The Back 40

Chester County Conservation District

Spring/Summer 2019

Erosion, Erosion, Everywhere

"What happened to my field?" "I've never had water there before!" Does this sound familiar?

Don't worry; even the best conservation-minded farmers struggle to keep their fields, waterways, and pastures intact during seasons with excessive rain. Spring, summer, and fall brought nearly 70 inches of rain to Chester County in 2018- 22 inches above average. Unfortunately this left farmers wondering how they were going to get field work done, while livestock owners had to sacrifice pastures just to get animals out of the barn for a little while. This caused a lot of muddy pastures and barnyards without active grass growth as we went into winter. As a residual effect of the exceptional amount of rain and runoff, we are seeing a lot of springs and streams popping up where they weren't before. Consequently, this has caused erosion too.

However, it's not just the amount of rain that causes erosion, but also soil composition. Consider how easy it is to wash fresh mud off your vehicle, but once you let it dry, it takes a little more time soaking and scrubbing. The same is true for fields, pastures, and driveways. A wet, saturated soil moves easily with a sudden downpour of rain. A dry, well drained soil with vegetative cover can withstand sudden downpours for a longer duration. Last summer, soils were unable to dry between rains and it was difficult for grasses to grow. Therefore, we're now seeing ditches and gullies in well-grassed waterways, fields, and pastures, where we may have never seen them before. Saturated soil caused by a running spring or wet ground is much more vulnerable to heavy rains than a well-drained and vegetated soil.

Call the Conservation District if you'd like help fixing erosion on your farm. Sometimes the simplest answer is to establish soil cover with grasses or cover crops. However, the answer could also be a little more complicated and we may need to look at the bigger picture (your watershed). Either way, we are here to help!

Initial Evaluation of a Barnyard

In looking to make improvements to a barnyard, an initial inventory and evaluation is done to determine resource concerns and to determine which best management practices can be implemented to address these concerns. Important aspects to look at is manure storage, animal concentration areas, and barnyard runoff.

Adequate manure and waste storage is essential. Upon an inspection of existing structures to see if they are effective and large enough (along with the size and type of management at the farm) different types of manure storage options can be explored. Other wastes such as silage leachate and wash water should be inspected as well to ensure it is being collected properly. The evaluation will include the type, size, and location of proposed waste storage so the farmer can gain a better idea of the potential improvements.

Another component to an evaluation is looking at any animal concentration units that are unprotected. Where animals congregate, such as near feeding or drinking areas, soil erosion can be a problem. An evaluation will help determine where these areas are so a protected heavy use area can be implemented to protect the soil and keep animals happy.

Runoff coming through a barnyard area is also an important thing to note. Different practices can be implemented – roof gutters, waterways and diversions, and drop boxes – in order to divert water from entering barnyard areas, animal concentration areas, and manure storage areas.

If you are having issues with a barnyard and are looking for ideas on improving it or reducing maintenance headaches, give us a call!

Manure Management Workshops

Once again, CCCD conducted Manure Management Workshops for Chester County farmers. The workshops are designed to provide farmers with information regarding regulations and the importance of keeping sediment and nutrients out of our clean water sources. All attendees are given the opportunity to write their plan during the workshop so they can go home with a completed plan. This year, workshops were hosted at the Lower Oxford Township Building and the Honey Brook Township Building.

This year brought a few changes from what is typically done for workshops. This was the first year CCCD offered a two day evening workshop at the Lower Oxford Township Building in an attempt to reach those farmers who cannot make our daytime workshops. This was also the first year that CCCD partnered with the Delaware County Conservation District (DCCD) and offered a workshop at the DCCD office for equine owners and small scale farmers. This workshop was a two-evening workshop and had 13 attendees. Both CCCD and DCCD were pleased with the turnout and hope to conduct another workshop next year!

Conservation Program Updates

The CCCD was recently awarded the **Growing Greener Grant** we applied for late last year. This award of $213,408.00 will be used to fund our Mushroom Farm Resource Conservationist position for the next three years. During this time, staff will be able to write and review MFEMPs (Mushroom Farm Environmental Management Plans), inspect farms with new BMPs/violations, and provide outreach to mushroom growers as well as the public.

The **CCCD Partnership for Chesapeake Bay Water Quality RCPP** — in which the District was awarded $2.5 million for agricultural BMPs — continues to move forward. The final agreement was signed in August of 2018, and we are currently in the process of ranking 22 first-round farmer applications. Projects are expected to start this spring, and additional outreach efforts have been planned in order to generate more applications.

Note: As of January 1st, Paige LaDuca (formerly the Chesapeake Bay Resource Conservationist), has stepped into the Conservation Program Representative ("CPR") position. This position has traditionally served the District in the acquisition and administration of grants for staff and agricultural projects. Paige will continue to be involved with Bay Program operations and RCPP administrative work, as well as exploring new conservation grant opportunities for the District and community.

Agricultural Team Changes

The movement of time continues regardless of what changes in our lives, in our occupations, or on our operations. For instance, cows need to be milked if there is a foot of snow on the ground, mushrooms need to be picked if commodity prices have slipped, and program and agreement goals need to be met if experienced staff has moved on.

Over the past year, the Agricultural Team has lost three experienced staff members. Fortunately, Paige LaDuca and Cori Trice were promoted to new positions within the Conservation District. Correspondingly, Mike Zuk transitioned to the local NRCS office. Each of them still contributes to our shared goal of "conserving soil for clean water," and their work also helps the Agricultural Team meet deliverables associated with our various agreements. However, their new job responsibilities mean that some of their previous projects still need to be accomplished by remaining Ag staff.

For years we have been able to continue to move forward and meet our obligations by developing a strong staff that thrives by working together selflessly to reach our goals. When something needs to get done, there is always someone willing to make sure it happens. This includes helping new employees – Melissa Murdock and Tom Oranzi, who have recently been brought onto the team – adjust and gain experience. The training needed to make sure that we can effectively work with our cooperators is intensive and time consuming. The entire team benefits when we each devote our time to educate new employees. As a team we will continue to invest in our future in order to help our cooperators invest in theirs, and as time moves forward, we will continue to adapt to ensure we get the job done.

My name is Melissa Murdock, and I am proud to be working on the Agricultural Team as a Resource Conservationist. I will be helping out with Chesapeake Bay inspections and coordinating our nutrient management program. I am a recent graduate of West Chester University, graduating this past winter with a degree in geoscience. I am currently continuing my education at Johns Hopkins University, pursuing a master's degree in environmental science and policy. After interning with the CCCD and seeing its positive impact, I knew I wanted to pursue a career in a related field. Never did I think it would land me right back to where I wanted to be to begin with!

Hello, my name is Tom Oranzi and I recently completed my B.S. in wildlife and fisheries science at Penn State University. Growing up exploring natural areas around Chester County instilled in me an appreciation for the outdoors at a young age. Over the past few summers, I have had the opportunity to work, learn, and grow at several non-profit watershed conservation organizations in the county. These experiences expanded my pre-established knowledge, interest, and passion for conserving natural resources and their inhabitants. I am delighted to be able to continue to pursue this field of work as the newest Agricultural Resource Conservationist here at the Chester County Conservation District.

CCCD Administrative Staff Addition…

Hi! I'm Caitlin Betts, and I most recently worked for a Behavioral Health company as part of their Support Staff. In that job and my position before it, I gained a lot of good experience in the admin world that I am looking forward to using within my role at the Conservation District. I grew up in Coatesville so I'm very excited to begin this new journey within an office that serves the place I've grown up. I can't wait to learn and grow with the new challenges and adventures that will come from working here at the District.

The Sound of Running Water

During my early morning routine, I go into the den and feed my fish. I have a sixty gallon aquarium where I keep an African side-necked turtle, a twelve inch Plecostomus (suckermouth catfish), an aggressive rainbow shark minnow, three schooling fish called barbs, and a scrappy feeder fish that was born in our previous tank and now survives his parents. The tank's filtering system shoots the clean water back into the tank with such an impact that the small room is filled with the sound of running water. Until experiencing it, I couldn't have known the degree to which that sound could affect the ambiance in the room.

Throughout my life I have walked along our local streams to have contemplative moments. Now when I sit in my den and close my eyes, I can think back on those instances of important decision making and beauty. With spring at our doorstep, I can't help but be excited to spend more time in nature, and more specifically, to be by the water.

I have a lot of plans for the 2019 growing season. I plan to help cooperators with existing riparian buffers gain a better understanding of what they can do to increase their tree survival, reduce weed pressure, work within program parameters, and make their buffer function how they desire. Any chance I get, I will inform watershed associations and municipalities that TreeVitalize is available to them and is a great resource for tree plantings on protected land. I will also continue to guide current TreeVitalize applicants and grantees through the process. I will inspire landowners to look at stormwater through a new lens. Instead of aiming to convey water off of their properties as directly as possible, I hope to challenge them to slow it down and reduce its impact on their downslope neighbors. I'd like to emphasize that protecting our water is a community-wide decision.

Do you have a stream flowing through your property without trees and shrubs along the banks? If you don't have a stream on your property, are you interested in planting trees to improve local water quality? If either of these applies to you, I'd love to talk with you and explore potential ways we can work together to protect water in our communities. Let's talk – contact Cori Trice at 610-925-4920x110 or ctrice@chesco.org.

Know Before You Dig

As we move into spring construction season, it is a good time to review Pennsylvania's One Call regulations. In the Commonwealth of Pennsylvania, if you are digging with powered equipment the person operating the equipment must perform a One Call notification. It does not matter how deep you are digging or where you are digging. Additionally, state law requires a minimum 3 business day notification, but not more than 10 days prior to the start of excavation. When a One Call is done, utility owners are notified of the planned excavation. They will then review their records and notify the project owner of any potential conflicts. If it is known that utility lines do exist in the proposed excavation site, the utility owner will visit the site three days before the planned excavation to flag out the location of their utility line and notify the project owner of any other requirements or restrictions that may need to be followed prior to the commencement of any excavation. It is also important to note that even when utility lines appear to be flagged and away from the dig site, it is still always important to proceed with any excavation cautiously and know before you dig.

Dirt & Gravel Low Volume Roads Program

The Dirt and Gravel Low Volume Road Program's purpose is to provide funding to municipalities for the improvement and maintenance of unpaved roads, and now paved roads that have traffic volume of 500 cars or less with the goal of protecting water quality.

Below you will find a synopsis of four of our most recently finished projects that are actively improving water quality across the county. Please visit our website at http://www.chesco.org/1992/Dirt-GravelLow-Volume-Road for more detailed information on our ever growing program.

- West Marlborough Township – Runnymede Road: A low volume road project with an immediately adjacent tributary to Doe Run, this project allowed for a new 10' bottomless arch culvert to be installed, replacing a failed culvert. Grant allowance - $202,215.00
- East Marlborough Township – Poplar Tree Road: A low volume road project that will feature a new 8' x 24' culvert and wing walls that will help improve water quality for Red Clay Creek. Grant allowance - $69,500.00
- Franklin Township – Franklin Road: A dirt and gravel road project adjacent to an unnamed tributary of Big Elk Creek. This project features a new road base and ditch outlets, existing ditch improvement, and several stormwater improvements. Grant allowance - $18,572.50
- Franklin Township – Creek Road: A dirt and gravel road project improving water quality for the Middle Branch of White Clay Creek. This maintenance project includes improvements to existing ditches and road base. Grant allowance - $5,460.00

Runnymede Road – West Marlborough Township

Chester County Conservation District Service Fees for Urban Plan Reviews have Changed

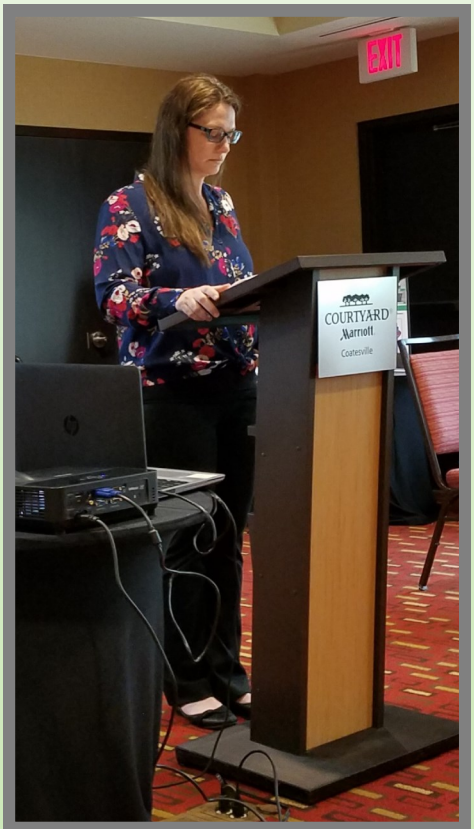
On March 21, 2019, the Chester County District Board adopted new district service fees. These fees went into effect on April 29, 2019. Some of the changes include:

- New Permit Renewal Fee - 25% of the original District Services fee
- Timber Harvest District Services Fee - increase to $500 per Erosion and Sediment Timber Harvest Plan
- Third Review Fee on plan reviews - 25% of the original base fee
- Additional Tier added to the Residential/Industrial/Commercial/Institutional Tier – new tiers include >2-5 and >10-15 tiers and increase the 20+ acres from $200 to $250 per acre
- Added a Medium Ag Tier Fee - $1500 for 1-5 acres
- Municipal Fees will now follow the regular permitting fees (County fees will remain at a reduced rate)
- Minor Amendment Fees - $600 for General NPDES Permits and $1200 for Individual NPDES Permits
- Chester County District Application has been updated and easier to read!

Please see our website at Chesco.org/conservation to download our new Service Fee Forms and Instructions.

ENGINEERS WORKSHOP

Southeast Region Engineers Workshop was held on March 29, 2019 at the Valley Forge Casino Resort. This training was provided by the four southeast districts of Bucks, Chester, Delaware, and Montgomery counties and targeted toward the engineers that provide National Pollutant Discharge Elimination System (NPDES) permits for review to the districts. Robert Traver, Ph.D., PE. D. WRT, F.EWRI, F.ASCE from Villanova University gave a presentation on Advances in Raingarden Design–An Engineered Approach. The 200+ attendees also received a presentation on the "New Managed Release Concept (MRC) Best Management Practice (BMP) by Nathan Crawford, PE, from the PA Department of Environmental Protection. Rational Hydrographs and how it relates to detention basin design was presented by Thomas F. Smith, PE, PLS from Bercek and Smith Engineering, Inc. And Riparian Buffers in a Ch. 102 BMP & Post Construction Stormwater Management Context was presented by Matthew J. Ehrhart, Director of Watershed Restoration at Stroud Water Research Center. These presentations will be accessible on our website as they become available. A big thank-you to the presenters and all those behind the scenes who made this much-awaited training worthwhile.



Shana Stephens, Urban Resource Conservationist, giving a presentation at the Municipal Inspector & Engineers Workshop

MUNICIPAL INSPECTOR & ENGINEERS WORKSHOP

The Municipal Inspector & Engineer's Workshop was held on April 11, 2019 at the Coatesville Marriott Hotel. The topics included the Conservation District's Role in Site Inspections and Compliance of Construction Sites. One topic that was greatly received was called "What's new with the Chapter 102 Program?" Shana Stephens from the Chester County Conservation District took the lead and explained many of the changes that have occurred. Molly Deger, PE, Conservation District Engineer, also took part and had a segment on the District's role with MS4's. Jim Demchak, Urban Resource Conservationist, gave information on the Dirt and Gravel & Low Volume Road Program and how the municipalities can participate. Molly wrapped up the training by covering the wide variety of items that are missed on submissions, applications, plans, and narratives. We want to thank the Dirt and Gravel & Low Volume Road Program for sponsoring this training as we strive to seek voluntary compliance and have better NPDES permit submissions for the future. If you are interested in the Conservation District providing training, please contact Shana Stephens, Urban Team Training Coordinator, at 610-925-4920 x105.

Stormwater BMP Tour

On April 2, CCCD staff led a tour of stormwater BMPs in West Whiteland Township to a group of West Chester University (WCU) students as part of their Stormwater Management course. The tour focused on sites that previously obtained NPDES permits for construction activities and had functioning post construction stormwater management (PCSM) BMPs installed. These BMPs included porous pavement, rain gardens, infiltration berms, water quality structures, forebays, and infiltration basins. In addition, the students learned who the Chester County Conservation District is, the NPDES submission and approval process, and how staff attained their current roles.

West Whiteland Township (as well as several other townships in Chester County) is largely underlain with carbonate geologic formations that make the landscape prone to sinkholes (cavities in the ground that form when rock is capable of being dissolved by surface water or groundwater). Stormwater Management in carbonate regions presents a unique challenge to the task of meeting the PA Code Chapter 102 requirements of managing volume, rate, and water quality. This was a common theme in the sites observed on the tour. Some of the items discussed at each site included:

- ◊ Was infiltration recommended by the geotechnical engineer contracted through the NPDES applicant?
- ◊ Which BMPs were approved, and were additional BMPs included in order to meet the regulations if infiltration was not recommended?
- ◊ What proprietary BMPs, if any, were utilized?
- ◊ What types of maintenance activities are required for the current owner for their PCSM BMPs?

This is the third year that staff has led this tour; past tours included BMPs in Uwchlan, Upper Uwchlan, and East Whiteland townships.

Post Construction Stormwater Cents

You have constructed your project and now it's time to convert or construct your stormwater basin in the upcoming growing season… nice work! As always, you should be following your approved plan for all of the material specifications, dimensions, and elevations, but there are some other items to consider as you make your final grades in the basin. Some considerations include:

- What is the seed mix for the basin and how is it being retained so that it doesn't need to be done again (and again)?
- How much does that seed mix cost?
- Is there an annual seed included in the mix to germinate quickly to hold that fresh new soil in place?
- Are there plantings or plugs proposed in the basin?
- How is the area between the plants to be stabilized so that the plugs aren't ruined by erosion?
- Is the basin to have shredded wood mulch and do you have the correct mulch lined up with your subcontractor?
- How is the basin to be dewatered during establishment?
- How is the basin to be maintained for the first couple of years and then in perpetuity?
- How much is the maintenance going to cost?

These are examples of items to discuss with your plan designer so that you have success as your project transitions to a long-term operation and maintenance schedule. This schedule is critical to the function of your stormwater facility as well as to the cost of it. Far too often we see landowners or property managers mowing bio-retention basins on a weekly or bi-weekly interval. This takes time if you do it yourself or costs money if you are paying someone else. A typical bio-retention mowing schedule prescribes mowing twice per year in the basin bottom - once in the spring and once in the fall after plants have gone to seed. Constantly having a mower on the basin bottom can also lead to compaction of the porous soils that are needed to help soak up, infiltrate, and evapotranspire the stormwater runoff. Minimizing compaction of the bottom and allowing more robust root systems to take hold in the soil also helps to minimize the risk of the stormwater facility failing to operate as it was designed. Otherwise you may have to hire someone to come fix it. So, plan accordingly and mow your basin less, it only makes "cents."

Bio-retention basin that is routinely mowed.

Bio-retention basin naturalizing with infrequent mowing.

Erosion from lack of stabilization measures between plugs.

Spotted Lanternfly Alert

The Spotted Lanternfly, Lycorma delicatula (White), an invasive planthopper, has been discovered in Berks and surrounding counties in Pennsylvania. It is native to China, Bangladesh, Vietnam, and introduced to Japan and Korea where it has become a major pest of grapes. This insect has the potential to greatly impact the grape, hops and logging industries. Early detection is vital for the protection of Pennsylvania businesses and agriculture.

Visit the Penn State Extension's website (https://extension.psu.edu/spotted-lanternfly) for more information. Call 1-888-4BAD-FLY (1-888-422-3359) with questions on spotted lanternfly management or to report a sighting.

Identification

The Spotted Lanternfly adult is approximately 1" long and 1/2" wide at rest. The forewing is grey with black spots and the wings tips are reticulated black blocks outlined in grey. The hind wings have contrasting patches of red and black with a white band. The legs and head are black; the abdomen is yellow with broad black bands. Immature stages are black with white spots, and develop red patches as they grow.

Signs & Symptoms

The spotted lanternfly feeds on many types of plants but strongly prefers Tree of Heaven. Attacked trees will develop weeping wounds. These wounds will leave a greyish or black trail along the trunk. This sap will attract other insects to feed, notably wasps and ants. In late fall, adults will lay egg masses on host trees and nearby smooth surfaces like stone, outdoor furniture, vehicles, and structures. Newly laid egg masses have a grey mud-like covering which can take on a dry cracked appearance over time. Old egg masses appear as rows of 30-50 brownish seed-like deposits in 4-7 columns on the trunk, roughly an inch long.

What To Do

If you see egg masses, scrape them off, double bag them and throw them away. You can also place the eggs into alcohol or hand sanitizer to kill them. Please report sightings of egg masses, nymphs, or adult spotted lanternfly at https://extension.psu.edu/have-you-seen-a-spotted-lanternfly OR call the Automated Invasive Species Report Line at 1-888-4BAD-FLY and leave a message detailing your sighting and contact information.

Collect a specimen: Specimens of any life stage can be turned in to the Pennsylvania Department of Agriculture's Entomology lab for verification.

Information from www.agriculture.pa.gov

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