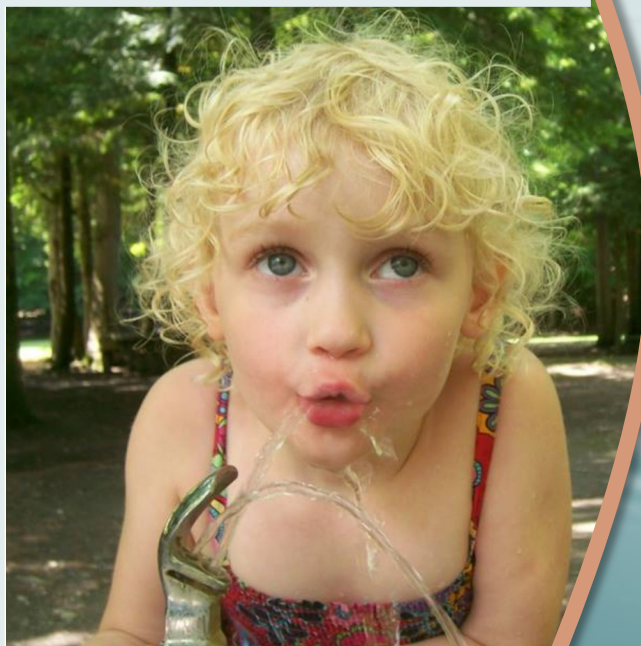




Pike County
Conservation District



2016

Annual Report



From the Conservation District Chairman



2016 has been an exciting year for the District. Our District Board began implementation of a revised Strategic Plan completed and adopted in 2015. The Plan has provided our Board and Staff with important direction, goals, and actions for moving forward with our District's Mission. Following identified goals which highlight the important role which the Conservation District can play in our community will serve as a blueprint to success. 2016 has been our first year of implementing this updated strategic plan and our accomplishments in this first year have shown our success through action, partnership, and support from the community.

One of the top six goals identified in the District's Strategic Plan was the expansion of "conservation outreach and education integrating it as a component of all of the District's conservation programs to achieve more effective implementation of these programs and to improve communication of the District's important role in the conservation of Pike County natural resources."

In 2016 our Board worked closely with the Pike County Commissioners to restructure several staff positions in order to add a Conservation Education and Outreach Coordinator as a permanent full-time position. Our Mission includes ensuring the long-term protection and conservation of Pike County's natural resources for the benefit of all and acting as a leader in our community to achieve this. Every program and service provided by the District should have an educational component, and our community conservation education and outreach should reach all of Pike County's residents and visitors. This is critical to our District fulfilling this leadership role in our community. The integration of education/outreach as a component of all of the District's conservation programs is a large task which needs clear, well-defined direction and coordination by a dedicated staff person.

With the support of the Pike County Commissioners and the reinstatement of the District's Education Coordinator position in September 2016, the District now has the ability to outreach to our Pike County community. This outreach will bring conservation of Pike County's natural resources --- the District's mission -- before all the residents of Pike County.

We strive to be a leader in Pike County in the understanding of our natural systems, promoting the protection and conservation of the natural world around us through strong partnerships. Looking forward to 2017, we hope to do the same.

Of course, all of this good work would not be possible without our very talented and dedicated Staff Team. We are fortunate and grateful for their efforts!

A handwritten signature in dark ink, appearing to read "Scott F. Savini". The signature is fluid and cursive, with a prominent "S" and "F".

PCCD Board Chairman Scott F. Savini

Pike County Conservation District

2016 Strategic Plan Goals

The Pike County Conservation District (the District) Board of Directors, at their April 18, 2016 meeting, adopted the 2016 Action Plan and the following goals for 2016. These goals were developed using the District's Strategic Plan which was developed in 2015. The District's Plan and these goals incorporate input received from Pike County residents and Conservation District stakeholders in their evaluation of the critical natural resource issues of Pike County. These six (6) key long-range goals will assist in the implementation of the District's Programs and Mission.

NATURAL RESOURCE CONSERVATION - *Provide advocacy for Pike County's natural resource assets – protecting sensitive natural environments, conserving the quality and quantity of soil and groundwater resources and Pike County's special protection surface water resources.*

RESOURCE STEWARDSHIP - *Encourage and build stewardship with all audiences for Pike County's land, water and natural resources through proactive public outreach, education, and technical assistance.*

LAND USE MANAGEMENT AND CONSERVATION - *Provide leadership promoting conservation of natural resources through implementation of best management practices for land use and sustainable development in accord with the integrity of our natural resource base.*

CONSERVATION EDUCATION AND COMMUNITY OUTREACH - *Expand conservation outreach and education integrating it as a component of all of the District's conservation programs to achieve more effective implementation of these programs and to improve communication of the District's important role in the conservation of Pike County natural resources.*

PARTNERSHIPS, COMMUNICATION-NETWORKING, AND AGENCY RELATIONSHIPS - *Establish, nurture and build partnerships and a communication network that provides opportunities for broadening/expanding our outreach and increasing the success of achieving our conservation mission.*

GOVERNANCE and MANAGEMENT, FINANCIAL SUPPORT and INFRASTRUCTURE - *Support the District's Mission through responsible governance and financial management and through provision of adequate staff/management capacity and infrastructure resources.*

OUR MISSION

Pike County Conservation District is committed to natural resource conservation through leadership, education, technical assistance, planning and enforcement to ensure the long-term protection and sustainable use of Pike County's natural resources and implementation of environmentally sound development and land use practices.

Our Vision

Pike County Conservation District will be a recognized and respected leader in fostering a conservation ethic among government officials, non-governmental groups, the development community, community associations, land owners and the general public that results in conserving the integrity of the natural systems that enrich the Pike County environment.

What is a Conservation District?

Pike County Conservation District is a legal subdivision of State government established under Pennsylvania's Conservation District Law (Act 217). The District is responsible for conservation work within the County's boundaries. This includes conservation of soil, water and other natural resources.

Pike County Conservation District was established in 1956 by Pike County Commissioners. The District has worked throughout its history to conserve soil, water and other natural resources. The District is governed by a volunteer Board of Directors. Members make policy decisions, plan programs and coordinate efforts of other agencies in providing conservation assistance in Pike County. District staff expertise includes: natural resource conservation, watershed protection, grant writing, education, outreach and program administration.



Nominating Organizations

Support District Mission

Nominating organizations provide a vital link between various community groups and the Conservation District. This is especially important given the public's increased concern for environmental issues. Nominating organizations have the opportunity to nominate individuals for the Board of Directors of the Pike County Conservation District. These nominated individuals can become District Directors or Associate Directors. Directors shape critical decisions about how Pike County manages our community's natural assets - soils, forests and woodlands, lakes and wetlands, rivers and streams, and drinking water supplies.

The District thanks all of our nominating organizations who participate in the important process of nominating individuals to serve the community and oversee the natural resources of Pike County. If your organization is interested in becoming a *nominating organization for PCCD* or if you are an individual who is interested in working with the Conservation District, please contact the PCCD Executive Director at 570-226-8220 or pikecd@pikepa.org.

PCCD Nominating Organizations

Delaware Highlands Conservancy
Gifford Pinchot Audubon Society
Hemlock Farms Conservancy
Milford Garden Club

Northeast PA Audubon Society
Pike Co. Agricultural Fair Association
Pike County Penn State Extension
Wayne/Pike Builders Association

Pike County Planning Commission
Pike Federation of Sportsmen's Clubs
Pike/Wayne Chapter Trout Unlimited
Wayne/Pike Farm Bureau

New Look for Pike County

Conservation District

The District put on a new face in 2016. In January, a new logo was approved by the Board and was used for many outreach efforts throughout the year. A new brochure featuring information about the District was developed and a new website was launched at an open house held at the District office on May 20, 2016. The website features a reader-friendly format which showcases resources, programs and services of the District. Along with the new website, the District worked throughout 2016 to increase its Social Media presence. This included increasing posts on Facebook and starting an Instagram account. These combined efforts have provided a new look for the District while providing residents and visitors more user-friendly resources.

Board Highlights

- Public Director John Milliken was sworn in by Commissioner Richard A. Caridi. John joined the Board in 2012 as an Associate Director. The Board signed a working agreement with a consultant to provide assistance with the District's on-going Surface Water Quality study.
- The Board approved the Chapter 102 Erosion and Sediment Control Program Delegation Agreement with PA Department of Environmental Protection.
- The 2016 Strategic Action Plan was presented and approved by the Board of Directors. Many of the action plan items pertain to increasing education and outreach.
- The Board approved a new Fee Schedule for Services. The update included an option for District assistance with PA Natural Diversity Inventory (PNDI) project screening.
- The Board also acted on recommendations from the Dirt, Gravel and Low Volume Road Quality Assurance Board approving new local policies and funding a Low Volume Road Project in Greene Township and D&G Road Project in Lackawaxen and Greene Townships.
- The Board welcomed Rebecca Holler as the District's new Education and Outreach Coordinator. Updated Standard Operating Procedures and District Board Operating Procedures were approved.
- The 2017 District Budget and 2017 meeting schedule were approved. The Board also welcomed Paul Ranello as an Associate Director.



Pike/Wayne Conservation

Partnership

The Pike/Wayne Conservation Partnership is an alliance of over twenty government, non-government, non-profit and grass roots organizations that work toward common goals for natural resource conservation, sustainable communities and citizen involvement in community planning in Pike and Wayne Counties. The Partnership meets on a regular basis to share information and provide updates on current activities.

The Conservation Partnership meet with legislators in April to discuss issues of concern. This discussion focused on the importance of the natural resources to our local economy and projects the Partners are currently working on to protect these resources. Partners discussed how our conservation community is promoting the use of alternative energies, sharing resources to educate our residents and visitors on the importance of our resources, and securing funding to protect the water and forested resources that support our community's economic engine.

District Staff member Michele Ulmer worked with Partners throughout the spring to put together the event. District staff spoke with Legislators about the District's surface and groundwater monitoring programs. These programs are critical to



providing baseline information on the quality and quantity of water resources. Our water resources are essential to not only the quality of life enjoyed by both residents and visitors to Pike County but also the economy of our region.

Meet the Staff and Board



Name: Sally Corrigan
Title: Executive Director
Role at District: Oversees all aspects of the District. Works on State-wide initiatives for conservation.
On Staff Since: 1999; Hired as Director in 2012.



Name: Michele Ulmer
Title: Administrative Manager
Role at District: Manages day-to-day operations at the District. Oversees Administrative staff, and manages partnerships with other agencies.
On Staff Since: 2003



Name: Kelly Rodemich
Title: Technical Program Assistant/Gypsy Moth Coordinator
Role at District: Provides support to all technical program areas and oversees the Gypsy Moth program for the county.
On Staff Since: 2011



Name: Ellen Enslin
Title: Senior Resource Conservationist
Role at District: Team Leader for Technical Staff. Works with all permit programs, and Dirt, Gravel and Low Volume Road Program.
On Staff Since: 2003



Name: Chris Ingulli
Title: Resource Conservationist
Role at District: Works directly with project permittees and engineers on Chapter 102 and Chapter 105 projects. Assists with Dirt, Gravel and Low Volume Road Program.
On Staff Since: 2015



Name: Rebecca Holler
Title: Education and Outreach Coordinator
Role at District: Provides outreach to residents about the role and programs of the District.
On Staff Since: 2016

Name: Marianna Quartararo
Title: Resource Conservationist
Role at District: Works directly with project permittees and engineers on Chapter 102 and Chapter 105 projects.
On Staff Since: 2012

2016 Board of Directors
Scott Savini, Chairman
John Milliken, Vice Chairman
Richard A. Caridi, Commissioner
Bob Engvaldsen, Pete Helms,
Mike Mancino, John Sivick

Associate Directors
Ken Ersbak, Treasurer
Carole Linkiewicz, Kelly Stagen,
Bob Stewart, Karl A. Wagner, Jr.
Pike County Commissioners
Richard A. Caridi
Matthew Osterberg
Steve Guccini

Pike County Conservation District

60th Anniversary



The Pike County Conservation District Board of Directors celebrated the 60th Anniversary of the District on June 24, 2016 at the PA Dept. of Conservation and Natural Resources Delaware State Forest Lily Pond site in Milford, PA. The Anniversary celebration included an overview of District successes, comments from local legislators and agency friends and an informal cookout.

The District was organized by Resolution of the Pike County Commissioners on June 18, 1956. The goals of the District as defined in the Resolution were *“to provide for the conservation of the soil and water resources of Pike County and for the control and preservation of soil erosion and thereby to preserve natural resources.”* The organizational meeting of the Pike County Soil Conservation District was held on March 4, 1957, and the first meeting of the District was held April 11, 1957.

Early efforts of the District included working with our Conservation partner USDA Soil Conservation Service (SCS) now USDA Natural Resource Conservation Service (NRCS) to assist farmers and landowners with conservation planning, soil survey information and tree plantings. One of the District’s early objectives was sponsorship of Watershed projects in the Greene-Dreher Watershed area following the devastation of the 1955 flood caused by Hurricane Diane. This resulted in the building of several flood control dams in the western edge of the County.

Since 1956, the District has worked closely with local and state government agencies, individuals, non-profits and many other organizations to protect the extraordinary natural resources of Pike County.

“We are blessed with great water resources here in Pike County and the Pike County Conservation District has been a big part in the protection of those resources. It’s a testament to the work done by our past and present Board and staff,” said Board Chairman Scott Savini.

Road Clean-up

Pike County Conservation District Board and Staff completed their annual Keep Pennsylvania Beautiful road-side cleanup maintaining just over two miles along State Route 402. After the District’s April 18, 2016 Board meeting, District Board and staff picked up styrofoam cups, bottles, cans and other garbage along the section of state highway in Blooming Grove Township. Joining the staff team in this 2016 clean up effort was Pike County Commissioner Richard Caridi. This annual Adopt-a-Highway cleanup is completed in partnership with the Pennsylvania Department of Transportation’s Great American Cleanup of PA campaign.



Chapter 102 Erosion and Sediment Control & Stormwater Management Program

In 2016, the Pike County Conservation District worked with the PA Department of Environmental Protection (DEP) to implement resource programs delegated to the District by DEP. Through an agreement, the District carries out responsibilities for two separate but related state programs -Waterways Management (Chapter 105) and Erosion and Sediment Control (Chapter 102). Both Chapter 102 and Chapter 105 are State regulations under PA Code, Title 25: Environmental Protection. (Waterways will be discussed in another section of this report). The Erosion and Sediment Control Program (Chapter 102) regulates land developments and other activities which disturb the earth. These activities are required to develop and implement an erosion and sediment (E&S) control plan which effectively minimizes the potential for sediment runoff. E&S Plans are reviewed for compliance with Chapter 102 by District Technical Staff. Site inspections and complaint investigations are also completed by staff.

District technical staff attended special trainings provided by DEP in 2016. These trainings focused on implementation of the programs in the field. Standard Operating Procedures, policies and forms were also covered at the trainings.

During 2016, Technical Staff worked with applicants and engineers on several large projects in Pike County including: Orion Pipeline, Greentown and Milford Dollar General stores, Columbia Gas Line 1278 Zinc Installation, Top of the Mountain Development, Pennsylvania Department of Transportation Maintenance Shed, Pond Eddy Bridge upgrade, Interstate 84-Section 448 and Section 449 and State Route 2001, Section 402 reconstruction, Delaware Valley School District projects, Westfall Senior Housing, and numerous other projects throughout Pike County.

PCCD 2016 E&S Control & NPDES 102 Program Highlights

Technical Assistance Provided	404	Project Acres	1,740
Initial Plan Reviews	47	Total Acres Disturbed	113
Follow-up Plan Reviews	38	Complaints Investigated	26
Site Inspections	207	Combined Staff Hours	5,374

The District processed four Individual/General NPDES Permits in 2016

Staff managed an additional 22 Individual/General NPDES Permits



Top: Overview of State Route 2001 expansion. Second from top: Erosion and sedimentation controls for State Route 2001 expansion project. Second from bottom: Delaware Valley Elementary School project in Matamoras Borough. Bottom: Rain garden at the Delaware Valley High School Project.

Waterways Management

Program

The Pike County Conservation District works with the Department of Environmental Protection (DEP) to provide technical assistance and oversight to residents and businesses planning to complete work in and around waterways.

Activities that change the current cross-section of a stream or waterway or activities that encroach into the floodway of a waterway can impact aquatic life or the habitats adjacent to these waterways. Encroachments or changes in stream cross-sections can also cause flooding which results in property damage. So planning for properly addressing and minimizing these potential impacts to streams and waterways is important whenever work in and around streams is proposed.

Through an agreement with PA DEP, the District carries out responsibilities for two separate but related state programs - Waterways Management (Chapter 105) and Erosion and Sediment Control (Chapter 102). Both Chapter 102 and Chapter 105 are State regulations under PA Code, Title 25: Environmental Protection. (Erosion Control will be discussed in another section of this report). The District works with landowners on Chapter 105 Waterways Management on behalf of PA DEP. The District handles General Permits which authorize certain types of work in and along waterways. General permits can include work such as: Fish Habitat Enhancement; Small Docks & Boat Ramps; Bank Stabilization; Utility Line or Minor Road or Trail Crossings of streams or wetlands.

PCCD 2016 Waterways Management 105 Program Highlights	
Technical Assistance Provided	188
General Permits Acknowledged	16
Complaints Investigated	10
New Sites Inspected	16
Total Inspections	33
Combined Staff Hours	1,317



Left: An open bottom arch culvert which allows the stream to flow naturally though and will accommodate flood waters. Center: All waterways management projects focus on protecting waterways like this pond. Right: A typical culvert for crossing a stream during construction. Bottom: A stream habitat improvement project on Blooming Grove Creek

Dirt, Gravel & Low Volume Road Maintenance Program

The focus of the Dirt, Gravel and Low Volume (DG&LV) Road Maintenance Program is to promote Environmentally Sensitive Road Maintenance Practices. These practices reduce the impact of road runoff and sediment to local streams while reducing long-term road maintenance costs.

In fall 2016, three municipalities completed projects funded under Pike County Conservation District's DG&LV Road Maintenance program.

Lackawaxen Township's Hendershot Dirt and Gravel Road project included the installation of several culvert pipes across the road, establishment of new ditches and stabilization of existing ditches, and removal of shoulder berms to improve water flow. Placement of Driving Surface Aggregate (DSA) on the road surface was completed to lessen the potential for sediment to reach the stream. Prior to the drainage improvements made through this project, stormwater runoff would travel down Hendershot Road's surface and discharge directly into Decker Creek. Decker Creek is a High Quality, Cold Water and Migratory Fishery, and Stocked Trout Stream. The drainage and driving surface improvements will help to promote sheet flow of stormwater runoff through dense vegetation before entry into Decker Creek.

In Shohola Township, Parkers Glen Dirt and Gravel Road project included the replacement and addition of culverts. Work was completed to increase the height of the road to assist in water flow during heavy rains. This project improved the water discharges from the road to Twin Lakes Creek, a High Quality, Cold Water and Migratory Fishery.

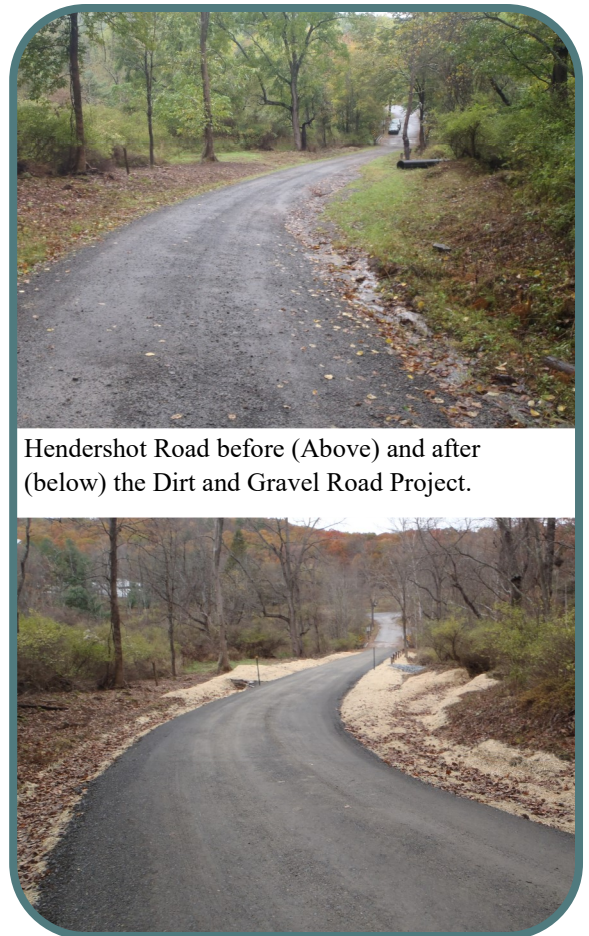
Greene Township received funding to improve drainage on Bartleson Road and Sawmill Road. The Bartleson Dirt and Gravel Road project included over 1000' feet of road improvements. Included were the installation of new culvert pipes across the road, cleaning and stabilization of existing ditches, as well as installing turnouts. Stormwater discharge from this road drains to an Unnamed Tributary to Lake Wallenpaupack that carries the designated use of a High Quality, Cold Water and Migratory Fishery.

Greene Township's Sawmill Road project was funded under the District's Low Volume Road portion of the program. The project involved cleaning and stabilization of existing ditches and turnouts, removal of excess road material along road shoulders, and stabilization of ditch outlets with stone. Tar and chip was applied to the road surface. Stormwater runoff from this road drains to Bridge Creek which is designated as a High Quality, Cold Water and Migratory Fishery.

Driving Surface Aggregate (DSA) was applied to all of the Dirt and Gravel road projects. Developed by Penn State's Center for Dirt and Gravel Road Studies, DSA is a mixture of crushed stone developed specifically as a surface wearing course for unpaved roads. DSA has a unique particle size distribution designed to maximize packing density and produce a durable road surface that performs better than conventional aggregates.

Since initiation of the DG&LV Road Program, the District has provided a total of \$1,115,000 in Dirt & Gravel Road funding and \$54,000 in Low Volume Road funding for municipal projects in Pike county. Municipalities have used these funds to supplement local road maintenance dollars to complete Environmentally Sensitive Road Maintenance Practices on Pike County Roads. The Board voted to approve a PCCD Dirt, Gravel and Low Volume Road Education Reimbursement Grant Program to provide funds for eligible applicants to attend trainings.

District staff and Board members continue to work closely with representatives from PA Fish and Boat Commission and the Natural Resource Conservation Service. Both agencies provide expertise on Pike County's Quality Assurance Board which prioritizes submitted applications and fund projects.



Hendershot Road before (Above) and after (below) the Dirt and Gravel Road Project.

High Praise for Pike's

Dirt and Gravel Road Program

In August 2016, the Pike County Conservation District received high praise for their administration of the Dirt, Gravel and Low Volume (DG&LV) Road Program in Pike County. Representatives from the State Conservation Commission (SCC) and the Center for Dirt and Gravel Road Studies visited the District in August 2016 to evaluate the District's administration of the Program. They met with District representatives, spoke with past applicants who had projects funded through the program and inspected sites where DG&LV Road funds were used to repair roadways. This Quality Assurance Quality Control (QA/QC) review is completed every three years to ensure the program is being administered in accordance with state guidelines.

Results of this Program evaluation were included in the SCC and Center for Dirt and Gravel Roads Final QA/QC Report released in Fall 2016. The program review found the District "*exceeds expectations*" in administration, functionality and project work under the program. Justin Challenger of the State Conservation Commission noted, "Pike County's administration is setting a great example for other Districts to follow. All project sites demonstrated an environmental benefit and road condition improvements and exceeded the expectations of the QA/QC team."

A copy of the SCC QA/QC report on the District's Dirt & Gravel Road Program is available at the District office.



Bartleson Road in Greene Township.

Gypsy Moth Program

The PA Department of Conservation and Natural Resources (DCNR) Division of Forest Pest Management did not conduct a Gypsy Moth spray suppression program for *private lands* located in Pike County in 2016. DCNR surveys indicated a low number of new Gypsy Moth egg masses in 2016. Additionally, a lack of sightings and complaints indicated numbers of caterpillars were reduced. DCNR will monitor Gypsy Moth defoliation and populations in 2017. If thresholds warrant, the state will work with Pike County Commissioners to implement a suppression program for private landowners in 2017-2018. Updated information on the Gypsy Moth program can be found on the Pike County Conservation District website.



Top: New gypsy moth egg cases. Bottom: An adult female gypsy moth caterpillar.

Pike County Conservation District completed another successful year monitoring the County's most important and valuable natural resource – water. The District monitors potential impacts to both groundwater and surface (stream) water and keeps a watchful eye on possible changes in water quality and quantity.



Top: Staff sample macroinvertebrates in a stream. Bottom: Wild brown trout caught in fish survey.

Monitoring Pike County's High Quality Streams

Stream health has been monitored by the District since the early 1990's.

Macroinvertebrate and fish surveys and habitat assessments are completed each year throughout the County. In 2016, District staff completed surveys on seven streams to assess fish populations and habitat. Twenty-two different fish species were found. All fish surveyed in 2016 showed no visible abnormalities. Saw Creek, Dwarfskill Creek, and Pond Eddy Creek all were found to have reproducing Brook Trout. Reproducing Brown Trout were found in Saw Creek and Pond Eddy Creek. All the sampled streams have shown little difference from previous years, and generally show healthy populations.

Seventeen sites were sampled for benthic macroinvertebrates, which are the small organisms living on the bottom of streams. Of the sampled sites, nine sites showed improvements in the number and type of organisms found over the past ten years. The improved streams were Saw Creek, Big Bushkill Creek, Adams Creek, Lackawaxen River, Toms Creek, Dingmans Creek, Westcolang Creek, and Kleinhans Creek. Only one stream showed populations of benthic macroinvertebrates which were considered marginal in quality.

Over all Pike County streams were assessed to be very good to excellent. The District will continue monitoring efforts to provide a baseline of stream health and as a watch guard of any potential changes in stream water quality.

The data collected has been compiled into a report available at the District's website.

Pocono Source Water Protection Collaborative

Protection of groundwater resources should be important to every individual who lives, works, or visits Pike County. All of Pike County's drinking water comes from groundwater. This includes private wells and community springs or wells which supply the larger population centers. Groundwater and its contaminants do not recognize property boundaries. Residents should understand where their drinking water comes from and who is taking action to protect it from contamination. Is there a protection plan in place for your drinking water? Will there be adequate supply to meet everyone's needs even during drought times? What is the plan for providing drinking water in a drought or contamination event?

To bring awareness to this issue the *Pocono Source Water Protection Collaborative* was formed in 2013 with assistance from the League of Women Voters of PA Citizen Education Fund and the PA Department of Environmental Protection Source Water Protection Program. Local partners including the District, Hemlock Farms Conservancy, Milford Water Authority, Hemlock Farms Community Water Company, Twin & Walker Creeks Watershed Conservancy, Blooming Grove Township, The Lackawaxen River Conservancy, Penn State Extension Master Well Owners, and PA Rural Water Association.

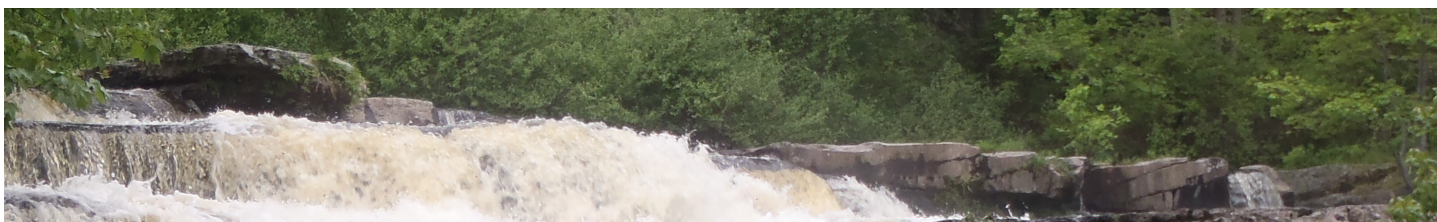
One of the main areas of focus for the Collaborative is to support community water systems through development of source water protection plans. Many of the smaller community water providers only have one well with no backup well, which is why it is so important to protect these systems. Source water protection planning involves actions such as mapping a water supply protection zone, identifying potential sources of contamination, and developing an emergency response plan for addressing such things as accidental spills that may impact the water supply's drinking water sources.

USGS Groundwater Assessment of Pike County

The District continued a partnership with the US Geological Survey (USGS) in 2016 completing work on the most comprehensive study of the County's groundwater water quality ever completed. Through this joint partnership funding was provided by USGS, the State's Marcellus Legacy Fund and the District. The participation and cooperation of eighty private property owners allowed the District and USGS to complete this comprehensive groundwater assessment. The significance of this groundwater study is not only the number of locations and geologic formations sampled but also the significant number of water analysis parameters which were included in the study. This assessment provides a baseline on the County's groundwater quality which can be used in future to compare and contrast potential changes.

Field sampling was completed in 2015 for a variety of parameters including but not limited to: major ions, nutrients, dissolved gasses, radionuclides, other physical and chemical properties. Sampling was completed by USGS staff. Preliminary results of the water quality analysis was shared with property owners early in 2016. The District and USGS provided assistance to these property owners in interpreting what the water test results showed and how potential issues might be addressed.

A report completed by USGS on this Pike County study will be published in 2017.



A Groundwater-level Monitoring Network for Pike County

The District in partnership with the USGS completed the ninth year of an on-going groundwater level monitoring study. Begun in 2008, the District has been measuring groundwater levels at twenty-four well locations located in different geologic formations located throughout the county. District staff sample and record groundwater levels at these locations monthly, and the information is posted to the USGS website located at: groundwaterwatch.usgs.gov/countymap.asp?sa=PA&cc=103.



Monitoring equipment used to determine water ground water level.

Data and summary statistics such as well depth, most recent well level measurement, site number, and short description of the local aquifer are available online. Tables and graphs showing historical data for each well site is also available. Data is being used to determine average depth to groundwater, annual fluctuation in water levels and variable climactic fluctuations especially in periods when conditions may be dry and water table levels may be of concern. Comparison of well level depth county-wide indicates median depth to water level in the wells and is reflective of both topographic setting and rock type of the aquifer.

The District has received funding to continue this groundwater quantity study through 2018. Funding is provided by the USGS, District, and the Pike County Scenic Rural Character Preservation Program. District staff will continue to complete the field monitoring through 2018. By the end of 2017, the District and USGS will have ten years worth of groundwater level data which can be a useful tool in understanding drought triggers and groundwater tables.

District Conservation

Education and Outreach...

- Supported the May 2016 *Women in Science Symposium* hosted by Wayne Pike Workforce Alliance (WPWA) and Lacawac Sanctuary and Biological Field Station for over 250 high school students. This unique forum showcased the professional and life experiences of distinguished female science and environmental leaders from our region.
- Conducted groundwater protection education including a groundwater flow-model demonstration for over 250 students at local schools.
- Provided education to 80 Elementary school students at Bushkill Elementary on Careers in the Conservation Field.
- Provided education programming and assisted with coordination of the Conservation Leadership Academy. PCCD also sponsored two Pike County students to attend the Academy.
- Participated in and assisted with coordination of Hawley Earth Fest in partnership with the Downtown Hawley Partnership. Earth Fest was a weekend-long celebration including an Environmental Expo and a Species Parade.
- Presented updates on District Programs and projects to the Pike County Association of Township Supervisors at their annual meeting in October.



Environmental Education Grant

The Pike County Conservation District Board of Directors established the Environmental Education (EE) Project Grant Program in 2005 to provide school classrooms or youth organizations with funding for projects that complement the mission of the District. Two grants were awarded by the District in 2015. One of these grants was extended to be completed in 2017.

In June 2016, East Stroudsburg North High School teacher Ryan DeLong provided the Board with a presentation on how his school utilized their 2015 EE Project grant (\$500). The funds assisted with construction of a small greenhouse to raise native and vegetable garden plants which students were growing as part of their classroom projects. Students had previously been raising trout as a part of the Trout in the Classroom program which they tied to their garden program. Components of the garden project include completing a soil test, learning about the carbon, nitrogen and phosphorus cycles and monitoring the Trout in the Classroom tank for water quality. Students use the water disposed of from the fish tank to water the vegetable garden.

The students' efforts produced over 80 vegetable plants including some great tomato plants! Students learned how plants clean certain nutrients from the water. With the trout tank and garden the issues of non-point source pollution became real.



In 2016, the District Board awarded one EE Project grant again to East Stroudsburg North High School to expand the spring vegetable garden project. The District's \$500 grant will be used to purchase materials to construct additional planter boxes at the school's outside garden and LED grow lights which will be used in the classroom to start the plants indoors. In the spring these plants will be moved outside to the expanding greenhouse.

To date, the District has provided over \$7,000 in grants to thirteen separate projects throughout Pike County.

Pike/Wayne Envirothon



The 2016 Pike/Wayne Envirothon was won by the Wallenpaupack Area School District team called *The Rubber Duckies*. Second place for Pike County went to *Oak-Hickory Hellbenders* of Delaware Valley High School, and third place went to *The Paupack Ospreys* from Wallenpaupack Area School District. This was the 30th Annual Pike/Wayne Envirothon. It was held Thursday, April 28, 2016 at the Wallenpaupack Environmental Learning Center in Hawley with an exciting day of competition and a visit from Augusta Acres.

The Rubber Duckies, first place team, represented Pike County at the State Envirothon event on May 24-25, 2016. The Envirothon is a one-day educational competition designed to test the knowledge, skills and problem solving capabilities of high school students regarding our earth's natural resources. Delaware Valley, Wayne Highlands, Wallenpaupack, Canaan Christian Academy, and Western Wayne High Schools competed in the 2016 event. Five-member teams competed by applying their knowledge and problem-solving skills in subject areas that included: Aquatic Ecology, Forestry, Soils/Land Use, Wildlife, and a Current Issue topic *Invasive Species*.

The 2016 Envirothon event included a presentation from Susan Klikus of Augusta Acres. Ms. Klikus explained the process of bee pollination and production of honey throughout the year. Ms. Klikus provided honey produced from Japanese Knotweed; this went along perfectly with the current issue topic of Invasive Species. Yatonsky's Farm, Wayne County, donated ice cream for the traditional sundae bar for students at the event.

The Pike/Wayne Envirothon and PA Envirothon partner with the U.S.D.A. Natural Resources Conservation Service, PA Fish and Boat Commission, PA Game Commission, PA Department of Conservation and Natural Resource Bureaus of Forestry and State Parks, the PA Department of Environmental Protection, the PA Department of Agriculture, and the PA Department of Education to bring this competition to students each year. These partners provide educational reference materials for high school teams as well as technical expertise, knowledge, and manpower at the event.

Each year both Pike and Wayne Conservation Districts seek financial contributions to support this highly successful youth conservation program. Donations support the purchase of Envirothon T-shirts, educational prizes and awards, lunch and the ice cream bar. The 2016 sponsors included: Pa's Trappers Association, Davitt's Nursery, Friends of Ray Tonkin, Atkinson Materials, Dutch's Supermarket, Wallenpaupack Veterinary Clinic, Brookfield Energy, Dyberry Sand & Gravel, Davis R. Chant Realtors, Woodloch Pines, The Dime Bank, Northern Tier Hardwood Association, Hemlock Farms Conservancy, Honesdale National Bank, Platform Custom Screen Printing, PPL, Wayne Bank, Creamworks Inc., Professional Forest Industry Association, Honesdale Farm & Garden, The Hideout POA, Natures Grace Health Foods & Deli, Dirlam Brothers Lumber Company, Yatonsky's Farm, and Augusta Acres.

Additional funding for the 2016 Pike/Wayne Envirothon was provided by the PA Envirothon Inc. through its education grant with the PA Department of Environmental Protection Environmental Education Fund.





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District Meetings

Monthly on third Monday

(Unless otherwise advertised)

9:00 am at the District Office.

The public is invited to attend.