Centre County Pennsylvania Senior Environmental Corps
at ClearWater Conservancy

Newsletter December 2021

Volunteering for future Generations

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

To make a gift today:

Call: 814-237-0400 Click: email: clearwater@clearwaterconservancy.org

Mail: 2555 N. Atherton St. State College, PA 16803 Your gift keeps our working flowing!

Thank you for your generous support!

➢ *Celebrate CCPaSEC 20th Anniversary 2022*

Laurie Jeffreys will lead a subcommittee to plan to celebrate our 20th anniversary. CCPaSEC volunteers have been monitoring water quality our local steams for our community since 2002. Why are we doing it? How good is the water? Our mission is to provide the public and our officials information on water quality because the Pennsylvania hasn't the resources to collect and analyze samples of all her many streams. As concerned citizens we took on the task here 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. One of our local papers coined us the "Water Watchers". We have 13 active teams of four or more members, sampling 49 locations monthly, weather permitting. And we are growing. A new team is being formed for 2022 (see pages 4 & 5).

Everyone in *Happy Valley* are stakeholders in the quality of our streams. Our area has seen the results of acid mine drainage and is now undergoing changes due to urban development affecting water runoff, deep well gas exploration (fracking) and new gas pipelines. These activities can have detrimental impact on water quality.

"*Volunteering for Future Generations*" is about monitoring short and long-term *changes* in the quality of water Centre County streams. Our primary goals are to detect and document changes that may indicate an issue to be investigated. Changes may happen over a long period of time and escape notice. You can review the charts in our data base to compare current data with what's happened over the long run.

➢ ***This year a major development and recognition of our efforts***

This year we were invited to share our data with the "Chesapeake Data Explorer**"** that is monitoring streams in Virginia, West Virginia, Pennsylvania, Maryland and New York that are part of the Chesapeake Bay Watershed. Our CCPaSEC teams have collected detailed water quality data, in some streams, for 20 years. To qualify, representatives of the Chesapeake Data Explorer reviewed and approved of our procedures and data reporting, and are now transcribing our data into their extensive website data base. See: **Home Page (vims.edu).**

Joyce McKay had meet with two representatives who are entering the data. All CCPaSEC active site chemical data through 2020 is now on the ALLARM web site. Next, the inactive and Marcellus data will be entered. Macro data has not been added yet. A notice will be posted on the CCPaSEC site to indicate when the data has been validated.

The representatives from ALLARM may attend a CCPaSEC meeting in March to demonstrate and answer questions regarding the site. Joyce demonstrated a page from the ALLARM site at the December ZOOM meeting and how to view information. The ALLARM grant was renewed for another six years.

➢ ***Presidents Report: Susan Snapp***

In 2021, CCPaSEC members logged 2221.8 hours of volunteer service in their mission to gather and publish data on the quality of water in the streams of Centre County. The value of those hours to the community* is $59,255.41, in the past 8 years (2014-2021), $494,955.84.. CCPaSEC works with several organizations, universities and youth groups to carry out projects benefiting Centre County watersheds.

* **https://www.independentsector.org/volunteer time**

February Election of officers: There will not be general meeting in January. The voting for officers will take place at the Feb. meeting. Anyone interested in one of the offices should contact Susan Sapp. Officers shall include a President, Vice-President, Secretary, and Treasurer. Officers shall be elected at the Annual Meeting of the membership for a term of one year, and may succeed themselves.

Excerpts from Susan's interview with the CDT *Centre County senior environmental group seeks new members*
by HOLLY RIDDLE for the CDT

The Centre County Pennsylvania Senior Environmental Corps performs a vital role in Centre County, and recently expanded its membership to include more community volunteers. The organization's work, monitoring stream and water health throughout the area, directly impacts residents' groundwater and drinking water. "We kind of consider ourselves like the canary in the mines," organization president Susan Sapp said. "We're checking the streams to ensure that they are healthy, that there's nothing wrong with them, and if we see anything, then we can let the proper authorities know so that they can then make sure that they hop on it, because there are too many streams around this area for them to monitor consistently. Data is collected by volunteers with the Centre County Pennsylvania Senior Environmental Corps around the region, with monthly site visits. Each site is monitored by a group of at least four volunteers.

➢ ***Local Happenings this quarter:***

- ***Bellefonte Volunteer Fair Oct 3 2021 Talleyrand Park***

The downtown area of Bellefonte is transformed into a fun arts and crafts haven for everyone. Enjoy arts, crafts and more from talented artists and crafters from near and far for numerous fun activities and games that will be sure to make memories. With countless delectable delights from the area's finest concessionaires.

Annual Bellefonte Arts and Crafts Festival

Susan Robb

Dan DeLotto (center) and two members of the Moshannon Creek Watershed Association

Dan DeLotto braved the weather to operate this year's fair. Dan, shown with two members of the **Moshannon Creek Watershed Association - Home** The Moshannon Creek Watershed Association is a 501C3 non-profit corporation chartered in Pennsylvania.

- ***ClearWater Conservancy partnered with the PA Naturalists***

…to offer to bring the state wide program in 2020.
Pennsylvania Master Naturalist is a statewide partnership initiative that aims to connect people with their local ecosystems through intensive natural science training and local conservation service work.
This in the second year CCPaSEC was asked to help teach a session on Citizen Science for the PA Master Naturalists Class to be held at Shavers Creek Environmental Center.
Kelle Kersten **https://pamasternaturalist.org**

What is a Pennsylvania Master Naturalist?
A Pennsylvania Master Naturalist is an individual with a passion for the natural world who participates in an intensive training program and uses his or her knowledge by giving back to the community through volunteer service. This year-round program has three components: an initial volunteer training course, volunteer service hours, and advanced training classes.

- ***Senior Environmental Corps New Member Training, December, 16 2021***

We thank the ***Bald Eagle environmental center*** for hosting our new member training session. The session introduced members to our website information and forms, our help videos, calibration procedures, tools to determine the flow rate, how to use view our data files and historic data charts. PaSEC equipment manager, Dan DeLotto, put together a stream monitoring kit for the new team, and they were given an initial training by President Susan Sapp, Susan Robb, Genie Robine, Rob Fugate and Dan DeLotto. Joyce McKay and Rob Fugate demonstrated the features of our website.

We utilize quality field instruments to measure and record water parameters. These include the YSI dissolved oxygen meter, HACH© field Colorimeter, Oakton PCSTestr35, 5-Function Meter, and *FloWatch©* velocity meter (*our method of determining flow by measuring the cross-sectional area and the mean water velocity*). Training for macroinvertebrate identification is held while conducting those actual surveys that our Teams perform twice a year.

This training of a new team will be followed by on site assistance once their monitoring sites have been established on Marsh Creek by Justin Kozak, the Watershed Specialist for Centre County Conservation District. Meanwhile, the new members will continue to go out with existing teams to gain more experience.

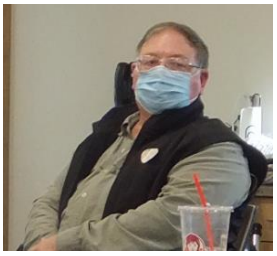
All photos curtesy of Susan Robb

Susan Sapp and Dan DeLotto (yellow shirt) demonstrates the use of the Colorimeter and YSI dissolved oxygen meter. Genie explains our method for measuring alkalinity.

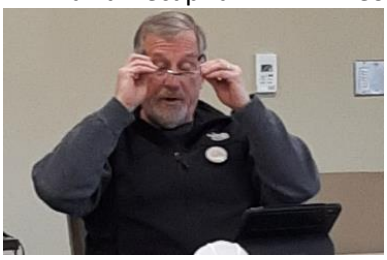
New team members are:

Terry Harrison

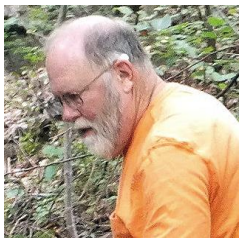
Tom Rogers



David Decapria



Leon Kolankiewicz



Joyce McKay and Rob Fugate exhibited and demonstrated many features of our website on the large wall mounted Bald Eagle monitor.

- ***Centre County Conservation District***

Centre County Conservation District held a workshop on November 3, 2021, in Bellefonte, PA. The workshop focused on educating homeowners on local water quality issues. This was an excellent opportunity for the district to have open dialogue and foster relationships within the residential community. Attendees left with a better understanding of local water quality issues, stormwater management practices, and resources to manage stormwater on their property.

Photo caption (Left to right): Tyler Fox, Centre County Conservation District Chesapeake Bay Technician, Allyson Ulsh, and Isaac Nulton. Tyler and Isaac are interns with the Agriculture and Environment Center at Penn State who helped present at the workshop for presentation experience. PA Association of Conservation Districts

swehinger@pacd.org

Financial and other support for this project is provided by the Pennsylvania Association of Conservation Districts, Inc. through a grant from the Pennsylvania Department of Environmental Protection under Section 319 of the Clean Water Act, administered by the U.S. Environmental Protection Agency.+

➢ In the News:

"The Senior Environmental Corps: Volunteers Monitoring Water Quality"

Published in The Spring Creek Watershed Atlas

Author: ***Betsie Blumberg***, Member of the Atlas Workgroup and CCPaSEC

Every month members of the local chapter of the Pennsylvania Senior Environmental Corps revisit a Centre County stream to check on its health. Divided into 13 teams, members meet at their team's designated stream to pursue two objectives: 1) to monitor the water quality and physical condition of their stream and alert the Pennsylvania Department of Environmental Protection when data are out of the "healthy" range, and 2) to get together outdoors to enjoy comradery while observing what's happening in the environment.

The ccpasec.org website contains much more information about the program, monitoring protocols, site locations, etc. For information about joining, call the Centre County Senior Volunteer Office at 814-355-6816. The more people who join, the more teams can be organized, and thus more streams can be monitored. Click HERE to read more!

Home | The Spring Creek Watershed Atlas

➢ *You should Know:*

- **Cold Weather safety**

To prepare for the cold weather hikes and outdoor activity, ClearWater Conservancy has a few tips for staying warm and comfortable on winter excursions:

- **Wear layers:** Layering allows you to add and remove layers throughout your hike so you can stay warm and comfortable without overheating and getting sweaty.
- **wear gloves**: If your outdoor activity may lead to wet weather or melting snow, be sure to pack an extra pair.
- **Wear synthetic or wool socks**: that fit well. Thicker socks provide more insulation, but make sure they don't cause your boots to fit too tight, which can cut off circulation. Wear waterproof boots if you'll be trekking through snow, and if you'll be in very cold temperatures, you might require boots with built-in insulation.
- **Carry heat: Hand warmer and toe warmer packets:** are a great way to warm up your digits, especially if you're prone to cold fingers and toes.
- **Wear a hat:** You can lose heat through the top of your head, so pull a winter hat on if you're feeling chilly.

Continued

- **Bring Water**: In very cold temperatures, water bottles can be prone to freezing. It usually happens
- from the top down, which means the bottle tops are prone to getting stuck shut. Flipping your bottles upside down will solve that problem. Putting the bottles in your pack rather than in exterior pockets will help insulate them from the cold as well.
- **Pack warm drinks:** Fill up a vacuum-insulated bottle with hot tea or hot chocolate to sip on when you take a break. The warmth goes a long way toward keeping you comfortable.

Wear sturdy shoes that support ankles on uneven ground - Pennsylvania grows rocks well, and walking is not always easy in the woods. Wear clothes treated with permethrin and that can tolerate pushing through brush, vines, or brambles. Consider warm clothes and layers for cold days.

Be tick savvy year-round. Unfortunately, ticks are active year-round, though less so on those extremely cold, dry days. Clothing is an important protective layer to guard against ticks. Wear your long pants tucked into your socks or taped to your boots and your long-sleeved shirts tucked into your pants. The goal is to not allow for openings for the ticks to get to your skin, and to give you a greater chance of you discovering and removing them.
If you find an embedded tick, remove it and stick it in a freezer bag in the freezer - label the bag with the date and location of the bite. If you later feel ill, you can then get the tick tested for the various tickborne diseases, which will greatly aid in treatment. ***FREE Tick Testing for all Pennsylvania Residents - SHIP SAVES***

- ## *Ralph's Hot Tips Reminder: Nitrate test*

What we were trying to do is to identify specific measures/procedures we should take to ensure accurate testing using the colorimeter. These ideas are either not mentioned in the manual or are not clear in the manual directions. This list is just a starting point. Others will have ideas about how to use the colorimeter in an optimal way.

a. Ensure that the desired test is displayed by pressing the "Conc." button. The correct **display must be NO3, not NO3 -N.** The difference in these two tests is a constant factor. The NO3 test yields results that are comparable with the test that does not use the colorimeter. The button can be pressed several times without affecting the procedure. The button will not be active until the program number for this test has been activated. In other words, one must be "inside" the procedure before this button will be effective.

b. It is important that all the powder in the packet is added to the 10ml stream sample. It is not uncommon that some of the powder is trapped in the corner of the packets. One way to check this is to cut one side of the packet to the corner and then look into the remaining corner for powder residues. Another, perhaps simpler way to do this is to use the small screw driver in the kit to stretch the two corners of the packet so that any powder trapped there can be scraped out. Clean the screw driver when finished because if it is used in more than one test there could be contamination.

➢ ***News of our Environment***

- ***Ocean microplastics around the world (NASA video)***

Researchers at the University of Michigan (UM) developed a new method to map the concentration of ocean microplastics around the world. The researchers used data from eight microsatellites that are part of the Cyclone Global Navigation Satellite System (CYGNSS) mission. Radio signals from GPS satellites reflect off the ocean surface, and CYGNSS satellites detect those reflections. Scientists then analyze the signals to measure the roughness of the ocean surface. These measurements provide scientists with a means to derive ocean wind speeds, which is useful for studying phenomena like hurricanes. It turns out that the signals also reveal the presence of plastic. View the NASA video at **Mapping Marine Microplastics (nasa.gov)**

- ***Microbes in oceans and soils are evolving to eat plastic, study reveals***

Microbes in oceans and soils are evolving to eat plastic, study reveals (theworldnews.net)

Microbes in oceans and soils are evolving to eat plastic, a new study reveals in a breakthrough that could help boost recycling of commercial packaging waste.

Researchers in Sweden measured samples of DNA at hundreds of locations around the world, taken from both soil and water.

- ***A Canadian nonprofit pulled 63,000 pounds of trash from Pacific***

A half-mile long trash-trapping system named "Jenny" was sent out in late July to collect waste, pulling out many items that came from humans like toothbrushes, VHS tapes, golf balls, shoes and fishing gear.

The patch is fueled in part by a steady stream of trash and debris that flows from rivers into oceans. A peer-reviewed study published in 2017 estimated between 1.27 million and 2.66 million tons of plastic waste flows into oceans via rivers every year.

The catalyst behind the cleaning is **The Ocean Cleanup**, a nonprofit trying to rid the world's oceans of plastic. Boyan Slat, who founded the organization in 2013 at the age of 18, called the most recent testing phase a success, but said there's still much to be done.

The Ocean Cleanup says it receives funding from philanthropic, commercial and governmental donations and sponsorships. Funding is one of many hurdles that lie ahead for The Ocean Cleanup and for Slat, who embarked on this journey after he went on a scuba diving trip when he was 16 and saw "more plastic bags than fish."

https://www.usatoday.com/story/news/world/2021/10/29/great-pacific-garbage-patch-ocean-cleanup-nets-63000-pounds-trash/6138815001/

Jay Cannon USA TODAY
Published 6:00 a.m. ET Oct. 29, 2021 | **Updated 7:38 a.m. ET Oct. 29, 2021**

- ***A new desalination technique for drinkable water from seawater***

Scientists at Northeastern University developed a process for a carbon filter that purifies otherwise undrinkable water – an innovation the team hopes can address the global water crisis

There are some 1.42 billion people living in areas stricken with water scarcity, according to **UNICEF,** and only three percent of water on Earth is drinkable. Building upon the filtration idea, Zheng looked for a more sustainable power source – sunlight.

However, the process would not need solar panels, but is a filter that is activated by sunlight.

The foam floats on the seawater's surface and when sunlight hits the area, water beneath the black material turns to steam and passes through it as drinkable liquid.

A foam that sits on the surface of sea water. It is activated by sunlight, allowing water underneath to pass through as steam. This water, which has been cleaned of salt, is collected and ready to drink.

'The resulting water was so fresh, Zheng said, adding that its sodium concentration was significantly lower than the standards set by the U.S. Environmental Protection Agency for drinking water, the researchers shared in the release. 'The materials we use are totally natural, sustainable,' Zheng said.

https://coe.northeastern.edu/people/zheng-yi

➢ ***Opportunities:***

- ***Become a ClearWater Volunteer!***

where community, friendship, and purpose meet to make a difference

Volunteered time and talent are critical to our continued success! ClearWater Conservancy offers a variety of volunteer opportunities that can fit your interests, skills, personal development, and availability. We are so appreciative of your help and want to build a long lasting and positive relationship with you as we work together to make our community healthier. We also hope to give back to you through assisting you with your own growth through leadership, stewardship, and service. Volunteer opportunities are aligned with our ClearWater Compass. Each compass point guides our work day to day and year to year. Which Compass Point fits best with your interests, goals and skills?

Volunteer | ClearWater (clearwaterconservancy.org)

- ***Do You Want to Be a Master Watershed Steward?***

Penn State Extension Master Watershed Stewards are first and foremost, volunteers.

Master Watershed Steward Program — Penn State Extension (psu.edu)

The goal of this training program is to expand upon your water and natural resources knowledge with Penn State's research-based information so that you will broaden our conservation outreach into the community.

Master Watershed Steward Program Requirements and Policies

- You will be allowed to miss *one session* if you have a scheduling conflict that cannot be changed. Additional missed sessions require make up work.
- There is a $125 one-time training fee, payable at the first session, to help offset the cost of program materials such as the manual and name badge; however, financial aid is available to those who need it.
- Varies by county: An *assigned group project* must be completed; the time that this project takes will count towards your required volunteer hours, described below.
- Varies by county: Create and give a *five-minute presentation* to your classmates on the topic of your choice.
- Take a pre- and post- assessment for the training course.
- Give a minimum of 50 hours of volunteer service during the year that begins with the day of the first class. All projects and presentations must be approved by the coordinator.
- To maintain your status as an active volunteer, you must give at least *20 hours of volunteer time* and take *10 hours of Penn State approved continuing education* each subsequent year.

Once the above requirements have been completed, you will be considered a Master Watershed Steward.
Application Form to B

Erin L. Frederick Statewide Master Watershed Steward Coordinator Penn State Extension Lehigh County Office 610 391 9840

Become a Master Watershed Steward
Join our dynamic team of volunteers across Pennsylvania protecting and restoring streams and rivers! Learn how you can make a difference in your community with Penn State Extension's Master Watershed Steward program.
Sign Up

➢ ***Upcoming Events and Learning Opportunities***

- ***Yearly Equipment Check and Battery replacement, January 21 2022***

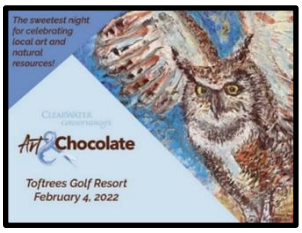
Our Quality Control team evaluates our field equipment every year. We thank the ***Bald Eagle environmental center*** for hosting our January 21 (back-up date January 24 2022) field Equipment evaluation.

All team's field kits will be examined by our Quality Team volunteers for:

- Physical condition of the equipment.
- The quantity and expiration dates of the Chemical reagents
- Calibration check of:
  - pH meters - pH & conductivity, (µS/cm)
  - Colorimeter - Nitrate, Sulfate & Phosphate, (mg/L)
  - Dissolved Oxygen (mg/L)
  - FLOWATCH® flow meter, velocity (cm/Sec)
- The process includes replacing all batteries and maintenance as required.

The results are presented as Percent Recovery (PR) which is an indicator of our equipment capability. Percent Recovery PR = $Mean\ Standard\ /$ X 100 Where the mean is the average value of the parameter measurements and the standard is the value of the standard solution shown on the bottle label. The CCPaSEC Equipment Check procedure is available on our WEB page: http://www.ccpasec.org/

- **ClearWater Conservancy annual Art & Cholate fundraiser.**



February 4, at the Toftrees Golf Resort. The event will feature the delicious food, decadent desserts and gorgeous local art you've come to expect, all while supporting ClearWater's efforts to connect and restore Central Pennsylvania's natural resources.
2022 Art & Chocolate ***Registration Now Open***

Other events: ***ClearWater Conservancy | Facebook***

- **Annual Shale Network Workshop May 12-13 2022**

(The Pennsylvania State University, Earth & Environmental Systems Institute)
Ten years of Unconventional Resource Development: Lessons Learned and Future Directions.
Registration will be available beginning in January 2022 at ***www.shalenetwork.org***

- **Volunteer with ClearWater Saturday, January 1, 202**

With help from volunteers and partners, ClearWater stays busy all throughout the year as we manage streamside forests on properties throughout the region. In fact, on New Year's Day, staff and volunteers will be maintaining trees and plants that have been planted at one of ClearWater's owned properties over the years. We invite you to start your New Year with us as we tend to the natural resources that keep Central PA beautiful, healthy, and thriving!

If interested, please email Maggie for more information about the day and how you can get involved: maggie@clearwaterconservancy.org.

PENNSYLVANIA Master Naturalist

Spring 2022 volunteer training courses will be offered in ***Allegheny, Northern Chester, and Washington Counties.*** Adults who want to learn about nature, enjoy the outdoors, and want to be a part of natural resource protection in their communities are perfect candidates to become Pennsylvania Master Naturalist volunteers.

Details for each course and the application can be found on the ***Training Courses page of the PA Master Naturalist website.***

Feb 25 2022 Keystone Coldwater Conference & PA American Fisheries Society Joint Meeting
Ramada Hotel & Conference Center, State College Home (coldwaterconference.org)

➢ ***Other news:***

- **Wolf Administration Highlights Stream Buffers**

Cindy Adams Dunn the sixth secretary of the Department of Conservation and Natural Resources (DCNR), joined the **Alliance for the Chesapeake Bay**, Knouse Foods Cooperative officials, and a host of partners for the kickoff of a streamside forest buffer planting at the fruit grower owned cooperative operations in Biglerville to improve the water quality of an unnamed tributary to the Conewago Creek, and eventually the Chesapeake Bay.
Statewide, Pennsylvania has a goal of planting 95,000 acres of forest buffers along waterways. The Knouse project includes planting 3.25 acres of forest buffers and 13 acres of lawn converted to native meadow habitat at four different locations.
, DCNR is leading the work with many partners to plant trees and shrubs along streams for water quality, with accomplishments including:

- Creating a watershed forestry team, an advisory group with more than 60 members and partners, and holding an annual summit;
- Providing almost $7 million dollars in grant funds for streamside forest buffers;
- Conducting ***Buffer My Stream*** landowner outreach;
- Attracting more than $4.45 million in federal grants and allocating more than $2 million in federal funds for projects;
- Collaborating on a reporting and tracking tool that allows the commonwealth to report successes to the federal government; and
- Working with the corrections system and other partners to train workers to plant and maintain buffers.

RE: **Wolf Administration Highlights Stream Buffers for Role in Addressing Climate Change Impacts at Planting in Adams County**

- **Department of Environmental Protection's eComment.**

From this page, you can view regulations, policies, technical guidance, general permits, and other proposals for which the Department is currently soliciting comments, access the full text of these documents, submit comments, and see other's comments. Thank you for taking the time to comment; your viewpoint is valuable to the Department.

a. Proposed Rulemaking: National Pollutant Discharge Elimination System (NPDES) Schedules of Compliance (#7-563) Coming soon. Will open on 1/15/2022
b. Proposed Rulemaking: Exclusion for Identification and Listing Hazardous Waste at MAX Environmental Technologies, Inc. Bulger & Yukon Facilities (#7-566) Coming soon. Will open on 1/8/2022
c. Stream Redesignation Evaluation: Angelica Creek (Berks County) and Saltlick Run (Clearfield County) Other Information at the Pennsylvania Bulletin (and publication date) 1/1/2022 1/1/2022 1/31/2022 View comments Submit comments
d. Draft Stream Evaluation Report: Class A Wild Trout Streams Other Information at the Pennsylvania Bulletin (and publication date)
1/10/2022 View comments Submit comments

https://www.bing.com/search?q=Department+of+Environmental+Protection%27s+eComment.&form=QBLH&sp=-1&pq=&sc=0-0&qs=n&sk=&cvid=D5E621B59F5A42F2982EC7DD729264C1

"Unless someone like you cares a whole awful lot, nothing is going to get better. It's not." — Dr. Seuss