



Conservation Matters



Winter plans; spring moves...

After what seemed like a very long winter, spring is finally here. The weather may be questionable, but soon enough we will be enjoying the festive display spring puts on every year.

We spend a lot of time during the winter months planning our spring, summer and fall. Once April hits, we start moving on those plans. We have a number of agriculture; streambank restoration; and dirt, gravel and low volume road projects taking place throughout the county.

I have also included the District's annual report in this edition. Please take the time to review the work completed in Northumberland County during 2017. You will see it was a busy and exciting year for us!

I hope you have the opportunity to enjoy the upcoming spring months. You may see us out and about. Enjoy the outdoors, and stay safe!

Sincerely,

Judy Becker

Tree Sale Update

By: Shirley Snyder, Administrative Assistant



Thank you to all who ordered from our 2018 Tree Seedling Sale!

In case you missed ordering this year, be sure to stop by on our pick up days: Wednesday, April 18 and Thursday, April 19 from 7:00 am until 7:00 pm both days. We will be at the Rockefeller Township building (538 Seven Points Road, Sunbury). This is located off of Route 890 outside of Sunbury.

We always have a good selection of extras for sale, but it's first come, first serve, and they always go fast!

Also, make sure you are on our tree sale mailing list. Contact our office at 570 -495-4665 or email ssnyder@nccdpa.org to be added. And don't forget to stop by and see us on April 18th and 19th!

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"Conservation Matters" is a quarterly newsletter published by the Northumberland County Conservation District, Sunbury.

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, Mosquito-borne Disease Control

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

New Agricultural Conservation Technician

By: **Ryan Cherwinski, Agricultural Conservation Technician**

Hi! My name is Ryan Cherwinski, and I am the new Agricultural Conservation Technician with Northumberland County Conservation District. As I am writing this, it is my first week on the job, and I can't wait to meet and work with the great people of this county. I am a 2013 graduate of Southern Columbia and more recently a 2017 graduate from Bloomsburg University. I have a Bachelor's Degree in Environmental Geographical and Geological Sciences and a Minor in Spatial Analysis.

I grew up enjoying the outdoors all over Pennsylvania, and while I didn't grow up on a farm, I always found myself lending a hand on one. It was through these recreational activities that I found my passion for conservation and strived to make a career of it. I knew that I wanted to preserve the many resources I enjoyed as a kid, and still enjoy, for future generations to come.

After interning with the District during the summer of 2017, I hoped to have the opportunity to return and continue to learn from and work with a wonderful team. One thing I learned from that experience is that each day has something different in store. Now that I am back with Northumberland County, I can't wait to get up to speed and get involved.

Please do not hesitate to contact me for any assistance you may need on your farm. I can be reached at 570-495-4665 ext. 304 or at rcherwinski@nccdpa.org.



The Atlantic Sunrise 42" Diameter Gas Transmission Line

By: **Michael McCleary, Erosion and Sediment Technician**

The Atlantic Sunrise Gas Pipeline begins at an existing pipeline in Susquehanna County and passes through Wyoming, Luzerne and Columbia Counties before entering Northumberland County. After a 10 mile sojourn through Ralpho, Coal, and East Cameron Townships, the pipeline continues on its way into Schuylkill County. From there it travels through Lebanon County and into Lancaster County where it connects with another existing pipeline. The purpose of this line is to carry natural gas from the Marcellus Shale drilling fields to markets and shipping points on the eastern seaboard.

This project is for the construction of a 32" pipeline from Susquehanna County to a point in the northern end of Columbia County where it is expanded to 42" in diameter for the rest of its length.

In November 2017 crews began clearing and grubbing the right-of-way. This entails the removal of all vegetation and the installation of environmental best management practices.

In January and February pipe was positioned on the right-of-way, placed on stands and welded together next to the trenching location.

Trenching has recently begun over the mountain tops, and it appears the pipes will be placed in the trenches hanging down both sides of the mountains. This method will keep the pipe balanced and prevent it from slipping down the slope.

View looking south from Reading Turnpike in Ralpho Township. Pipeline is ascending Little Mountain. The first picture shows pipe hanging over top of mountain waiting for insertion in trench. The second picture shows the trench that has been dug to the left of the pipe. The pipe is covered with snow and not as easy to see.



Picture taken February 27, 2018



Picture taken March 12, 2018

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.

Kids and Trout

By: Ted Carodiskey, NCCD Associate Director and Secretary of the Little Shamokin Creek Watershed Association

The mission of the Little Shamokin Creek Watershed Association, a group affiliated with the NCCD, is to promote stewardship that will conserve, protect, assess, enhance, utilize, and restore the natural resources of the Little Shamokin Creek Watershed. The watershed group has partnered with streamside landowners to create an area of the creek where youth can fish for trout without the pressure associated with older fishermen. The watershed group's contribution to this activity is to advise the landowners, secure permits from the PA Fish and Boat Commission, and place appropriate signage to make the public aware of this regulated area. Our largest contribution is to provide a large number of additional trout to create a better fishing experience for the youth.

At the request of the landowners Sonny Comfort, Jeff Pontius, Ric Starr, and others, the PA Fish and Boat Commission has established a "SPECIAL REGULATIONS, CHILDREN ONLY" fishing area on Little Shamokin Creek. This regulation makes the area available to fishing exclusively for children 12 years of age and younger and will be in effect **April 7 thru May 31, 2018**. April 7 is the mentored youth fishing day on the stream; **fishing is allowed for ages 12 or younger 8:00 am TILL 7:00 pm ONLY**. There is a **2 trout maximum limit for all youth**. Per PA Fish and Boat Commission regulations, adults are not allowed to fish or kill any trout on this mentored youth day. No fishing is allowed from April 7 at 7:00 PM until April 14 at 8:00 AM which is the opening day for youth fishing trout on these waters. After May 31, 2018, this area will be open to fishing for all ages.




The area included is: **THE TRANSMISSION LINE CROSSING UPSTREAM OF THE INTERSECTION OF COMFORT RD (T-538) AND MILLER RD (T-479): Lat: 40.824553, Long: -76.751857, downstream to the BRIDGE ON COMFORT RD.: Lat: 40.829653, Long: -76.750070**. Signs have been placed at this area to inform the public of this action and will be closely monitored by PA Fish and Boat Commission enforcement officers and others.


Boat Commission enforcement officers and others.

The regulation stipulates that any adult who assists a child (12 years of age and under) by casting or retrieving a fishing line or fishing rod is NOT required to possess a valid fishing license provided that the child remains within arms' reach of the assisting adult and is actively involved in the fishing activity. An adult may assist a child by baiting hooks, removing fish from the line, netting fish, and preparing the fishing rod for use. Adults MAY NOT "set the hook" for a child.


To view pictures of this activity, which is one of our most rewarding, visit our website: <http://www.littleshamokincreek-watershed.org/youthonly.html>.







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Odor Management Regulations in Pennsylvania

(Act 38 of 2005)



When new or existing Concentrated Animal Operations (CAOs) or Concentrated Animal Feeding Operations (CAFOs) are planning to construct new or expand existing manure storage or animal housing facilities, they are required to develop and implement an Odor Management Plan (OMP) for those new facilities. ONLY the manure storage or animal housing facilities with new construction activities are regulated facilities for the purposes of the Odor Management Act.

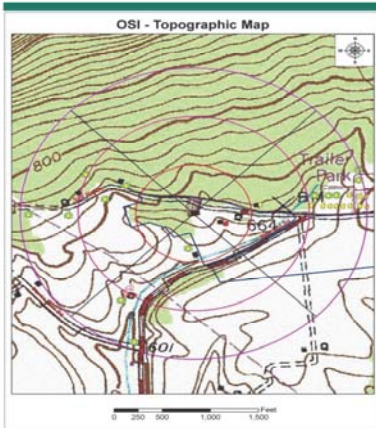
The odor regulations do not apply to existing facilities.
The odor regulations do not address the land application of manure.

What is an Odor Management Plan?

An OMP is a written, site-specific plan that assesses the potential odor impacts from animal housing facilities and manure storage facilities. The Plan identifies practices to be implemented to manage the impact of odors generated from these facilities. Odor management plans are not required to eliminate odors, they only need to manage the offsite impacts. The PA statute recognizes the impracticality of completely eliminating odors associated with agricultural operations, as well as the evolving science of odor management.



Farms regulated by this statute must have an approved plan prior to construction of the new or expanded facilities, and any required odor-reducing practices must be fully implemented prior to commencing use of the new or expanded animal housing or manure storage facilities.



Odor management specialists use maps and on-site visits to determine the potential impact to surrounding residences and businesses. The score will determine the degree of odor management practices a farmer must utilize.

OMPs include:

- 1) An evaluation and identification of the *potential* impacts must be conducted. This evaluation is typically done using the authorized Odor Site Index (OSI). The OSI will identify if the proposed structure(s) will have a
 - a. "low" (score less than 50)
 - b. "medium" (score 50-99) or
 - c. "high" (score 100 or greater) potential for odor impacts.
- 2) If the evaluation identified a "low" potential, there are Level I BMPs that each farm must follow.
 - a. Reduce dust and feed accumulation in pens, aisles and on animals.
 - b. Manage ventilation to provide sufficient fresh airflow throughout the facility, keeping animals and facility surfaces clean and dry.
 - c. Manage manure to minimize damp, exposed manure that contributes to odor generation.
 - d. Remove mortalities daily and manage appropriately.
 - e. Match feed nutrients to animal nutrient requirements to avoid excess nutrient excretion.
 - f. Manage manure storage facility to reduce exposed surface area and off-site odor transfer.

DIVERSE SPECIES COVER CROP INCENTIVE PROGRAM

The NCCD (in coordination with Columbia and Montour counties) are offering a Diverse Cover Crop Incentive program. The goal of the program is to demonstrate the successful use of cover crops as a means to improve soil health on local farms while reducing production costs and improving water quality and infiltration. Soil health will be improved through a systems approach including No-Till and diverse species cover cropping. For more information on this program, please contact Ryan Cherwinski at 570-495-4665 x304.

Erosion Control

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Keith Weaver
(570) 523-9000
Fax - 570-521-6640
kweaver@af0.net

OMPs include:

- 3) If the evaluation identified a “medium” potential, the Level I BMPs must be implemented and maintenance of the BMPs must be documented.
- 4) If there is a “high” potential, the operator must implement Level I and Level II Odor BMPs to manage the impacts. Level II Odor BMPs are additional, specialized Odor BMPs that provide additional strategies for odor management. The plan writer in conjunction with the operator must determine which individual Level II Odor BMP(s) to install and operate based on those which are expected to be effective and feasible from a practical and economic perspective. The State Conservation Commission (SCC) has issued an Odor Management Guidance document listing Odor BMPs consistent with this approach. The SCC also provides a PA Odor BMP Reference List which provides detailed information on specific Odor BMPs.



Covered manure storage on a poultry farm. The odor management regulations addressed animal housing and manure storage facilities but does not include land application of manure.

Act 38 Odor Management Plan - Odor Site Index

Operator Name		
Planner Name		
Type of Operation		
Voluntary Existing AEUs		
Proposed AEUs		
Previously Approved AEUs		
AEUs Covered by OMP		
Evaluation Distance		
Part A: Odor Source Factors		OSI Score
Facility Size Covered by OMP		
Site Livestock History		
Manure Handling System		
Part B: Site Land Use		
Ag Security Zone		
Ag Zoning		
Preserved Farm		
Part C: Surrounding Land Use		
Other Livestock >8 AEU in evaluation distance		
Distance to Nearest Property Line		
If nearest property is <300', is it preserved farmland		
Neighboring Homes		
Public Use Facilities		
Species Adjustment Factor		
Final OSI Score		

Example of part of the Odor Site Index used to determine potential impacts surrounding the proposed construction or expansion.



Karl Dymond
Odor Management Program Coordinator
PDA – Region 3
Route 925, PO Box C
Tunkhannock, Pa 18657
(570) 836-2181, ext. 120

NOTES:

- The statewide odor management regulations preempt more stringent local regulations or ordinances on agricultural odors. They do not preempt the statewide Nutrient Management Program criteria.
- Odor Management Plans must be written by a certified Odor Management Specialist. The PA Department of Agriculture administers the Odor Management Specialist Certification program.
- OMPs must be submitted for review and approval to the State Conservation Commission.
- Non-CAO and non-CAFO operations may volunteer to develop and implement OMPs.
- Odor Management Plan approval is needed before construction activities can begin.
- *For more information, refer to:*
<http://www.agriculture.pa.gov/Protect/StateConservationCommission/OdorManagementProgram/Pages/default.aspx>



CENTRAL SUSQUEHANNA THRUWAY UPDATE

by: Michael McCleary, Erosion and Sediment Technician

THE CENTRAL SUSQUEHANNA THRUWAY PROJECT CONTINUES:

The piers for the bridge over the eastern half of the Susquehanna River are at various stages of construction.



The footer has been poured and reinforcement bars are being installed to begin pouring concrete for pier #1 near the bottom of the slope for the approach to the southern abutment.

Concrete is being poured into forms to create pier #2 in the middle of this picture.

Pier #3 in the forefront is waiting for the forms to be installed that will be used to create the buttresses which will support the bridge deck.

Seven of eight deck beams have been placed on pier #4 and extended to pier #5. Piers #6 and #7 are ready for deck beams to be placed on them. Pier #8 will be ready as soon as the forms are removed from the buttress structure on top of it.

The causeway will soon be extended to facilitate construction of pier #9 just east of the small island in the center of the river.

The forms for the northern abutment can be seen in the background.



When the causeway has been extended, a pit will be dug to bedrock and these forms will be placed for the construction of a coffer dam. Once the cofferdam is complete, the footer, plinth and pier will be constructed. If all goes well, the bridge superstructure on the western side of the river

will be complete, and the coffer dam will be moved to the eastern side of the river in June or July of this year. Then the bridge will continue its march across the Susquehanna to the northern abutment.



The forms are almost complete and ready to receive concrete to make the northern abutment. This picture was taken east of the northern abutment looking west at the pier construction on the western side of the river.



(continued on next page)

CENTRAL SUSQUEHANNA THRUWAY UPDATE, *continued*

Concrete is poured into the bucket in the foreground and then hoisted by a crane into the form at the top of the completed portion of a pier. The concrete is then dumped from the bucket into the form and allowed to harden before continuing the process. Each pier takes many buckets of concrete to complete.



The bridge beams are 9 feet tall and require 3 large cranes to lift them into position. Once on top of the piers, the beams are bolted end to end by workers on a scaffold which hangs from the end of the completed beams.



Relocated Ridge Road interchange: Fill has been placed to bring the thruway almost to finished grade on both sides of relocated Ridge Road. Pile divers are driving steel beams into the ground on both sides of the road to support the abutments of the bridge which

will carry the thruway over this road. On and off ramps are also under construction at this part of the project.

Wooded Run crossing: Piers have been placed for the bridges which will span Wooded Run. Beams will be placed at a later date.

Chillisquaque Creek crossing: The new bridge which will carry the northbound lanes of the thruway over Chillisquaque Creek has been completed and is currently being used to allow traffic to cross this stream. The original bridge has been demolished and piers for a new bridge erected. The deck beams for the southbound bridge are on site and should be in place soon.

What are YOU doing this summer?

Learning
new skills?

Earning
service
credit?

Protecting the environment?

Join **EARTH TEAM**

Sunbury Field Office is looking for one or more motivated students (ages 14 and up) to volunteer with USDA's Natural Resources Conservation Service over the summer.

If you are interested in gaining valuable work experience while helping protect our natural resources, please contact Janette Leshner at 570-415-3117.



For more information, go to:
<http://www.pa.nrcs.usda.gov>
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DIG A LITTLE, LEARN A LOT (PART 3)

by: Janette Leshner, District Conservationist, NRCS

By now you have probably figured out that I am going to tell you that Healthy soils are: 1- full of life, 2- high in organic matter, 3- covered all the time, and 4 - well structured! The last article I focused on being covered all the time. Now let's talk about why being high in organic matter really does *matter*!

Soil organic matter is that portion of the soil composed of anything that once lived. It includes animal and plant remains in different stages of decomposition, cells and tissues of soil organisms, and substances from plant roots and soil microbes.

The carbon in organic matter is the main source of energy for soil microbes and is key for making nutrients available to plants! (Remember back to my first article on healthy soils being full of life!) Once you begin working towards enhancing soil organic matter, a series of soil changes and environmental benefits will follow.

Increasing organic matter leads to:

- Increased surface residue that forms a physical barrier to wind and water erosion and decreases sediment and nutrient loads in surface water
- Water infiltration increases and runoff decreases when soil structure improves because of increased organic matter
- Ground and surface water quality improve because better structure, infiltration, and biological activity make the soil a more effective filter
- Crops are better able to withstand drought when infiltration and water holding capacity increase
- Beneficial soil organisms become more numerous and active with higher organic matter levels
- Crop health and vigor increase when soil biological activity and diversity increase
- Soils managed for high organic matter may suppress disease organisms, which could reduce pesticide needs
- Wildlife habitat improves when residue management improves

The rate and degree of these changes and the best group of practices needed to achieve results vary with soil and climate.

Here's the good news! You can improve your level of organic matter to gain the above-mentioned benefits on your land! The amount of soil organic matter is controlled by a balance between additions of plant and animal materials and losses by decomposition. Both additions and losses are very strongly controlled by management activities. Most farmers can increase their soil organic matter in **three to 10 years** if they are motivated about adopting conservation practices to achieve this goal.

Practices that enhance soil organic matter include:

- Diverse, high biomass crop rotations
- Cover crops
- Reduced tillage
- Rotational or prescribed grazing

Did you know?

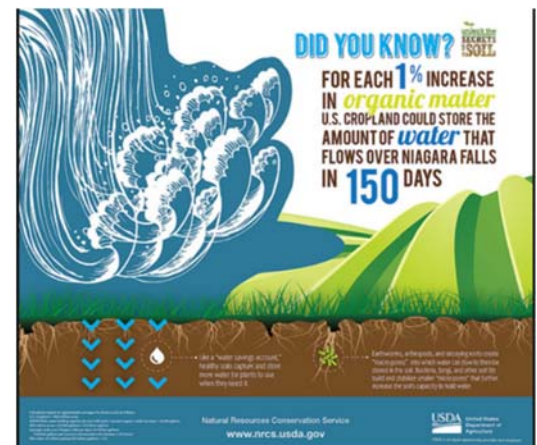
Organic matter holds 18-20 times its weight in water and recycles nutrients for plants to use! One percent of organic matter in the top six inches of soil would hold approximately 27,000 gallons of water per acre!

Organic matter builds as tillage declines and plant and residue cover the soil. Every time the soil is tilled, there is oxygen stirred into it, which stimulates microbial action to decompose organic matter at a high rate. Combining frequent tillage with farming practices that leave little plant residue for soil microbes to eat will lead to depletion of organic matter.

Implementing a Soil Health Management System will lead to increased organic matter, more soil organisms, reduced soil compaction and improved nutrient cycling.

I am excited to have the opportunity to work with producers and landowners in Northumberland County to improve the health of their soils. If you would like to learn more about programs available to assist you in your efforts call the NRCS office today at 570-415-3130.

And remember! Don't treat your soil like dirt!





2017 Annual Report

About Us...

2017 Directors

Michael Hubler
Chairman, Public Director
Since 2016

Leon Wertz
Vice-Chairman, Farmer Director
Since 2000

Richard Shoch
Commissioner Director
Since 2012

Richard Daniels
Farmer Director
Since 2012

John Kopp
Farmer Director
Since 2004

Dave Crowl
Chairman, Public Director
Since 2006

Gary Truckenmiller
Farmer Director
Since 2013

Staff

Judy Becker
District Manager

Shirley Snyder
Administrative Assistant

Jaci Harner
Watershed Specialist

Michael McCleary
Erosion and Sediment
Technician

Ryan Cherwinski
Agricultural Conservation
Technician

Corey Bower
Mosquito-borne Disease
Control Coordinator

Chantel Shambach
Mosquito-borne Disease
Control Technician

2017 Associate Directors

Dave Swank
Since 1976

Dr. Blair Carbaugh
Former NCCD Board Member
Since 2006

Albert Mabus
Former NCCD Board Member
Since 2008

Ted Carodiskey
Little Shamokin Creek Watershed
Association, Secretary
Since 2010

John Pfleegor
Former NCCD Board Member
Since 2013

Michael Erdley
Former NCCD Board Member
Since 2016

Lynn Wilson
Since 2017



Left to right: Dave Crowl, Leon Wertz, Gary Truckenmiller, Richard Daniels, Michael Hubler, John Kopp, Richard Shoch

EROSION AND SEDIMENTATION CONTROL PROGRAM

The NCCD administers the Chapter 102 Erosion Control program through a signed delegation agreement with the Department of Environmental Protection (DEP). Under Chapter 102 delegation, NCCD conducts the following program responsibilities: community outreach, permit application receipt & review, permit approval or denial, consultation, site monitoring and final inspection upon project completion. These functions require coordination with DEP, the applicants and their consultants and municipal officials.

NPDES Permit Applications:

Approved - 14
Major Modifications - 0
Renewals - 1
Withdrawn by Applicant - 0
Under review at end of year - 2

E&S Plan Submittals:

Approved - 26
Courtesy Copies on File - 12
Waiver Letters Sent - 5

Complaints Investigated: 10

Site Visits: 97

Consultations: 372

Multi County Projects:

- * UGI Sunbury 20" diameter gas pipeline
- * Atlantic Sunrise/Transco 42" diameter gas pipeline
- * Central Susquehanna Thruway
- * PPL Richfield to Dalmatia transmission line

DAM SAFETY AND WATERWAY MANAGEMENT

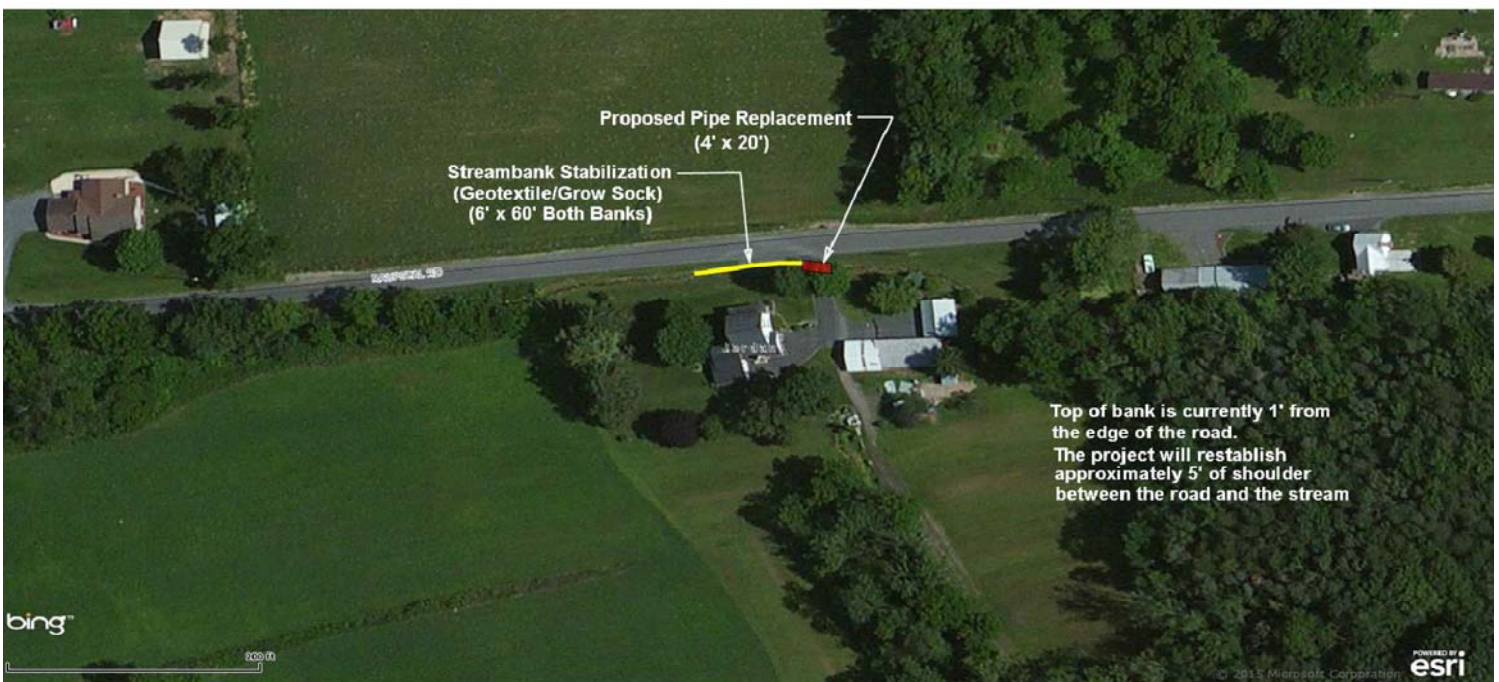
In 2017 under a Delegation of Authority Agreement with DEP pursuant to PA Code Title 25 Chapter 105 (Dam Safety and Waterway Management), the E&S Technician has processed and acknowledged registrations to use the following 35 General Permits:

- 3 – GP 01 – Fish Habitat Enhancement Structures
- 2 – GP 02 – Small Docks and Boat Launching Ramps
- 6 – GP 03 – Bank Rehabilitation, Bank Protection and Gravel Bar Removal
- 0 – GP 04 – Intake and Outfall Structures
- 6 – GP 05 – Utility Line Stream Crossings
- 1 – GP 06 – Agricultural Crossings and Ramps
- 15 – GP 07 – Minor Road Crossings
- 2 – GP 08 – Temporary Road Crossings
- 0 – GP 06 – Agricultural Activities

DIRT AND GRAVEL/LOW VOLUME ROADS

The E&S Technician is also responsible for managing the Dirt, Gravel and Low Volume Paved Roads Program for the Northumberland County Conservation District. In this capacity he has received confirmation of receipt of the District's 2016-2017 allocation of funds and sent advertisements to all eligible entities within the county to submit applications for projects. Six townships submitted ten projects requesting a total of \$565,705.40 in grant funds. Three townships were awarded funding for five projects. Total grant funding awarded was \$244,550.00. The townships provided \$61,052.52 in-kind contributions.

Feature Project: Raupstal Road, Jordan Township (Low Volume Roads Project) **Raupstal Road/Streambank Project**



Tue Jan 27 2015 01:49:53 PM.

Before



After



DIRT AND GRAVEL/LOW VOLUME ROADS, cont.

Before



After

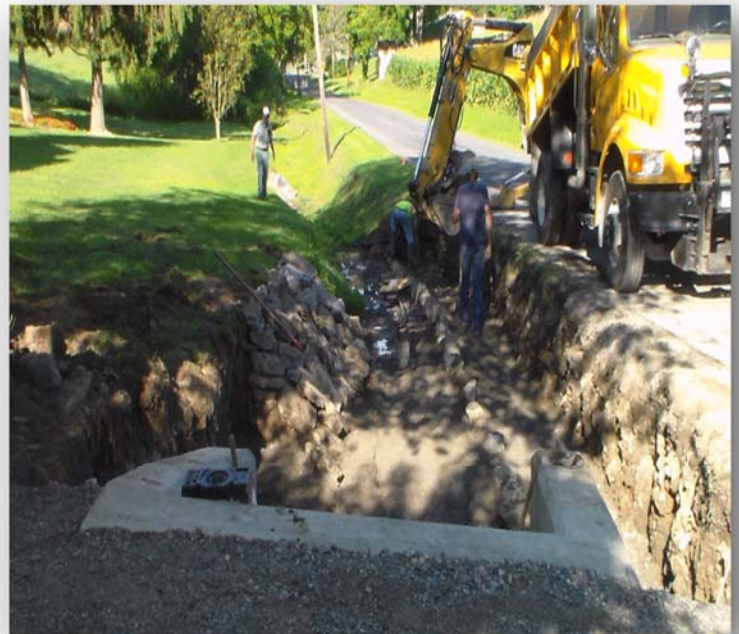


CHANNEL WALL

Culvert demolished and rebuilt



Stone footer placed and dirt fill added and compacted



NCCD Quality Assurance Board

Michael McCleary (NCCD)
Michael Erdley (NCCD)
Janette Leshar (NRCS)

Jacob Bennett (Fish and Boat Commission)
Ted Carodiskey (NCCD/Advisory, non-voting)
Judy Becker (NCCD/Advisory, non-voting)

NUTRIENT MANAGEMENT

NCCD, under a delegation agreement with the State Conservation Commission, administers the Pennsylvania Nutrient Management Program, Act 38 (formerly Act 6 of 1993), in Northumberland County.

Under Act 38, Concentrated Animal Operations (CAOs) are required to develop and implement a Nutrient Management Plan. CAOs are defined as agricultural operations where the animal density exceeds 2 animal equivalent units (AEUs) per acre of land suitable for manure application on an annualized basis. An AEU is defined as 1,000 pounds of live animal weight and includes all livestock, whether for production, transportation, or recreation. Land suitable for manure application includes cropland, hayland, or pastureland (owned or rented) that is, or will be, available for the application of manure from the operation. Farmstead and forestland cannot be included in the acres suitable for manure application. Agricultural operations having less than 8 animal equivalent units are not classified as CAOs, regardless of animal density.

Currently, there are 12 CAOs, 8 CAFOs, and 3 VAOs in Northumberland County. During 2017, NCCD approved 10 nutrient management plans and completed 17 on-site status reviews.

In addition to Act 38 plans, the Agricultural Conservation Technician also completed 45 manure management plans (3 workshops were held), 41 agricultural erosion and sedimentation plans, and assisted 3 farmers with REAP applications.

AGRICULTURAL LAND PRESERVATION

The NCCD coordinates the activities involved in the Agriculture Land Preservation Program for the county on behalf of the Northumberland County Agricultural Land Preservation Board. Applications are received during open application rounds, which are advertised. .

Applications are ranked using a two-part Land Evaluation and Site Assessment (LESA). The LESA looks at the quality of soils/site assessment, and considers local factors that may have an impact on the current or future viability of a farm.

Once the farms are ranked and the funding is provided from the State and the County Commissioners, the land development rights are purchased from the highest-ranking farms. The total number of farm easements purchased to date in the county is 22, totaling 2,420 acres. One farm easement was approved in 2017 in Delaware Township. Currently there are 56 farms on a waiting list totaling 6,525 acres.

2017 Northumberland County Agricultural Land Preservation Board:

William Geise, Chairman	Richard Daniels, Vice-Chairman	Mary Crone, Secretary/Treasurer
Benny Snyder, Township	Donald Ferster, Contractor Director	Dave Becker, At-large Member
	Tom Boop, At-large Member	

WATERSHED PROTECTION

The Conservation District supports watershed association development and projects with organizational and technical assistance provided by the Watershed Specialist. Watershed Associations invite members of a community to work together to solve or repair complex issues within their waterways and watersheds. Currently there are six watershed associations in Northumberland County. They are:

- Shamokin Creek Restoration Alliance
- Little Shamokin Creek Watershed Association
- Chillisquaque Limestone Watershed Association
- Roaring Creek Valley Conservation Association
- Tri-Valley Watershed Association
- Mahanoy Creek Watershed Association

The following is a summary of tasks performed by our Watershed Specialist during 2017:

- Fish Habitat Structure Projects
 - L. Reitz site, Little Shamokin Creek:
 - *3 multi log vane deflectors, 8 single log vane deflectors
 - *5 log cross vanes, 1 double cross vane
 - *1 stabilized walkway, 1 stabilized livestock crossing
 - *Northcentral PA Conservancy (NPC) Partnership, using DEP Growing Greener (GG) funds
 - D. Werner site, Little Shamokin Creek:
 - *4 stone deflectors, 3 multi log vane deflectors
 - *NPC funded contractor and logs (GG funds) while property owner funded rock
 - F. Anonia site, Little Shamokin Creek:
 - *1 multi log vane deflector, 3 single log vane deflectors
 - *2 log cross vanes, 30' toe log
 - *NPC Partnership, using DEP GG funds
 - D. Reiner site, Schwaben Creek:
 - *9 stone deflectors, 120' modified mudsill crib
 - *30' toe log, 1 stabilized livestock crossing
 - *NPC Partnership, using DEP GG funds
 - C. Pardoe site, Chillisquaque Creek:
 - *12 multi log vane deflectors, 5 single log vane deflectors
 - *1 root wad deflector, 75' brush crib
 - *60' modified mudsill crib, NCCD project using GG funds

(continued on next page)

WATERSHED PROTECTION, cont.

-Faus site (maintenance work), UNT to Susquehanna River:

*20' toe log, Stabilized livestock crossing

*NPC Partnership, using DEP GG fund

-Raker/Fasold site (maintenance work), UNT to Susquehanna River:

*3 log cross vanes, 1 single vane deflector

*30' toe log, 65' modified mudsill crib

*Regrading, 75' modified mudsill crib

*NPC Partnership, using DEP GG funds

- Tree Plantings

-Schnure site, Limestone Run:

*Installed trees/shrubs along 1956' of stream, average 50' wide

*NPC Partnership, using DEP GG funds

-Sunbury Park

*Installed 12 trees within park area and media day for PPL Community Roots Program

- Collected electrofishing and macroinvertebrate data on Little Shamokin Creek, Limestone Run, and Warrior Run, comparing biological presence before and after project installation, working with Susquehanna University Freshwater Research Initiative and NPC, worth \$7,740

- Water Testing

-Collected and analyzed water samples from 11 locations along Little Shamokin creek with Little Shamokin Creek Watershed Association, March – November

-Collected water samples at Site 42 in partnership with Trout Unlimited, 2-8 and 6-5

-Collected water samples at Site 42 with Shamokin Creek Restoration Alliance, 10-25

- Educational Activities:

-Enviroscape presentation to Shamokin HS Environmental Club, ~4 attendees

-Watershed Grant Debate for Shamokin HS Environmental Club, ~7 attendees

-Assisted with 3 Manure Management Workshops, 1-10, 1-23, 2-1

-Installed interpretive sign at Little Shamokin Creek Watershed Association project site along Comfort Road

-Rain to Drain Activity for Shamokin HS Environmental Club, ~5 attendees

-Rain barrel/stormwater educational workshop for Sunbury Hill Community, ~8 attendees

-2 Biological assessment field trips for Susquehanna University Environmental Science class, ~42 attendees

WATERSHED PROTECTION, cont.

- Shamokin HS Environmental Club Field Trip:
 - *Dairy farm tour
 - *Soil pit activity
 - *Biological assessment of local stream
- Rain to Drain Activity for Lourdes 6th grade, ~40 attendees
- Watershed Grant Debate for Lourdes 6th grade, ~40 attendees
- 3 Presentations to Milton YMCA Summer Camp, ~34 attendees
 - *Rain to Drain Activity
 - *Watershed Grant Debate
 - *Enviroscape
- Ag Tour, ~10 attendees
 - *Visited a dairy farm- explained animal care, roof gutters, manure storage and handling
 - *Visited a stream site- explained benefits of riparian buffers and field diversions
 - *Enviroscape presentation
- Outdoor Field Trip for Lourdes and Mt. Carmel:
 - *Presentation on coal mining history, mine reclamation activities, riparian buffers, watershed description, macroinvertebrate identification related to water quality
 - *Students helped plant 45 trees/shrubs along Quaker Run
 - *Approximately 60 students attended
 - *Partnership with Kulpmont Borough and Shamokin Creek Restoration Alliance
 - *Funding from DEP Environmental Education Grant administered by Kulpmont Borough, worth ~\$2,900.00
- *Biological Assessment and Water Analysis field trip for Line Mountain High School Environmental Science Class, ~15 students
- *Enviroscape Presentation to Herndon Lion's club, ~7 attendees
- *Enviroscape Presentation to Elysburg Brownie Troop, 18 attendees

MOSQUITO-BORNE DISEASE CONTROL

Mosquito Surveillance

Surveillance is an integral part of the District's Integrated Mosquito Management (IMM) program, as it allows us to track mosquito populations through sampling across our 5-county region and decide how best to utilize our resources to keep mosquitos at manageable levels. This year's surveillance began May 18th and ended September 23rd. During the 2017 season our team set 956 traps, 841 gravid and 115 BG, at 233 distinct locations throughout our region and caught a **total of 39,061 mosquitos** over the 19-week surveillance season (refer to Table 1). Once caught, all mosquitos are sent on dry ice by

(continued on next page)

MOSQUITO-BORNE DISEASE CONTROL, cont.

our team to the vector-borne disease lab in Harrisburg and then individually identified to species and counted. *Culex pipiens* and *Culex restuans* are then grouped into pools of up to 100 mosquitos to be tested for the West Nile Virus (WNV). Of our 841 gravid traps set (those used to collect WNV species), 110 of them were detected positive for the WNV, or 13% frequency. However, WNV frequency (number of positive samples/ number of mosquito samples tested*100) of samples with potential vectoring *Culex* species were far greater and is broken down in Figure 1.

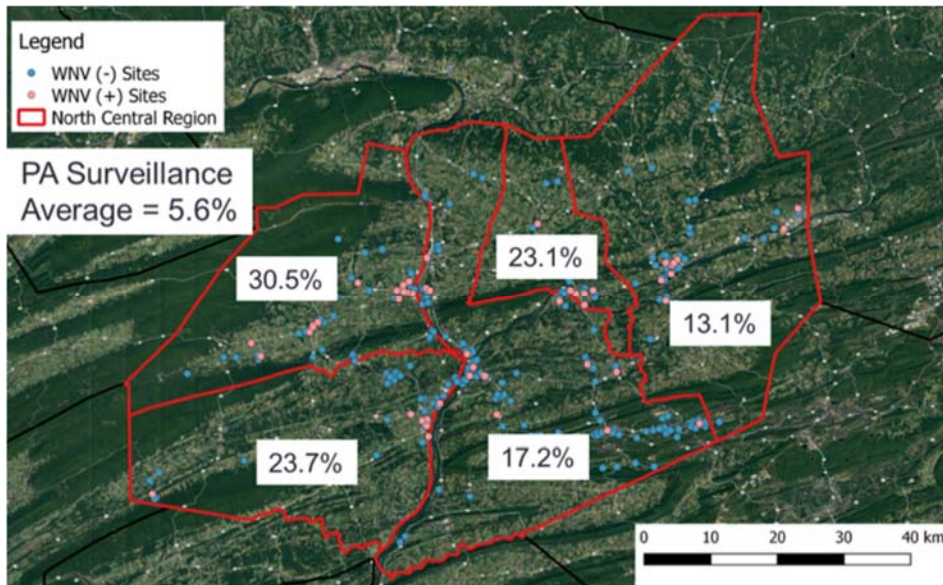


Figure 1. 2017 West Nile virus trap site locations and frequency by county in comparison to PA state average.

This season we searched for the presence of the highly invasive Asian tiger mosquito, *Aedes albopictus*, by setting BG traps in densely populated areas where they have become a problem in the US. We chose those specific sites because of the possibility of eggs or adults hitchhiking on imported plants. The *Aedes albopictus* mosquito can carry dengue fever, chikungunya, and yellow fever. Our team will continue to be proactive in our efforts to be on the lookout for this nuisance and potential vector. This year we have found the species present in new areas and in greater abundance in comparison to historical data, dating back to 2013 when it was first collected in our region (refer to Figure 2). This highly invasive nuisance will be a focal point of our surveillance program and in efforts to control their expansion.

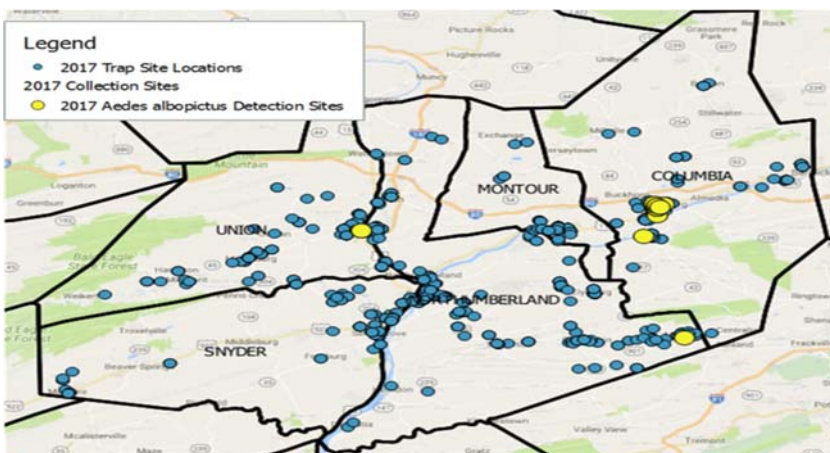


Figure 2. 2017 *Aedes albopictus* collection sites (yellow) in comparison to 2017 trap collection sites (blue).

MOSQUITO-BORNE DISEASE CONTROL, cont.

Table 1: 2017 Surveillance by the Northcentral Coalition

County	*Gravid	**BG	Larval	Unique	Total	WNV	Complaint
Columbia	188	19	47	44	7,398	16	2
Montour	82	7	15	17	3,784	12	0
Northumberland	277	56	121	89	13,881	29	9
Snyder	102	22	25	39	3,562	14	1
Union	192	11	39	44	10,436	39	2
Total	841	115	247	233	39,061	110	14

*Traps set to collect pregnant females post-bloodmeal. **Traps set to collect host-seeking mosquitoes.

West Nile Virus in the Northcentral Region

West Nile Virus was first found in our region in 2002 and 16 years later we still have it. Birds are the host of the virus and act as a reservoir where female mosquitoes go to feed and subsequently infect another bird or mammal, such as humans. In 2017, we found a total of 110 positive mosquito pools (refer to figure 1 for a break-down by county). Our region had one human positive WNV case, where the victim experienced a severe case of encephalitis. In addition, our region reported one dead crow that was positive for WNV, and three veterinary positive equine cases.

Mosquito Control

Our team responded to and followed up with a total of 14 complaint sites of whom were either residents, neighbors, or Township employees that have contacted us to assess and remedy mosquito nuisances. After assessing the data post-surveillance, we made informed decisions based on habitat, species present, abundance, and WNV detection to properly treat each site. Our team treated a total of 103 sites in the Northcentral Coalition Region and is further broken down by county in Table 2.

Table 2: 2017 Control Efforts by the Northcentral Coalition

County	Larval Treatment	Adult Treatment
Columbia	16	2
Montour	13	2
Northumberland	22	8
Snyder	3	1
Union	7	2
Total	88	15

Goals for 2018

After a steep learning curve for our program's first season in 2017, we have established goals for the upcoming 2018 season.

1. Pre-treat well established mosquito breeding sites with larvicides to prevent adult emergence and subsequent adulticiding events.
2. Implement city catch basin larvicide treatment on the first of each month from June-October.
3. Continue to improve upon and increase education and outreach to the public.

Mission Statement

The mission of the Northcentral Region's Mosquito-borne Disease Control Program is to locate and control mosquitoes that are both a nuisance and potential vector of disease to the Northcentral Region's residents.

MEETINGS/OUTREACH

Manure Management Workshops – January 10 and 23, February 1. NCCD held 3 manure management workshops for farmers in Northumberland County. 2 of the workshops were held at the NCCD EE Center and the other was held at Martz’s Game Farm in Dalmatia. 16 farmers left with completed manure management plans and 7 farmers left with completed agricultural erosion and sedimentation plans. Financial support of this project was provided by the Pennsylvania Department of Environmental Protection through the Chesapeake Bay Implementation Grant and the Clean Water Fund.

5th Annual CD Forum – March 7, 2017. This annual event provided 2 breakouts for farmers and municipalities. Topics included Farm Planning; Pesticide Recordkeeping; Sprayer Calibration; Weed Control and Herbicide Selection with Inter-Seeded Cover Crops; a Roundtable for Legal Questions Municipality Officials May Have; the Agriculture, Communities and Rural Environment Act (ACRE); and Applying for Dirt, Gravel and Low Volume Roads Project Funds. 10 vendors provided sponsorships to help fund the program and were on hand to speak to attendees. Vendors present included Crop Production Services of Bloomsburg; Channel Seed/Pine Hurst Acres of Danville; DuPont Pioneer; AgChoice Farm Credit of Lewisburg; Rovendale Ag of Watsonstown; KW Enterprises, LLC of Milton; Sunbury Motors; Valley Ag and Turf of Watsonstown; KIZ Resources, LLC of Altoona; and Hoover Tractor of Mifflinburg. 2 Category and 2 Core credits were offered to attendees.

47th Annual Tree Sale – Week of April 17, 2017. This year’s tree sale was another great success. We sold 11,261 trees to 156 customers.

Susquehanna Valley High School and Middle School Envirothon – April 25 and May 9, 2017. The annual Susquehanna Valley High School and Middle School Envirothons are a joint effort of the Columbia, Montour, Northumberland, Snyder, and Union Conservation Districts. At our High School Envirothon, held at the Shikellamy State Park Overlook, Northumberland County had 10 teams. Warrior Run Team A was the winner. Our Middle School Envirothon, held at the Montour Preserve, had 10 teams.

Twilight Meeting – September 12, 2017. This year’s Twilight Meeting was again held at the Long Center for Environmental Stewardship and Education outside of Sunbury. Topics included What’s New in Herbicides/Resistant Weed Management for 2017; Reading the Label and Drift Reduction Strategies/Pesticide Safety; and the Agriculture, Communities and Rural Environment Act (ACRE). Attendees received two category and two core credits.



2017 Twilight Meeting held on September 12, 2017



2017 AWARDS

Swank Outstanding Conservation Organization Award

Winner: Our Lady of Lourdes Regional Middle School STEM Team

About the award: This award is sponsored annually by David and Judy Swank of Elysburg in honor of their granddaughter, Shelby Palmer. It is presented to an outstanding conservation organization which has done exceptional conservation related work in the county.

About the winner: Our Lady of Lourdes faculty members are committed to offering integrated STEM (Science, Technology, Engineering, and Mathematics) experiences to Our Lady of Lourdes students. Three of the faculty involved are University of Notre Dame STEM Teaching Fellows. They have created a STEM Impact Plan that strives to make STEM opportunities available to all students at Our Lady of Lourdes with a particular focus on ecology in grades 5-8.

In the last year, students from Our Lady of Lourdes have worked with the Shamokin Creek Restoration Alliance (SCRA), the Northumberland County Conservation District (NCCD), and Landscape Services, Inc. to plant trees along Quaker Run and fulfill the requirements of the Kulpmont Borough Quaker Run Stream Quality Education grant from the PA Department of Environmental Protection. Additionally, students in the fourth through sixth grades have initiated a vermicomposting project that seeks to reduce the food scraps entering the solid waste stream in the school's cafeteria. The students began this project with 1,000 worms from March through May. In June, over 20 students engaged in an 8-day Worm Camp with the goal of creating a system large enough to compost one lunch period's scraps each day of the 2017-2018 school year. Students hope to reduce solid waste and enrich the soil in test gardens that have also been created by middle school students on the school's campus .

Raymond D. and Mable E. Shaffer Scholarships

Winner: Garrett Kieffer, Dornsife; Samuel Ferster, Dalmatia

About the award: The Raymond D. and Mable E. Shaffer Scholarship is provided every year by Sandra Shaffer-Mattern of Dalmatia to a Line Mountain High School senior who will attend college in the fall. It was instituted in 1996 in memory of Raymond and Mable Shaffer, who were among the founders of the Northumberland County Conservation District. Raymond was on the original steering committee and was appointed to the Board of Directors of the Conservation District in 1955.

About the winner: The first 2017 winner of this scholarship is Garrett Kieffer of Dornsife, the son of Heather and Shane Kieffer. Garrett's extracurricular activities included wrestling, baseball, and football. He has been accepted to Lock Haven University. His career plans are work as a game warden or a park ranger or work landscaping with his father. His Chemistry and Forensic Science teacher, Shelley L. Herb Fausey, Ph.D. stated the following, "Garrett possesses the intellectual ability and interpersonal skills necessary to succeed in higher education. Garrett enjoys the outdoors and has a natural curiosity of his world which makes him a great candidate for environmental science. The educational program at the collegiate level will allow Garrett the opportunity to further explore and achieve his career goals."

(continued on next page)

2017 AWARDS, cont.

Raymond D. and Mable E. Shaffer Scholarships (cont.)

Winner: Garrett Kieffer, Dornsife; Samuel Ferster, Dalmatia

About the winner: The second 2017 winner of this scholarship is Samuel Ferster of Dalmatia, the son of Donald and Francine Ferster. Samuel's extracurricular activities included FFA, 4-H, concert band, jazz band, marching band, chorus, and musicals. He has been accepted to Potomac State College in West Virginia. His career plans are to work with his father in Mark Ferster and Sons Excavating and West Malta Farms after receiving an Associate's Degree in Sustainable Agricultural Entrepreneurship. His Chemistry and AP Physics teacher, Shelley L. Herb Fausey, Ph.D. stated the following, "Sam exhibits the qualities necessary to be successful in college. Sam enjoys a challenge and exhibits great potential for academic success. He demonstrates the qualities necessary to be successful in an agriculture field. After college, Sam plans to return to this community and work in the family business and continue his involvement with his church."

Don Cotner, Sr. Memorial Scholarship

Winner: Alexis Bassett, Sunbury

About the award: We are proud to present this scholarship for a ninth year, which is sponsored by Don Cotner, Jr. in memory of his father. The award is given to a senior pursuing a degree in agriculture or an environmentally related field in the fall 2017 semester. Don Cotner, Sr. was a director for the Northumberland County Conservation District from 1960-1979. Cotner Farms began implementing a soil conservation program in the mid-1930s and has been actively conducting and promoting soil conservation practices ever since. In 1936, Cotner Farms became one of the first farms in central Pennsylvania to implement 'contour' farming. In recognition of over 50 years of practicing soil conservation, Don Cotner Sr. was named Pennsylvania Conservation Farmer of the Year in 1988. Mr. Cotner was a top ten finalist for the National Conservation Farmer that same year. Soil conservation continues at Cotner Farms today. All acreage is still farmed using no-till methods, cover crops are planted each fall, and diversion ditches, waterways, and terraces are maintained and improved upon annually. Employees of the farm routinely participate in soil conservation meetings and panels which provide information to legislators.

About the winner: Our ninth annual award winner of this scholarship is Alexis Bassett, a 2017 graduate of Danville Area High School. She is the daughter of Duane and Christy Bassett. Alexis has been accepted to Delaware Valley University for the fall of 2017. Her career plans include pursuing a degree in Agricultural Business with an eye towards opening a greenhouse operation. Alexis received a Certificate of Completion in Production Agriculture from the National Occupational Competency Testing Institute (NOCTI) in 2017. Her extracurricular activities have included FFA, band, 4-H, and tennis. Her Honors Biology teacher, Emily Morgan, stated the following about Alexis, "Alexis shows tremendous potential. In Honors Biology, Alexis demonstrated her strong work ethic, dedication to herself and her peers by striving to do her best each day, and her passion for the content. Alexis has my full support, as I know she will succeed in any area she invests her time and abilities."



NCCD would like to thank 2017 members for their support.

Conservation Benefactor:

KW Enterprises, LLC, Milton

Friend of Conservation:

Hoffman Brothers Lumber, Inc., Richfield

Associate Members:

Aqua PA, Inc., Shamokin
In Memory of Marlin R. Becker
Blair & Mary Carbaugh, Danville
Daniel Shingara Enterprises, Inc., Paxinos
Donald H. Beagle Excavating, Inc., Danville
First National Insurance, Selingsgrove
Glenn O. Hawbaker, Inc., State College
H.H. Knoebel Sons, Inc., Elysburg
Keefer & Associates Land Surveying, Sunbury
Mark Ferster & Sons Excavating, Dornsife
Meckley's Limestone Products, Inc., Herndon
Mid-Penn Engineering, Lewisburg
Moser Seed Agency, New Columbia

Northumberland County Anthracite Outdoor Adventure Area
In Honor of Raymond D. Shaffer by Sandra Shaffer Mattern,
Dalmatia

RJ Hoffman & Sons, Inc., Mt. Pleasant Mills
Robert C. Snyder Farms, Inc., Northumberland
Rovendale Ag & Barn Equipment, Inc., Milton
Scattered Acres Farm, Elysburg
Valley Ag & Turf, LLC, Watsonstown
Watson Excavating, Inc., Turbotville

Affiliate Members:

Brewers' Outlet, Sunbury
Carriage Manor Builders, Inc., Danville
Central Builders Supply Company, Sunbury
Damon Kline-Penn E&R, Hatfield
Dennis Martz, Dalmatia
Fairchild Brothers, Inc., Winfield
Kauffman Tractor & Implement Painting, Dornsife
Mahantongo Game Farm, Dalmatia
Paul Q. Ross Construction, Inc., Sunbury
Pik Rite, Inc., Lewisburg
RHP Law Group, LLC, Selingsgrove
State Representative Lynda Schlegel Culver
Sunbury Animal Hospital, Sunbury
Uni-Tec Consulting Engineers, Inc., State College

A LOOK BACK IN 2017...



Northumberland County Conservation District added 2 new photos.

Published by Jaci Harner [?] · June 7, 2017 ·

Gathering proof that our projects are cleaning up our local streams! Electroshocking Little Shamokin Creek and Limestone Run. Analysis of fish species and macroinvertebrates. Partnership with Susquehanna University and Northcentral PA. Long-term monitoring to evaluate progress.



Northumberland County Conservation District added 8 new photos.

Published by Jaci Harner [?] · September 14, 2017 ·

Another great day!!! PPL media day, helping promote their Community Roots program. They are offering FREE TREES to local communities, elementary schools, and environmental organizations. A big THANK YOU to the City of Sunbury and Our Lady of Lourdes for their help.



**Northumberland County
Conservation District**
441 Plum Creek Road
Sunbury, PA 17801
Phone: (570) 495-4665
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.

Directors

Mike Hubler: Chairman, Public	Mike Erdley: Associate
Leon Wertz: Vice-Chairman, Farmer	Dave Swank: Associate
Richard Shoch: Commissioner	Blair Carbaugh: Associate
Gary Truckenmiller: Farmer	Albert Mabus: Associate
John Kopp: Farmer	John Pflieger: Associate
Natalie Wertman: Public	Ted Carodiskey: Associate
Rich Daniels: Farmer	Lynn Wilson: Associate
	Dave Crowl: Associate

Staff

Judy Becker: District Manager, AgLand Preservation, Editor
Shirley Snyder: Administrative Assistant
Jaci Harner: Watershed Specialist, Nutrient Management Technician
Michael McCleary: Erosion & Sediment Technician, Dirt & Gravel Roads
Ryan Cherwinski: Agricultural Conservation Technician
Corey Bower: Mosquito-borne Disease Control

**NCCD Board of Directors Upcoming Meetings:
May 3, June 7, July 5 at 7:00pm; all held at the NCCD EE Center**