Cooks Current

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

Volume 16, Issue 3 Newsletter of the Cooks Creek Watershed **Summer 2019**

2019 Events

Regular Board Meetings:

Springtown Fire House- 7:30PM

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

All are welcome! We appreciate your involvement

Special Events

Springfield Community Day - TBD;
Oct. 5, Fall Dinner, 5pm-9pm, Springtown Rod & Gun Club;
Oct. 6, Walk in Penn's Woods, TBD;
Oct. 12, Durham Community Day, Noon-3pm, Durham Mill Green;
Nov 19, Fall Clean-Up, 9-Noon, meet at Old Philadelphia & Rt. 212 & Gallows Hill Rd.

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

Vice President:

Treasurer: Jim Orben

Communications Director/ Recording Secretary/Editor: Lois Oleksa

Marketing and Public Relations: Lois Oleksa

Layout & Graphic Design: Ellie Scheitrum

Additional Members: Sarah Snider, Stephen Smith, MD,

From Across the Board...

From Across the Board…

Participants at the Reforestation Workshop

Photo by Jeff Heehs

On May 22, we gathered at the lone Tulip Poplar at Peppermint Park in Springfield to dedicate a park bench in Hans' name. A number of people spoke, including a taped message from Zack Boyd who is away at college now but was inspired by Hans and built the nature trail through the woods as his Eagle Project. It was moving to hear him talk of the importance of working locally to change the world and knowing that one of our own is out there spreading Hans' wisdom. All of his thoughtful words and more were followed by a group drumming session led by Karen Bedics. Your contributions to Hans' memorial helped to purchase the bench, as well as a memorial stone that we will place in front of the bench soon.

As usual, our summer is a bustle of activities. On Earth Day, I went to Durham Nockamixon Elementary School and talked about watersheds and water quality to all five grades and the kindergarteners. It was a whirlwind of 20 minutes for each group, but the kids seemed to enjoy the show. This was followed up by our annual Mini Monster Mayhem on June 15 which was heavily attended this year. As usual, the kids and I had a wonderful time eating gummy worms and playing in the water.

On the serious side, we participated in a kick off meeting for the Delaware Canal study that will look at water quality in the canal and the contributing watersheds. Although Cooks Creek does not add any water directly to the canal, parts of our watershed do potentially contribute runoff to the canal. One of the participants noted that most of the adjoining watersheds are far cleaner than the canal, and that the Lehigh and Delaware Rivers (and the century and a half of

(*Continued to page 2)*

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accumulated sediment) probably contribute more to the water quality of the canal. Regardless, CCWA offered up its database on water quality and quantity, and will continue to assist as needed in the efforts of the group.

Speaking of water quality and quantity, our latest monitoring effort is reaching a crescendo this summer. Princeton Hydro is preparing the report for our first round of water quality sampling, and that should be available for your reading by the time our next newsletter comes out. They have also proposed equipment upgrades to the stream gaging stations, so they will also be back on line, after a couple of years' hiatus.

Lois, Jim and Joe Mihok of Trout Unlimited continue to work on improving conditions in the riparian zone at Silver Creek by the Springtown Firehouse. Stop by and take a look if you are in the area. There is a whole lot of new native growth there. This fall, you can look forward to our Fall Fellowship dinner in October, where local mushroom expert Martie Kyde will share with us her photos and specimens. No, Martie, I don't want to try them….

Yours in conservation

W. Scott Douglas, President

Botanical Focus: Wild Grapes

By: David Oleksa

This is the 12th installment in a series of articles on the flora of the Cooks Creek Watershed.

Grape Vine

When we consider grapes, we probably envision the seedless table grapes (red, white and blue/black varieties). Or, if we happen to be wine connoisseurs, perhaps we think of the European varieties such as Bordeaux or Chardonnay. All of these grapes are cultivars of the Mediterranean grape vine *Vitis vinifera* .But here in Pennsylvania, actually along the entire eastern seaboard of the United States, there are many varieties of wild grapes. At least 50 varieties make the area their home and eight specific varieties are found in Pennsylvania alone. The most common of these eight are the fox grape, *Vitis labrusca*, the summer grape, *V. aestivalis*, and the frost or river grape, *V. riparia*. All grapes have a woody stem that is flexible rather than stiff. To a botanist, this means the plant is considered to be a vine rather than a tree.

The bark of grape vines is made up of dark gray, thin, papery strips which, when dried, make excellent kindling with which to start a fire. The other feature of these vines that distinguish them from other plants is that they have tendrils. These tendrils are modified growths on the stem that assist the plant in climbing up on other structures and help support the plant. You may have noticed similar tendrils on the pea vines in your garden. Many other plants have tendrils but most of them attach through a system using an adhesive. Examples of these plants would be English ivy which grows on walls of buildings and Virginia creeper which grasps on to most anything with its sticky tendrils. Grape vines, on the other hand, have tendrils which seem to have a mind of their own, and curl and wrap themselves around anything that stands still long enough. Thus the grape vine is able to grow and extend itself as far as the support structure exists. Some grape vines grow to a length of 80 feet and wind their way through the forest canopy.

Wild grapes have flowers like most plants and these small inconspicuous blooms occur in early spring. The blossoms are pollinated by insects and fruit develops, maturing in late summer to early fall.

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Most wild grapes are commonly found in wooded areas, especially those that were recently logged since the grape vines need access to sun and they are able to take advantage of the breaks in the forest canopy that logging provides. Because of their climbing tendencies, it is difficult to harvest the fruit of wild grapes unless you are adept at climbing yourself or are fortunate enough to find a vine whose weight was enough to bend the support tree down to where you are able to reach the fruit. The grapes develop in clusters similar to the table grapes we purchase at the market although the wild grapes tend to be quite a bit smaller. The fruit is usually a bit on the sour side due to the plants which grow in acidic soil with pH levels of 5.5 to 6.0. These fruits are still prized for wine making, and can be used for a superior type of vinegar. Excellent jams and jellies are provided by the wild grape and their leaves provide the necessary tannins for making crock pickles. The leaves also have another culinary use being a prime component of Mediterranean dolmas or stuffed grape leaves. The leaves are generally large with a three lobed or heart shaped configuration. The edges of the leaves tend to be toothed and some have fine wooly hairs on the underside.

A question many people have is whether the wild grape is a blessing or a curse. Because it is so fast growing and entwines itself amongst the branches of a support tree, if a heavy rain or snow occurs, the vine may get so heavy that it breaks the branches and sometimes causes a more valuable tree to be uprooted. The vines may create a thicket or an impressive tangle which is not the most pleasant sight. However, this does create an excellent hiding, nesting or protective space for small animals and birds.

The French wine industry has the American wild grape to thank for saving the industry's life. A fungus attacked the European grape vines and killed most of them off. However, the American grape was resistant to the fungus and thousands upon thousands of root stock were sent to France where European vines were grafted on to the American roots. Fortunately the experiment worked and folks are able to continue to enjoy French wines.

So, although many people would like to think of the wild grape as a noxious weed rather than a provider of Nature's bounty, the animals and birds that the vines shelter and feed and those individuals who appreciate a fine French wine would heartily disagree.

Keynote speaker the Annual Fall Dinner, October 5, 2019, announced!

Cooks Creek Watershed Association is proud to announce that the keynote speaker for its Annual Fall Dinner on October 5, 2019 will be Dr. Marion (Martie) Kyde. Dr. Kyde possesses a BS in Botany, an MS in Plant Physiology and a Ph.D. in Mycology all granted by Rutgers University. She and her husband, Neil are residents of Tinicum Township where they have a home located on The Tulgey Wood, a State Stewardship Forest and a protected site through an easement granted by the Heritage Conservancy.

An active conservationist, Dr. Kyde has been a member of a number of Open Space and Land Conservation committees. Among her many awards are being recognized by the Delaware River Greenway Partnership; being named Bucks County Watershed Conservationist of the Year; recipient of the Director's Land Ethics Award from Bowman's Hill Wildflower Preserve and was named Lady High Admiral of the Delaware River Sojourn.

With her Ph.D. in Mycology, it goes without saying that she has a deep interest in mushroom and correspondingly in-depth knowledge of them. It is our privilege to have Martie with us to present "Lotta Things You Don't Know About 'Shrooms"

Children's Backyard: Flower Flies/Hover Flies/Syrphid Flies

By: Lois Oleksa

Unidentified Syrphid Fly

Flower flies also called hover flies or syrphid flies are important native pollinators. Flies pollinate as well as bees. Flies carry out about one third of the pollination that is done. Among flies, the flower flies are the most important pollinators. Pollination is important for our agriculture. Without pollination of flowers there would be no development of fruits, vegetables, seeds and grains; the food we all eat. Pollination is also important to our native flowers.

Hover flies are important as larvae; they eat insects such as aphids, scales, mealybugs, spider mites, and thrips thus controlling these pests. They can eat fifty aphids per day. Watch a syrphid larva eating an aphid in real time at: https://www.youtube.com/watch?v=UNeAJlXUw_Y

Not all syrphid fly larvae are predators; some species feed on fungi.

Other syrphid larvae do sewage recycling and turnover compost. Still other larvae are bacterial filter feeders in sap runs or under bark. Ant fly syrphids feed on ant eggs. This group of flies has such a diverse range of feeding styles. As adults they feed on flower nectar or occasionally pollen.

As adult syrphids, most of them, copy/mimic wasps or bees in some way. Some look like wasps and yellow jackets. Others waggle their prolegs to mimic wasp antennae and can buzz like a bumblebee. But no syrphids bite or sting. The difference between bees and flies comes down to a few things. Bees have four wings, flies have two. If beating fast it's hard to tell the difference. Also bees can hook their forward and back wings together so they look like one. Eyes are another clue. Flies have great big eyes right on top and bees' eyes are off to the sides of their heads. Antennae on flies are little and short while bees have long antennae. Legs of bees are fat and can carry pollen while flies have scrawny legs. Diptera is the fly scientific name. Diptera is a Greek word having *di* (two) and *ptera* (wings). The hind pair of wings on a flower fly are small clubs, called halteres. Flower flies use these for orientation. If you can get close enough or can view the wings, check out the veins. All syrphids in our region except two, have what is called a "false" vein – a spurious vein. This vein is not connected to any other vein. But, it's hard to see some of the flower flies let alone the veins on the wings! The flower fly's size is measured in millimeters. Ten millimeters is an average size with some smaller and others larger. (8-20 mm long or 0.3-0.8 inch long) Their size can vary depending on the amount of food the larvae consumed.

Flower flies, like all insects, go through complete metamorphosis; that is, eggs hatch into larvae, larvae become pupae, and pupae turn into adults. Eggs are laid singly or in small clumps on foliage near their food source – aphids. The larvae molt three times before forming a pupa. The pupa is inside a puparium which is a cocoon but made from the skin of the last larva stage. In contrast, mosquitoes and horse flies have exposed pupae – not in cocoons.

Males and females tend to look alike except for their genitalia and the size of their eyes. Most males have larger eyes which touch together above their antennae. The males also have one extra abdominal segment. However, some flower flies have completely different looking males and females.

There are over 6,300 described species of hover flies in the world. Look at a *Field Guide to the Flower Flies of Northeastern North America* by Jeffery H. Skevington and Michelle M. Locke. There are 413 species in the Northeastern North America which can be identified as birds are identified. However, there is much work to be done in giving them names or correcting their names. *(Continued on page 5)*

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Why are they called hover flies? Some of the syrphids are the best fliers and they can hover like a helicopter for minutes at a time. They can back out of flowers and zoom off in an instant. But, the name flower fly applies to all of these flies whether they can hover or not. They are called flower flies because they visit flowers.

If you want to encourage syrphids/flower flies/hover flies don't rake up all your leaf litter. The fallen leaves are their winter homes. Protect grasslands, meadows, gardens, field borders, and hedgerows to protect these important pollinators. Flowers such as goldenrod, at this time of year, have so many beneficial insects including flower flies. Other shallow, flat topped, or open flowers, such as plants in the willow, rose, buttercup, aster, and carrot families attract flower flies. And, herbs like dill can be planted for a few pennies to attract beneficial insects such as flower flies.

To see the flower flies, a pair of binoculars is helpful. A net works well to capture, observe and release. Try a tiny net, as these are small flies but work slowly as the flies have vision that can detect any small movement.

Observing flower flies is best in spring and fall. Look from early morning to early afternoon. If it is too hot you won't find them. And, if it's too windy, you won't find them. Sun is key for finding most flower flies but also look for them on cloudy days and even in light rain. Look for flower flies at forest openings, natural meadows, and riparian areas. There are fewer flower flies in dry environments. Remember flat topped flowers whether on trees, shrubs or herbaceous plants are a great spot to observe flower flies. If you walk back and forth in a flowering meadow you most likely will spot some flower flies. Patiently waiting is the trick. Some of the rarer syrphids can be found on hilltops. The hilltop is a special location for certain flower flies looking for a mate. A hilltop doesn't have to be a mountain; rocks, ridges, or tree trunks sticking slightly higher than the surrounding area work as well. This habit is called hilltopping and mornings are best. As the day becomes afternoon, they hide. Another spot where you'll find syrphids is on plant leaves producing honeydew. Honeydew is produced by aphids and scale as they feed on the plant leaves. Find some natural honeydew and watch for flower flies. You can make your own mixture of honey, water and cola; put it in a spray bottle and spray it on some big leaves growing in sunny patches. This technique works especially a day or two after heavy rains. Happy hunting but remember patience!

Rhingia nasica American Snout Fly

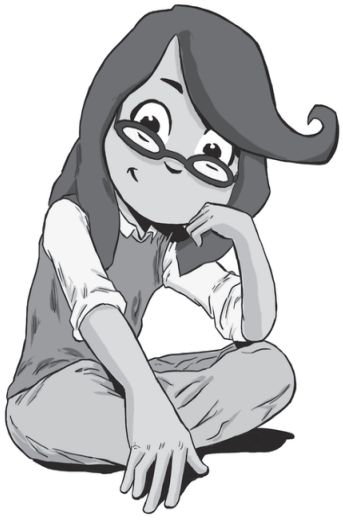
This ia a long snout syrphid {5 cm} fly found on a Jewelweed flower. .*Photo by Lois Oleksa*

Children's Backyard Activity: Set Up a Sit Spot and Observe

A sit spot is a place that you can set up to observe nature.

1. Walk around testing out places where you can observe nature. Is it in the garden or the woods? A sit spot needs to be a place where you can comfortably sit for a long time. A log or stump, a cement block, a camp chair can be used for a chair or platform for your observations. There should be different colors and plants in the spot. There should be enough room to sit. It should be a spot YOU choose.

2. Sit quietly and listen for birds, frogs, insects, and the wind moving the leaves. Check out the different textures you can feel, the colors you can see in the spot; look above, below and behind you. Do you see animal or insect life? Smell the flowers in the sit spot. Check out the area over time; how is your sit spot different in the different seasons and even in the rain? Check out the soil with a magnifying glass.



3. Start by spending one or two minutes in the sit spot and then slowly increase the time you spent in your sit spot.

4. Bring some tools to your sit spot – magnifying glasses, mirrors, trowels, rulers, thermometers, stop watches, weights and scales and guide books.

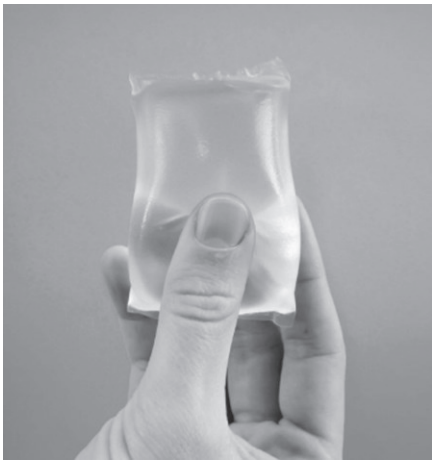
5. Record your observations don't just observe. When recording your observations use words, numbers, pictures, photos and videos.

Check us out on the web for more information and articles from past brochures!

www.cookscreekpa

Green Tip #47: What are some examples of ways food and drink producers are fighting the ever-growing torrent of plastic waste they have helped create?

EarthTalk®; From the Editors of E - The Environmental Magazine ***EarthTalk®*** *is produced by Roddy Scheer & Doug Moss for the 501(c)3 nonprofit* ***EarthTalk****.*



Ooho is an edible water bottle

As more people become aware of the extent of plastic waste clogging up our environment, cutting back on plastic use is fast becoming a key environmental priority around the world. According to a 2017 study by researchers from the University of Georgia, UC Santa Barbara and Sea Education Association, humans have produced 8.3 billion metric tons of plastic since mass-production started in the 1950s. While we've recycled about nine percent of all that plastic and incinerated another 12 percent, as much as 75 percent has been discarded into landfills or, even worse, set adrift into the environment. If we don't slow down our current run rate of producing new ("virgin") plastic, we can expect to add another four billion metric tons of it to our global environment by 2050.

With no cheap and scalable way to collect and get rid of all this plastic, the best we can hope for is to not make the problem worse. Luckily sustainable alternatives to plastic are coming on strong. PLA plastic, which is derived from plants and functions like conventional plastic, is promising but needs to scale up to become economically viable as it requires dedicated recycling/processing systems to truly "close its loop." Likewise, paper or cardboard cartons could be a viable alternative to plastic food and drink storage containers if they are produced at great enough scale to justify dedicated facilities to process them for recycling, given that they are also infused with non-recyclable layers for strength and to prevent seepage.

PLA and cardboard are just the beginning of what is possible. Food producers and chemists are experimenting with making containers out of biodegradable plant products like corn starch, cassava and even algae. And just this spring, tens of thousands of runners participating in the London Marathon were given water out of edible pods made from seaweed and plant extracts instead of plastic bottles. Skipping Rocks Lab, the London-based startup behind the newfangled containers, reports that they're not only cheaper to produce than plastic but are also biodegradable, breaking down completely within a month, while not imparting any flavor or taste to the water or whatever else is inside.

While there's something to be said for technology, an older school "alternative" to plastic is all-natural plant material. American supermarkets could learn a lot from some Southeast Asian grocers, for instance, that wrap up produce for sale in biodegradable banana leaves instead of plastic bags. These all-natural wrappers can be thrown into the compost pile or yard waste bin and become rich soil without ever having to be processed using fossil-fuel based energy (like traditional recyclables).

You can do your part by telling your friends, neighbors, store managers, policymakers, elected officials and anyone else within hearing distance that you and millions of others like you don't want any more single use plastics in your town, county, state or country. And if you haven't already done so, get yourself a reusable water bottle and reusable shopping bag(s) so you can start being part of the day-to-day solution.

EarthTalk® is produced by Roddy Scheer & Doug Moss for the 501(c)3 nonprofit **EarthTalk**.

Creature Feature: Black Flies *By: W. Scott Douglas*

This is 49th installment in a series of articles on the fauna of Cooks Creek Watershed.

Along with humidity, perhaps the worst part of summer are the swarms of gnats that descend upon us when we go out to enjoy nature. The little black flies swarm around your head, get in your eyes, ears and nose, and generally make being outside miserable; whether on a hike in a meadow or weeding your garden, and can literally drive you inside. Insect repellent helps to keep them at bay….sometimes. Just what are the little devils anyway? And why are they so annoying?

The word "gnats" can apply to a number of insects depending on your location, but the ones that swarm around your head in the summer in the northeast are most likely blackflies of the Simuliidae family. They are actually a very common and important part of most clean water ecosystems. The flies are the adult form of course, and the larvae live in almost every body of clean freshwater throughout the world. There are over two thousand species of blackfly, and 53 species have been described in PA alone. Fortunately, only four of those are pests on humans. All blackflies feed on nectar for energy, but females of many species will seek out a host to obtain blood in order to develop their eggs.

Males will swarm in clouds of hundreds to even thousands of individuals. Females in search of a mate enter into the cloud and are quickly detected by the males. Once the females have mated they will search out a host animal in order to obtain a blood meal. The flies that descend upon you in the summer are probably females looking for a host. Whether the blood is from a human, other mammal or bird, the female will lay her eggs in running water where they will stay for as little as two days or as long as eight months before hatching into a small caterpillar-like larva with large fans on its head. Egg density can be enormous, with densities of 2000-3000 eggs per cm^2! The larva will attach itself to the substrate of the waterway using silk threads and a circlet of hooks on the end of its abdomen with its head pointed downstream. It uses the fans on its head to capture particles of algae, diatoms, bacteria and other organic material that it scrapes off and eats. The larva can only eat what the water brings to it, so blackflies only live in moving water. Since organic matter in a stream often concentrates pollutants, blackflies are usually found in relatively clean well oxygenated water (though not necessarily clear).

After a few weeks to a few months, depending on temperature, availability of food and time of year, the larva will pupate. When fully developed, the adult will cut its way out of the pupal cocoon and ride a bubble of air to the surface where it will crawl out onto overhanging vegetation. When its wings dry it will fly away to start the cycle over again. Most species emerge in late spring to summer, and cause no end of misery to their hosts until September. The females use their mouthparts to cut the skin and then feed on the pool of blood that forms. Because the density of blackflies can be astronomical, the number of individuals swarming about and crawling in and out of orifices can be so high that animals are literally driven crazy. To add insult to injury some species also spread blood borne pathogens and parasites.

Pennsylvania actually has one of the most extensive blackfly control programs in the country. Because most insecticides are either ineffective on blackflies or too destructive to stream ecology to use, PA exclusively uses the natural-occurring bacteria *Bacillus thuringiensis,* or BTI, for its program. The larvae ingest the bacteria and their secretions are transformed into potent toxins that quickly kill them. The toxins break down rapidly and rarely impact other stream life or humans. This type of statement often makes me nervous, however I was relieved to discover that while the Commonwealth uses BTI on the Delaware River and the Tohickon Creek, it does not apply BTI on Cooks Creek. Which means we will have more blackflies in our area than some of our neighbors. To repel the nasty pests, wear long sleeves, pants and a brimmed hat when outside in the summer. If you apply natural repellents to your clothing (citronella, lemon grass, etc.), this should make their presence tolerable. If you want to see the larvae, look in any swift moving section of the creek where they can be found in large groups on the tops of smooth rocks. Finally, when swatting at the adults, remember that even these annoying flies are part of the larger ecosystem of the Creek and provide much needed food for other invertebrates and fish.

Year End Financial Reports

Submitted by: Aimee Douglas, CPA

Cooks Creek Watershed Association

Statement of Financial Position

March 31, 2019

Assets	$11,394
Liabilities	$ 1,505
Unrestricted net assets	9,889
Temporarily restricted net assets	-0-
Total liabilities and net assets	$11,394

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Cooks Creek Watershed Association

Statement of Activity

For Year Ended March 31, 2019

UNRESTRICTED NET ASSETS	
Total revenue and support	$ 2,625
Net assets released from restrictions	-0-
	$ 2,625
Total expenses	(1,839)
INCREASE IN NET ASSETS	$ 786

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Cooks Creek Watershed Association

Statement of Changes in Net Assets

For Year Ended March 31, 2019

Unrestricted	Temporarily Restricted	Total
Balance March 31, 2018		
$ 10,608	-0-	$10,608
Increase in net assets		
786	-0-	786
Balance March 31, 2019		
$ 11,394	-0-	$11,394

Current Interesting Info…

Tape sprayed with putrified egg solids to keep out deer at Sringtown Fire Co.

COOKS CREEK WATERSHED ASSOCIATION

Annual Report

April 1, 2018 to March 31, 2019

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.

2018-2019 Officers and Board of Directors

W. Scott Douglas, President James Orben, Treasurer Lois Oleksa, Communications Director

Sarah Snider Ellie Scheitrum Steve Smith

15th 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 effort had to be postponed until May due to a freak snowstorm that was predicted, but never happened. While participation was low, we still had a fair amount of help and managed to get things picked up in good shape. Lots of folks actually participated on other days by cleaning up sections, so overall we can still say that we succeeded in getting winter's litter cleaned up. Thanks to Springfield Township for providing us with a dumpster since PennDOT could not help us this year. 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). CCWA filed an intervention with the Adelphia pipeline and a public informational meeting was held in Springtown. CCWA also sent a letter to the Federal Energy Regulatory Commission after reviewing the Environmental Assessment for the Adelphia pipeline.

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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.

Educational Outreach – In April, Scott presented his show on watersheds and water quality at Palisades High School as part of the kickoff for the Sustainability Expo held later that same day. For the Expo, Jim and Lois hosted our booth and talked about mushroom cultivation and showed off our popular groundwater model. In July, Jeff Heehs hosted an invasive plant workshop at his place in Durham. About 25 folks attended, Jeff and Maureen showed the damage that invasives can do and what folks can do about it. CCWA hosted an abbreviated Mini Monster Mayhem show at the Springfield community day in September. About 15 kids took part in the fun, finding lots of new critters in the Silver Creek portion of the watershed. The show was repeated the next weekend at the Frys Run Watershed festival and about 15 kids and their parents participated at their site on Raubsville Rd. in Williams Township. In October CCWA co-sponsored with the Durham EAC a "Walk in Penn's Woods". The event was held at Mariton Sanctuary where we sampled pawpaws.

Stream Gauging and Monitoring – Last year, the CCWA was awarded a $39,000 Growing Greener grant from PADEP to refurbish the stream gauges on the creek that monitor and record the flow in Springtown and Durham. CCWA hired Princeton Hydro to assist with the technical parts and began work last fall, including sampling for water quality and benthic invertebrates.

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 teamed up with the Durham Historical Society and the Boy Scouts of Troop 27 to clean the invasive plants, trash and debris in the Durham Mill Tailrace (behind the Durham Boat). This project was started last year and finished up this past summer. CCWA and the Durham Historical Society applied for a second grant and were granted another mini-grant to stabilize and plant the banks of the Durham Mill Tailrace with native plants.

Continue this good work and renew your membership for 2019

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.

Your renewal will be appreciated!

Back to the Past: Flax and its Culture

A column highlighting the natural history of the Watershed. By Grier Scheetz, Perkasie, PA.

(Doylestown Meeting, May 28, 1907.) From A collection of Papers Read Before The Bucks County Historical Society, Volume III. Published For The Society By B.F. Fackenthall, Jr., Riegelsville, PA., 1909

Flax was grown in our Watershed and this article begins in this issue and continues in the Fall 2019 newsletter.

Flax and Its Culture.*

BY GRIER SCHEETZ, PERKASIE, PA.

(Doylestown Meeting, May 28, 1907.)

To the remotest period of the world's history we can trace the raising of flax, and the manufacture of linen products. It is mentioned in the book of Exodus as one of the productions of Egypt during the time of the Pharoahs, and it has been ascertained by miscroscopic examinations that the cloth in which the mummies of Egypt are enveloped is made of the finest linen.

Solomon purchased linen yarn in Egypt; Herodotus speaks of the great flax trade of Egypt, and great quantities are grown in that country to-day. Flax has been cultivated from time immemorial as a winter crop in India, for its seed only. Ireland raises more flax than any other European country.

Flax or lint is made into linen thread, cloth of the finest and coarsest fabrics, delicate cambrics, or exquisite lace, or coarsest sail cloth. Flanders in which the most beautiful flax in the whole world is produced, is employed for the manufacture of the famous Brussels lace, and sold for the purpose at a price of from $500 to $900 per ton. The crop prepared for market ofttimes exceeds the value of the land on which it is produced.

Flax is also used for the manufacture of our choicest writing paper. I have in my possession four pages of linen paper made and printed at the Ephrata Cloister, Lancaster county, Pa., (where the first Bible in America was printed.) These pages were printed many years before the Revolution, a lot of the same kind was carted to and used at the battle of the Brandywine by the soldiers of Washington for gun wadding, and what was left afterwards carted back again to Ephrata. This paper was made from the offal of linen clippings made by the sisters at the Ephrata Cloister.

From flax-seed are made large quantities of linseed oil for the mixing of paints, and the manufacture of printers'-ink. No plant not used for food is more useful to man than the flax

* For an interesting paper, with illustrations, on "Flax Culture and its Utility," by Rev. Eli Keller, D.D., see "The Pennsylvania German," Vol. IX, page 266.

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plant. When the supply of cotton was cut short during the Rebellion, efforts were made in some sections to substitute flax and spin and weave it by means of machinery employed in the manufacture of cotton fabrics, but the results were not satisfactory, the two products requiring different treatment.

The flax plant grows in any part of the United States. It requires a greater amount of labor than most other crops, and unless great care is exercised at every step the value of the crop will be seriously impaired.

Flax has been cultivated in this country from its earliest settlement, but is now principally raised for its seed. In 1870 thirty million pounds of seed were produced in this country, amounting to nearly $10,000,000 in value.

The last flax-mill to pass its usefulness in this section was located at Frenchtown, N. J., in the early seventies, and the last linseed oil mill in Bucks county was located near Tylersport, Pa., and known as Deetz's mill where the oil was extracted from the seed, and the oil-cake was crushed, ground, and used as an excellent food for the cattle both to produce milk, and for fattening them. This mill also quit in the seventies.

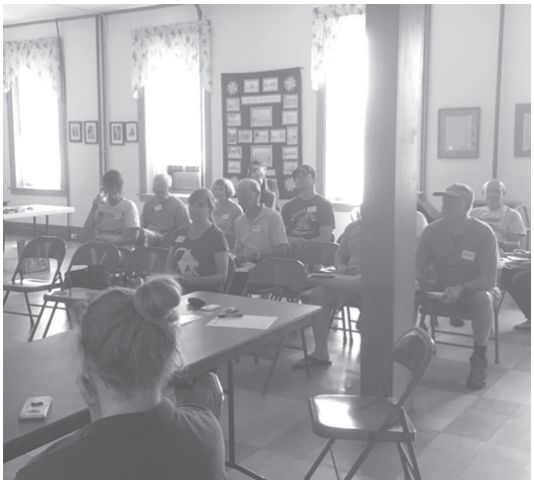
The flax when in blossom is a beautiful sky-blue color. It opens early in the morning, and lasts until about nine a. m. when it closes and goes to sleep.

When flax is ready to pull (for all flax must be pulled up by the roots,) the seeds or bolls begin to change from a green to a pale brown. This is considered the best time for flax pulling. After pulling it is tied into small bundles the thickness of a man's arm, and thrown on small heaps when it is put into shocks same as wheat and left to dry in the hot sun for a day or two so as to thoroughly ripen the bolls, when it is hauled to the barn where the bolls are pounded with a maul by the handful, or a bed of about three inches thick spread upon the barn floor, and crushed with a heavy block of wood thirty inches long by six inches wide and four thick, having a handle inserted at about an angle of forty-five degrees.

In pulling flax one-fourth of an acre was considered a full day's work. If any one lagged behind, the rest pulled the flax around him leaving a square patch, and this was called the "lazy acre."

2019 Native Plant Workshop: Reforestation

By: Jeff Heehs



Reforestation *Workshop continued at Riegelsville Boro Hall*

For this year's Native Plant Workshop we invited expert presenters to speak on the subject of "Reforestation for Landowners Facing Major Tree Loss." They started with a visit to a local wooded property with 12 people attending, and then gave talks at the Riegelsville Borough Hall to an audience of 15. The speakers were Kayla Kehres, Service Forester with DCNR Bureau of Forestry, and Carl Graybill, contract biologist with the Wildlife Management Institute.

The property we visited offered views of ash trees in various stages of decline from ash yellows and emerald ash borer. We walked through areas affected by heavy invasive shrub and vine penetration. These set the stage for the afternoon's presentations.

Kayla Kehres offered a close look at spotted lantern fly infestations that are impacting produce crops in our area, and may also endanger different tree stocks. We got a comparative look at ash trees impacted by emerald ash borer infestations or by the disease ash yellows. She discussed different strategies for combating invasive plants that move in where native tree losses create openings in the forest canopy and floor. We heard about replacement tree species and regeneration or planting strategies to restore lost trees.

Carl Graybill from the Wildlife Management Institute is retired from a long career as Education Director for the PA Game Commission. His talk focused on efforts to revive failing populations of wildlife that are threatened by the progressive loss of young forest environments over the entire eastern U.S. forest lands.

We learned that many animals require forest areas of sapling and seedling trees in order to reproduce and raise young. This class of forest is gradually disappearing due to natural forest maturation, development, forest fire suppression, intensified farming, invasive plants, etc. Focusing on the American woodcock (found in Bucks County) and golden winged warbler, the efforts to provide more young forest habitat for these species are helping all of the other wild birds, mammals, reptiles and amphibians that also require young forest habitat. Carl shared slides of opening up ranges of woodland to allow regeneration to young trees and native understory plants. This in turn creates conditions for wildlife to rebound from loss of nesting and breeding grounds. The loss of trees to disease and insects has a silver lining: regenerating the forest with diverse successional stages is a benefit to wildlife and woodland diversity.

We wrapped up more than three hours of animated presentations with questions and discussion from the audience. A wealth of handouts and literature was available from the speakers, from our local Penn State Extension agent, and from Cooks Creek Watershed Association.

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: 8:00AM – 12:00 noon, 1:00PM-4:00PM, (call ahead)

Accepting newspapers, magazines, junk mail, phone books, glass, tin, plastic, aluminum and cardboard, and CFL bulbs, rechargeable batteries (during office hours).

Please note that this facility is available to all, not 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

Paper 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: 2nd Tuesday @ 7:30 PM
Planning Commission: 1st Wed. @ 7 PM
Supervisors/Planning Commission
Work Session: 3rd Thurs. @ 7 PM
Environmental Advisory Council:
2nd Thurs. @ 7:30 PM
Open Space Committee:
1st Tuesday @7:30PM
Historic Commission:
3rd Tuesday @ 7:30 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:
3rd Thurs. @ 7 PM
EAC: 1st 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:
3rd Mon. @ 7 PM

Richland Township:
www.richlandtownship.org
215-536-4066
1328 California Road

Supervisors: 2nd and 4th Mon. @ 7 PM
Planning Commission: 3rd Tues. @ 7 PM
Preservation Board: 2nd Thurs. @ 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.