Cooks Current

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

Volume 17, Issue 3 Newsletter of the Cooks Creek Watershed **Summer 2020**

2020 Events

Regular Board Meetings: TBD Check our website for details

Springtown Fire House- 7:30PM

4th Thursday of the month except Nov. and Dec. which is the 3rd Thursday;

Aug.27, Sept. 24, Oct. 22, Nov.19 (3rd Thursday), Dec.17 (3rd Thursday) **All are welcome! We appreciate your involvement**

All Events: TBD please check our website!

Springfield Community Day - TBD

Oct. 3, first Sat. of Oct., **Fall Dinner,** 5pm-9pm, Springtown Rod & Gun Club TBD

Oct. 4, first Sunday of Oct., **Walk in Penn's Woods,** Virtual tour.

Oct. 10, second Sat. of Oct., **Durham Community Day,** Noon-3pm, Durham Mill Green is cancelled.

Nov 14, second Sat. of Nov., **Fall Clean-Up,** 9-Noon, meet at Old Philadelphia & Rt. 212 & Gallows Hill Rd. TBD

See back for details!

We're on the web!
www.cookscreekpa.org

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

Board Members:
President: W. Scott Douglas

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Treasurer: Jim Orben

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From Across the Board…

There is no question that the pandemic has impacted each and every one of us. However, how we choose to deal with it matters a great deal. For some, the loss of a job, or loved ones, is certainly devastating. For others, the inconvenience of a disrupted life is frustrating as we try to work from home with all the distractions that brings. For those of us with school age children, trying to keep them occupied and worrying about the loss of socializing activities and classroom education is taking up a lot of our bandwidth. However, trials like this also provide an opportunity to reflect on our daily lives in a way that otherwise just doesn't happen.

Summer Bouquet from wing stem. *Photo by: Lois Oleksa*

With normalcy so disrupted, now is a perfect opportunity to question what of that normalcy is really what we actually want. No one can answer that question for us, but we should strongly consider if, when this is over, we want the "old times" back. I have found that working from home many days has increased my productivity. At the same time, I've reduced my carbon footprint dramatically as my commuting miles have dropped from 400 miles a week to less than 80. While my children are grown, my daughter, who finished up graduate school this spring, has been living with us again while she searches for a place to start her career. Since many companies have put new employment on hold, she has taken her interest in sustainable food and started a blog featuring an analysis of the impacts of dietary alternatives (and some awesome vegan recipes). It's hard to know how this will change her future, but I do wonder if she would have tried this if things were "normal". Her new husband is still working for a firm in Iowa, but from our backroom here in Pennsylvania. And my wife and I are happy to have our empty nest refilled.

I do worry about school

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age children, but the traditional classroom with 30 children and one instructor is not the only educational model. Our local Scout troop is encouraging its members to stay connected through the internet, and it appears to be working. Virtual interaction is not a panacea, but I have noticed that some of my more talented friends are using the internet to reach youth with entertaining video clips on scientific topics. I am working with the Troop on a mini-camp that will have a number of outdoor classes that will provide the youth with opportunities to learn about nature, citizenship and outdoor skills from experts in the community and from within their circle of family and friends. I personally will be teaching classes on insects, mammals and ecology. I have heard that other groups are also finding ways to bring our children together safely and give them the enrichment that they need. Perhaps the pandemic will force us to bring the generations back together to build the trust and respect that our communities so desperately need.

Across the nation we are finally facing the systemic racism that has plagued our society for hundreds of years. While I do not and cannot support violence, the resumption of active and energetic debate, marches and activism encourages me after so many years of apathy and community disengagement. I cannot help but wonder if the boredom of isolation has encouraged many to finally act on their beliefs. This can be both good and bad, but I personally believe that the majority of us are good at heart and want the best for everyone. It has never been hard for me to find common ground on environmental issues, but it is hard to find folks willing to dedicate time to affecting change.

This year, the CCWA has been forced to cancel many of our activities. It appears that our normal way of doing things will not resume anytime soon. Our Cleanup and Mini Monster Mayhem were cancelled as you know, and it appears that Community Days in Durham and Springfield will also be cancelled. The Walk in Penn's Woods at the Durham caves is going to be virtual. The Board is struggling with how best to move forward, but we are seriously considering our alternatives. In the meantime, we continue with our monitoring programs and working with our partners in other organizations and local government. We would love to have your input though, particularly if you have expertise in using the tools available through the internet so that we can continue our good work with the community. We are always looking for people in the technology field. I can always be reached at info@cookscreekpa.org.

W. Scott Douglas, President

Botanical Focus: Wingstem (*Verbesina alternifolia*) *By: David Oleksa*

Notice the stem is winged, hense Wingstem

This is the 16th installment in a series of articles on the flora of the Cooks Creek Watershed.

Many people are surprised to learn that not all invasive plants are non-natives. The definition of invasive might be simply stated as any plant species whose introduction into an ecosystem will cause harm – economic or environmental or may cause health risks. So, native plants can become invasive ones and the plant we will be discussing in this column happens to fall into that category.

Wingstem (*Verbesina alternifolia*) is a perennial plant that seems to have originated in the Ozarks and has spread eastward to the Atlantic coast and northward to as far as southern Minnesota. It may grow as high as eight or nine feet in ideal conditions and has a single stalk which is not branched except for near the top where the floral array occurs. The leaves are rather large being up to 10 inches in length and over two inches in width with edges that are toothed. The leaves taper to a point and have a central vein and several curving lateral veins. The plant gets its name from distinctive wing-like structures which run along the sides of the stem between the places where the

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leaves join the main stem.

It is a popular plant for "native" gardens since it displays a dramatic foliage exhibit and a beautiful profusion of yellow daisy-like structured flowers. The blooming period starts in late summer and into early fall and the blooms last for nearly 1 ½ months. Wingstem likes moist soil, rich in organic matter and if it is located in full sun to light shade it will be very happy. If the weather becomes too hot and dry, some of the bottom leaves may drop off and the leaves are also susceptible to powdery mildew. Here in the Watershed area, we have seen more and more of these plants that take advantage of the many areas along fields, streams, pastures, and roadside ditches that proliferate. The plants seem to enjoy being in close proximity to Sycamore, Elm and Hackberry trees that prefer the same type of environment.

One reason that people enjoy having these plants as background plants (because of their height) in their gardens is because of the many insects that are drawn to the flowers. Long-tongued bees such as bumble bees and some short-tongued bees, skippers, and butterflies also help to pollinate the long tubes that make up parts of the blossom. Although the plants are pretty much animal resistant (deer, rabbits, and other herbivores can't abide the bitter taste), the leaves are savored by the caterpillar stage of the Silvery Checkerspot butterfly. The flowers are targets of Gold Moth caterpillars as are the developing seeds. Leaf beetles, aphids, gall fly larvae, and stink bugs are also fond of the wingstem plant.

Since the plant is a native one, it is easy to understand that the Native Americans were quick to pick up on medicinal uses for it. Wingstem (or as it is sometimes called – Frostweed) has been historically used as an aid for gastrointestinal problems as well as urinary ones. It served as a laxative and was used externally as a relief for joint pain.

Over the past few years, many more of these plants can be seen as you drive along the roads in the Watershed. Since the seeds are air borne, it is easy for them to escape from gardens and once established in an area, they become very difficult to get rid of. They are aggressive growers and have the habit of choking out other plants that enjoy the same ecological systems. They are interesting, beautiful and quickly establish themselves into a thick patch. Just remember, they can become invasive and if they make themselves too much at home on your property, you will have a tough time evicting them.

Continue our good work and renew your membership!

Membership for 2020

Cooks Creek is an important resource for our community. Don't forget to renew your membership and stay up to date on issues concerning our Watershed.

Please notice the asterisk* on your mailing label. If you do see the * your membership has expired. We count on all of you for our support. We would miss you. Please renew your annual membership.

Find the membership form on the back page.

If you want to get more involved, drop us a line at info@cookscreekpa.org or the postal way at CCWA, P.O. Box 45, Springtown, PA 18081 and share your talents and interests!

Back to the Past: Beating the Heat in times gone Past

By: Lois Oleksa

Water Fountains or Water Troughs were large troughs made of stone so you could take a drink but also dunk your head to stay cool. Sometimes horses and other animals used them as well and thus they could be unsanitary.

Ice blocks were harvested from lakes and ponds during the cold winters and stored in ice-houses until the blocks were distributed in the summer for refrigeration and cooling purposes. Take a look at the beautiful two story ice-house in Springtown behind the General Store.

Transoms were small rectangular window panes above doors, close to the ceiling, that opened and closed to allow hot air that rises to escape through the transom. Creating air flow kept homes cooler.

Front Porches, which are once again popular on new homes, help shade the front of the house and people, prior to air conditioning, used to sit outside during the evening and early in the night when it was cooler. It became a popular place to hang out.

Napping in the Shade during the hottest part of the day, under a shade tree, reduced the threat of dehydration, heat stroke and heat exhaustion. In the afternoon no strenuous work was done and even today, certain Hispanic cultures stop work and participate in siestas.

Clothing constructed of Linen kept one cool as the linen whisks sweat away from the body; rayon and polyester don't compare.

Switchel, a beverage used by haymakers out in the hot fields, beat the heat. Ingredients used were water, ground ginger and a sweetener like molasses, sugar, or honey. Switchel provided electrolytes before they were even discovered in 1887.

Architecturally Designed Homes with underground living space built into a bank or hillside kept homes cool. They also had thick stone walls in our area and adobe walls in other areas of the country to keep the homes cool.

And, **Hand Held Fans**, were used, before air conditioning was invented in 1902 by Willis Haviland Carrier. Fans were used since ancient times utilizing leaves to provide cooling breezes. Constructed of vellum or stiff cloth, some folded, some were encrusted with feathers, changed with the fashion, and depicted religious or classical cartoons, political satire, historical events, advertisements and landscapes.

"Lazy River" or Why Streams Meander *By: Steve Smith*

"Everything that can happen in life happens...But those things happen in a slow, sure, meandering river of real existence..."

A Tree Grows in Brooklyn by Betty Smith

Up a Lazy River

"Up A Lazy River", a song written by Hoagie Carmichael and Sidney Arodin published in 1930, became a hit when sung by the Mills Brothers in 1957 and again, at number 14 on the charts, as sung by Bobby Darin in 1961. If the song had been titled "Up the Most Efficient River" or "Up the Lowest Energy River" it probably wouldn't have been in the top 20. And then then there was the Sam Cook song, "What a Wonderful World", with the line, "Don't know much trigonometry." Poor Sam, if he had only tried a little harder to master trigonometry, he would have seen how the "sine generated curve" gives rise to stream meanders and by whispering this fascinating stuff into the ear of his lady friend, might have won her heart.

An article attempting to provide some basic knowledge in regard to the phenomenon of stream meandering would be particularly relevant at this time as planning is underway for major riparian buffer projects along stretches of Cooks Creek. One would be tempted to think that the sinuous curves in a stream are caused primarily by impediments to flow (irregularities), such as rocky outcrops, fallen trees, dense root systems, or perhaps cohesive masses of clay, but as we shall see, this intuitive thought would not be accurate.

The term "meander" derives from the river Menderes in modern Turkey, known at the time of ancient Greece as the Maiandros. While streams and rivers do have relatively straight reaches, these rarely exceed ten times the stream width (Leopold and Langbein 1966). "Lazy river" aptly describes the physics behind meanders. All naturally occurring dynamic systems trend toward expending the least possible energy which in turn makes the average path the *most probable.*

A valley floor, or *flood plain,* is not formed as one might think by the deposition of silt during times of periodic flooding, but by the relentless meandering of the stream channel, eroding here and depositing there at random over many years in every possible position within the plain. This phenomenon has been extensively studied both empirically with tens of thousands of measurements for depth, width, channel cross section, radius of curvature, current velocity, distance between successive meanders (wave length), etc., as well as with sophisticated mathematical equations, many of which use advanced calculus. These equations are beyond the scope of this article and would be of interest mainly to geomorphologists (Bagnold 1960, Williams 1986).

One of the key hydrodynamic features in the process of river meandering is the helical flow of water in the channel. This can be best envisioned as a corkscrew, flattened on top, as the water moves sideways across the top of the channel while at the same time moving downstream. While first described by James Thomson in 1876, it was Albert Einstein who first understood how helical flow determines both meander length and the down channel migration of meanders. Einstein, always curious about everything and anything, published "The Cause of the Formation of Meanders in the Courses of Rivers and of the So-Called Baer's Law" in the German periodical *Die Naturwissenschaften* in 1926.

Eager to explain complicated physics in simple terms by using analogies, Einstein demonstrated how helical currents generated for example by stirring a cup of tea with a spoon, cause the tea leaves to seek the center of the bottom of the cup. He stated, "The explanation of this phenomenon is as follows: the rotation of the liquid causes a centrifugal force to act on it. This in itself would give rise to no change in the flow of the liquid if the latter rotated like a solid body. But in the neighborhood of the walls of the cup the liquid is restrained by friction, so that the angular velocity with which it rotates is less there than in other places nearer the center. In particular, the angular velocity of rotation, and therefore the centrifugal force, will be smaller near the bottom than higher up. The result will be a circular movement (helical flow) of the liquid..." Einstein's illustration relates the accumulation of tea leaves in the bottom of the cup to the deposition of sediment at the "point bar" of a meander in a stream or river.

Einstein also mentions that, "It is well known to geographers that the rivers in the northern hemisphere tend to erode chiefly on the right side. The rivers in the southern hemisphere behave in the opposite manner (Baer's law).

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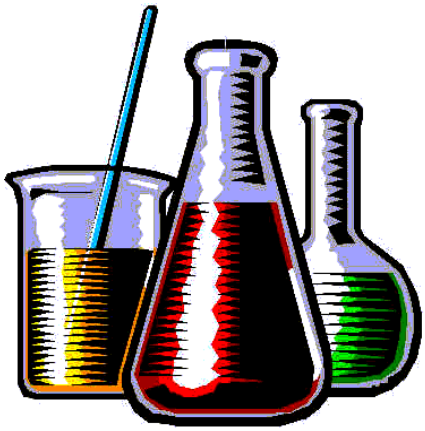
Green Tip #49: Common Toxic Chemicals — And How To Avoid Them

From: *The Environmental Magazine*, *Green Guide* by: Sam Heller, December 17, 2019

This is a series of articles on synthetic chemicals with recommendations in avoiding them.

Part 3



Polyfluorinated Compounds

These substances have rightly been experiencing a rising amount of coverage in the media. This is largely due to their nearly ubiquitous presence in human bloodstreams, and links to diseases such as heart disease and testicular cancer. One of the best known ways in which you can reduce your potential of being exposed to dangerous amounts of these substances is by filtering your drinking water.

You can test your water for PFCs.

You can learn more about the current body of knowledge on PFCs by clicking here…https://pubs.acs.org/doi/10.1021/es2011622

Fluoride

Studies have shown that adding fluoride to a water supply can reduce rates of tooth decay, and fluoride can actually be found in natural water. However, studies have also shown fluoride to be a neurotoxin, and indicate that it can lead to tooth discoloration and bone problems. Though care has been taken to ensure fluoride levels in water are at safe limits, there are other sources of fluoride in the environment that could be pushing your levels past the safe zone.

You can reduce your exposure levels by filtering your tap water before drinking it (Or drinking spring water), using non-fluoride toothpastes, eating more fresh and organic food, drinking less bottled black tea (which often contains high fluoride levels), and not cooking with non-stick Teflon pans.

EMFs

There is a tremendous amount of misinformation on the electromagnetic waves put out by cell towers, wifi routers, and other common emitters. Hardcore believers in the dangers of EMFs frequently promulgate false articles that greatly exaggerate the risks these energies pose. Conversely, hardcore skeptics often claim EMFs are undeniably safe and that there is simply no cause for concern. In reality, the truth probably lies somewhere in the middle.

Fortunately, plenty of moderates are conducting quality research on the topic, and rationally analyzing the existing data. The evidence they have compiled strongly

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suggests that EMFs are not entirely innocuous, and that they warrant further investigation.

To reduce your exposure to EMFs, you can keep your phone on airplane mode when it's in your pocket and turn your wifi router off at night.

Click here to watch a talk on the scientific evidence pointing to the dangers of EMFs, delivered by Dr. Devra Davis, at The University of Melbourne…https://www.youtube.com/watch?v=BwyDCHf5iCY

Atrazine

This common herbicide leaches from fields into drinking water and has been strongly linked to hormonal irregularities. From the feminization of frogs, to the disruption of periods in midwest women, atrazine has been having serious effects on both human and animal life. A study comparing period regularity between women in Vermont and women in Illinois (where the chemical is regularly applied to cornfields) found that women in the latter state were five times as likely to report period irregularities. It also found that the more water the midwest women drank per day, the less likely their periods were to be regular.

If you'd like to reduce your exposure to atrazine, consider buying organic, wash all your produce, and filter your drinking water.

The following links provide additional information on atrazine…https://www.scientificamerican.com/article/atrazine-water-tied-hormonal-irregularities/https://www.panna.org/resources/atrazine

Formaldehyde

Formaldehyde has been linked to several cancers.

The most common sources of exposure in the household are furniture, and other treated wood products and building materials. In order to limit exposure, open your windows for good ventilation, and buy untreated wood products when possible.

To learn more about formaldehyde's effects, and possible routes of exposure, click on the links below…https://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet#how-can-people-limit-formaldehyde-exposure-in-their-homeshttps://www.cancer.gov/about-cancer/causes-prevention/risk/substances/formaldehyde/formaldehyde-fact-sheet#how-can-people-limit-formaldehyde-exposure-in-their-homes

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He noted that because of the earth's rotation, a circular current will exist in a river's cross section *even in straight sections*. This well-known Coriolis-force acts, "...transversely to the direction of the current, whose right-hand horizontal component amounts to $2v\Omega\sin\varphi$ per unit mass of the liquid where v is the velocity of the current, Ω the speed of the earth's rotation, and φ the geographical latitude. As ground friction causes a diminution of this force toward the bottom, this force also gives rise to a circular movement..." (Einstein 1926). OK Eagle Scout candidates, figure this out for some of the straight reaches of Cooks Creek!

Typically meanders begin forming downstream from the headwaters where there is sufficient water deposited sediment (alluvium) in the flood plain. That irregularities along the sides of the channel are not the cause of meanders is evident when one considers that meanders form in rivulets on the surface of glaciers or even in ocean currents such as the Gulf Stream (Leopold and Langbein 1966). The basic process is one of water velocity generated erosion on a concave bank and deposition of the eroded material as sediment downstream, *usually on the same side*, as a convex bar.

Luna Leopold and W. B. Langbein in a 1966 *Scientific American* article described meanders as conforming to a "sine-generated pattern". This pattern would roughly approximate the "standing wave" formed by a rope, secured on one end, as it is being flipped up and down (or sideways) with a frequency causing one loop to form above the horizontal and another loop below. The "wave length", is measured from the beginning of one loop to the end of the successive loop or meander. These authors, after many field measurements, noted that there is a constant ratio between the wavelength of the curves and the radius of a single curve. For most streams the ratio turns out to be between 1.3 and 1.4 to one.

The point at which one meander changes to the successive meander is called the *inflection point* and this might mark the middle of a relatively short straight stretch of a stream connecting the two (right and left hand) curves. The deepest point of the channel will occur at the axis of the bend of a meander and the shallowest area in the channel will be at the inflection point. In cross section the channel will be relatively symmetrical immediately downstream from the inflection point and asymmetrical at the axis of the bend of the meander. Water velocity is slower where channel depth is greater *except at the axis of the bend* adjacent to the concave bank where it reaches a maximum just below the surface. The centrifugal force is larger in the swifter moving water near the surface at the apex of the bend than in the slower water adjacent to the bed. This results in the surface water in a meander being thrust toward the concave bank, in turn pushing the bed water laterally in the opposite direction (obliquely because of the current) toward the convex bank. This is the dynamic causing the helical or flattened cork-screw current in the channel giving rise to the erosion-deposition mechanism of meandering (Bagnold 1960, Einstein 1926). The so-called sine-generated curve pattern of most meandering streams and rivers, according to Leopold and Langbein, tends to *minimize local erosion.*

The slope of the water channel tends to be steeper in meandering stretches than in straight stretches. Even relatively straight stretches have some characteristics similar to the curved portions of the channel in that the shallows where riffles occur, tend to alternate with deeps or pools. The rises in the stream bed causing riffles, occur at regular intervals alternately from one side of the channel to the other. Riffles are spaced on average about five to seven times the stream width or approximately double the wavelength of a meander.

To quote from the article by Leopold and Langbein, "The meandering form is the *most probable* result of the process that on the one hand tend to eliminate concentrations of energy loss and on the other tend to reduce the total energy loss to a minimum rate...The typical meander shape is assumed because, in the absence of any other constraints, the *sine-generated curve is the most probable path* of a fixed length between two fixed points." (emphasis by this author).

(The author gratefully acknowledges the assistance of Dr. Bobb Carson in securing the U.S. Geological Survey Professional Papers used in this article.)

Einstein, A, 1926, The cause of the formation of meanders in the courses of rivers and of the so- called Baer's Law: *Die Naturwissenschaften*

Bagnold, Ralph A., 1960, Some aspects of the shape of river meanders: *Geological Survey Professional Paper 282-E*

Leopold, Luna B., Langbein, W.B., 1966, River Meanders: *Scientific American*

Williams, Garnett P., 1986, River meanders and channel size: *Journal of Hydrology,* 88, 147- 164

Creature Feature: Grey Tree Frog (*Hyla versicolor)* By: W. Scott Douglas

This is 53rd in a series on the fauna of Cooks Creek

One of our long time Board members and newsletter contributors, Jim Orben, offered up his back deck for a board meeting a few months ago. As we sat down to have our meeting, he pointed out a tropical bromeliad behind the table and warned us that we may be interrupted by a tree frog that had taken up residence in the potted specimen. It's startlingly loud, he remarked. The frog remained silent during our meeting, but it did prompt me to look into the life history of the animal to share with you here.

Photo by Jim Orben

The Grey Tree Frog is the most widely distributed tree frog in the US, and the only one in Pennsylvania. It ranges pretty much across the entire eastern US and southeastern Canada, absent from only northern Maine and southern Florida. It is small, only 1-2 inches and only weighing about a quarter ounce. The frog is fairly common and abundant in forested areas near water, often heard, but rarely seen. This is because they are nocturnal and strictly arboreal, only coming down from the trees to breed, and they are very well camouflaged. The Grey Tree Frog can change color like a chameleon from almost white to almost black at will to match its surroundings. When I've seen them, they've either been grey or light green with a white belly. If you turn it over, there are distinctive yellow orange patches under the hind legs. The skin is very bumpy in texture, not quite as warty as a toad, but more consistently covered.

The breeding season starts in late April and runs into late June and early July. The males gather in groups in low bushes near water and set up territories which they defend with their characteristic nocturnal trilling calls. The call is similar to a toad's, but more varied and lower in pitch. The females are attracted by the calls and will choose a mate based on the call and proximity to a suitable pool of water. Like salamanders, tree frogs prefer semi-permanent water bodies to lay their eggs in, without fish or other predators. They have been known to utilize water gardens, old tires, birdbaths and even swimming pool covers as tadpole nurseries. The female will lay as many as 2000 eggs, which the male fertilizes externally, and the masses are stuck to vegetation in clumps of 10-40 eggs. The tadpoles hatch in 4-5 days. Grey Tree Frog tadpoles are colorful, with yellow and green bodies and red and black tails. They feed primarily on algae and detritus. The tadpoles develop into froglets in 6-8 weeks.

Grey Tree Frogs are considered a beneficial animal because they eat a considerable number of moths, crickets, ants, flies, grasshoppers and beetles from the trees in which they spend most of their lives. They are, in turn, consumed by birds, snakes, other frogs, and small mammals. Fish and salamander larvae eat tadpoles when they can find them. Interestingly, there are more female tree frogs than males in a population because the male's courtship singing alerts predators to their presence. Apparently even giant water beetles have been known to capture and consume tree frogs when they are breeding. Grey tree frogs live 7-9 years in the wild, hibernating in colder parts of their range under rocks, logs and bark on the forest floor. It can even withstand freezing temperatures by producing glycerol which acts like a form of antifreeze, preventing ice crystals from forming. During this extreme cold, the frog's heart actually stops beating and it stops breathing altogether. When the weather warms, it thaws out and resumes its activities as if nothing had happened.

Annual Report

April 1, 2019 to March 31, 2020

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.

2019-2020 Officers and Board of Directors

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

17th 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 (2019) effort had the benefit of great weather and a reasonable turnout. We cleaned up 15 roadways and gathered up over 140 bags of trash that were hauled off in a PennDOT dump truck. Thanks to the Springfield roadcrew for helping us gather up the bags. Thanks again to the Springtown Volunteer Fire Company for provided us our base of operations. As usual, our board provided a sumptuous lunch of homemade chili, cornbread and baked goodies.

18th Annual Mini-monster Mayhem – We are back! Over a dozen young folks attended with their parents for our annual romp in the stream. This year we had a bunch of Cub Scouts from a local pack as well as those who picked up our Facebook posts and just popped by. As usual, Scott regaled the youngsters with tales of wonder including dinosaurs, comets, flash floods and pollution. Not to mention the copious quantities of gummy worms and other monsters. All members are always welcome to join in the fun on the Saturday before Father's Day.

Stop the Pipeline – This year we continued our fight against the, gasp, now two pipelines proposed for our Watershed (PennEast and Adelphia). It appears that PennEast is losing steam, but you never know what will happen. We continue to watch carefully.

Ordinances and Plans – From positions on local governing bodies (Durham EAC, Springfield EAC, Springfield Planning Commission, Springfield Open Space Committee), CCWA members continue to work advocating for changes in local policies toward more sustainable practices that will preserve and protect our beloved Cooks Creek.

Habitat Restoration – The riparian buffer at the Firehouse is doing great! Make sure to check it out. Additional maintenance work will be performed in the coming year. If you have any ideas, or want to contribute, please let us know by sending an email to info@cookscreekpa.org.

Educational Outreach – In April, Scott presented his show on watersheds and water quality at Durham Nockamixon Elementary School as part of their Earth Day celebrations. All the kids in grades K-5 participated in the event. As part of the Walk in Penns Woods sponsored by Penn State, CCWA members Sarah Snider and Scott Douglas hosted a walking tour of some old roadways in Durham to illustrate the changes in forest caused by historical activities. Scott showed the dozen participants the differences in invertebrate populations that can be caused by relatively minor changes in land use and water quality. A Re-Forestation program was held in July at Jeff Heehs' place and the Riegelsville Public Library. At our fall fellowship dinner, local mycologist Martie Kyde talked to us about the fascinating world of mushrooms.

Stream Gauging and Monitoring – The CCWA continued to work on the monitoring updates funded through the State's Growing Greener grant. New stream gauges were installed at the Red Bridge and Brunswick (Springtown) stations, water quality and benthic invertebrate samples were taken and a watershed model was developed. The project should finish up by the end of 2020 with some recommendations to improve and sustain water quality.

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.

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Canal Monitoring Project – The CCWA was represented at several public outreach meetings regarding the development of a water quality and monitoring program run by a consulting firm working on a grant from the Pew Charitable Trust. A number of suggestions were made, but we await any word on whether or not this program will ever actually start up.

Durham Mill Tailrace Cleanup – Thanks to a mini-grant by the Lower Delaware Wild and Scenic Management Council and the Delaware River Greenway Partnership, CCWA continued to work on the Durham Mill Tailrace with some grading and planting of native species.

Hans Memorial – As many of you know, a memorial bench for Hans was placed at Peppermint Park by Springtown and the Springtown Fire Company. At the end of August last year, Stephen Willey, Scott Douglas and Jim Nielsen placed a memorial stone in front of the bench. Lois Oleksa planted some native sedge and violets next to the stone. The dedication reads: In Memory; Hans O. Reimann, Jr; 1953-2017; Activist, Naturalist, Friend.

Year End Financial Reports

Submitted by: Aimee Douglas, CPA

Cooks Creek Watershed Association

Statement of Financial Position

March 31, 2020

Assets	$10,074
Liabilities	$ 677
Unrestricted net assets	9,397
Temporarily restricted net assets	-0-
Total liabilities and net assets	$10,074

»»

Cooks Creek Watershed Association

Statement of Activity

For Year Ended March 31, 2020

UNRESTRICTED NET ASSETS

Total revenue and support	$ 779
Net assets released from restrictions	-0-
	779
Total expenses	(2,099)
DECREASE IN NET ASSETS	$(1,320)

»»

Cooks Creek Watershed Association

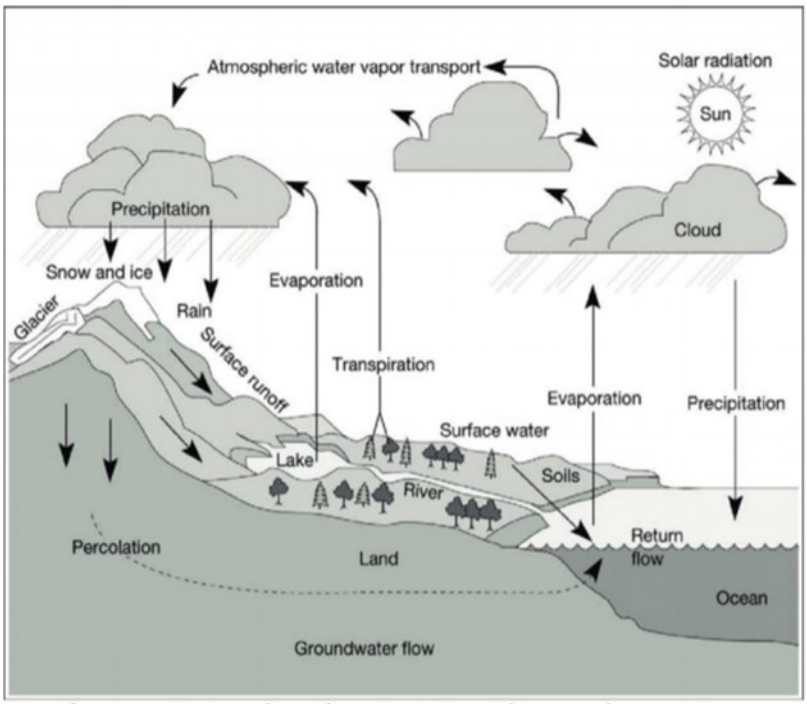
Statement of Changes in Net Assets

For Year Ended March 31, 2020

	Unrestricted	Temporarily Restricted	Total
Balance March 31, 2019	$ 11,394	-0-	$11,394
Decrease in net assets	(1,320	-0-	(1,320)
Balance March 31, 2020	$ 10,074	$ -0-	$10,074

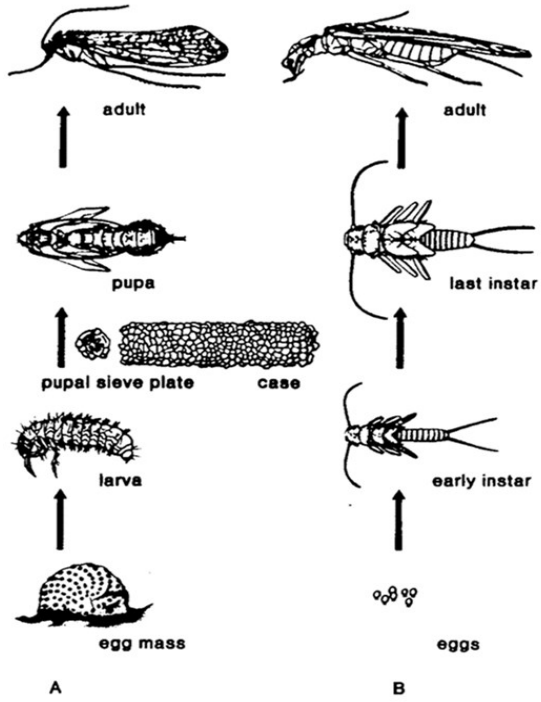
Children's Backyard: Hunting for Mini-Monsters Part 2

Hydrologic Cycle



Clouds are composed of **condensed** water vapor. When the air cools, the water **precipitates** (falls) as rain or snow which either **runs off** the surface or **infiltrates** (percolates) into the ground to become **groundwater**. Plants take up water from the ground and pass it through their leaves in the process of **transpiration**. Water is stored in lakes, oceans and glaciers or **evaporates** into the air where it eventually **condenses** into clouds, starting the cycle again.

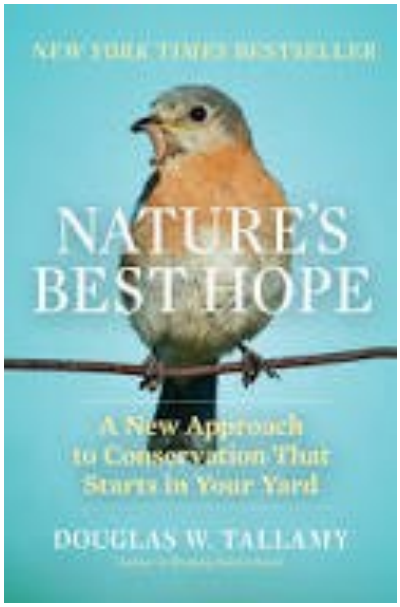
How the water cycle works and keeps this important resource replenished.



Life Cycles

Insects change form dramatically as they grow up. They start out as tiny **eggs**, laid either singly or in jelly-like masses. Then they transform into either a grub-like **larva** or wingless **nymph**. Larvae and nymphs then go through a rest stage either as a **pupa** or an **imago**. Finally, they will emerge as **adults**. Often it is during emergence that they are eaten by fish. Fly-fishers make lures which mimic the emerging adults. Those that survive will mate and lay more eggs, and the cycle starts again.

A book review of Douglas Tallamy's new book, *Nature's Best Hope, A New Approach to Conservation That Starts in Your Yard* *By:Debbie Orben.*



Like you, I am missing my friends and family and trying not to worry about my loved ones. At times like this when social isolation is mandated, leaving our homes feels threatening, and going to work is reporting for hazardous duty, we need every source of hope we can find. I am grateful for them all: art, music, literature, spiritual traditions, sports, exercise, time in nature, and gardening.

Gardening, for me, has always been a source of hope. Putting small inanimate seeds into rows and seeing them emerge as leaves, blossoms, fruit, beans and squash is a miracle we sometimes take for granted. It is good to hear that during this pandemic more people are beginning to garden. It takes hard work and perseverance plus fertile soil and the right amount of water, but the rewards of freshly picked peas and sun-ripened tomatoes are worth all our time and effort.

For me, another source of hope was reading Douglas Tallamy's new book, *Nature's Best Hope*, *A New Approach to Conservation That Starts in Your Yard*. Professor Tallamy is an entomologist at the University of Delaware and his book is both inspiring and challenging. I agree with Tallamy that we need to change the way we use land and it is not enough to restrict the natural world to parks and preserves. We, humans, are an integral part of nature and we need to work harder at making our yards wildlife friendly, turning them into small versions of our grand National Parks

Professor Tallamy's idea of converting our properties into what he calls *Homegrown National Park* is especially appealing to me because, like my food garden, it is something I can begin to do here and now. Restoring wildlife habitat where we live and work, and creating biological corridors would help to protect plants and animals who, like us right now, cannot safely travel from place to place.

The challenge for me was not in reading Tallamy's book, for it is very clear and understandable. The challenge is to actually do what he suggests but I am going to try. In the United States we have acres and acres of what we think are beautiful and healthy green lawns but they are essentially biological deserts. The solitary bees who help pollinate our food and the caterpillars that are at the bottom of our food webs cannot thrive in neatly manicured lawns, especially ones that are fertilized and mowed frequently. We need more native plants, especially keystone plants, the ones that have been identified as supporting the greatest diversity of caterpillars and insects.

Here are just a few of the steps Douglas Tallamy suggests we can do to contribute to *Homegrown National Park* and the wonderful diversity of wildlife in our neighborhoods. First we should try to shrink our lawns so we have room to plant more trees such as native oaks, cherries, willows, and birches that support our local ecosystems. We also need to plant more native wildflowers including perennial sunflowers, goldenrods, native asters, and milkweeds for our pollinators, native bees, and butterflies. You can visit the National Wildlife Federation's Native Plant Finder website (https://www.nwf.org/Native Plant Finder) to find the best woody and herbaceous plants for your zip code.

Another step he suggests is to rid our properties of invasive species. Perhaps I could write more about invasive plants at another time but now I have to go pull some weedy garlic mustard, barberry, autumn olive, and stilt grass. We may not be able to rescue the whole world but we can follow Professor Tallamy's advice and create more hopeful life-supporting spaces. We can make our yards havens for wildlife, places alive with the voices of songbirds, places of refuge, natural beauty, and peace.

Current Matters

Wingstem flowers

Rescued red tail hawk doing well after a head trauma in Durham. Rescue and photo by Tom Ferrara.

Aark.org is the organization that saved the red tail hawk. The work of the Aark includes rehabilitation, education and training.

See www.aark.org to support this work.

Soon you can check out more Mini-monsters and more information on the web:

www.cookscreekpa

Two story ice house in Springtown

Garter Snake

Recycle! Local Recycling Information

Durham Township Recycling Center

Location: Municipal Building, 215 Old Furnace Rd, Durham

1st Saturday of every month (2nd Saturday if 1st 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, and CFL bulbs, rechargeable batteries (during office hours).

Please note that this facility is just Durham Township residents!

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

Springfield Township

Location: Township Building, 2320 Township Road. Note: Springfield residents only. Cloth/clothes only at Springfield Fire company.

Paper/cardboard Recycling Bin Available at Township Building.

A Recycling bin was recently placed here and is available to anyone. Cut down on trash and help the township earn extra money. You can drop off: Magazines, Shopping Catalogs, Phone Books, Newspapers, Office and School Papers, Mail.

Please do NOT include: Plastic, glass, metal, trash

Hours: Anytime ; See website: *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*

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.

Schedules of Local Government Meetings

Springfield Township:
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
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
610-865-3291
3700 Old Philadelphia Pike

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

Williams Township:
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
215-536-4066
1328 California Road

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

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**

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.