



Pike County Conservation District 2015 Annual Report

From the Conservation District Chairman...

In June 2016, the Pike County Conservation District will be celebrating its sixtieth year serving the County as a leader in natural resource conservation - ensuring the long-term protection and sustainable use of Pike County's natural resources. The District is guided in this effort by a Strategic Plan that brings together input from Pike County residents and stakeholders on the critical issues and challenges facing our county's natural resources. The Strategic Plan succinctly incorporates these concerns into goals, objectives, and an action plan that directs the District Board in their policy decisions and provides guidance for District staff in programming and conservation efforts.



The Pike County Conservation District Board in 2015 reached out to stakeholders, officials, cooperators, and residents to update the District's Strategic Plan to bring clear direction to our District as we approach our 60th anniversary. Based on this input, our Conservation District Board, in March 2015, adopted a set of six key goals designed to address the concerns of our stakeholders into major areas where the District can and should direct our work. These areas include: Natural Resource Conservation, Resource Stewardship, Land Use Management and Conservation, Conservation Education and Outreach, Partnerships, and Governance and Management. The Board's overarching Goals for each of these areas were further detailed with identified objectives and an action plan. This Strategic Plan was adopted by the Pike County Conservation District Board in May 2015.

Throughout 2015, our Strategic Plan has played a vital role in focusing the work of the District Board and our Staff. We have seen measurable successes in our first year of implementation. Encouragingly, I am also happy to announce that in 2015 our District was recognized state-wide when we received the State Conservation Commission's *Conservation Excellence Award*. I wish to congratulate my fellow Board Members, Executive Director Sally Corrigan and our entire District Staff Team.

This Annual Report highlights some of our special projects, our on-going programs, and our successful accomplishments and actions. As we continue to plan for the future and to serve the community through our mission of conservation, our District welcomes input on critical natural resource issues. The original purpose of the Conservation District when the Pike County Commissioners established the District through Resolution on June 18, 1956 was to provide for the conservation of soil and water resources of the county. Our 2015 Strategic Plan continues to focus our mission on water, soil and natural resource conservation and will serve as a blueprint to guide our work.

Thank you for your continued support of our work,

PCCD Board Chairman Scott F. Savini

Pike County Conservation District

2015 Strategic Plan Goals

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.

The Pike County Conservation District (PCCD) Board of Directors, at their March 16, 2015 meeting, adopted the following goals as part of the 2015 Strategic Plan. These goals and the District's Plan 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.

District goals, as adopted by the PCCD Board in March 2015, were further detailed through the 2015 strategic planning discussions to arrive at specific objectives and actions which were included as part of the Strategic Plan's Actions and District Program Work Plan.

District Board Highlights of 2015

February

Public Director Pete Helms and Farmer Director Mike Mancino were sworn in by Commissioner Richard A. Caridi. Pete joined the Board originally in 2005 and Mike in 2014. The Board approved the 2015 Budget and a new Fee Schedule for Services. The Board signed a Joint Funding Agreement with US Geological Survey for a comprehensive groundwater study of 80 Pike County private wells. The study was funded by USGS, PCCD and a \$188,000 Commonwealth Finance Authority Marcellus Legacy Grant.

March

A working agreement with a consultant was approved to provide assistance with the District's on-going Surface Water Quality study. The Board received an update from District Compliance/Enforcement staff on a signed Settlement Agreement with Columbia Gas for violations related to the Line 1287 project—\$150,000 to Commonwealth Clean Water Fund and \$21,500 to District in Cost Recovery.



Pictured (l. to r.): District Director Pete Helms, Pike County Commissioner CD Representative Richard A. Caridi, District Director Mike Mancino, and District Chairman Scott F. Savini

April

The Board acted on recommendations from the Dirt, Gravel and Low Volume Road Quality Assurance Board approving new policies and funding a Low Volume Road Project in Westfall Township and D&G Road Project in Shohola Township. Board voted to support Women in Science Symposium for local High School students.

May

Board adopted the District's new Strategic Plan. District Environmental Education Grants of \$500 each were awarded to Bushkill Elementary School and East Stroudsburg North High School. A D&G Road project for Greene Township was funded.

June

Local schools provided presentations to the Board on their 2014 Environmental Education Grant projects funded by the District. John Milliken became a new Public Director. Board begins process of reviewing all of their existing policies as an identified action item in the new Strategic Plan.

July

Pike County Conservation District Board and Staff were recognized with a State-wide Award for Excellence. Board signed a grant contract with Pinchot Institute for Conservation Studies to assist with a William Penn Foundation grant studying water quality in the Upper Delaware Watershed.

August

The Board welcomed new Associate Director Bob Stewart and Watershed Specialist Emily Rinaldi. The 2014 Audit and District office building improvements were approved. The Board reviewed the Executive Summary of the proposed changes to the 102 and 105 Delegation Agreements.

September

A consultant was hired to assist the Board's Marketing Committee with implementation of the Marketing Plan identified as an Action item in the District's Strategic Plan. The Board approved a D&G Road project in Shohola Township.

October

Board welcomed Resource Conservationist Chris Ingulli. Board accepted the Final Report on a three-year groundwater well level study completed in conjunction with USGS and USGS Hydrologist Lisa Senior provided a project overview (picture below). The Board approved a proposal to move forward with grant applications for seeking funds for continuing the study through 2018.

November

Board agreed to partner with Dingman Township Supervisors on an environmental education grant for program development at the Cornelia and Florence Bridge Preserve. They approved the petition of Hemlock Farms Conservancy to be a PCCD Nominating Organization. The petition was later approved by State Conservation Commission.

December

Board was awarded grant from the Scenic Rural Character Preservation Program to continue the well level monitoring study through 2018. They signed a Joint Funding Agreement with USGS to cooperate with them on this three year study.



***Conservation District
Directors and Associate
Directors are volunteers who
have the responsibility for
assuring conservation of the
natural resources within Pike
County's boundaries.***

Pike County Conservation District Recognized with STATE AWARD FOR EXCELLENCE



Pictured (l to r): State Conservation Commission Executive Secretary Karl Brown, PA Department of Agriculture Secretary Russell Redding, PCCD Administrative Manager Michele Ulmer accepting the award on behalf of the Board and PA Department of Environmental Protection Deputy Secretary Kelly Heffner.

The State Conservation Commission (SCC) recognized Pike County Conservation District Board with a **Conservation Excellence Award** in July 2015. The award acknowledged the District's completion of an extensive strategic planning exercise in 2015 to identify priority challenges and concerns for the District's on-going work. The SCC commended the District for seeking out new ways to better serve their county and achieve their mission to protect and conserve the county's natural resources. They also praised the District Board for their active and involved group of Directors, Associate Directors and staff. Board Chairman Scott Savini responded to the award by stating, "This award is not only a reflection of the Board's efforts but also demonstrates the professionalism and dedication of our exceptional staff team. We are honored as a Board and Staff to receive this award."

The award was presented at a ceremony held July 8 at the PA Association of Conservation District state-wide meeting held in Monroeville, PA.

New District Directors

John Milliken was sworn in by Pike County Commissioner Richard Caridi as a new Pike County Conservation District Public Director at the June 15 Conservation District meeting. John has been an Associate Director on the Conservation District Board since September 2012. John lives in Lackawaxen and is retired from IBM where he worked in engineering, product development, quality assurance management and marketing. John has been a great addition to the Conservation District Board, and we look forward to many more years of his volunteer service to Pike County and its natural resources.



Bob Stewart was welcomed by District Board Chairman Scott Savini as a new Associate Director at the August 17, 2015 Board meeting. Mr. Stewart, along with his wife, own and operate Myers Florist in Milford. Mr. Stewart brings an excellent background in horticulture and business management to the District Board. Bob also volunteers on the Board of Directors at Milford Municipal Water Authority. Bob is pictured in the immediate foreground with other Board members listening as USGS provides a Final Report on the well level study at the October meeting.



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, responsible under Pennsylvania's Conservation District Law (Act 217), for conservation work within the County's boundaries. Established in 1956 by Pike County Commissioners, the District has actively worked throughout its history to carry out programs focused on conservation of soil, water and other natural resources. The District is governed by a volunteer Board of Directors whose members meet monthly to 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, conservation outreach and program administration.

Pike County Conservation District is committed to natural resources 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.

Nominating Organizations Support District

At the November Pike County Conservation District meeting, the Board approved a petition by Hemlock Farms Conservancy, a non-profit land trust organization, to become a nominating organization for the District. The District Board then sent their recommendation to the State Conservation Commission (SCC) for final approval. The SCC approved the petition on November 19, 2015. By becoming a nominating organization the Conservancy will play an integral role in shaping the future of Pike County's conservation program.

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 welcomes the Hemlock Farms Conservancy. The District also 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 scorrigan@pikepa.org.

2015 Board of Directors

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

Associate Directors

Ken Ersbak, Treasurer
Carole Linkiewicz, Kelly Stagen,
Bob Stewart

2015 District Staff

Sally Corrigan, Executive Director
Michele Ulmer, Administrative
Manager
Kelly Rodemich, Technical Program
Assistant/Gypsy Moth Coordinator
Tina Spizuoco, Administrative
Assistant
Ellen Enslin, CPESC, Senior Resource
Conservationist
Chris Ingulli, Resource Conservationist
Marianna Quartararo, Resource
Conservationist
Emily Rinaldi, Watershed Specialist

Pike County Commissioners

Richard A. Caridi
Matthew Osterberg
Karl A. Wagner, Jr.

District Meetings

Monthly on third Monday
(unless otherwise advertised)
9:00 am at the District Office.
The public is invited to attend.

District Office

556 Route 402
Hawley, PA 18428
PHONE: 570-226-8220
FAX: 570-226-8222
email: pikecd@pikepa.org
www.pikeconservation.org

PCCD Nominating Organizations

Delaware Highlands Conservancy	Pike County Penn State Extension
Gifford Pinchot Audubon Society	Wayne/Pike Builders Association
Hemlock Farms Conservancy	Pike County Planning Commission
Milford Garden Club	Pike Federation of Sportsmen's Clubs
Northeast PA Audubon Society	Pike/Wayne Chapter Trout Unlimited
Pike Co. Agricultural Fair Association	Wayne/Pike Farm Bureau

2015 Staff Highlights



Executive Director Sally Corrigan led the Pike County Conservation District staff team through another busy year that included the addition of two new staff members! Chris Ingulli (pictured top left) joined the District staff on October 5 as Resource Conservationist. Chris is a life-long resident of Pike County and a graduate of East Stroudsburg University with a Bachelor of Science in Environmental Studies. Chris enjoys hunting, fishing and hiking. Chris is excited to be part of the Pike County Conservation District team and is looking forward to protecting Pike County's natural resources.



Emily Rinaldi (pictured middle left) joined the District on August 10 as the new Watershed Specialist. Emily moved back to Northeastern Pennsylvania, where she was born and raised, from South Central Pennsylvania where she worked previously as an Urban Resource Conservationist for Berks County Conservation District. She is a graduate of Keystone College with a Bachelor of Science in Environmental Resource Management. Emily is an avid fisherman, river guide, and all around outdoors enthusiast who is looking forward to sharing her knowledge and passion for the outdoors with Pike County residents.

Both Emily and Chris attended a Wetland Training instructed by professionals from the US Army Corps of Engineers (ACOE) and the USDA Natural Resource Conservation Service (NRCS) during October 2015 (pictured middle left).



Throughout the year, Administrative Manager Michele Ulmer worked closely with the District's administrative staff team handling all aspects of the District's day-to-day operations. Michele continued to work with the Pike-Wayne Conservation Partnership, represented the District on the PACD Education and Outreach Committee, served as District Voting Delegate to the PACD Executive Council and worked with the State Conservation Commission's Leadership Development Committee. The District's Administrative Assistant Tina Spizuoco served as the District's front line of contact answering phones and greeting visitors to the office.

Technical Program Assistant/Gypsy Moth Coordinator Kelly Rodemich (pictured bottom left) provided administrative support to all technical program areas including Chapter 102 and Chapter 105 delegated programs. Kelly had a busy 2015 gearing up for the implementation of a 2016 Pike County Gypsy Moth Program. She worked closely with the County Commissioners and DCNR gathering resident applications, completing field evaluations for determining eligibility for the program, and working with the press and residents to get the word out regarding the 2016 program.



Resource Conservationist Marianna Quartararo, on staff since 2012, continues to work directly with project permittees and engineers on Chapter 102 and Chapter 105 projects. Ellen Enslin, Senior Resource Conservationist, also works in both 102/105 programs as well as acting as Team Leader coordinating the work of the Tech Staff Team. Ellen continues her Certification as a Professional in Erosion and Sediment Control (CPESC). This certification is given to specialists who have met established educational and practical standards, expertise and knowledge. CPESC demonstrates their knowledge of effective and economical methods of minimizing soil erosion and sediment transport due to land disturbance activities.

Chapter 102 Erosion and Sediment Control & Stormwater Management Program

The District continued to work closely with the Pennsylvania Department of Environmental Protection (DEP) to implement all resource programs that have been delegated via an agreement with the District. In addition to the Waterways Management (Chapter 105) Program, Conservation District staff carry out responsibilities of PA DEP under the Erosion and Sediment Control Program (Chapter 102). Land developments and other activities which *disturb the earth* are required to develop and implement an erosion and sediment (E&S) control plan which effectively minimizes the potential for sediment runoff. Most of these E&S Plans are reviewed for compliance with Chapter 102 by District Technical Staff. Site inspections are also completed by staff.



Pictured above: Westfall Senior Housing project in Westfall Township

District Technical Staff attended specialized training provided by DEP in 2015 to update staff implementing the programs in the field and to provide information on Standard Operating Procedures (SOPs), policies and forms which may have changed during the year. During 2015, Technical Staff worked with applicants and engineers on several large projects in Pike County including: Tennessee Gas Northeast Upgrade project, Pennsylvania Department of Transportation Interstate 84-Section 448 and Section 449 and State Route SR 2001, Section 401 and Section 402 reconstruction, Delaware Valley School District projects, Hemlock Farms Stormwater Improvements, Westfall Senior Housing, the Pond Eddy Bridge upgrade and numerous other projects throughout Pike County.



Pictured above: Delaware Valley School District Elementary School project in Matamoras Borough

PCCD 2015 E&S Control & NPDES 102 Program Highlights

Technical Assistance Provided	500	Project Acres	10,462
Initial Plan Reviews	40	Total Acres Disturbed	696
Follow-up Plan Reviews	17	Complaints Investigated	45
Site Inspections	239	Combined Staff Hours	5,375

The District processed four Individual/General NPDES Permits in 2015
Staff managed an additional 22 Individual/General NPDES Permits during 2015

PCCD Fees for Services Updated

The Pike County Conservation District Board approved an updated Fee Schedule for Services which became effective April 24, 2015. The purpose of the Fee Schedule For Services is to help defray costs incurred by the District in its delegated administration of the Pennsylvania Department of Environmental Protection (Department) Chapter 102 Erosion and Sediment (E&S) Control and Chapter 105 Dam Safety and Waterway Management Programs and to promote complete and accurate E&S Control plan submissions and efficient reviews. A copy of the Fees for Services can be found on our website or by contacting the District office.



Above is an example of a Minor Road Crossing (GP-7) in Lackawaxen Township

PCCD 2015 Waterways Management 105 Program Highlights

Technical Assistance Provided	474
General Permits Acknowledged	47
Complaints Investigated	25
New Sites Inspected	13
Total Inspections	31
Combined Staff Hours	1,549

Waterways Management Program

Activities that change the current cross section of a stream or waterway or that encroach into the floodway of a water body can impact aquatic life, habitats adjacent to water bodies, or cause flooding resulting in property damage. So planning for properly addressing and minimizing these potential impacts is important whenever work in and around streams and waterways are proposed.

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

The District handles Chapter 105 (Waterways Management) General Permits, which authorize certain types of work in and along waterways including: Fish Habitat Enhancement; Small Docks & Boat Ramps; Bank Stabilization; Utility Line or Minor Road or Trail Crossings of streams or wetlands.

An example of a common General Permit used in Pike County is a General Permit 2 (GP-2) used for the installation of small docks and boat ramps. This type of General Permit is required whenever one of these activities is proposed in or along regulated waters of the Commonwealth of Pennsylvania. Another common General Permit for Pike County would be a General Permit 7 (GP-7) for minor road crossings. An example of where this type of permit would be utilized is for a driveway from a residence that requires crossing a stream to gain access to a roadway.

Gypsy Moth Program Update for 2015

With an increased presence of gypsy moth throughout Pike County in 2015, Pike County Commissioners, with the District taking the lead, coordinated with the Department of Conservation and Natural Resources (DCNR) Bureau of Forestry to gear up for a 2016 Gypsy Moth Suppression Program. During Summer 2015, PCCD Gypsy Moth Coordinator Kelly Rodemich worked closely with Pike County residents, community association representatives, municipal officials, DCNR and the Pike County Commissioners to spread the word regarding an upcoming program.

A public informational meeting was held August 12, 2015 with representatives from DCNR and Pike County to present information on the gypsy moth lifecycle, explain the state suppression program and answer questions. Applications for consideration to be included in the program were submitted in September for evaluation. Field work to determine the density of Gypsy Moth egg masses on resident and community association properties was completed in Fall 2015. Aerial spray blocks were designed for those property owners who qualified for aerial spraying and submitted payment. Aerial spraying is scheduled to occur between late April and early June 2016 depending on weather conditions. No additional properties can be added to the 2016 program at this time.

If you would like more information on the 2016 Pike County Gypsy Moth Suppression Program or if you are interested in contracting a private aerial sprayer, please visit our website at www.pikeconservation.org or contact the District office.



Gypsy Moth caterpillar



Gypsy Moth Informational Meeting held at the Pike County Training Center in August 2015

Dirt, Gravel & Low Volume Road Maintenance Program

The focus of the DG&LV Road Maintenance Program is promotion of *Environmentally Sensitive Road Maintenance Practices* that reduce the impact of road runoff and sediment to local streams while reducing long term road maintenance costs. The Pike County Conservation District Quality Assurance Board and the Conservation District Staff provided program updates to potential Pike County Dirt, Gravel and Low Volume Road applicants at an informational session held on January 29, 2015. Representatives from seven townships and the PA Game Commission were on hand for the presentation. Pike County Conservation District Senior Resource Conservationist Ellen Enslin and Administrative Manager Michele Ulmer provided an overview of the changes to the program, reviewed what funding was available for Pike County applicants, and discussed new tools available to assist applicants. The simple application process and project evaluation and prioritization process were also covered.

In Fall 2015, three municipalities completed projects funded under Pike County Conservation District's Dirt, Gravel and Low Volume (DG&LV) Road Maintenance program. Westfall Township's Bluestone Boulevard Low Volume road project includes the replacement of culvert pipes along the road to assist in water flow and prevent flooding events along the road. Previous flood events washed shoulder and embankment stone and soil into Bush Kill Creek, an Exceptional Value stream near MillRift.



Overflow Stream Culvert Installed,
Bluestone Boulevard, Westfall
Township

Shohola Township's Parkers Glen Road Dirt and Gravel road project included the replacement and addition of culverts as well as increasing 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 German Valley Road. The project included the installation of over 150 feet of underdrain within a roadside channel to manage groundwater seeps and keep them separate from channel flow. Channel stabilization, additional culvert installation and driving surface aggregate application all help prevent sediment from reaching Mozzette Creek, a high quality, cold water fishery.



DSA Placement, German Valley Road,
Greene Township

Driving Surface Aggregate (DSA) was applied to the two 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.

District staff and Board members continue to work closely with representatives from PA Fish and Boat Commission and the Natural Resource Conservation Service on Pike County's Quality Assurance Board to prioritize submitted applications and fund projects. To learn more about the program you can visit the District website at: [http://www.pikeconservation.org/per_reg.htm#Environmentally Sensitive Dirt & Gravel](http://www.pikeconservation.org/per_reg.htm#Environmentally_Sensitive_Dirt_&_Gravel)

District Completes Road Cleanup

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 Conservation District's May 18, 2015 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 PCCD staff team in this 2015 clean up effort were Pike County Commissioners Matt Osterberg and 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.



USGS Groundwater Assessment of Pike County

Whether through a private well or water from a community water supply, all of Pike's drinking water comes from groundwater. Groundwater also provides the base flow for the Pike County streams which is especially important during periods of drought. Pike County has been shown to have relatively good groundwater quality along with a stable supply of water to fit the County's current needs; however, keeping a baseline of information is important to protecting this resource. Pike County Conservation District (PCCD) has joined with the US Geological Survey (USGS) on a number of recent studies investigating the county's water quality and quantity.

Most recently, PCCD joined with USGS on an extensive groundwater assessment begun in 2015. Between April and September 2015, USGS in coordination with the District sampled a total of 79 private wells throughout Pike County. Each well was sampled for a variety of parameters including but not limited to: major ions, nutrients, dissolved gases, radionuclides, other physical and chemical properties. The wells were sampled by USGS field employees from the Exton and New Cumberland offices. The results of the samples taken in 2015 will be available to well owner participants in late spring 2016.

The wells were sampled for drinking water safety standards set by the Environmental Protection Agency (EPA) together with constituents associated with the process of unconventional hydraulic fracturing and for the presence of naturally occurring methane.

Funding for this study was provided by the US Geological Survey (USGS) and a grant awarded to the Pike County Conservation District by the Commonwealth Finance Authority (CFA) through Pennsylvania's Marcellus Legacy Fund (supported by gas well impact fees).



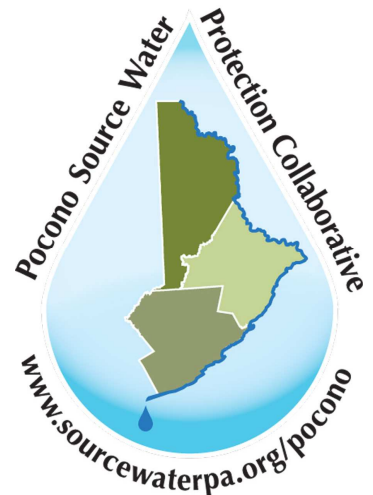
Pictured above: USGS Staff working with PCCD Staff sampling a water well in Pike County

Pocono Source Water Protection Collaborative

Several partners joined together in 2013 to develop a collaborative which focuses on maintaining the excellent drinking water quality of Pike County and the region. Pike County Conservation District partnered with 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 Pennsylvania Rural Water Association to form the Pocono Source Water Protection Collaborative (PSWPC).

One of the main areas of focus for the Collaborative is to support community water systems in their drinking water protection efforts 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. PSWPC also hopes to extend participation of community water suppliers by highlighting the benefits and opportunities of working together. The Collaborative meets bi-monthly.

The Collaborative was begun with assistance of a start-up grant in the amount of \$5,000 from the Water Resources Education Network, a project of the League of Women Voters of Pennsylvania Citizen Education Fund through a grant from the Pennsylvania Department of Environmental Protection for Drinking Water Source Water Protection administered by the US Environmental Protection Agency. The League of Women Voters also provided guidance on educational outreach and water resource protection initiatives. More information can be obtained by calling the Pike County Conservation District.



A Groundwater-level Monitoring Network for Pike County

During 2015, the Pike County Conservation District (PCCD) continued its partnership with US Geological Survey (USGS), Exton office and 24 Pike County property owners to monitor groundwater levels in Pike County. Conservation District staff monitor water levels monthly in 24 wells located throughout Pike County with at least one well in each of the major watershed areas. Water level measurements began in June 2007 with USGS staff taking responsibility for the initial measurements. PCCD staff, trained by USGS Technicians, have continued the monthly data collection since 2009. All monthly data is immediately entered into the USGS database and is available to the public on the internet. Visit: <http://groundwaterwatch.usgs.gov/countymap.asp?sa=PA&cc=103>.

Data and summary statistics such as well depth, most recent well level measurement with date, well site name and identifying number, short description of the local aquifer as well as tables and graphs showing historical data for each well site since monitoring began can be viewed on-line. 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 level decline 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.

Pike County Conservation District is committed to continuing this groundwater partnership with USGS through 2018. Funding for the project is provided by the USGS, PCCD, and the Pike County Scenic Rural Character Preservation Program.

Monitoring Pike County's High Quality Streams

The Pike County Conservation District (PCCD) continued its annual surface water quality monitoring program in 2015. Emily Rinaldi, the District's Watershed Specialist and Sally Corrigan, Executive Director completed a full schedule of sampling in spring and fall continuing years of water quality monitoring in Pike County streams. Both District staff and Board members participate in this watershed work.

Annually, PCCD monitors approximately 30 stream sites with over 45 stream sites county-wide included in the PCCD Surface Water Quality Monitoring Program. The District added several special study sites to the program in 2012 to broaden the baseline of information. During April and May 2015, District personnel conducted sampling of 25 stream sites including 4 special study sites. Fish surveys were completed in August 2015 on five streams including Toms Creek, Little Bushkill, Sawkill, Kleinhans Creeks and the Lackawaxen River with the assistance of Aquatic Resource Consulting (ARC) biologists.



The District works with Aquatic Resources Consulting (ARC) to complete the water quality monitoring program each fall and spring. Pictured l. to r.: PCCD Board Associate Director Ken Ersbak and Jim Harsler, ARC.

Biological monitoring of streams serves several purposes. It can provide an early warning of changes in water quality, detect pollution events or other episodes which cause changes, evaluate recovery from disturbed conditions, or reveal environmental trends and cycles. Information derived from long-term biological monitoring can be used to assess water quality trends and develop programs which provide for proper conservation and protection of stream ecosystems.

Pike County's freshwater streams range in size from small headwater streams to large rivers. Nearly all of these waterways are classified by the PA Department of Environmental Protection (DEP) as *High Quality* or *Exceptional Value* (PA Code Title 25, Chapter 93). To understand if these systems are changing over time, Pike County Conservation District (PCCD) has been monitoring stream biology for over 20 years. The District's monitoring has included analysis of macroinvertebrate and fish populations, habitats and some basic physical and chemical parameters such as temperature, pH, dissolved oxygen, and conductivity. Analysis of the information is summarized in the District's Annual *Environmental Quality of Pike County Streams* which is posted on the Conservation District website.

Wallenpaupack Wins 2015 Pike/Wayne Envirothon



The *Tanmolashwesonio* team from Wallenpaupack won the Pike/Wayne Envirothon. From left to right: Pike County Commissioner Richard Caridi, Pike County Conservation District Envirothon Coordinator Michele Ulmer, Pike County Commissioner Matt Osterberg, Wesley Kundla, Antonio DiSilvestre, Tanner Abbott, Ashley Quinn, Molly Peterson, and Wayne County Commissioner Wendall Kay.

The *Tanmolashwesonio* team won the 2015 Pike/Wayne Envirothon. Second place went to *Here's Johnny...Darter*, and third place went to *The Avengers* all from Wallenpaupack Area School District. The 29th Annual Pike/Wayne Envirothon was held Thursday, April 30, 2015 at the Environmental Learning Center in Hawley with an exciting day of competition. The first place Wallenpaupack team represented Pike County at the State Envirothon event at University of Pittsburgh in Johnstown and the Windber Recreation Park on May 19-20, 2015. This one-day educational competition is 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, and Western Wayne High Schools competed in the 2015 event. Five-member teams competed by applying their knowledge and problem-solving skills in subject areas including: Aquatic Ecology, Forestry, Soils/Land Use, Wildlife, and Urban and Community Forestry, the 2015 current issue topic.

The 2015 Envirothon included a presentation from Susan Klikus of Augusta Acres, who spoke to students about the process of producing maple syrup. Ms. Klikus provided maple syrup that went along perfectly with the donated ice cream from Yatonsky's Farm for the traditional sundae bar held at the event.

The Pike/Wayne Envirothon and Pennsylvania Envirothon partner with the USDA Natural Resources Conservation Service, Pennsylvania Fish and Boat Commission, Pennsylvania Game Commission, Pennsylvania Department of Conservation and Natural Resource Bureaus of Forestry and State Parks, the Pennsylvania Department of Environmental Protection, the Pennsylvania Department of Agriculture, and the Pennsylvania 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. 2015 Envirothon sponsors included: Pennsylvania's Trappers Association, Dutch's Supermarket, Wallenpaupack Veterinary Clinic, Davis R. Chant Realtors, Woodloch Pines, Honesdale National Bank,



Wayne Bank, McGoey, Hauser & Edsall, Natures Grace Health Foods & Deli, Dirlam Brothers Lumber Company, Yatonsky's Farm, and Augusta Acres. Additional funding was provided by the Pennsylvania Envirothon Inc. through its education grant with the Pennsylvania Department of Environmental Protection Environmental Education Fund.

District Conservation Education and Outreach...



Pictured l. to r.: Sally Corrigan, Michele Ulmer, Marianna Quartararo, District Associate Director Kelly Stagen and Ellen Enslin at the Women in Science Symposium held in May 2015.



- Supported the May 2015 *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. Conservation District Executive Director Sally Corrigan and Senior Resource Conservationist Ellen Enslin were highlighted in a video clip of local women in science.
- Conducted groundwater protection education including a groundwater flow-model demonstration for over 200 students at Wallenpaupack High School.
- Supported and promoted educational programs of the Pike/Monroe Forest Landowners Association.
- Participated in the Hawley Earth Fest in partnership with the Downtown Hawley Partnership in a weekend-long celebration including an Environmental Expo and a Species Parade.
- Provided funding for eight Pike County classrooms to receive the Gifford Pinchot Audubon Society's Audubon Adventures program. The 2015-2016 theme was *Migration: Birds' Amazing Journeys*.
- Presented updates on District Programs and projects to the Pike County Association of Township Supervisors at their annual meeting in October.
- Partnered with Dingman Township Supervisors on a DEP Environmental Education grant for program development at the Cornelia and Florence Bridge Preserve.

Scenic, Wild Delaware River Geotourism Program

In 2015 the Pike County Conservation District Administrative Manager Michele Ulmer was asked to join a group of organizations in New Jersey, New York, and Pennsylvania to work with National Geographic Maps to launch a new Geotourism initiative to highlight the world-class natural and cultural attractions of the Middle and Upper Delaware River Region.

Geotourism is tourism that sustains or enhances the geographic character of a place, its environment, culture, aesthetics, heritage, and the well-being of its residents. The Scenic, Wild Delaware River Geotourism Program will create a National Geographic Society co-branded interactive website of the Upper and Middle Delaware River Region that identifies natural, cultural, and historic attractions that make the area unique. The website will be created from stories, recommendations and nominations of local residents. The program covers sites, attractions and businesses within a nine-county area: Sussex and Warren counties in New Jersey; Delaware, Orange and Sullivan counties in New York; and Monroe, Northampton, Pike and Wayne counties in Pennsylvania.

This program seeks to promote and enhance the area's natural, historic and cultural sites to potential visitors who are seeking authentic travel experiences. The project will encourage sustainable economic development and promote long-term stewardship of the rivers' distinctive communities, businesses, working landscapes and natural areas.

The Scenic, Wild Delaware River Geotourism Council has been convening since September 2015 and has reviewed a number of nominated sites and stories that were submitted for inclusion in the MapGuide. The Geotourism program will roll out in the Spring 2016 but there will continue to be opportunities to submit nominations for your favorite place in the Upper and Middle Delaware Region. To learn more about this exciting program or to nominate a special place visit: <http://delawareriver.natgeotourism.com>.

PCCD Environmental Education Grant

The Pike County Conservation District (PCCD) 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 conservation mission of the District. Two grants were awarded by the District in 2014, and grant recipients provided presentations to the District Board in 2015.

Dingman-Delaware Elementary School (DDES) constructed a shade structure to add to their outdoor classroom by utilizing grant funds received from the District. The DDES structure is located between the elementary and middle schools for use by classes from both schools. Dave Koretz, fourth grade teacher and Head teacher at DDES, took the lead on coordinating the building of the outdoor classroom. The project also received funding and assistance from the PA Game Commission, the National Wild Turkey Federation and the Girl Scouts to construct a path and install a native plant garden.

Wallenpaupack Middle School students along with their teacher Mrs. Lori Christopher and volunteer Master Gardener Bob Morgan provided the Conservation District Board with a presentation on how their school project utilized a \$500 Environmental Education Project grant.. The funds were used to purchase supplies for the Middle school garden and Junior Master Gardener Resources to assist students in better understanding gardening principles and techniques.

The garden was planted and is being maintained by the students in the sixth grade science classes. It will be maintained over the summer by student volunteers along with their families.

To date, over \$6,500 in funds have been provided to thirteen separate projects throughout Pike County through the District's Grant program.

In 2015, the District Board awarded two EE Project grants. East Stroudsburg North High School received a \$500 grant to purchase and run a small greenhouse. Native plants and garden vegetables will be raised by students from Biology II and Environmental Science classes.

Bushkill Elementary in the East Stroudsburg School District received a \$500 grant to build a vegetable garden in the school courtyard. Food grown in the garden will be donated to the local food pantry.



Left to right: Dave Koretz Head Teacher at DDES, Skyler Bower, Mark Scalley, Jayden Latini, Vito Montorio, Lily Williams, and Nick Lauersen Fifth Grade teacher DDES.



Left to right: Wallenpaupack students Tim Stopyra, Janelle Ortiz, Abigail McCue, Liam Smith, and volunteer Master Gardener Bob Morgan.



Ryan Delong from East Stroudsburg North is pictured above left with PCCD Board Chairman Scott F. Savini.

