



Conservation Matters

Happy fall!

Summer always seems to go so fast. Fortunately, fall presents a beautiful portrait that helps us take in the cooler, shorter days. Back to school also brings new opportunities for kids in the upcoming school year.

While our project season is calming down, there is always unfinished business to take care of. We are happy to have a new Agricultural Conservation Technician on staff (see page 2 for more information). She has already been busy working with the farming community on assisting with manure management and ag erosion and sedimentation plans. The rest of our staff are also busy handling matters that have to take a back seat during project season. There is never a shortage of things to do!

As you attend to your daily to-do's, I hope you will take time to enjoy the tremendous display of foliage our area has to offer this time of year.

Have a happy and safe fall!

Sincerely,

Judy Becker

Chesapeake Bay Inspections Update

Letters were sent out the beginning of September to farms that DEP will be visiting to perform compliance inspections. As we have stated in the past, the focus will be non-CAOs and non-CAFOs. The reason for this is CAOs and CAFOs are already inspected annually. Farmers will be asked if they have a Manure Management Plan, an Agricultural Erosion and Sediment Plan (or updated Conservation Plan). They will also be looking for water quality issues.

You can find copies of the letter that was sent out, as well as the inspection report that will be used by visiting the following website: <http://www.dep.pa.gov/Business/Water/Pages/Chesapeake-Bay-Office.aspx>.

If you are concerned about whether or not you are in compliance and need assistance with a manure management plan and/or agricultural erosion and sedimentation plan, please contact Bryanna Kenno at our office at 570-495-4665 x304.



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Our Programs: Erosion and Sedimentation Control, National Pollution Discharge Elimination System (NPDES), Dam Safety and Waterway Management, Environmental Education, Nutrient Management, Chesapeake Bay Program, Dirt & Gravel Roads, Agricultural Land Preservation, Watershed Protection and Education

Visit www.nccdpa.org for more information. We are also on Facebook at www.facebook.com/nccdpa.

Meet our new Agricultural Conservation Technician

by Bryanna Kenno



Hello! My name is Bryanna Kenno, and I am the new agricultural conservation technician with the Northumberland County Conservation District. I began working with the district in mid-July. I am a 2011 graduate of Upper Dauphin Area High School and a 2015 graduate of Penn State University. I have a Bachelor of Science degree in Agricultural and Extension Education with three minors: wildlife and fisheries science, international agriculture, and environmental inquiry. I moved to Green Bay, Wisconsin to teach high school agriculture for one year before deciding to move back to Pennsylvania and pursue another career option in the agricultural industry.

While I did not grow up on a farm, I grew up in a rural community and have experience working on farms. I was a member of FFA throughout high school, and it was during this time that I developed a love and passion of agriculture; specifically natural resource management. I knew the right career for me would encompass both agriculture and education. Because of this, I am very excited for the opportunity to work as Northumberland County's ag conservation technician!

I have learned a great deal of information in my short time working for the district. My courses for nutrient management certification are underway, and I am anxious to officially become certified and begin working with farmers in Northumberland County! One thing I love about this job is the versatility; no two days are quite the same! I enjoy traveling the county, meeting new individuals in the industry, and collaborating with other employees on large projects. I have a great support system and am truly thankful for this opportunity to serve Northumberland County. Please do not hesitate to contact me for any assistance regarding manure management, nutrient management, soil testing, or any other farm assistance you may need!

Enjoy the cooler weather, and I look forward to working with you!

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Agricultural Land Preservation Program Open Enrollment

by: Judy Becker

The Northumberland County Agricultural Land Preservation Board will be holding open enrollment for new applications during the month of November 2016. Applications will be available starting October 24th. You may access an application on our website, or you may contact our office at 570-495-4665 x305.

The following are the minimum requirements to be eligible for the program:

1. The farm must be located in an Ag Security area that is 500 acres or more. If you are unsure if you are in an Ag Security Area, contact your municipality.
2. The farm must be at least 50 contiguous acres in size, or at least 10 acres in size if adjacent to another qualified conservation easement.
3. 50% of the farm's soils must be available for agricultural production and in land capability classes I-IV, as defined by USDA-NRCS.
4. Must contain at least 50% of land in harvested cropland, pasture, or grazing. (Land in CREP is not eligible).
5. Total farm gross receipts must equal \$25,000 or more annually.

BECOMING A CONSERVATION AMBASSADOR

by: Jacob Wolfe, Line Mountain High School Senior

My name is Jacob Wolfe. I am a senior at Line Mountain High School located in Herndon. This past July, I attended the 2016 Brook Trout "Brookies" Wildlife Leadership Academy (WLA). The WLA is sponsored by the Pennsylvania Institute for Conservation Education (PICE). PICE sponsored five different field schools this summer. The field schools were the Brookies (brook trout), the Ursids (black bear), the Bucktails (white tail deer), the Drummers (ruffed grouse) and the Bass. The Brookies field school was held in rural Clinton County at the rustic Sieg Conference Center.



Jacob, standing by a display he created during the WLA that will be used for outreach in schools

Brookies academy was five days of intensive, fast-paced learning and activities. I learned about the ecology and anatomy of the brook trout. Instructors came in from around the commonwealth to teach "brookies" about water quality, macroinvertebrates, the damage caused by abandoned mines and pollution, electrofishing, watersheds, and photography. As a "Brookie," I took a college level course in a five day time frame. (I will be applying for three credits from Cedar Crest College).

Twenty four students (Brookies) from all over the commonwealth attended the field school along the Fishing Creek. The learning experience was indoors in the classroom as well as outdoors in many field and team-building exercises. My field experiences as a Brookie included trout dissection, collection and identification of macroinvertebrates, fly tying, and wildlife observation. Our

excursions away from the school were to two fish hatcheries, a farm to discuss the importance of conservation, and a native trout stream for observation.

I applied to the "Brookies" field school because of my passion for learning, conservation, and freshwater fish. My career goal is to become a Fisheries Biologist working with freshwater fish and their habitats. My absolute favorite part of the field school was the collection and identification of macroinvertebrates. I enjoyed this activity because I learned the importance of preservation of a stream and all of its sub-species and how conservation can result in a better trout stream.

The main idea I retained from the school is the importance of conservation of resources and the need to educate future generations. Every student, of any field school, is required to complete outreach in their community for several months after graduation from the school. I am required to perform outreach in the areas of education, media, service, art, and outdoor mentorship. My outreach activities since field school have included a macroinvertebrate identification and education lesson for children. I have also helped the Northumberland County Conservation District with installation of fish habitat structures. In the media category, I was featured in a local newspaper article explaining all about the WLA and my experience.



A lesson in fly fishing



Jacob and his fellow "Brookies." Jacob is in the back row, on the right.

Why is conservation so important to me? Streams are a nonrenewable resource. Once the stream quality is gone due to loss of habitat and pollution, streams cannot recover without major conservation. It is important to teach and implement conservation practices now rather than react to problems later. What I was taught at Brookies will stay with me for the rest of my life. When I see a stream, creek, or river that looks in need of conservation, I feel the need to step in and help clean the area. As I walk through Penn's Woods and fish along the streams and rivers, I realize that it is up to me and my generation to be the next group of conservation ambassadors.

For information on how to "Nominate A Teen" to become a Conservation Ambassador, please contact the Wildlife Leadership Academy at www.piceweb.org.

Big Changes Along Brush Valley Road

by Jaci Harner, Watershed Specialist

Restoration.... The act or process of returning something to its original condition by repairing it, cleaning it, or rebuilding it.

Conservation..... Planned management of something (as natural resources or historic places) to prevent destruction, damage, waste, or neglect

When we do a stream improvement project we want the end result to accomplish both restoration and conservation. The stream will function normally if we return it to its original state, but we also have to manage the stream to prevent as much future damage and erosion as possible.

Over time, we have learned to observe stable stream sites in nature to understand how to properly implement a stream improvement project. Mother Nature is a great teacher. Stable stream sites often have many of the following components:

- vegetation along the banks and adjacent land area of the stream
- connection to the floodplain
- shade from tree canopies
- gravel or cobble stream bottom
- variety of aquatic habitats
- meanders or curves throughout the stream

In August, we tackled a large project along Brush Valley Road, just south of Sunbury, to return it to a more natural state by adding some of the previously stated components. This is an unnamed tributary that drains directly into the Susquehanna River. Stream improvement work had been completed upstream on the Faus Farm in 2014. It made sense to continue working downstream to improve stream corridor conditions as they approached the Susquehanna River.

Some portions of the stream have a mature riparian buffer that grows between crop field/meadow and the stream. Other sections of the stream are used as pasture for an active cow/calf operation. As we walked the stream to design the project, we observed a variety of issues: erosion jeopardizing a local roadway, 3' – 7' vertical streambanks, a large debris jam, livestock exposure, and gravel bars. We knew if the site was to be properly restored, all aspects would need to be addressed.

The project was designed to restore 4,342 linear feet of stream and includes the following components:

- 35 multi-log vane deflectors
- 19 single log vane deflectors
- 7 log cross vanes
- 6 stone deflectors
- 5 modified muddsill cribs
- 3 toe logs
- Gravel bar removal
- Bank regrading
- Stream bank fencing (to keep livestock out of stream)
- 1 stabilized livestock walkway
- 1 stabilized livestock crossing

Adding fish habitat structures help stabilize streambanks to reduce erosion and increases the quantity and quality of fish habitat. Removing gravel bars will remove obstructions from the stream that were directing water flow toward a major highway. Regrading banks will reconnect the stream channel with the floodplain; this allows high flows to escape the

Big Changes, *continued*

stream channel and spread out across a wider area. The water's energy is reduced and causes less damage. Streambank fencing limits livestock access to the stream, reducing animal pressure on the streambanks allows natural vegetation to grow and limits erosion activity. Finally, the stabilized livestock walkway and crossing allow animals to utilize the pasture and stream for food and water purposes while also limiting environmental degradation.



Before: Severe erosion on outside of meander



After: Graded, stabilized streambank on outside of meander



Before: Active erosion along streambank

“Adding fish habitat structures help stabilize streambanks to reduce erosion and increases the quantity and quality of fish habitat. Removing gravel bars will remove obstructions from the stream that were directing water flow toward a major highway.”



After: Multi-log deflectors and toe logs protect streambank

Stay up to date on our events by
visiting www.nccdpa.org or
www.facebook.com/nccdpa.

Big Changes, *continued*



Before: Unstabilized livestock crossing



After: Stable livestock crossing



Before: Stream was eroding toward major roadway



Before: Stream was eroding toward major roadway



After: Vertical bank was regraded to reduce erosion at toe of bank and restore functionality during high waters

To watch a brief video highlighting this project and the partnerships involved, visit PA DEP's Youtube page via this link: <https://www.youtube.com/watch?v=h6gtE8-6lZk>.

(continued on next page)

Big Changes, *continued*



Corner fence post was about to fall into stream channel



Before: Unstable, vertical banks along outside of meander

After: A modified mudsill with regraded banks stabilize this long, outside meander



After: trees are stabilized with a modified mudsill and rock



Before: exposed tree roots along the inside of a meander



(continued on next page)

Big Changes, *continued*



All bare soil areas were covered with hydro seed

All project areas were hydro seeded with a grass and pollinator seed mix as final grading was completed. It is important to cover exposed areas of soil with seed and mulch or hydro seed to reduce the risk of erosion and sedimentation during the construction phase. Since this was such a large project site, PA Fish and Boat Commission used a hydro seeder to complete this task in an efficient manner. A pollinator mix was added to provide a healthy food source for native bees, butterflies, and humming birds.

This site included 2 different landowners; Cory Fasold and Kevin Raker. Both gentlemen were highly cooperative throughout the entire process. They opened their properties and allowed us to stage large piles of rocks and logs, stockpile gravel bar and bank material and drive large pieces of equipment all over. Neither one complained about the numerous phone calls I made to them to review details about the project. Despite the temporary inconveniences, they both were supportive of our overall goals and recognized the environmental benefits to be gained. We are very grateful to both landowners for their cooperation, patience, and environmental stewardship.

Not all project elements were completed in August; we head back in October to finish. As this restoration project comes to an end, it is important to acknowledge streams are dynamic systems, which means they are ever-changing and reacting to other processes, both natural and man-made. We do our best to implement environmental improvements to reduce sediment and nutrient inputs to our local streams and river, but also realize we can never totally control Mother Nature. We can only do our best to learn from properly functioning natural settings, and work to achieve an effective balance between meeting the needs of society, while also conserving our environment.

I look forward to observing this site over the coming months to watch the continued transformation which we have initiated. Many people will speed by the site on their way to work or the mall and have no idea of the benefits we have implemented. But I will quietly sit back knowing full well the tons of sediment we have prevented from flowing into the Susquehanna River, smile, and prepare to do it all over again next year at a new site.

You may contact us at any time by email or phone to be added to, or removed from, our mailing list. Simply call 570-495-4665 or email info@nccdpa.org. If you would rather "Go Green," email us with the words "electronic newsletter" in the subject line and we will send our newsletter to you electronically.

UGI Gas Pipeline

by: Michael McCleary, Erosion and Sediment Technician

UGI is currently constructing a 20" diameter pipeline to carry natural gas from an existing pipeline in Lycoming County to feed the Hummel Station power plant in Snyder County. This pipeline will cross through Lycoming, Montour, Northumberland, Union and Snyder counties. Work began in July in Lycoming County and has been steadily moving south. According to Casey Monagan of UGI, the pipeline has been placed and the ground surface restored in most of Lycoming County. The construction is proceeding through the five counties with marking the right-of-way; clearing trees, clearing and grubbing the entire right-of-way, removing and stockpiling topsoil, digging the trench, laying out the pipe sections, welding the pipe, laying the pipe in the trench, backfilling the trench, and returning the surface to its original condition. Large streams and major roads are being crossed by a method call HDD or Horizontal Directional Drilling. In Northumberland County, this included the Chillisquaque Creek and SR 45 and the Susquehanna River and SR 147. The boring under the Chillisquaque Creek was done 47 feet below the stream bed and is complete. The boring under the Susquehanna River is still ongoing at a depth of 80± feet and is approximately 75% complete. In approximately six weeks they have drilled over 4,200 feet horizontally from the west bank of the Susquehanna River into Point Township in Northumberland County. As of this writing they still have to cross under the railroad tracks and SR 0147 and will come out of the ground several hundred feet east of SR 147.



Right-of-Way with topsoil stripped and stockpiled along the side



Right-of-way from Snyder Road in East Chillisquaque Township looking at Montour Ridge with beginning of trenching

The Lycoming, Montour, Northumberland, Snyder and Union County Conservation Districts have been actively monitoring the progress of this project to ensure that best management practices are employed and minimize any impacts the project will have on the environment.

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The District held a Kayak Trip on the Susquehanna River for legislators and media on August 30th. Jim Charles, retired river guide from the Isle of Que, Selinsgrove and Jacob Bennett of the Fish and Boat Commission provided assistance for the event.

The Northern Section of the Central Susquehanna Valley Thruway Continues

by: Michael McCleary, Erosion and Sediment Technician

Phase I of the Central Susquehanna Valley Thruway (CSVT) covers the proposed bridge over the Susquehanna River and the approaches to the bridge from Ridge Road in Point Township, Northumberland County to SR 15 on the top of the mountain south of Winfield in Union Township, Union County. The earth moving required for this phase of the project began in December of 2015 and is nearly complete. The following pictures show the progress made in the last 3 months. The rectangular feature in the background of picture two is the tops of the large tree seen in the background of picture one. The high ground in front of this tree is an off ramp at or near finished grade. The southbound and northbound lanes of the CSVT are the next level below the off ramp. In Phase two these lanes will be brought up to an elevation above the off ramp, and the southbound and northbound lanes of the CSVT will be constructed northward over existing Ridge Road which will be relocated to a point where an interchange with Ridge Road will be constructed.



#1 Access Road From Ridge Rd. 6/16/2016



#2 Access Road From Ridge Rd. 9/20/2016

Earthwork for the bridge abutment has also been nearly completed. Picture four shows the final grade for the northern abutment of the bridge which will cross the Susquehanna River. This earth work has been placed in quarantine for 6 months. Sensors have been placed in the ground and extend to bedrock. These sensors will detect any shift in the embankment which must set for six months with no movement to show that it is stable enough to support the bridge. The southern bridge abutment in Union County is much higher and will be in quarantine for one year with no movement before the bridge can be constructed on it.



#3 Earthwork for North Bridge Abutment



#4 Earthwork for Northern Approach

CSVT, continued

Phase two of the CSVT will include the remaining earthwork required to construct the roadway from Ridge Road north to the existing four lane portion of SR 147. This will include the relocation of Ridge Road and two side roads, an interchange at relocated Ridge Road, approximately 700 linear feet of relocated stream under the thru-way, five structures, and three miles of additional road through Point Township into West Chillisquaque Township. Approximately 2.5 million cubic yards of earthwork will be required for this phase of construction.



#5 View of location of Ridge Road Interchange from top of off ramp

Ridge Road will be relocated from the bottom of Picture five to approximately the location of the clump of trees near the middle of the picture. The CSVT will cross over relocation Ridge Road, and an inter-change will be built. Relocated Ridge Road will terminate at SR 147 in front of UGI's maintenance and office building. Phase two will begin in late September or early October of 2016.

Although earth moving required for Phase one is coming to an end, the construction of the river bridge is just beginning. A causeway has been constructed from the west shore of the river to the west shore of an island in the middle of the river. Contractors are currently installing coffer dams and digging pits to install piers for the bridge.



#6 Stone Causeway across western half of river



#7 Steel Cofferdams for piers on causeway and approach

The Northumberland, Snyder and Union County Conservation Districts have been actively monitoring the progress of this project to ensure that best management practices are employed and minimize any impacts the project will have on the environment.



On Thursday, September 8th, the NCCD held our annual Twilight Meeting at the Long Center for Environmental Stewardship and Education outside of Sunbury. Approximately 90 individuals were in attendance. Attendees were served a delicious dinner from Chestnut Street Deli and two core and two category credits were available.

Northumberland County
Conservation District
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Website: www.nccdpa.org



Northumberland County Conservation District

The NCCD, formed in 1943 under the Conservation District Law, is a subdivision of state government and is one of 66 Conservation Districts throughout the state of Pennsylvania. The purpose of the Conservation District is to promote protection, maintenance, improvement, and wise use of the land, water, and other natural resources.

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Jaci Harner: Watershed Specialist, Nutrient Management Technician
Michael McCleary: Erosion & Sediment Technician, Dirt & Gravel Roads
Bryanna Kenno: Agricultural Conservation Technician

NCCD Board of Directors Upcoming Meetings:
October 6th, November 3rd at 7:00pm, and December 1st at 12:30pm
all held at the NCCD EE Center