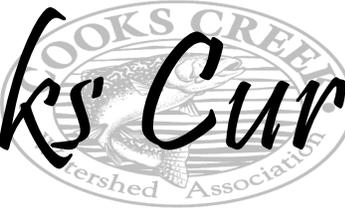


# Cooks Current



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

Volume 18, Issue 1

Newsletter of the Cooks Creek Watershed

Winter 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; Jan. 28, Feb. 25, Mar. 25, Apr. 22, May 27, June 24, July 22, 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!**

**Apr. 10, Spring Clean-Up**, 9am-4pm, Springtown Fire Company, **Apr. 22, Annual Meeting**, 7:30pm, Springtown Fire Company, **June 19, Mini Monster Mayhem**, 9:30am-Noon, The Douglas's, 3450 Rt. 212, Springtown, PA, **July 10, Native Plant and Invasive Workshop**, TBD, **Springfield Community Day - TBD**, **Oct. 2, Fall Dinner**, 5pm-9pm, Springtown Rod & Gun Club, **Oct. 3, Walk in Penn's Woods**, TBD, **Oct. 9, Durham Community Day**, Noon-3pm, 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

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**Treasurer:** Jim Orben

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

**Marketing and Public Relations:** Lois Oleksa

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Ellie Scheitrum

### Additional Members:

Sarah Snider, Stephen Smith, MD,

## From Across the Board...

Another quarter has passed and we are still essentially shut out of our usual activities due to the continued ravaging of the dreaded coronavirus. A year ago, at this time we were still hoping to dodge the bullet, and while some experts knew better, most of us have continued to be surprised by our vulnerability. The pandemic has had impacts to our world and our place in it that will take years to understand, but the most obvious impact has been a change in political leadership in Washington.

From the perspective of environmental advocacy, this change is a relief. The continued assault on our hard-won environmental protections, from the Clean Water Act to the Migratory Bird Act has finally ceased. Several executive actions have already been signed that indicate that our environmental ship will be righted, including a return to the Paris Climate Accord and a halt on drilling in the Arctic National Wildlife Refuge. The Biden administration has suggested that the new head



Winter Wonderland Photo by Lois Oleksa

at USEPA be former Secretary of the North Carolina Department of Environmental Quality, Michael Regan. Mr. Regan appears to be a strong advocate of clean air and water regulation, and a proponent of environmental justice. This is likely to help states like PA, where an anti-regulatory mood is still prevalent in the legislature, and minority and rural communities continue to be targeted by industry. Mr. Regan appears to be in favor of climate change action; and

while this may help with our struggles against the pipeline, there is no indication that he will do anything to stop fracking. This contradictory position continues to confuse me. In local news, the vaccine rollout will dictate just how much we will be able to do this year. Inside you will see an advertisement for the cleanup, but COVID requirements for mask wearing and social distancing will still be in place. We will have re-

*(Continued on page 2)*

(Continued from page 1)

freshments and our popular chili lunch, but food will be served and consumed outside. We encourage that you keep groups to your inner circle of contacts, and to minimize contact with other groups during the event. As for Mini Monsters, we are reaching out to the schools for their input. It is hoped that by June we will be much closer to the end of the pandemic, but we plan to have a format change that again keeps participants together in family or other close contact groups, and that the groups stay apart from each other. Masks will be required. Inside you will see a report on the results of our water quality monitoring over the course of the last couple of years. This was funded by our Growing Greener grant which was recently extended for another year. In addition to another couple of newsletter articles, reports will be posted on our newly updated and refreshed website, [www.cookscreekpa.org](http://www.cookscreekpa.org). Thanks to Jeff Heehs for all his hard work on the website! Finally, we do plan on having a presence at Durham and Springfield Community Days this year, and we will be having a fall fellowship dinner, so there will be opportunities to see each other, talk about environmental concerns, and share information. I look forward to a return to normal.

Yours in conservation,

W. Scott Douglas, President



**Botanical Focus: Horsetail (*Equisetum hyemale*)**

By: David Oleksa

*This is the 18<sup>th</sup> installment in a series of articles on the flora of the Cooks Creek Watershed.*

As we were driving along a back road the other day, we spotted an interesting patch of dark green foliage. It appeared to be quite different from the surrounding plants so we stopped to look at it more closely. Upon observation, I thought to myself that our granddaughter would describe it as a bunch of baby bamboo since it was made up of slender straight shoots with distinctive joints. There appeared to be no leaves and these strange stems had a rough texture due to tiny ridges that ran vertically along the stems. The plant is commonly referred to as horsetail with a formal Latin name of *Equisetum hyemale*.



*Horsetails*

Horsetail is native to North America, Europe and Asia and boasts several different species, but *hyemale*, is the most common. Horsetail is probably the strangest plant we've discussed in this column since it is a non-flowering evergreen perennial. Its looks (as described before) are similar to bamboo, but the stems are skinny like tall grass. In addition, it reproduces itself through spores (not seed) like ferns. However, horsetail is not related to grasses, bamboo or ferns. The plant actually dates back to the Paleozoic Era, about 350 million years ago, and thus the progenitors of these weird plants were alive before even the dinosaurs roamed the earth.

One of the reasons that horsetail has survived this long is because of its adaptability. It grows best in moist soil but it can actually grow in up to 4 inches of standing water. Oddly enough, it can also withstand drought conditions readily. It is adaptable to various light conditions and although it prefers full sun, it can do well in partial and even deep shade. It can grow in just about any

(Continued on page 3)



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kind of soil from wet muck to a sandy or gravelly mix. It can withstand pH levels ranging from moderately acidic to moderately alkaline. Taking all these factors into consideration, it is understandable how the horsetail has been able to survive for so long.

Because of its ability to withstand extremes of wet and dry conditions and its flexibility of growing in a variety of soils, horsetail has become a popular plant for poor drainage areas and for rain gardens. However, another feature, yet to be discussed, poses a problem for the home gardener. Horsetail is a born colonizer. It spreads through aggressive rhizomes and once established, it feels obligated to spread and attempts to form a monoculture, squeezing out other plants. This factor makes them a wonderful choice for swales but caution should be used in choosing horsetail for decorative planting in areas where other plants are being propagated.



*Horsetails*

With such a long history, it is not surprising that horsetail, was used by native people for many reasons. The tall (from 18 inches to 6 feet) slender stems are dark green in color and are hollow. But running vertically along the stems are those tiny ridges that contain silica and these ridges give the plant a rough texture which made the stems useful to early settlers and natives alike. American colonists used the horsetail for scouring their pots and Native Americans and early woodworkers used the stems for smoothing arrows or other fine woodwork much as we today would use a fine grit sandpaper. Japanese woodworkers take this a step further and boil the horsetail and then dry it which makes it into a more effective form of abrasive. The stems were (are) also used to make the reeds for reed instruments such as clarinets, saxophones and oboes.

Medicinally, the horsetail has several uses. Today it is used in some homeopathic remedies but the Plateau Indian tribes boiled the stalks to produce a drink used as a diuretic and to treat venereal disease.

Horsetail is extremely deer resistant and for this reason and its interesting foliage many people in our area could choose it as an ornamental plant for landscape purposes. However, you can never lose sight of its spreading nature and unless you plant it in a deep pot or suppress its roots by burying metal or plastic sheathing deep around the area where it will be planted, be prepared to see it take over the whole area and just keep spreading. It cannot be considered as an invasive since it is a native plant but its aggressive growth tendencies can turn it into a problem similar to many invasives. That being said, the horsetail is certainly an unusual, beautiful, and interesting species that can be found here in the Cooks Creek Watershed and we hope that this article can make you appreciate it more if you were already familiar with it or give you inspiration to look for it if it is new to you.

## Back to the Past: Moss, Liverworts and Lichens

*A column highlighting the natural history of the Watershed.*

*With winter upon us, enjoy a trip outside and study the color of mosses, etc. as was done in 1884. A portion of a full article on Bucks County plants found in our Watershed is offered to this reader.*

### **“Indigenous and Naturalized Flowering Plants, Ferns, and Fern Allies of Bucks County.”** BY DR. ISAAC S. MOYER, QUAKERTOWN, PA. (Quakertown Meeting, April 15, 1884).

From *A Collection of Papers Read Before the Bucks County Historical Society* Published for the Society by B.F.Fackenthal, Jr., Riegelsville

Volume I.

Press of the Chemical Publishing Co., Easton, PA.

The complete flora of Bucks county would embrace, in addition to the plants mentioned in the title of this paper, all the lower orders of the vegetable kingdom. These orders contain an immense assemblage of forms, many of them of surpassing beauty, when examined by lens or microscope, and with specific characters just as sharp and valid, as obtains among higher forms.

The study of these humbler plants would be of absorbing interest, but, by the botanists of the county, they have been scarcely touched, and years must elapse before any successful attempt to catalogue them can be made.

A brief glance at these forms of vegetable life may not be unprofitable. The Musci or mosses stand highest in the scale of organization, and with their roots, stems, leaves and organs of fructification resemble plants of the higher types of structure. In fact, they look like trees and shrubs in miniature. No botanical taste is necessary in order to appreciate the beauty of these plants. During every month of the year, unless snow mantles the earth, they will reward the searcher in field, wood, or rocky hillside. You will notice, that when all other vegetation is brown and sere, mosses put on their loveliest green. Has any one ever attempted to define all the shades of green that the mosses of a single woodland show? You will find them from the most delicate yellow-green, varying to shades so intensely dark-green as to seem almost black. As to form of leaf and stem, we have here an endless variety of the most exquisitely chiseled, feathery foliage to be found in the vegetable kingdom. Bucks county is rich in species of mosses, Haycock and Buckingham mountains being especially rich localities for some of the rarer forms. Mr. Eugene A. Rau, an excellent botanist, of Bethlehem, Pa., has long been making mosses a specialty, and is an authority on the subject. Moss lovers are glad to know that a work on the mosses of the United States is now in press at Cambridge, and will soon be published.\* I will add that the shingle-covered roofs of old buildings are often good collecting ground for the bryologist.

The next order in the descending scale of plant life, is the Hepaticae or liverworts. In this order the distinction of stem and foliage is almost wholly lost, and, were it not for their green and lively colors they would be hard to distinguish from the lichens, next to be considered. Some of these liverworts are very beautiful. They must be looked for in damp situations, especially in ravines, at the base of wet and slippery rocks, where they are continually bathed in the spray of some small waterfall. In this country these plants have been especially studied by the late C. F. Austin, of Closter, N. J., by whose early and lamented death, a timely monograph on these interesting plants has been rendered impossible.

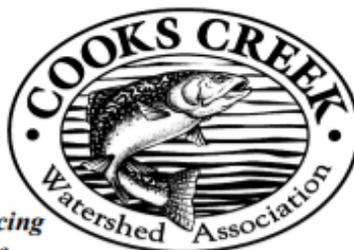
The Lichens, in which the familiar stem, leaves, and branches are entirely lost, and in which we have only a more or less flat expansion of structure not at all resembling that of a true leaf, and of almost

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any color except that of true green, are a most interesting order. Every one has seen the gray lichen covering fences, rocks, and trunks of trees. A closer inspection will discover that it is not only the gray lichen, but that there are many kinds of various colors, yellow, red, blue, purple, and brown, sometimes even upon the same tree, rock, or fence. In our northern flora, lichens play a conspicuous part, and probably few persons have thought, what an entire and utter change our landscapes would undergo if our lichen flora were blotted out of existence. This flora never changes, but, winter and summer, our eyes are relieved and gladdened by its harmonious colors. As an instance of the fullness of our lichen flora, I need only to say that, during an excursion to the Haycock mountain, made last summer, Dr. Eckfeldt, of West Philadelphia, collected sixty-five species in the course of a few hours. The Doctor was delighted with the richness of the locality. The lichens of this country have been well studied, and are now being described by Dr. Edward Tuckerman, of Boston. \* *Published May, 1884, by Lesqueret & James.*

17th



Annual

*Masks and social distancing  
required at Firehouse*



**SATURDAY APRIL 10, 9AM TO 4PM**

**HOSTED BY**

**THE SPRINGTOWN FIRE COMPANY**

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register yourself or your group, please contact  
Scott Douglas at 610-346-1604**

## New Jersey Liquefied Natural Gas Export Terminal Approved by Delaware River Basin Commission

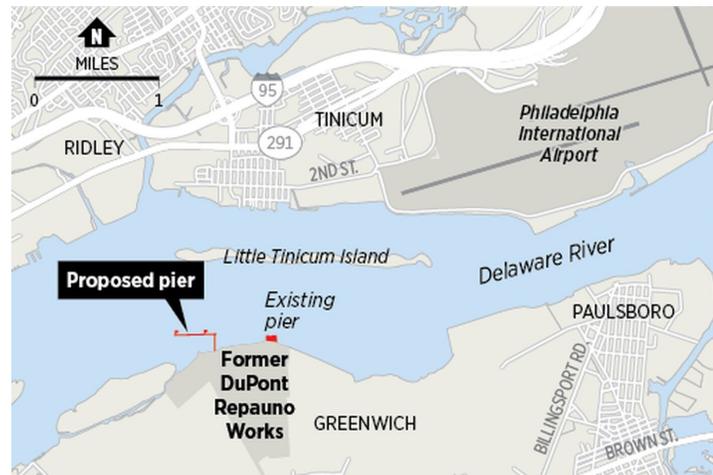
By: James Orben

In 2019, the Delaware River Basin Commission (DRBC) approved the construction of a deep-water pier at the abandoned Dupont Repauno Works on the Delaware River Estuary near Gibbstown, New Jersey. On June 12, 2019, when the development plan was approved the developer, Delaware River Partners, LLC, DRBC, and the State of New Jersey failed to disclose that they intended to ship LNG from the second and larger pier they wished to build. This approval followed a 2017 approval of the first and smaller pier at the site. At the time of the 2019 approval the Delaware Riverkeeper Network filed suit and had the DRBC decision put on hold pending review of the newly revealed secret. The review ended on December 9, 2020 when DRBC gave its final approval for the construction of the second pier that is designed to load and ship liquefied natural gas (LNG) from the shale fields of Northern and Western Pennsylvania to the world. The DRBC's decision to allow the pier to be built came after a narrowly focused review on the impacts of dredging and wharf construction on the Delaware Estuary. "The Commission does not review or approve the cargo that moves through a marine terminal," the DRBC staff said in a statement after the 2019 vote.

DRBC's approval to construct the liquefied natural gas shipping facility came despite a petition signed by nearly 100,000 nearby residents stating their opposition to the plan. Numerous elected officials and more than 10 municipal governments voiced their disapproval to no avail. Among the reasons for their opposition are the release of toxic chemicals during dredging and construction, transportation of highly flammable LNG by truck and train through densely populated areas, and the eventual impact on climate of burning more and more natural gas. Despite the fact that the LNG will be shipped from Wyalusing, PA over either a 255-mile rail route or a 174-mile highway route, both almost entirely in PA, the PA representative seconded the motion that brought the question to a vote, and then he voted to approve. Our governor and his administration remain wedded to the natural gas industry's pollution and industrialization of Penn's Woods.

In the Days before December 9, 2020 the National Resources Defense Council (NRDC) filed a request to the DRBC to delay the vote, claiming that the entire project was in violation of agreements made to limit the discharge, into the Delaware River, of polychlorinated biphenyls (PCBs) that remain on the site. Since the DRBC request failed to postpone the vote and complete a review of the PCB discharges the NRDC will likely file an appeal. In the final tally the vote was 4-0-1 to approve the construction of an LNG terminal. The one abstention was the New York State representative, Kenneth Kosinski. Kosinski said that the dock construction's impacts on water quality and climate change required more study. We should join the National Resources Defense Council, the Delaware Riverkeeper Network, and Mr. Kosinski in calling for a complete review and eventual denial of the Delaware River Basin Commission's approval of this ill-conceived project.

More Information from: <https://www.inquirer.com/business/lng-port-delaware-river-repauno-drbc-gibbstown-approved-20201209.html>



SOURCE: U.S. Army Corps of Engineers

JOHN DUCHNESKIE / Staff Artist

## Water Quality Sampling Results *By: W. Scott Douglas*

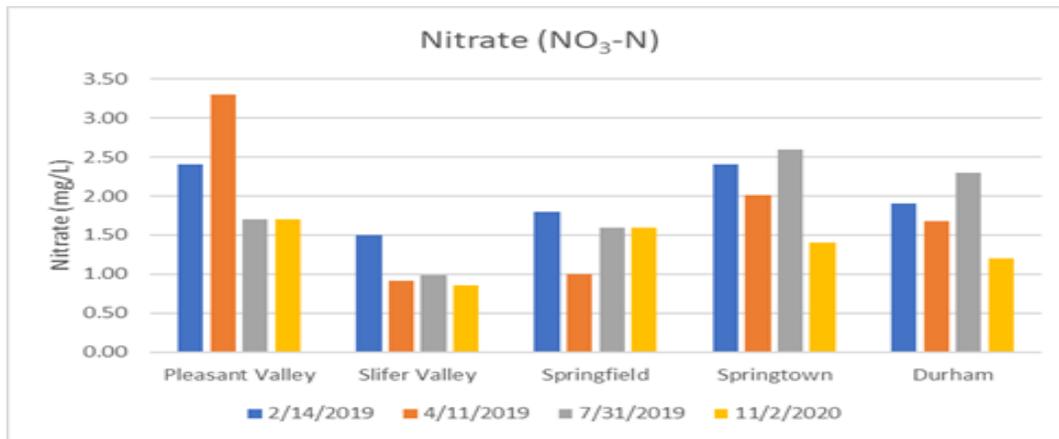
Our PA Growing Greener grant project is rapidly coming to a close. We've reset our stream gages, collected benthic invertebrate and water quality samples, and are identifying areas of concern. The project was extended a year to allow for delays caused by the pandemic, but other than that things are moving along nicely. I reported on the benthic invertebrates last newsletter, and this time I want to share the water quality data.

Over the course of the project, samples of water were taken at our five stations (Pleasant Valley, Slifer Valley, Springfield (near Springtown), Springtown (Silver Creek), and Durham) and analyzed for nitrogen and phosphorous in various forms, total suspended solids, temperature and dissolved oxygen. A complete report of this effort is being prepared and will be shared on our website soon. For now, I wanted to give you a snapshot of what I believe are the most important findings.

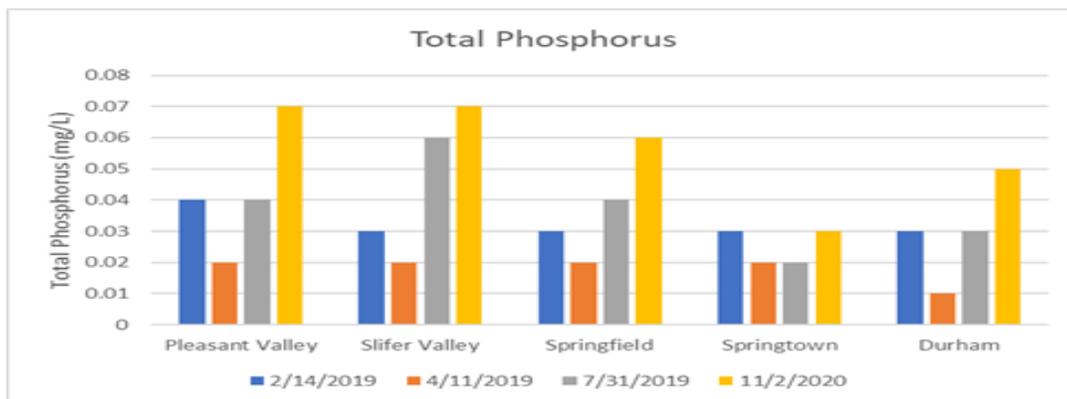
For the nutrients, nitrate and total phosphorous are the two constituents that are of most concern. While the measured nitrate concentrations in our creek were all far below the limit of 10 mg/L by the PADEP, the scientific literature suggests that concentrations greater than 1 mg/L are indicative of agricultural or residential (septic) inputs. Looking at Figure 1, you can see that we are over 1 for most of the stations, but not by much. The highest concentrations of nitrate were seen in Pleasant Valley and Springtown, both of which were identified in the benthic invertebrate study as showing impacts in the summer months.

As for Phosphorous, another common nutrient, the concentrations in our creek are consistently higher than the PADEP limit of 0.1 mg/L (Figure 2). The combination of phosphorous and nitrate can result in excessive algae and periphyton growth in streams. The sources of nutrients in our streams are probably the result of a combination of stormwater runoff and contaminated groundwater. The stormwater runoff carries nutrients from fertilizer (residential and agricultural) and the groundwater can be a conduit for nutrient rich water from leaky or ineffective septic systems. Both Pleasant Valley and Springtown are known to have issues with erosion and septic system problems, respectively.

**Figure 1. Nitrate concentrations in Cooks Creek**



First Column is 2/14/2019  
 Second Column is 4/11/2019  
 Third Column is 7/31/2010  
 Fourth Column is 11/2/2020



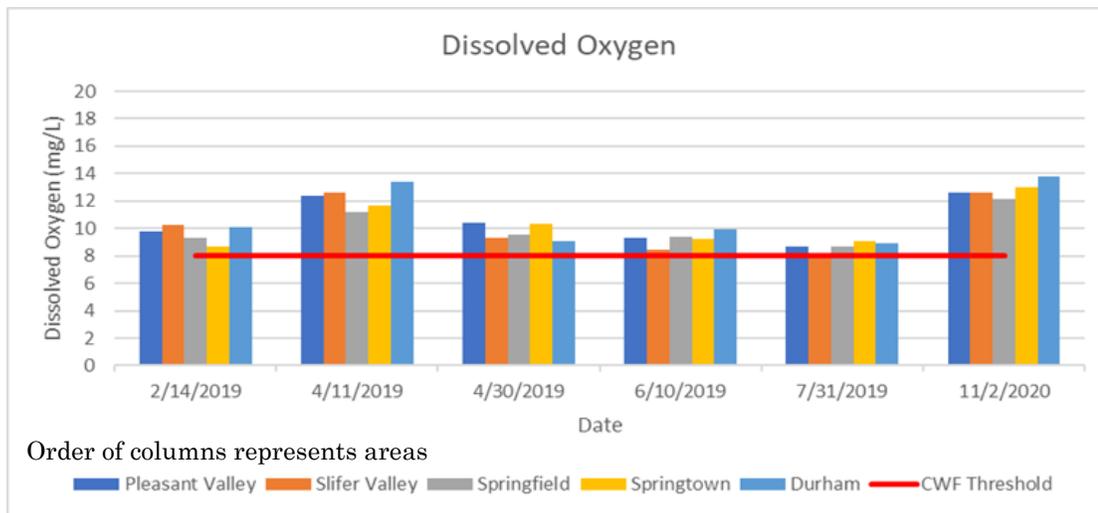
First Column is 2/14/2019  
 Second Column is 4/11/2019  
 Third Column is 7/31/2010  
 Fourth Column is 11/2/2020

**Figure 2. Phosphorous concentrations in Cooks Creek**

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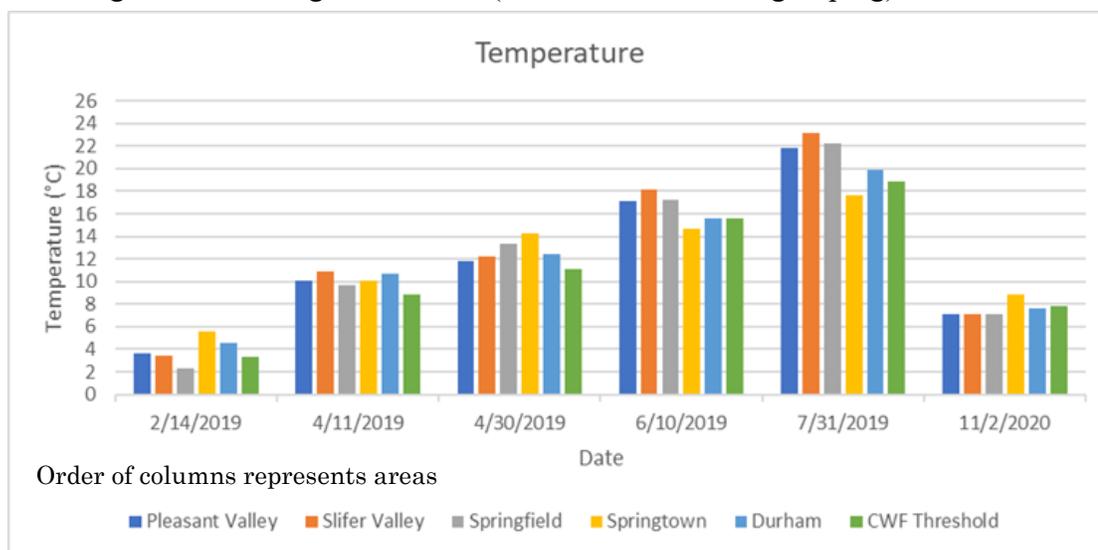
(Continued from page 7) Additional study in Pleasant Valley and Springtown (Silver Creek) are being recommended to PADEP to sort out the specific sources of these problems so that, hopefully, they can be addressed. Fortunately, the impacts to the stream ecosystem appears to be minor and seasonal.

In addition to nutrient data, dissolved oxygen was also monitored at the five stations. While the dissolved oxygen appears to be greater than what PADEP requires for a Cold Water Fishery (trout supporting), it is close to the limit in the summer months (Figure 3). Dissolved oxygen can be impacted by a number of factors, including nutrient inputs, but the most common cause of low dissolved oxygen in our creeks is temperature. Quite simply, cold water holds more dissolved oxygen than warm water.



**Figure 3. Dissolved Oxygen readings in Cooks Creek as compared to thresholds for Cold Water Fisheries**

The temperature of the water was also monitored in this study. As you might imagine, the temperature of the water will vary seasonally and the ecosystem has adapted to handle these natural fluctuations. However, as temperatures increase, the ability of the water to hold enough oxygen for sensitive fish like trout will drop too far. Consequently, there are upper limits set by PADEP for temperature for each month. These limits are the green bars in Figure 4, below (sixth bar in each site grouping).



**Figure 4. Dissolved Oxygen readings in Cooks Creek as compared to thresholds for Cold Water Fisheries**

(Continued from page 8)

As you can see, in many cases the temperatures recorded are higher than the PADEP recommended limits and that the relative increases are higher in the summer months. This could be indicative of either a reduction in canopy cover throughout the system, or a reduction in groundwater relative to storm water at the time of sampling. Canopy cover in the watershed is reduced by development, but is likely exacerbated by the widespread loss of ash trees due to the Emerald Ash Borer. Relative amounts of groundwater can be impacted by development (new wells), but is more likely a result of increased stormwater input. Stormwater runoff is best controlled by maintaining good riparian buffers and protecting wetlands; two things CCWA has always encouraged. The importance of these buffers is becoming more and more important for protecting water quality as storms become more frequent and severe due to climate change. An analysis of the flow in the creek, as well as the relative amounts of groundwater and runoff will be presented in an upcoming report.

In summary, the water quality observations are not dramatically different from what we have observed over the years, but there are reasons to be vigilant. I believe this study tells us that our continued efforts to control development, minimize impervious surfaces, reduce stormwater runoff, and maintain and improve riparian buffers are just as important as ever.



### **Children's Backyard: Phenology, nature's calendar** *By: Lois Oleksa*

Phenology is the science of showing or appearing. It is the study of repeating and seasonal rhythms in nature. In simple language, phenology is nature's calendar – when does the groundhog come out of hibernation, when do the spring peepers start their chorus, when does the redwing blackbird show up or when do the leaves turn color in the fall.

Phenology is important. Many birds time their nesting so that eggs hatch when insects are available to feed their young. Insects like Japanese beetles emerge when their favorite plants are around. For people, earlier flowering means earlier allergies. Farmers and gardeners need to know the schedule of plant and insect development to decide when to apply fertilizers and pesticides and when to plant to avoid frosts. Phenology, nature's calendar, can be altered by changes in temperature and precipitation all of which is important today. Today, across the world, many spring events are happening earlier and fall events are happening later than they did years ago.

Why is it important to observe? The outdoors is a fun place to be. There are exciting things in your backyard. Looking at plants, animals and insects up-close will expand your knowledge of nature and you'll be connected with nature, a part of it. Studying "phenology" will get you to see things you may not have noticed before. You'll appreciate and love nature more than you did before. This is how science researchers collect important data.

### **Children's Backyard Activity: Making a nature's calendar or practicing phenology science -**

Pick a site/location from which you will make your observations. And, pick a plant, animal or insect that you choose to observe. I will suggest that you use a journal for your entries but if you desire to be digital and even offer your observations and find suggestions at the national phenology organization, check out: [https://www.usanpn.org/natures\\_notebook](https://www.usanpn.org/natures_notebook). There are many things to observe. Choose what you'd like to observe; you don't need to record everything.

These are general suggestions to follow:

- Visit your site as often as possible. At least once a week is good, but several times a week or even once a day is even better during times of the year such as spring and fall when things change quickly.

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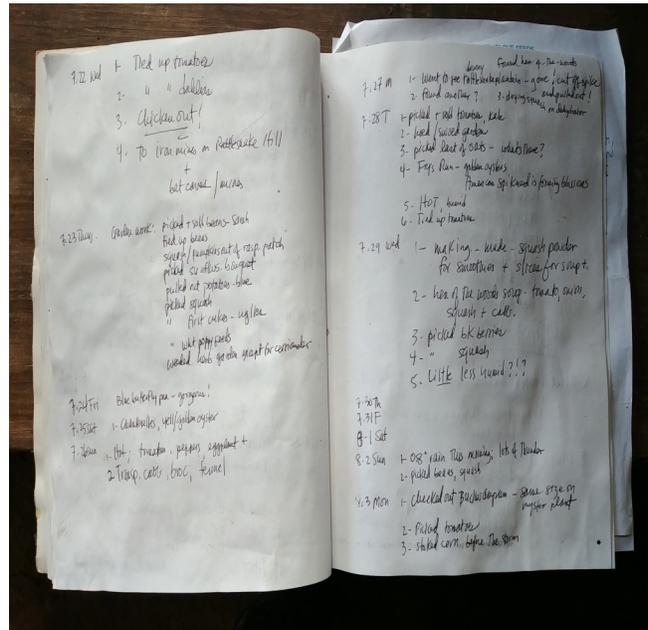
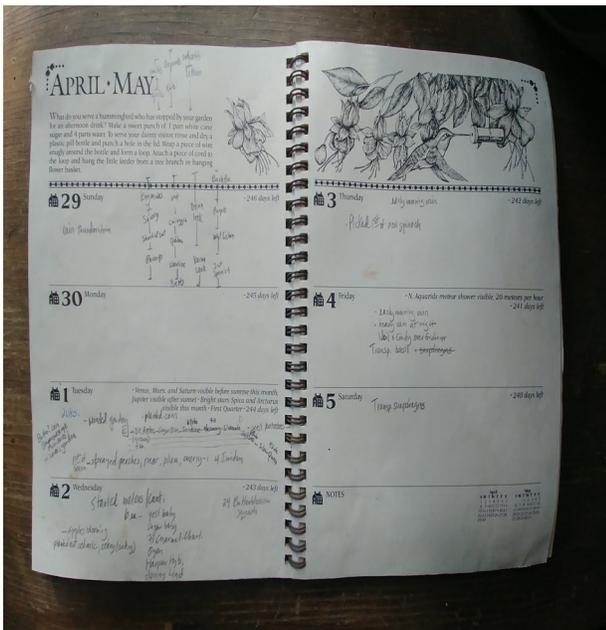


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- Record the date and time that an observation was made. Also, record if nothing was seen.
- Record the amount of time you spent looking for animals. Was there snow on the ground, how much snow and is there snow in the canopy/tops of the trees and shrubs.
- For plant journaling of trees and shrubs: Record - breaking leaf buds, are there leaves, the sizes of the leaves as they grow, are the leaves colored, falling leaves, flowers or flower buds, open flowers, pollen release, fruits, ripe fruits and recent fruit or seed drop.
- For songbird journaling: Record – what you see and hear such as the active individuals, feeding, fruit/seed consumption, calls or song, singing males, nest building, dead individuals and individuals at a feeding station.
- For example, these could be observed: swallows', warblers', hummingbirds' arrival and departure; monarch butterflies' arrival; first blooming trout lily; spotting the first groundhog out of hibernation; the first Japanese beetles; the return of redwing blackbirds; spring peepers in chorus.
- I have kept track of gardening, recording in a notebook the frosts, appearance of mushrooms such as morels and chanterelles and apple blossoms that tell me when to plant corn. See the journal entries below.

### Recording your activity in a Phenology Journal or a Phenology Wheel -

A Phenology Journal can be recorded in a sketch book or a plain old notebook. Make a drawing

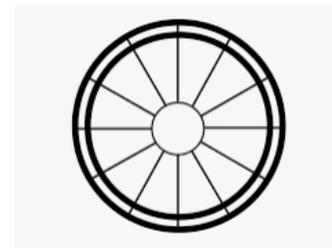


once a week on one page, record the day and year. The following year come back to the same day or week and record your observations that following year. This journal can last for years. It will show you at a quick glance the observations that occur day by day or week by week over many, many years. If you're not into sketching, just writing a few words and dates will get the same idea out there.

(Continued on page 11)

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A **Phenology Wheel** is made up of three rings in a circle, like a target. Trace around a large plate or pizza pan. Then draw a set of nesting circles. The center ring/bull's eye would have your home, garden or "sit spot". Make a map or picture of this home place for the center of the circle. In the outside ring think what time you will record; the seasons, winter, spring, summer and fall. Add the months that go with each season. Then you are ready to start your observations and recordings. Write in the first redwing blackbird you see or even make a drawing of the bird. You can start any place on the Phenology Wheel to enter your information and at a quick glance you will be able to see the unique happenings in a year. Your entries will tell the full story of the life cycle of an animal, plant or insect for a special year. If you continue with another Phenology Wheel the next year, your observations will now start to gather data; did the redwing blackbird arrive on a different day the following year? Now you will be able to see changes that have come about.



# Notice!

## It's Annual Meeting Time again!

*Not just another Board Meeting, the Annual Meeting is a chance to discuss our year, plan for next year, elect officers and recognize the hard work of our members. This meeting is a requirement of our 501c3 status, but is also a great time to "put in your two cents" about what the CCWA does with YOUR money.*

**Make a difference, plan on attending!**

Thursday, April 22, 2021 @ 7:30 PM @ Springtown Fire Company

## Renew Your Membership for 2021

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.

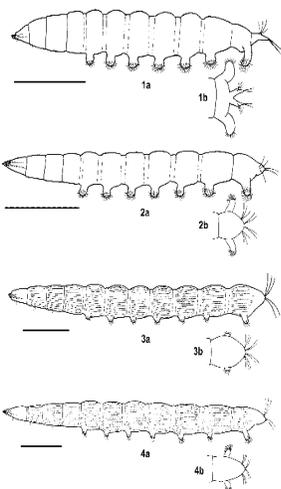
If you want to get more involved, come to a meeting and share your talents and interests!

**Find the membership form on the back page.**

## Creature Feature: Dance flies, family Empididae By: W. Scott Douglas

*This is 55th in a series on the fauna of the Cooks Creek Watershed.*

As you read this, Valentine's Day will have just passed, and you probably exchanged some sort of sweet tasting or sweet-smelling gift with your significant other. Giving nuptial gifts is not unique to humans; several species of birds present gifts of food or shiny trinkets in exchange for sex, but I bet you didn't know that insects do it too! Dance flies are a type of fly that lives throughout the Holarctic, with many having aquatic life stages that live in streams, lakes, marshes and estuaries. Their primary claim to fame is that they will typically form mating swarms where the males fly up and down vertically, while the females perch on nearby vegetation and watch. If a female is impressed, she will fly into the swarm to hook up with her preferred performer. Some species take this a step further and actually hold a small silk ball when they dance. Sometimes the ball is decorative, and sometimes the male will place an insect that it has captured inside. Dance flies are predatory, so the insect is a food gift for his intended mate. What the empty silk ball does scientists do not know, but empty or not if the female accepts the gift the pair will mate.



There are over 3000 species of dance flies described in the world, but entomologists expect there are many more. From the perspective of stream ecology, there are several genera that are pretty common, 7 are known from the northeast. I have seen 5 different species in Pennsylvania. The larvae are tiny white or tan legless and hairless maggots, with a very reduced and retracted head capsule, so they are not the most endearing of mini monsters. They are also only a few millimeters to a centimeter in length at the most, so they are not easily seen, even if you know what to look for. They are distinguishable from other fly larvae by the 7-8 pairs of prolegs and the presence of lobes at the end of abdomen that bear one or two pairs of setae (bristles). The larvae burrow about in the detritus of the stream bottom, preying on mostly other small dipteran larvae. It is not known what preys on them, but I suspect that their primary enemies are other invertebrate predators and fish.

Like most dipterans, dance fly larvae are not particularly sensitive to pollution. However, their presence, even abundance, is not an indicator of poor water quality like it is for some flies. I typically will only find one or two in any given sample, but their presence is a good indicator of the overall robustness of the benthic ecosystem.

If you want to see dance flies, the best way is to look for the adult mating swarms in the early spring and summer. The swarms are made up of several to several dozen adults flying in a group, a few feet to a few meters off the ground. The males are darkly colored and about a centimeter or so in length, and fly up and down vertically in the swarm. Look for the swarms over any waterbody; but I see them regularly over my lawn as well. Note that while the species shown here is one that presents gifts, not all species do.



## 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 5 (Final, in a series)*

### Key Takeaways and Additional Tips

- Installing a water filter is one of the best things you can do to reduce the number of toxins entering your body. For a list of top rated water filters from Popular Mechanics, click here... [https://www.popularmechanics.com/home/a28325625/top-water-filters/?src=arb\\_fb\\_ga\\_d\\_bmm\\_na&utm\\_source=google&utm\\_medium=cpc&utm\\_campaign=arb\\_fb\\_ga\\_d\\_bmm\\_na&gclid=CjwKCAiArJvBRACEiwA-WiqqyTPPIlv9ECOw1IsIYO-wAZY6nEO\\_aV05kPEBAVs7hgJvABLn51aoRoCgiQQA\\_vD\\_BwE](https://www.popularmechanics.com/home/a28325625/top-water-filters/?src=arb_fb_ga_d_bmm_na&utm_source=google&utm_medium=cpc&utm_campaign=arb_fb_ga_d_bmm_na&gclid=CjwKCAiArJvBRACEiwA-WiqqyTPPIlv9ECOw1IsIYO-wAZY6nEO_aV05kPEBAVs7hgJvABLn51aoRoCgiQQA_vD_BwE)
- Buy a houseplant; they act as air filters. According to CNN, a houseplant can remove up to 90% of common toxins (Such as VOCs and formaldehyde) present in indoor air.
- Have your water tested.
- Wash all fruits and vegetables thoroughly before eating them.
- Open your windows. Off-gassing from products such as furniture and curtains greatly lowers the quality of indoor air. In general, outdoor air is cleaner. Opening your windows is a simple and easy way to improve the quality of the air inside your home. Remember to do this even in the winter, when pollutant levels in indoor air are at their highest.
- If you enjoy burning candles indoors, go with beeswax. Conventional candles often release toxins, such as benzene and formaldehyde into the air when burned.
- Use certified green cleaners, or alternative natural cleaners such as baking soda and vinegar.
- Invest in a high quality air purifier.
- Be careful of chemically treated woods.
- Vacuum and wet dust your home. Doing so will stop pollutants in dust from becoming airborne and being inhaled.
- Take your shoes off before going into your house. Shoes can track toxins such as herbicides, pesticides, lawn fertilizer, and road oil onto your carpet. This is especially an issue if you have a young child who frequently touches the floor.
- If you have an old plumbing system and no filter, you might want to consider letting the sink run for a minute or two before drinking from it.
- Don't eat burned meat. Burning meat creates carcinogenic compounds.
- When purchasing the products listed below, do some research on the chemicals they might contain, and look for green alternatives when appropriate...
  - Cookware and Food Containers
  - Water Bottles
  - Cosmetics
  - Hygiene Products
  - Carpets
  - Building Materials
  - Cleaning Products



# Current Matters



Saturday, November 14, 2020, CCWA was picking up trash along our Adopt a Highway section.

Snow in Upper Bucks...31.2 inches in Springtown!  
During Covid-19, the view out your window went viral.  
We are lucky we have these views! Enjoy!



Skunk cabbage flower shows even in winter. *Photo by Jim Orben.*

Join us for our Spring Clean Up on April 10th! See flyer on page 5. We could use your help and it is a great day outside!

**Soon you can check out more Mini-monsters and more information on the web:  
[www.cookscreekpa](http://www.cookscreekpa)**

## 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, and CFL bulbs, rechargeable batteries (during office hours).

Please note that this facility is just Durham Township residents!

Contact 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](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

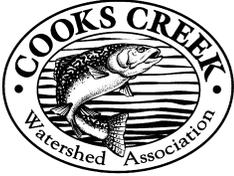
Web site: [www.bethlehem-pa.gov/recycle/services/theis\\_cornfeld.htm](http://www.bethlehem-pa.gov/recycle/services/theis_cornfeld.htm)

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.

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