

# Centre County Pennsylvania Senior Environmental Corps Newsletter

## July 2021

CCPaSEC President's Report



### August picnic

Ideas for an Aug. 11 picnic for members and spouses were discussed at the July meeting. Carolyn reached out to the Clearfield PaSEC group and found that they are interested in joining our group for a picnic. Susan Robb will inquire about the possibility of having a tour of the new nature center at Bald Eagle State Park followed by a picnic lunch. The Benner Township Park is another possible site.

**“The fun of the Senior Environmental Corps” (by Gary Moorman) originally printed in the Centre County Gazette.**

One of the most interesting activities CCPaSEC



participants do is to assess stream quality by recording the various types of aquatic animals there are at sampling sites. One person holds a fine mesh net in the water firmly to the bottom while a partner rakes the bottom upstream from the net for 3 minutes. The net is then

lifted from the water and placed on a portable table where the critters are sorted by type and then counted. This is done twice a year; Spring and Fall.

When you stand next to a stream in the summer, you seldom think about the rich biological activity in that



### ***Volunteering for future Generations***

Our work is made possible by ClearWater Conservancy, the Centre County Conservation District and the Centre County RSVP.

To make a gift today:

Call: 814-237-0400 Click: email:

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water. In fact, depending upon the stream and vegetation in and around the stream, there may be mayflies, caddisflies, stoneflies, midges, sowbugs, freshwater shrimp, aquatic worms, snails, dragonflies, beetles, blackflies, crane flies, hellgrammites, alderflies, fishflies, clams, leeches, planaria, crawfish, fish, turtles, hellbenders, salamanders, frogs, and more in the water and sediment, attached to rocks and plants, or under rocks. At some locations, we find many of the above while at other sites we find only a few of these critters. Based on which ones are found and the number of each present, the quality of the stream environment is ranked as good, fair, or poor. It is very commonly found that the variety of critters at a particular location stays the same over the seasons and years but the number of each type of critter changes. Major changes in the variety of things found occur when flooding scours out the bottom and when drought reduces the stream to a trickle or turns it into a poorly paved path. Yet when flows return to normal, even these streams recover their variety of life forms in a season to two.

Some of the life forms found in streams also spend part of their lives out of the water. Fishermen know this well and watch for that special 'hatch' when a certain caddisfly or mayfly is active and provides a veritable buffet for fish. Here in central Pennsylvania, you've probably heard of the Green Drake hatch on Penns Creek or the Sulphur hatch on the Little Juniata, two events that draw in fishermen from around the world. In some cases, it is actually not the mayfly emerging from the water that triggers a feeding frenzy by the fish but it is the insects returning to the stream after mating to deposit eggs in the water or falling into the water 'spent' after completing this cycle. A great guide to mayflies, caddisflies and other's biology here in Pennsylvania is by Thomas Ames, Jr., Hatch Guide for New England Streams (despite the New England in the title). It contains numerous photos of nymph and adult stages of many aquatic insects. Some of this activity can be linked to the flowering of common plants.

Plant phenology is the study of plant growth and development in relation to climate and environmental

factors. For example, many gardeners record the date that a particular favorite plant flowers. In China, this has been recorded for hundreds of years! In North America, there was a research project that involved recording the dates of leaf bud break and flowering of a particular variety of dwarf lilac planted near hundreds of official weather stations. Plant development is closely tied to environmental factors, especially soil moisture and soil and air temperature. The cumulative effects of these factors go a long way to determine when a plant flowers, for example. Determining when a plant flowers actually turns out to be much more complex than just a relationship to temperature. But it is certainly interesting to record when your favorite forsythia, lilac, or dogwood flowers each Spring and see the variation from year to year.

But getting back to the stream, aquatic insect activity can be related to plant flowering because both are controlled to some extent by temperature. Charles Meck (1932-2018), a world-renowned local fly fisherman and member of Pennsylvania Fly Fishing Museum Hall of Fame carefully recorded his observations. He noted that a caddisfly species in the genus *Brachycentrus* (known to fly fishermen as the Grannom) is actively on the stream when forsythia flowers are just opening as is a mayfly in the genus *Ephemerella*, imitated by fly tiers with a pattern called the Hendrickson. When lilacs are in bloom, two other mayflies in the genus *Ephemerella* are imitated with flies called Sulphurs and Pale Morning Duns. When oxeye daisies are blooming, a mayfly in the genus *Stenacron* can be imitated with a Light Cahill pattern and one in the mayfly genus *Isonychia* with the Slate Drake pattern. The Green Drake (a mayfly in the genus *Ephemera*) is active along streams when locust trees are blooming.

Discovering the relationships among plants, animals, and stream quality is part of participating in Centre County Pennsylvania Senior Environmental Corps. It keeps us interested year in and year out.

## Other CCPaSEC in the News



The Centre County Times included an article by Ken Johnson in the June 6 Sunday addition of *Good Life* section about our mission “**volunteering for Future Generations**” is about monitoring **changes** in our environment. More specifically, about changes in our Centre County streams. **Our primary goal is to perceive changes** in water quality that may indicate an issue to be investigated. Pennsylvania hasn't the resources to collect and analyze samples of all her many streams. As concerned volunteers **we took on the task** to help fill the gap by monitoring key streams in Centre County. Our mission is to inform the public and our county leadership of the quality and health of those streams.

### The ClearWater Conservancy held its annual Watersheds Cleanup Day, Saturday, April 24, 2021.



The first Cleanup Day was held in 1997. Over these twenty-four years, roughly six million pounds of trash has been removed from our roadways and streams, all done by volunteers.

The Centre County Pennsylvania Senior Environmental Corps is a division of the ClearWater

Conservancy and the Centre County Retired and Senior Volunteer Program has been participating in the Cleanup effort over the years. This year we had eight of our members participating. We concentrated our efforts in the Buffalo Run watershed area, and did our cleanup along Filmore Road, Upper Gyp Road, and Valleyview Road. All of these roadway's border on or have tributaries to Buffalo Run. Cleanup Day this year, collected a total of 217 bags. We were the collectors of 36 bags of that total. Since our main volunteer effort is

**Centre County Pennsylvania Senior Environmental Corps**

monitoring the quality of Centre County streams, we view it as important to continue our participation in the Cleanup Day campaign. After all, we do "all live downstream".

### 2021 Equipment check

We have the privilege of using some of the best field test equipment available. Each year, our teams' field kits are collected for an evaluation and battery replacement. This year the Bald Eagle State Park in Howard provided us with their brand-new teaching facility as the location of our 2021 equipment check.



Evaluation is made for each colorimeter, pH/conductivity meter, dissolved oxygen meter, flow velocity meter and the contents of field kits for glassware, reagent due date and general supplies. Dan DeLotto organized the event with several member volunteers. The process involves inspection and re-calibration testing of each piece of equipment to assure its function is within the limits established by the original EASI quality assurance program. We replace worn or damaged sensory probes and all batteries.



Mick McKay (seated) with Dan DeLotto (standing), evaluating a dissolved oxygen meter.

A detailed report of the results is prepared by our Quality Control Resource Advisor and made available on our CCPaSEC website at [CCPaSEC.org](http://CCPaSEC.org)

## Upcoming Events

### Explore Dry Hollow with Centred Outdoors



Centred Outdoors will host three events at Dry Hollow the week of July 18. Visitors can explore the newly acquired property at their own pace and learn about its ecological features from ClearWater staff. Jana Marie Foundation and Lucy Heggenstaller will also offer special wellness activities throughout the week.

Sunday, July 18

Explore the property at your own pace between 12-6 p.m.

Wellness activities: Mindful Rhythms Drum Circle at 1 p.m. and 3 p.m.

Forest Bathing with Lucy Heggenstaller from 4-5:30 p.m.

Wednesday, July 21

Explore the property at your own pace between 9 a.m.-1 p.m.

Wellness activity: Nature Card Making from 11:30 am - 1:00 p.m.

Friday, July 23

Explore the property at your own pace between 6-8 p.m.

Wellness activity: Peaceful Poetry

Registration is not required but is appreciated.

Choose the day and time that's best for you and meet us at Dry Hollow Camp Lane in Warrior's Mark Township. Centred Outdoors is a program of ClearWater Conservancy. All events are free, and open to the public. Find details and safety tips at [centredoutdoors.org](http://centredoutdoors.org). Email [info@centredoutdoors.org](mailto:info@centredoutdoors.org) with any questions.

[HOME | Centred Outdoors](#)

## How flooded coal mines are being put to a new, zero-carbon use.

### [How flooded coal mines could heat homes - BBC Future](#)



Mine water is one of our best options to help with the decarbonisation of geothermal heating. The resource is readily available all year round at a steady temperature, and there is an abundance to be accessed." At the surface, the warmth from this water is now to be used to heat buildings above ground. Once its heat has been absorbed, the water is then returned to the mine workings where it will be warmed up again.

In 1989, a packaging firm in Springhill, Nova Scotia, began attempts to draw heat from a network of nearby coal mines that had lain dormant for decades. The company, now owned by Mauser Packaging Solutions, has been refining the process ever since, and now boasts a circular climate control system that is 100% renewable 12 months of the year.

But what if, in a serendipitous circle of history, our extractive past could be repurposed for a greener, cleaner future? Adam Black, a renewable energy enthusiast employed by one of Britain's largest bottling firms, asked: What if the vast maze of coal mines beneath our feet, now filled with naturally warm water, could help decarbonise the UK's – and the world's – herculean heating needs? Warmed by natural geological processes, the water they pumped to the surface was a pleasant 15C (59F).

Perhaps the greatest hurdle, however, is that which motivated the opening of the mines in the first place: The capital costs are much higher with mine water geothermal, though under the right conditions the energy generated can be cheaper than that from conventional sources.

**Volunteers needed**

Exposure to extreme heat can result in occupational illnesses and injuries. Heat stress can result in **heat stroke, heat exhaustion, heat cramps, or heat rashes**. Heat can also increase the risk of injuries in workers as it may result in sweaty palms, fogged-up safety glasses, and dizziness.

This is a great opportunity to get out of the city to observe the seasonal changes in a portion of the “Pennsylvania Wilds” and to help monitor streams in the Marcellus deep-well fracking area.

Our team 14 is in need of new team members to help monitor streams in the Beech Creek Snow Shoe area. Bill Leech has stepped in to replace Dave Truesdale who has moved out of the area. The team is currently down to only one other active member: Bob Wilberding. Ken Johnson is currently unable.

For over 11 years the team monitored 13 streams, as part of our program with the Shale Network and the Chesapeake Monitoring Cooperative. Each month they visit 4 of the sites to collect water samples for analysis at PSU and to measure flow, pH, conductivity and dissolved oxygen. They also do macroinvertebrate surveys to help determine long term conditions.

Please contact team leader Bill Leech via our website if you can help. [bpleech@gmail.com](mailto:bpleech@gmail.com)

To join us: Please call the Centre County RSVP (Retired and Senior Volunteer Program) Monday – Friday 8:30 am - 5:00 pm Phone (814) 355-6816  
 The CCPaSEC newsletter is published quarterly except for special events. To contribute news articles, or corrections please Contact Ken Johnson via our CCPaSEC website.



*"The struggle of today is not entirely for today, but for a vast future." -Abraham Lincoln*