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Front cover photo: a resident frog expresses appreciation for volunteers' efforts at the 2020 Lake Towhee Water Chestnut Pull

Board of Directors

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The BCCD is a legal subdivision of state government and is administered by a Board of Directors composed of four farmer members, two public members, and one county commissioner member, all of whom serve without pay. The Directors work with all individuals, organizations, and agencies interested in soil and water conservation, land use planning, watershed protection, and flood prevention in the broadest sense to secure their assistance and support in planning and carrying out District programs.

2020 Annual Report - Manager Message

As I settled down to write my annual message, I decided to look back at my message from 2019 and was reminded that I wrote it in the very first days of the COVID pandemic. More specifically, of Pennsylvania's required COVID restrictions. Reimagining how the BCCD would conduct daily business for what we then imagined might be as much as six weeks was all-consuming.

Imagining at that time that I would be writing to you again exactly one year later, still in the same circumstances would have been simply unbelievable. And yet, here we are. As adjusted as possible to this new normal, and proving that we can not only stay safe, but we can also stay productive, stay focused on our goals, and stay successful.

While we are all eager to receive our vaccines and begin the process of returning to our more traditional habits, we have learned (the hard way) that there are more pathways to our goals than we ever considered before. That finding a new way is not impossible. That if everyone is willing to make small changes to help each other, we can all reach our common goals together.

In a year when so many offices have downsized in response to the new remote workforce, the BCCD made the bold choice to begin expanding and renovating our offices. We hired 3 new staff members during the pandemic, and plan to expand even further. While we embrace the flexibility and safety of remote employment, we have also rediscovered our passion for collaboration and socialization with our colleagues. I personally long for my first headache due to a noisy day in the office with a full staff asking hundreds of questions.

Suffice it to say, no one could have predicted the many ways that the past year has changed us, as a team, as a business, or as a family. Things could have been much worse in so many ways. I believe that one of the major reasons we have all been able to hold on, to hang in there, and to remain happy and healthy is that this team of colleagues truly supports each other. Their loyalty to protecting each other is unmatched.

Because of their ability to help, and their ability to accept help, the BCCD made it through 2020 just fine. Like everyone else, we had to let go of some things, but not everything. Now we cannot wait to show you what we will do next.

Sincerely,

Gretchen Schatschneider

BCCD District Manager

Gretchen, at her desk, keeping the BCCD office open during the early days of the Covid 19 pandemic.



2020 Financial Statement

Revenue:		
Fees for services	\$ 804,728	
Grant Income	643,584	
Interest	3,698	
Miscellaneous	713	
Total Revenue	1,452,723	
Expenses:		
Building Maintenance	\$ 18,742	
Capital Purchases	61,34	
Computer Services	24,159	
Dues and Subscriptions	5,180	
Education Programs	1,33	
Grants and Programs	150,913	
Insurance	27,129	
Meetings and Seminars	2,049	
Miscellaneous	3,669	
Office Supplies	8,184	
Payroll and Benefits	538,854	
Payroll Taxes	43,702	
Postage	3,002	
Professional Fees	16,01	
Publicity and Promotion	84:	
Travel	1,288	
Utilities	19,280	
Vehicles	5,553	
Total Expenses	931,252	
Excess of Revenues over		
Expenses:	521,47	

BCCD Staff

Gretchen Schatschneider, District Manager

Richard Krasselt, Environmental Protection Specialist

Morgan Schuster, Erosion Control Technician and Lead DGLVR Administrator

René Moyer, Chapter 102/NPDES Administrator

Marilyn Laurelli, Receptionist

Meghan Rogalus, Watershed Specialist

Rachel Onuska, Agricultural Conservation Technician

Ryan Herstine, Agricultural Conservation Technician

Jason Maurer, Erosion Control Technician and Education Specialist

Sue Seykot, Asst. Chapter 102/NPDES Administrator

Tori Jones Long, Erosion Control Technician

Chris Cook, Erosion Control Technician

Baileigh Rosado, BCCD Intern 2020

Ashlin Brooks, BCCD Intern 2020



BCCD intern Ashlin Brooks and watershed specialist Meghan Rogalus take samples during Poquessing monitoring in November 2020



Jason collects water chemistry data during the August 2020 window of Poquessing monitoring

2020 New Employee Spotlight

In 2020, BCCD was pleased to hire new staff to participate in and advance our core mission of resource conservation. A brief biography for each is provided below on this and the following page so you can get to know our new staff!

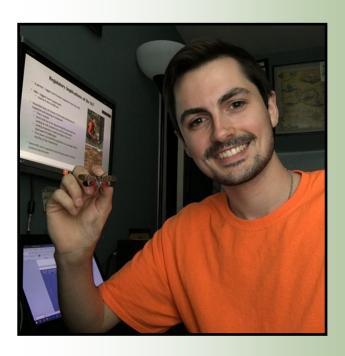


Tori Jones Long, at left

Tori Jones Long joined Bucks County Conservation District (BCCD) in March 2020 and works as one of BCCD's Erosion & Sediment Control Technicians. Prior to joining BCCD, Tori worked as an environmental consultant performing a variety of environmental services including site characterization and remediation work, wetland delineations, and permit preparation throughout southeast Pennsylvania and New Jersey. She made the jump from consulting because of her interests in resource conservation and community environmental outreach, which stem from growing up in the Chesapeake Bay region and completing undergraduate studies in biology at St. Mary's College of Maryland. Tori has enjoyed her first year at BCCD, even with all the COVID-19 challenges, and is looking forward to gaining additional skills related to her Ch. 102 work as well as getting involved with other BCCD projects.

Chris Cook, at right

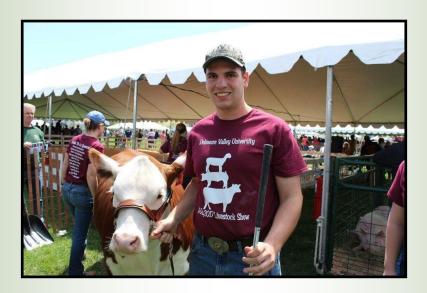
Since February of 2020, Chris has been a positive addition to the Bucks County Conservation District (BCCD). Currently, Chris serves as an Erosion and Sediment Control Technician, but often looks for ways to support programs beyond his position obligations. In May of 2019, Chris was awarded the degree of B.S. Environmental Science with a focus on wildlife from King's College. Through his diverse undergrad experience ranging from leadership roles in urban ecological conservation projects with the Student Conservation Association (2018), to acting as the King's College entomological liaison for various research projects and courses (2017-19), Chris is able to provide the BCCD with the skills necessary to effectively regulate natural resource management programs. Chris is hopeful that his time spent at the BCCD will be the start of a meaningful career in environmental conservation.



2020 New Employee Spotlight continued

Ryan Herstine, below

Ryan was hired to by the Bucks County Conservation District (BCCD) in October 2020 to be an agricultural conservation technician. Ryan brings with him an extensive agricultural background to aid the agricultural community of Bucks County with environmental conservation resources. Providing the resources necessary to help farms address conservation concerns will make our thriving local agricultural sector even more productive and more sustainable, so our growing population can be fed. Ryan comes to BCCD from a family-owned hay, row crop, and beef farm, where he gained his passion for agriculture. In May of 2019, Ryan graduated with a Bachelor of Science degree, majoring in agricultural business with a minor in crop science from Delaware Valley University.



BCCD is thrilled to welcome all of these talented and passionate individuals on board! We're very glad to have them as new members of our team.

Erosion and Sediment Control

Bucks County Conservation District technicians enforce PA Code Title 25,
Chapter 102 regulations relating to erosion and sediment pollution control
and administer Pennsylvania Department of Environmental Protection
programs in that field. Our team of technicians reviews land
development plans to make sure they meet the requirements of Chapter 102
and conduct field inspections to ensure compliance with state and federal
regulations. Our work helps protect local waterways for the benefit of us all!



Feb. 2020 — This project at left acquired appropriate permits from BCCD and PADEP, but didn't follow the requirements of the approved plans and permits. This stream crossing should have been installed so as to provide safe access across the channel without damaging the watercourse or causing sediment pollution. BCCD is following this case all the way through the enforcement process.

Dec. 2020 — The photo at right shows the importance of routine inspection and maintenance of sediment controls. This sock was initially installed properly but was not maintained. Controls should be cleaned out at specified height so the sediment storage capacity remains functional and the sock doesn't get overtopped..



Chapter 102/NPDES Program

Below is a summary table of BCCD's activities administering the Chapter 102/NPDES Program. Despite operations continuing through COVID-19 related challenges, BCCD actually reviewed more applications and performed more full technical reviews than in 2019.

Unfortunately, these same challenges made it difficult to conduct outreach events because of social distancing restrictions. We look forward to being able to continue our outreach events in full swing in future years.

	Program activity	Activity tallies
	Outreach events	5
	Event participants	133
	Technical assistance contacts	2,828
	News releases	7
	Technical plan reviews	885
	Total project acres submitted	10,278
Т	otal disturbed acres submitted	1,418
(General NPDES permits issued	78
lr	ndividual NPDES permits issued	0
Voti	ces of Termination acknowledged	54
Со	mplaints received and inspected	64
	New project sites inspected	94
	Total inspections conducted	396
	Total program costs	\$362,373

Dirt & Gravel/Low Volume Roads (DGLVR) Program 2020

Cleaner Streams, Better Roads

PA's Dirt Gravel and Low Volume Roads (DGLVR) Program provides local road-owning entities with grant funding for road and environmental improvements on unpaved and low-volume paved roads.

This year, Bucks County received: -\$100,000.00 for Dirt & Gravel roads -\$199,173.00 for Low Volume roads

No new projects were contracted during 2020 – but many 2019 projects were under construction and/or finished up. The biggest project our County funded and worked on was Dogwood Lane in Durham Township. The township decided to convert Dogwood Lane back to a dirt & gravel road after heavy storms washed out the existing culvert in the Summer of 2018. BCCD allocated \$150,000 towards this project to replace the failing structure with a new bottomless arch culvert.

With the help of Trout Unlimited and assistance from the District, the Township has completed all the construction on their own. This helps keeps costs low and have more money available for other projects. With the exception of the driving surface aggregate (DSA) that will be laid in this coming Spring, the project has been completed and most definitely is a better road leading to a cleaner stream!

Photos of the project are on the following page.

Bucks County Conservation District is always looking for more applicants and eligible projects within the County to work towards the program's goal of better roads and cleaner streams. To be eligible for DGLVR program funding, a representative from the local entity applying must attend an environmentally sensitive management training (ESM) once every five years. For more information on the DGLVR program, possible sites to be funded in the future, or the required ESM training, please contact Bucks County Conservation District's Dirt & Gravel/Low Volume Road Administrator Morgan Schuster at mschuster@bucksccd.org.

Dirt & Gravel/Low Volume Roads (DGLVR) Program 2020,

Below are photos of the DGLVR program completed on Dogwood Lane



At left: Dogwood Lane prior to the start of construction – lots of debris and a failing structure that leads over an exceptional value stream, Cooks Creek

At right: Durham Township and representatives from Lane Enterprises, Inc. building the metal bottomless arch pipe in the open streambed





At left: Finishing touches being put on the structure by Durham Township. DSA and final grading will be completed in the Spring of 2021 to finish off the project!

Watershed Programs

Below are highlights of our 2020 watershed program. For more information, contact BCCD's Watershed Specialist, Meghan Rogalus.

Watershed Outreach and Technical Assistance

In 2020, BCCD's Watershed Specialist conducted five outreach events reaching approximately 133 people on topics including environmental stewardship, nonpoint source pollution prevention, invasive species, and lake and pond ecology. Presentations were provided to scout troops and citizen scientists.

BCCD's Watershed Specialist also provided technical assistance to 113 watershed stakeholders throughout 2020. Topics of assistance ranged from addressing general natural resource questions, the benefits of riparian buffers, invasive species management, funding opportunities for projects and regulatory requirements for streambank stabilization projects.

Lake Luxembourg Wetland BMP Project

With funding from USEPA and PADEP Section 319 Nonpoint Source Program, BCCD spent the last few years working with consultant Princeton Hydro to design and permit a regional stormwater wetland best management practice in the 'Conservation Pool' of Lake Luxembourg in Core Creek County Park. Lake Luxembourg's Conservation Pool is the 17-acre area east of Woodbourne Road. When Lake Luxembourg was created as a multi-use reservoir in 1977, it was estimated the Conservation Pool area would act as a settling basin, capturing sediment washing in from the watershed over the next 100 years. Unfortunately, the pool reached capacity within nine years and is now a source of sediment to the main body of the lake.

Lake Luxembourg and Core Creek have regulatory targets to reduce nonpoint source pollution, called Total Maximum Daily Loads (TMDL). Restoring the Conservation Pool by establishing a regional wetland BMP will bring Lake Luxembourg within its targeted reduction for total phosphorus and make significant progress in reducing sediment loading to Lake Luxembourg, Core Creek, and downstream Neshaminy Creek. This large-scale project will generate substantial improvements to water quality and enhance the habitat in this section of the lake, but it also has a large construction budget: approximately 2.1 million dollars.

In 2020, BCCD was awarded the final allotment of grant funding needed to proceed with the project! Grants for this project are from the Commonwealth Finance Authority Watershed Restoration Protection Program, National Fish and Wildlife Foundation Delaware River Conservation Fund, USEPA Section 319 Nonpoint Source Program as well as a \$1M local match from the County of Bucks. We are grateful to all our funders and project partners including the County of Bucks, USDA NRCS, and Neshaminy Creek Watershed Association for supporting this beneficial project. Due to seasonal construction restrictions associated with threatened and endangered species that occupy the project area, BCCD plans to complete project bidding and some initial site preparation in late 2020 and initiate major construction in August 2022.

Poquessing Creek Monitoring Program

Pennsylvania Environmental Council (PEC) contracted with BCCD again in 2020 to continue the Poquessing Creek Monitoring Program. The Poquessing is one of several sub-watersheds within the Upstream Philadelphia cluster of the Delaware River Watershed Initiative (DRWI), a water quality improvement program funded by the William Penn Foundation.

As the Poquessing Monitoring Coordinator, Meghan works with PEC, the Friends of the Poquessing Watershed (FOPW), other Upstream Philadelphia Cluster partners and local volunteers. As with many programs, this monitoring program was a little different in 2020: notably the annual macroinvertebrate sampling and spring water quality sampling were not completed due to the COVID-19 lockdown. Starting in August, Meghan worked with BCCD staff members to return to quarterly collection of stream channel measurements and water quality samples (nutrients, sediment, and chloride) upstream and downstream of locations in the creek where restoration projects have recently been completed or are planned while employing COVID safety protocols. Special thanks to BCCD staff Ashlin Brooks, Chris Cook, and Jason Maurer for their assistance with the water quality monitoring program this year.

In addition to water quality monitoring, Meghan coordinates volunteer 'Streamkeepers' who complete visual assessments at locations along the Poquessing and its tributaries. Combined with the quarterly sampling, these citizen scientists' observations are a valuable way to assess the condition of the entire watershed. The Streamkeepers took a brief hiatus in the spring but have since returned in force to their visual monitoring activities and online training events. We are always looking for more eyes and ears for the Poquessing - please contact Meghan if you are interested in joining the Poquessing Streamkeeper team!



At top, Ashlin and Chris take stream velocity measurements in the Poquessing in November 2020.

At right, Jason and Jim take stream width and depth measurements in February 2020.



Lake Towhee Invasive Water Chestnut Control

From July through mid-August BCCD coordinated a contactless 'Paddle with a Purpose' event to pull invasive water chestnut (*Trapa natans*) from Lake Towhee. The event was a collaborative effort of BCCD, community volunteers, Bucks County Department of Parks and Recreation, Pennsylvania Department of Environmental Protection and Delaware Canal State Park. Kits of contractor grade trash bags, work gloves and water chestnut identification information were provided to all interested volunteers via US mail or drop-off. Considering the close contact involved in the past between BCCD and DCNR staff with volunteers associated with the pre-COVID multi-day event, the revised format allowed the program to safely continue in 2020 while also providing a longer seasonal window to offer volunteers opportunity to self-schedule and maintain momentum on site with this 12th annual invasive plant removal project.

To adjust for missing the in-person engagement associated with the event, BCCD compiled a 4-part video series on water chestnut and management at Lake Towhee and posted to social media and YouTube. We also encouraged volunteers to post photos to their social media accounts for entry into a raffle to update and connect others to this event. Special thanks to BCCD summer intern Baileigh Rosado for hours filming and editing video for that series! The 12-year project progress was also featured in a Pennsylvania Invasive Species Council ArcGIS story map entitled <u>"Pennsylvania Invasive Species Projects."</u>

Based on volunteers' self-reports, 62 volunteers logged a collective 169 hours over the seven-week period, removing approximately 12 cubic yards of water chestnut and/or water chestnut seedpods from the lake by hand. Filled bags were left at a designated spot marked with signage to inform volunteers and park visitors, and BCCD staff visited the site weekly to load the bags into pickup trucks and transport collected material to a heavily wooded and secluded section of the county park to decompose. As with past years, the event was timed prior to seed maturity to mitigate buildup of the seedbank in Lake Towhee and limit downstream spread to Lake Nockamixon, where this plant has also been documented and is being controlled by the efforts of the Bucks County Master Watershed Stewards. Thanks to Ashlin Brooks, Tori Jones Long, Jason Maurer, Rachel Onuska, Michael Rogalus and Sue Seykot for helping transport bags of plant material and seeds to the composting site.



Above, staff from PADEP assist with the chestnut pull (photo credit: Tim Cherry)



Even without the full group 3-day event as in usual years, volunteers were hard at work pulling water chestnut and making it easy for BCCD staff to dispose of plant material safely

Lake Towhee continued

In addition to the ongoing volunteer pull, BCCD continued managing a PADEP Growing Greener Grant awarded in Spring 2018 to expand our water chestnut management efforts in the Dimple (aka locally as Kimples) Creek watershed which contains Lake Towhee. BCCD contracted with Aqua Link, Inc. again in 2020 to chemically control water chestnut (*Trapa natans*) and hydrilla (*Hydrilla verticillata*) within Lake Towhee. Four treatments were completed this season, and thanks to an extension granted by PADEP, another round of treatments is being planned for 2021. With permitting completed in 2019, Aqua Link was able to get an early start this season with the first treatment in April 2020. Two consecutive years of treatment plus the earlier start made a noticeable impact at Lake Towhee. Acres of open water was restored for the first time in over a decade in the upper lake! The Growing Greener project also includes annual monitoring of the presence and density of water chestnut in the watershed. Thanks to Ed Hawkey for assisting with both the pulling and monitoring this year- and congrats again for winning our photo raffle!



At left, all of the bags of water chestnut from the previous page are safely disposed of in an upland location

TreeVitalize Watersheds

BCCD is one of several regional partners administering and providing technical assistance for TreeVitalize Watersheds, which funds riparian buffer restoration and stormwater basin naturalization projects across southeastern PA. In 2020 our local partners funded by TreeVitalize Watersheds met the unique challenges presented by coordinating volunteer events during COVID-19. In total, volunteers and partner organization staff planted 619 trees, 184 shrubs, and 331 herbaceous plants on 7 acres through this program. The \$26,306.68 in grant funding was leveraged with \$22,604.38 in the form of in-kind match, most in the form of 584 hours of volunteer time completing site preparation, project management, and planting day tasks. Our thanks to Pennsylvania Horticultural Society and funders PADEP and Aqua PA as well as the flexibility, persistence, hard work and dedication of our local partners who make these projects happen. This year's grantees were Excel Events, The Highlands Homeowners Association, Milford Township and Watershed Coalition of the Lehigh Valley.

Spotted Lanternfly Control Project

2020 marked the second year of BCCD's participation in the Spotted Lanternfly Control Project funded by USDA and Pennsylvania Department of Agriculture and administered by the State Conservation Commission to counties within the spotted lanternfly (SLF) guarantine zone.

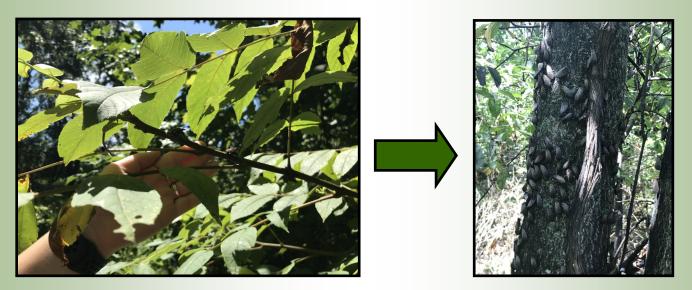
The Spotted Lanternfly originates from China, India, and Vietnam and was first discovered in the U.S. in Berks County, PA in 2014. Since then, it has spread to several neighboring counties and states. Spotted lanternfly is considered an invasive species, meaning it is nonnative, spreads very quickly and has negative impacts to the ecosystem and economy.

Spotted lanternfly does not directly harm humans, but they can cause significant damages to the agriculture industry. They feed by sucking out sap from plants such as grapes hops and fruit trees and excrete a 'honeydew' (sugary water) which attracts wasps and encourages black sooty mold to grow in those areas coated with honeydew. If near an infestation of spotted lanternfly, plant leaves, buildings, vehicles all can become coated with honeydew and develop a coating of black sooty mold.

Through this program BCCD responded to requests for assistance and coordinated with a contractor to complete treatment on two preserved agricultural properties in the county with significant *Ailanthus altissima* (aka Tree of Heaven) populations. Tree of heaven is an invasive tree species and considered a preferred host plant for spotted lanternfly. Combined acreage of the 2 treated farms is 74 acres.

In addition, BCCD hired former intern Ashlin Brooks as a seasonal technician to assist with program outreach. Ashlin contacted municipalities, nature preserves, and other conservation organizations to coordinate distribution of education and outreach materials developed in 2019, and sticky bands and circle traps purchased through the program to catch nymphs and adult spotted lanternfly. Sticky band rolls were cut in half prior to distribution to reduce problems associated with bycatch associated with this control method. The initial plan was to limit distribution to public property but the District received overwhelming response/requests from private landowners and less interest than anticipated from public sites, thus following public distribution effort we expanded distribution of band material to private landowners on first-come, first-served basis.

Circle traps are another method to collect spotted lanternfly nymphs and adults that take advantage of the spotted lanternfly's instinct to climb up trees and have fewer nontarget species impacts. Municipalities, nature centers and other conservation-oriented nonprofits were targeted initially for circle trap distribution as demonstration projects to educate the public, and circle traps were then offered to the public. A contactless circle trap distribution was held at the BCCD office in September 2020. Just over 100 circle traps were distributed, and another distribution effort will be completed in Spring 2021 prior to nymph hatch.



These stage 4 nymphs at left grow to adult spotted lanternflies at right

Agricultural Conservation

The Bucks County Conservation District's (BCCD's) agricultural program had a busy year in 2020! A data analysis for research completed through a SARE grant, lots of conservation designs and construction checks for repairing gullies accelerated by heavy rains of the previous year.

Outreach/Education

BCCD continued its agricultural conservation outreach efforts in 2020. BCCD participated in a regional manure management workshop in partnership with Lehigh, Northampton & Montgomery County Conservation Districts. BCCD's ACT presented manure regulations and equine-related best management practices (BMPs) at Delaware Valley University's Horse Owner's Educational Seminar. BCCD also presented agricultural best management practices and regulations to a soils class at Delaware Valley University. At Penn State Extension's Pesticide Update Meetings, BCCD presented the results from its seasonal high water table and manure stacking experiment.



Program flyer for March 2020 Workshop

Agricultural Conservation

BCCD continued its efforts in conservation planning and implementation. BCCD developed a proposal for DEP's Growing Greener for BMP implementation on two CAO equine farms. It also developed a proposal for USDA's Regional Conservation Partnership Program (RCPP). The proposal was a joint effort with Chester, Montgomery and Berks County Conservation Districts.

In addition to proposal development, BCCD's ACT did design and construction inspections for 3 farms and 20 BMPs.

Act 38 Nutrient Management

BCCD administers Pennsylvania's Act 38 Nutrient Management program. Farms with an annualized animal density of 2,000 lbs per acre or more are classified as Concentrated Animal Operations (CAOs) and are required to have a nutrient management plan. Bucks County has 15 CAOs, all are equine farms. Two of those CAOs got either new nutrient management plans (NMPs) or NMP updates in 2020.

2020 Envirothon Competition

As has been mentioned on several preceding pages, challenges and restrictions related to Covid-19 precautions affected a lot of BCCD's activities in 2020. The Envirothon was another of those programs, in that we were not able to hold an in-person event.

However, thanks to a lot of hard work from PA Envirothon staff, an online challenge option was created for schools and students who wanted to participate, even if it couldn't be done in person.

Congratulations go to participants from Neshaminy High School and Central Bucks High School East, who scored strongly across all subject categories. Students from Neshaminy were in the top 10 scores in most categories, including the first place score in the entire state in the Current Issue and Forestry subjects.

We appreciate all of the time and effort put in by PA Envirothon in providing the online testing option, as well as the commitment from schools, advisors, and students to study and participate even in a significantly altered format. We all look very forward to returning to an in-person event in future years!





The mission of the Bucks County Conservation District is to provide for the wise use, management and development of the county's soil, water and related natural resources. This is accomplished with the cooperation of public agencies, private groups and individuals.