CATAWISSA CREEK WATERSHED

RIVERS CONSERVATION PLAN

December 9, 2010

Prepared By:

Pennsylvania Environmental Council

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And

The Foundation for Pennsylvania Watersheds

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Municipalities:

Carbon County	**Columbia County**	**Luzerne**	**Schuylkill**
Banks Township	Beaver Township	Black Creek Township	Delano Township
	Catawissa Borough	Hazle Township	East Union Township
	Catawissa Township		Kline Township
	Conyngham Township		Mahanoy Township
	Franklin Township		McAdoo Borough
	Main Township		North Union Township
	Mifflin Township		Ringtown Borough
	Roaring Creek Township		Union Township
			Mahanoy Township

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Executive Summary

The Pennsylvania Environmental Council (PEC), Northeast Regional Office, has prepared a Rivers Conservation Plan (RCP) for the Catawissa Creek Watershed through funding provided by the Pennsylvania Department of Conservation and Natural Resources (DCNR) and the Foundation for Pennsylvania Watersheds. The Catawissa Creek Watershed includes portions of twenty (20) municipalities located in Carbon, Columbia, Luzerne and Schuylkill Counties. The Catawissa Creek is approximately forty (40) miles in length and drains an area of approximately 152 square miles. This RCP was prepared per DCNR guidelines and is based on an inventory of land, water, recreational, social and cultural resources in the study area. The Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) provided in-kind services to prepare a series of GIS based maps which detail the cultural and historic resources, land use, critical areas, open space and recreational sites, and wetlands and floodplain sites. The Columbia County Conservation District's Watershed Specialist provided in-kind services including the coordination of meetings and assistance with public participation

The Pennsylvania Rivers Conservation Program was developed by DCNR to conserve and enhance river resources through the development and implementation of locally initiated plans. The program provides technical and financial assistance to municipalities and river support groups to carry out both planning and implementation activities. A registry has been established to recognize completed river conservation plans and is on-line at http://www.dcnr.state.pa.us/brc/rivers/riversconservation/. With the completion of this plan, the Catawissa Creek Watershed Rivers Conservation Plan can be placed on the Pennsylvania Rivers Conservation Registry to become eligible for funding assistance. This program has no regulatory component. Communities that develop a rivers conservation plan are not subject to additional state or federal regulations because of the existence of the plan. The completion of a Rivers Conservation Plan does not insure automatic listing on the Pennsylvania Rivers Conservation Registry. A petition to have the plan included on the registry is required.

Community involvement from the private and public sector in the planning stage of the rivers conservation program is essential to the success of a completed rivers conservation plan. Community involvement not only ensures that the interests of local citizens are reflected in the plan (thereby making specific projects eligible for implementation dollars), but also instills a degree of ownership on the part of the community for the plan once it is completed. PEC conducted an extensive community involvement/public participation process that included public and steering committee meetings, surveys, and key person interviews. This process was essential to the development of the Action Plan that reflects the needs of the local communities.

The Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) provided in-kind services to produce the GIS based maps for the Plan. The maps produced by EPCAMR included geology & mine lands, topography & soils, sub-watersheds, cultural & historic, county zoning, open space, floodplain and wetlands and water quality. The steering committee provided valuable input to the production of these maps.

The primary goal for the RCP was to define the existing characteristics and attributes of the Catawissa Creek Watershed through an inventory of land and water; biological; and cultural

resources and then prepare a comprehensive Action Plan with corresponding management options to better plan for the future of the Watershed.

Project Area Characteristics

The Catawissa Creek Watershed is located in Northeastern Pennsylvania and flows through portions of Carbon, Columbia, Luzerne and Schuylkill Counties. The headwaters of the Catawissa Creek are located along the boundary of Luzerne and Carbon Counties, a few miles southwest of Hazleton, Pennsylvania. The Borough of McAdoo and the village of Kelayres lie at the eastern edge of the watershed. The villages of Sheppton and Oneida lie in the mid-region of the watershed. The Catawissa Creek flows generally west from Luzerne and Schuylkill Counties into Columbia County to its confluence with the North Branch of the Susquehanna River in Catawissa Borough, eventually flowing into the Chesapeake Bay. The watershed drains an area of approximately 152 square miles consisting of approximately 132 total miles of streams. The total length of the main stem of the Catawissa Creek is approximately 40 miles.

The Watershed is located in portions of the following twenty (20) municipalities: Banks Township, Carbon County; Beaver, Catawissa, Conyngham, Franklin, Main, Mifflin and Roaring Creek Townships and Catawissa Borough in Columbia County; Black Creek and Hazle Townships in Luzerne County; and Delano, East Union, Kline, Mahanoy, North Union, Union and Mahanoy Townships and McAdoo and Ringtown Boroughs in Schuylkill County.

The predominant land use in the Watershed is forest. State game lands 58 and 308 comprise 13,711 acres of forested land within the watershed. The remaining forest in the Watershed is privately owned. The watershed is also interspersed with single family rural residences and small farming operations. More concentrated residential development is present in the Boroughs of McAdoo, Ringtown and Catawissa. However, there are pockets of industrial areas including some industrial parks in the northeast section of the Watershed.

The leading employment sectors in the counties that comprise the Watershed are health care and social assistance and manufacturing. Retail trade is the second leading employment sector and local government is the third leading industry.

Project Area Features – Land and Water

The Watershed is rich in land and water resources. A large majority of the Watershed is forested land, with a smaller percentage of land devoted to agricultural. The Watershed is comprised of twenty-five tributaries. It lies within the Appalachian Mountain Section of the Ridge and Valley Province. The topography of the headwaters is characteristic of the northern sandstone ridge and anthracite regions with areas of sharp ridges and narrow valleys. The remainder of the Watershed is characterized by rolling valleys and isolated hills. Most of the soil series in the Catawissa Creek Watershed are low in pH and contain no buffering capabilities.

Thirteen (13) tributaries in the Watershed are designated as high quality cold water fisheries (HQ-CWF). Twelve (12) tributaries in the Watershed are designated as cold water fisheries

(CWF). A section of the Catawissa Creek from Rattling Run to the mouth of the creek is designated as a trout stocked fishery (TSF).

There are a variety of issues affecting water quality in the study area including but not limited to acid mine drainage, agricultural runoff and erosion and sediment. The 303(d) listing process includes waters impaired by point and non-point sources of pollutants. Several creeks in the study area are listed as 303(d) impaired waters for aquatic life by acid mine drainage (AMD) and these include the Catawissa Creek, Fisher Run, Little Tomhicken Creek, Tomhicken Creek and Sugarloaf Creek. Creeks identified on the 303(d) list in the study area for other impairments, including atmospheric deposition (pH) and agriculture-siltation, include Stranger Hollow, Cranberry Run, Crooked Run, Tributary 27542 to Catawissa Creek and Tributary 27559 to Catawissa Creek.

Biological Resources

The Watershed has a number of biological resources as indentified in the Natural Area Inventories for each county within the Watershed including numerous birds, mammals, reptiles, fish, mussels and insects. The Pennsylvania Natural Diversity Inventory (PNDI) is maintained by the Pennsylvania Department of Conservation and Natural Resources (DCNR) for the purpose of describing significant natural resources in Pennsylvania. The information is site specific and includes plants, natural communities, terrestrial invertebrates and geologic features. Based on the PNDI findings for the Catawissa Creek Watershed, there are nine (9) plants and seven (7) natural communities of significance located within the Watershed.

Cultural Resources

There are a number of recreational, cultural and historic resources within the Watershed. Recreational resources within the Watershed include State Game Lands, numerous private clubs and associations that own tracts of at least 10 contiguous acres, as well as, local municipal parks and ball fields. There are also rails-to trails within a few miles of the Watershed boundary and a section of a Pennsylvania Department of Transportation cross-state on-road bicycle route (PA Bike Route V). The Watershed also has a rich lumber and anthracite mining history including an historical significance relating to the Molly Maguires. There is one covered bridge within the Watershed however, Columbia County has numerous covered bridges throughout the County and offers information for covered bridge driving tours.

Project Public Participation

Public participation was crucial to the planning process for the rivers conservation plan. Input, in the form of steering committees and surveys was integral to the development of the RCP. The first public meeting was held on March 21, 2007 at the beginning of the project to present the project. A steering committee was formed and all municipalities in the watershed were invited to participate on the committee, as well as, other organization representatives.

PEC distributed a survey to all twenty (20) municipalities in the Catawissa Creek Watershed. The purpose of the survey was to assist in the determination of the importance of water

protection issues by municipal representatives, municipal concerns regarding the watershed, and to obtain recommendations for the Action Plan of the Rivers Conservation Plan. Not all the municipalities actively participated on the steering committee therefore the survey provided municipal representatives with an alternative to contribute concerns/potential actions to this Rivers Conservation Plan. A general questionnaire was also distributed via Representative Yudichak's quarterly newsletter, as well as, made available on the website of the Pennsylvania Environmental Council, the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation and the Catawissa Creek Restoration Association.

Project Recommendations and Management Options

Based on input from the steering committee and responses from the surveys various recommendations were developed for the resources of the Watershed. The recommendations developed through the public and municipal participation include addressing water, land, recreational, historic and cultural and educational resources of the Watershed.

A sampling of recommendations include addressing water resources by maintaining and planting riparian buffers, addressing AMD and removing invasive species along streambanks; addressing land resources through more regional and joint planning efforts, updating local municipal comprehensive plans, sub-division and land development and zoning ordinances and cleaning up illegal dumping sites; addressing recreational resources by providing access to streams within the Watershed for recreational opportunities, especially fishing, trail and park development and promoting tourism and special events regarding the region; addressing educational needs by developing materials regarding what a watershed is and why is it important, the importance and function of riparian buffers, outreach programs for local residents and businesses emphasizing water conservation, nutrient control and storm water runoff and the importance of providing public access to the creek; addressing historic resources by rebuilding and repairing covered bridges, promoting local Native American heritage, promoting the local lumber and anthracite mining history and preserve and enhance other historical aspects of the Watershed communities.

The recommendations are varied in type and scope, therefore implementation of the Project recommendations will require cooperation and coordination among many different organizations. There are many agencies and organizations immediately available to assist in the Watershed with implementation and management of these recommendations. An organization that has been very active in the watershed and could be the primary organization to oversee the implementation of these recommendations is the Catawissa Creek Restoration Association (CCRA), a local watershed organization formed with a mission to preserve and improve the water quality in the Catawissa Creek Watershed.

Introduction

The Pennsylvania Rivers Conservation Program has been developed by the Department of Conservation and Natural Resources to conserve and enhance river resources through preparation and accomplishment of locally initiated plans. The program provides technical and financial assistance to municipalities and river support groups to carry out planning, implementation, and acquisition and development activities. It is a goal of DCNR to have a RCP prepared for all the watersheds in the Commonwealth. Many of the watersheds surrounding the Catawissa Creek Watershed already have a completed RCP and it was the desire of the partners and DCNR to have a plan completed for the Catawissa Creek Watershed.

PEC submitted grants to the Pennsylvania Department of Conservation and Natural Resources Rivers Conservation Program and the Foundation for Pennsylvania Watersheds to prepare a Rivers Conservation Plan for the Catawissa Creek Watershed and was successfully awarded both grants. The intent of the following Plan is to address environmental, cultural and natural resource issues within the watershed and make locally relevant recommendations for preservation or restoration of environmental integrity to the corridor based upon public input and information gathered during the course of the project. PEC and the Eastern Pennsylvania Coalition for Abandoned Mine Drainage (EPCAMR) signed a memorandum of agreement for EPCAMR to prepare all of the GIS based maps for this Plan.

Community involvement from the private and public sector in the planning stage of the rivers conservation program was essential to the success of the Rivers Conservation Plan. Community involvement not only ensured that the interests of local citizens were reflected in the plan (thereby making specific projects eligible for implementation dollars), but also instilled a degree of ownership on the part of the community for the Plan.

Municipalities that were actively involved in the preparation of the Plan will benefit the greatest during the implementation phase. Once a resolution of endorsement has been passed the Plan will become eligible for implementation funds for projects included in the Plan. Municipalities that are actively involved in the planning process are better positioned to submit implementation grant applications than are less involved municipalities.

Project Characteristics

Location/Size/Topography

Location

The Catawissa Creek Watershed is located in Northeastern Pennsylvania in portions of Carbon, Columbia, Luzerne and Schuylkill Counties (Figure 1 Catawissa Creek Watershed Map: Base Aerial Map). The headwaters of the Catawissa Creek are located along the boundary of Luzerne and Carbon Counties, a few miles southwest of Hazleton, Pennsylvania. The Borough of McAdoo and the village of Kelayres lie at the eastern edge of the watershed. The villages of Sheppton and Oneida lie in the mid-region of the watershed. The Catawissa Creek flows generally west from Luzerne and Schuylkill Counties into Columbia County to its confluence with the North Branch of the Susquehanna River in Catawissa Borough, eventually flowing into the Chesapeake Bay. The watershed is located in portions of the following twenty (20) municipalities: Banks Township, Carbon County; Beaver, Catawissa, Conyngham, Franklin, Main, Mifflin and Roaring Creek Townships and Catawissa Borough in Columbia County; Black Creek and Hazle Townships in Luzerne County; and Delano, East Union, Kline, Mahanoy, North Union, Union and Mahanoy Townships and McAdoo and Ringtown Boroughs in Schuylkill County (Table 1 Municipalities in the Watershed).

Size

The watershed drains an area of approximately 152 square miles consisting of approximately 132 total miles of streams. The total length of the main stem of the Catawissa Creek is approximately 44 miles.

Topography

Landforms of similar surface characteristics are classified into physiographic divisions, provinces and sections. A physiographic province is a region whose parts exhibit similar geographic structures and climate and whose topographic relief differs significantly from that of adjacent regions, indicating a unified geomorphic history. The Catawissa Creek Watershed lies within the Valley and Ridge Physiogeographical Province. As defined by DCNR, the Ridge and Valley Physiographic Province is composed of sedimentary rocks including limestone, coal, shale, siltstone, sandstone and conglomerates, formed 290 to 570 million years ago in the Paleozoic Age. During the Alleghanian Orogeny, a mountain building episode that began approximately 290 million years ago when North America collided with Africa, these sedimentary rocks were folded to up to 90 degrees from their original horizontal position. Erosion by water movement and rain has formed a surface topography of a series of parallel valleys that include softer shale and limestone rocks and ridges composed of harder sandstone and conglomerate rocks. (DCNR, 1996).

The topography of the headwaters is characteristic of the northern sandstone ridge and anthracite regions. These areas have sharp ridges and narrow valleys. The rest of the watershed downstream from Mainville is characterized by rolling valleys and isolated hills. Soils

throughout the Catawissa Creek Watershed are usually well drained and acidic (Wnuk, 1998). The surficial geology is mainly interbedded sedimentary (93 percent) with a small amount of sandstone (7 percent) (Catawissa Creek Watershed TMDL, 2003). There is a vertical drop in the watershed of 1,548 feet from its headwaters to its mouth at the Susquehanna River in Catawissa Borough, Columbia County (Figure 2 Catawissa Creek Watershed Map: Topography).

Major Tributaries

The entire drainage area of the Catawissa Creek Watershed is approximately 152 square miles. The sub-watersheds of the surrounding tributaries drain into the Catawissa eventually draining into the Susquehanna River, which eventually discharges into the Chesapeake Bay. There are twenty five (25) named tributaries in the Watershed including Beaver Run, Catawissa Creek, Cranberry Run, Crooked Run, Dark Run, Davis Run, Fisher Run, Furnace Run, Hunkydory Creek, Klingermans Run, Little Catawissa Creek, Little Crooked Run, Little Tomhicken Creek, Long Hollow, Messers Run, Mine Gap Run, Negro Hollow, Raccoon Creek, Rattling Run, Scotch Run, Stony Run, Stranger Hollow, Sugarloaf Creek, Tomhicken Creek and Trexler Run (Figure 3 Catawissa Creek Watershed Map: Sub-Watersheds).

Land Use

The predominant land use in the Watershed is forest. State game lands 58 and 308 comprise 13,711 acres of forested land within the watershed. The remaining forest in the Watershed is privately owned. The watershed is also interspersed with single family rural residences and small farming operations. More concentrated residential development is present in the Boroughs of McAdoo, Ringtown and Catawissa. Continued residential development is taking place at Eagle Rock Resort, a 6,000 acre golf and ski community located five miles southwest of Hazleton off of I-81, and large private vacation style campgrounds are located along the lower sections of the Watershed along Catawissa and Tomhicken Creeks (Figure 4 Catawissa Creek Watershed Map: Base Land Use Map).

The land use data compiled by the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (EPCAMR) for the Geographical Information System (GIS) map was obtained from the Carbon County GIS/Mapping Department, the Columbia County Planning Commission, the Schuylkill County Planning Commission and the Luzerne County Planning Commission (Figure 5 Catawissa Creek Watershed Map: County Zoning).

In Pennsylvania, most decisions concerning land use are under the prevue of the local governments. The Pennsylvania Municipalities Planning Code (MPC) Act 247 of 1968 empowers Pennsylvania municipalities to plan their development and to govern the same through the use of numerous tools such as zoning, subdivision and land development ordinances, official maps, establishment of planning commissions, zoning hearing boards, etc. These tools are available to help them plan or manage their growth and protect and maintain a quality of life. The following tools can be used by municipalities to manage their land use; Comprehensive Plan, Zoning Ordinance, Subdivision and Land Development Ordinance, Municipal Planning Commission, and a Stormwater Management Plan. If a local municipality chooses not to enact land use ordinances, the municipality may follow county level ordinances.

A Comprehensive Plan is an important land use development tool as it is a guide to decision making about physical development in the community. The Comprehensive Plan includes a statement of future goals for the community and serves as a formal vision for the planning commission, elected officials, and other public agencies, private organizations, and individuals within the community. The Plan provides context and direction for a land use ordinances and regulations and should be updated and modified periodically to reflect changes in the community.

Within the Catawissa Watershed, twelve (12) municipalities have their own Comprehensive Plan. Hazle Township, Luzerne County plans to update their Comprehensive Plan originally created in 1974. The Columbia County Comprehensive Plan was created in 1995 and the Schuylkill County Comprehensive Plan was created in 2006. Carbon and Luzerne County are currently updating their County Comprehensive Plans.

A Zoning Ordinance is a legal mechanism by which governmental bodies for the sake of protecting public health, safety and the general welfare regulate land use using designated districts designed to segregate incompatible uses. Municipal zoning is employed to protect a municipality's safety health and welfare as it relates to current and future land development.

Sixteen (16) municipalities have their own Zoning Ordinance. Black Creek and Hazle Townships in Luzerne County are currently updating their respective Zoning Ordinances. The remaining municipalities follow their respective county's zoning ordinances.

A Subdivision and Land Development Ordinance outlines development guidelines and provisions in more detail and may provide for specific mechanisms for controlling site development patterns and design standards. Subdivision regulations authorize a planning commission to review and approve the division of a parcel of land based upon standards and criteria that are set for the community. Municipal Planning Commissions act as advisors to their elected governing body on matters concerning the physical development of the community, including review of subdivisions, land use regulations, building structures, and developing recreation plans.

Ten (10) of the municipalities in the watershed follow their own Subdivision and Land Development Ordinance (SALDO). Ten (10) municipalities within the Watershed have their own Municipal Planning Commissions. The Planning Commissions in Catawissa and Main Townships, Columbia County are currently inactive. The remaining eight (8) municipalities are governed by their respective County Planning Commissions.

A Stormwater Management Plan is a comprehensive and practical implementation plan that provides a mechanism for municipalities within a watershed to plan for and manage increased stormwater runoff associated with future development and land use changes within the community.

According to the Pennsylvania Department of Environmental Protection (PADEP) Carbon and Columbia Counties are considering conducting countywide Stormwater Management Plans, but

neither currently has a county-wide plan (PADEP, 2009). However, there is a stormwater management plan for the Susquehanna River Tributaries Watershed in Columbia County. Luzerne County is currently preparing the Phase II portion of a countywide Stormwater Management Plan. Schuylkill County is in the Phase I process of a Stormwater Management Plan, but does not currently have a Plan. None of the municipalities in the watershed have a Stormwater Management Plan.

In addition to the tools outlined above, municipalities can pass an ordinance to form Environmental Advisory Councils (EACs). An EAC is a group of 3-7 community residents, appointed by local elected officials that advise the local planning commission, park and recreation board and elected officials on the protection, conservation, management, promotion and use of natural resources within its territorial limits. Municipalities are authorized to establish EACs through Act 177 of 1996, originally Act 148 of 1973. There are currently no EACs established in any of the municipalities within the watershed. For a summary of the land use planning and regulation tools in place for each of the municipalities within the Watershed see Table 2 Municipal Ordinance Data Summary.

Socioeconomic Profile

Population Centers

Population data was obtained from the United States Census Bureau for years 1990 and 2000. Population density figures were calculated using the Census data. The area encompassing the Catawissa Creek Watershed is generally rural with residential areas in the Boroughs of McAdoo, Ringtown and Catawissa. Many of the municipalities are not wholly located within the watershed, for example only a small percentage of Banks and Hazle Townships are actually located within the watershed boundaries. However, McAdoo, Catawissa and Ringtown Boroughs are all located within the watershed and they have the highest population density with 6,891, 2,943, 1,877 people per square mile respectively. Between 1990 to 2000 the following fourteen (14) municipalities saw population decreases; Banks Township in Carbon County; Beaver, Catawissa, Conyngham, Franklin and Mifflin Townships and Catawissa Borough in Columbia County; Hazle Township in Luzerne County, and Delano, Kline, Mahanoy and Union Townships and McAdoo and Ringtown Boroughs in Schuylkill County. Conyngham Township saw the greatest decrease of 23.7% in population. Between 1990 and 2000 the following six (6) municipalities saw population increases; Main and Roaring Creek Townships, Columbia County; Black Township, Luzerne County; East Union, North Union and West Mahanoy Townships, Schuylkill County. West Mahanoy Township saw the greatest population increase of approximately 36% (Table 3 Population Data Summary and Figure 6 Catawissa Creek Watershed Map: Municipalities with Population Density)**.**

The Center for Rural Pennsylvania has developed a criterion for defining a county or municipality as urban or rural. According to the Center for Rural Pennsylvania, a municipality is rural when the population density within the municipality is less than 274 persons per square mile or the municipality's total population is less than 2,500 unless more than 50 percent of the population lives in an urbanized area, as defined by the U.S. Census Bureau. All other municipalities are considered urban. Based on this definition, Carbon, Columbia and Schuylkill

Counties are considered rural counties and Luzerne County is considered urban. Nineteen (19) municipalities in the study area are considered rural and one municipality, West Mahanoy Township, Schuylkill, is classified as urban.

Transportation Facilities

Major roadways are the primary source of transportation in the Watershed. Interstate 80 and SR 11 can be accessed from the western portion of the Catawissa Creek Watershed via SR 42 and SR 487 which connects the watershed to Bloomsburg, PA and points west. SR 42 south also connects the watershed to SR 61 to Pottsville, PA. SR 339 follows the Catawissa Creek from the southeast portion of the watershed in Schuylkill County to Mainville where it turns north and connects to I-80. SR 924 traverses the eastern portion of the watershed and provides access to interstate 81. A small section of SR 309 in the eastern portion of the watershed provides access to points north and south outside of the watershed. Numerous township roads also provide access to locations throughout the Watershed.

Carbon County Community Transit (CCCT) offers public transportation in Carbon County and to several points outside of the County. Door-to-door and "fixed route" services are also offered. The Columbia Montour Area Agency on Aging offers transportation to senior citizens when they have no other means of transportation. Columbia County Human Services also administers the following transportation programs within the county, Medical Access Transportation Program, Welfare to Work Transportation program and Income Eligible Transportation programs. Mass transit is available for the Luzerne County municipalities within the Watershed via Hazleton Public Transit (HPT). HPT is a service of the City of Hazleton's Department of Public Services and operates nine routes in the City of Hazleton and surrounding townships and boroughs Monday through Friday, with limited service on Saturdays and Sundays. The Schuylkill Transportation System (STS) provides mass transit service for the municipalities in Schuylkill County. The STS operates a fixed route bus system Monday to Friday from 6:00 AM to 6:00 PM and Saturday from 8:00 AM to 4:00 PM. No bus service is provided on Sundays. The STS also offers an ADA ParaTransit curb to curb service within a specified area for persons with disabilities, a Shared Ride Van Program for senior citizens and an Employment Transportation Program for low income qualifying residents.

Other bus lines in the region which serve the study area include Susquehanna Trailways and Greyhound Bus Company. These bus lines provide service with regularly scheduled daily trips to New York City, Philadelphia, and Atlantic City.

Although not within the study area, the following airports provide local residents convenient access to major cities across the country: Bloomsburg Municipal Airport, Hazleton Municipal Airport, Jake Arner Memorial Airport, Beltzville Airport, Wilkes-Barre Scranton International Airport and the Allentown, Bethlehem, Easton Airport.

Rail service includes two (2) Class I railroads - Norfolk Southern Rail Corporation and Canadian Pacific Railroad - plus feeder service from the North Shore Rail Company and the Reading, Blue Mountain and Northern Railroad.

Major Employers

A majority of the Catawissa Creek watershed is rural with small areas of residential development. However, there are pockets of industrial areas such as the McAdoo Industrial Park and the Humboldt Industrial Park. The 172 acre McAdoo Industrial Park is located in Banks Township, Carbon County is, zoned for industrial use and is a designated Keystone Opportunity Zone (KOZ). The Humboldt Industrial Park, located off of I-81 along SR 924 in Hazle Township, Luzerne County and East Union Township, Schuylkill County is a 3,000 acre park zoned for industrial and commercial uses with many of the properties within the park designated KOZs.

The major employers in a region are important to the local communities as they provide jobs and resources to those communities for a listing of the major employers in the counties of the Watershed see Table 4 Major Employers.

The unemployment rate can be used as a tool to gauge the economic conditions in a state, county or municipality. The seasonally adjusted unemployment rate for the United States for August 2010 was 9.6%. The August 2010 seasonally adjusted unemployment rate for the Commonwealth of Pennsylvania was below the national rate at 9.2%. All four of the counties that comprise the watershed had unemployment rates (not seasonally adjusted) above the state rate. For July 2010, the unemployment rate for Carbon County was 11.1%, for Columbia County it was 9.3%, for Luzerne County it was 10.7% and for Schuylkill County it was 11 %.

According to the Center for Workforce Information and Analysis, the leading employment sectors in the counties that comprise the Watershed, were health care and social assistance and manufacturing, each providing approximately 15% of the employment within the counties. Retail trade at approximately 13% was the second leading employment sector and local government, at 9%, was the third leading industry for employment in the Watershed (Table 5 Breakdown of Employment in the Counties of the Watershed).

Land Resources

Geology

Geology is the study of the Earth and its history, the materials of which it is made, the structure of those materials, and the processes acting upon them. An important part of geology is the study of how Earth's materials, structures, processes and organisms have changed over time. The modern landscape is a result of millions of years of geologic processes. Pennsylvania is enriched with many scenic geologic features and a strong geologic heritage.

The underlying geology of the upper portion of the Catawissa Creek, from the headwaters to its confluence with Tomhicken Creek, is dominated by the Mauch Chunk Formation with significant deposits of anthracite coal from the Llewellyn Formation and the Pottsville Group. The underlying geology of the middle portion, from the Catawissa Creeks confluence with Crooked Run to Mainville, is dominated by a combination of the Mauch Chunk and Pocono Formations. The underlying geology of the lower portion, from Mainville to the mouth, is composed of materials from the Buddys Run Member (Wnuk, 1998). Other bedrock formations of the Watershed include the Keyser and Tonoloway Formations, Duncannon Member of Catskill Formation, Irish Valley Member of Catskill Formation, Sherman Creek Member of Catskill Formation, Hamilton Group, Onondaga and Old Port, Trimmers Rock Formation, Spechty Kopf Formation, Bloomsburg and Mifflintown Formations, Clinton Group and the Wills Creek Formation (Figure 7 Catawissa Creek Watershed: Surface Geology and Mine Lands Map). The following is a brief description all of the formations of the Watershed:

1. Keyser and Tonoloway Formations (DSkt), undivided: medium-gray, crystalline to nodular, fossiliferous limestone; upper part laminated and mud cracked and the Tonoloway Formation is medium-gray, laminated, mud-cracked limestone containing some medium-dark- or olive-gray shale interbeds.
2. Buddys Run Member of Catskill Formation (Dcb): grayish-red and brownish-gray siltstone, mudstone, and sandstone; some gray and dusky-yellow sandstone and siltstone.
3. Duncannon Member of Catskill Formation (Dcd): grayish red-sandstone, siltstone, and mudstone, in fining-upward cycles; conglomerate occurs at base of some cycles.
4. Irish Valley Member of Catskill Formation (Dciv): Nonmarine, grayish-red siltstone and mudstone, and gray and grayish-red sandstone interbedded with minor, thin, light-olive-gray marine siltstone; arranged in fining-upward cycles. Lower part of member has conglomeratic sandstones.
5. Sherman Creek Member of Catskill Formation (Dcsc): alternating grayish-red mudstone and siltstone in poorly defined fining-upward cycles, and minor intervals of gray sandstone.
6. Onondaga and Old Port, undivided (Doo): medium-gray calcareous shale; marine fossils; medium-gray argillaceous limestone.
7. Trimmers Rock Formation (Dtr): olive-gray siltstone and shale, characterized by graded bedding; marine fossils; some very fine grained sandstone in northeast.
8. Spechty Kopf Formation (MDsk): Light- to olive-gray, fine- to medium- grained, crossbedded sandstone, siltstone, and local polymictic diamictite, pebbly mudstone, and

laminite; arranged in crude fining-upward cycles in some places; locally has grayish-red shale near top and conglomerate at base and in middle.

9. Mauch Chunk Formation (Mmc): grayish-red shale, siltstone, sandstone, and some conglomerate; some local non-red zones.
10. Pocono Formation (Mp): Light-gray to buff or light-olive-gray, medium-grained crossbedded sandstone and minor siltstone; commonly conglomeratic at base and in middle.
11. Llwellyn Formation (Pl): Gray, fine-to-coarse-grained sandstone, siltstone, shale, conglomerate, and numerous anthracite coals in repetitive sequences.
12. Pottsville Formation (Pp): Predominately gray sandstone and conglomerate, also contains thin beds of shale, claystone, limestone.
13. Bloomsburg and Mifflintown Formations, undivided (Sbm): grayish-red and greenish-gray shale, siltstone, and very fine to coarse-grained sandstone and the Mifflintown Formation interbedded dark-gray shale and medium-gray fossiliferous limestone.
14. Clinton Group (Sc): light-olive-gray to brownish-gray, fossiliferous shale; locally, limestone occurs near top; includes dark-reddish-gray, very fine to coarse-grained, ferruginous sandstone.
15. Wills Creek Formation (Swc): variegated gray, grayish-red, yellowish-gray and greenish-gray, interbedded calcareous shale, siltstone, shale limestone, and dolomite.

Soil Characteristics

Soils reveal important characteristics of the land with regard to soil composition, dampness, and susceptibility to erosion. Frequently, soils play an important role in determining a site's ability to support development. Soils vary widely in texture and hue, five (5) unique soil types exist in the Catawissa Creek Watershed. The soil associations (groups of soils that exhibit a regularly repeating pattern) in the watershed are developed on glacial till deposits and sandstone and shale bedrock. Soil association characteristics can provide information and understanding of rainfall infiltration rates, flowthrough rates, runoff rates, water retention capabilities, agricultural suitability, erosion, and impact on construction activities. Most of the soil series in the Catawissa Creek Watershed are low in pH and contain no buffering capabilities. The following presents a summary of the five soil associations found within the watershed.

Berks - The Berks series consists of moderately deep, well drained soils formed in residuum weathered from shale, siltstone and fine grained sandstone on rounded and dissected uplands. Slope ranges from 0 to 80 percent. Permeability is moderate or moderately rapid.

Hazleton - The Hazleton series consists of deep and very deep, well drained soils formed in residuum of acid gray, brown or red sandstone on uplands. Slope ranges from 0 to 80 percent. Permeability is moderately rapid to rapid.

Leck Kill - The Leck Kill series consists of deep and very deep, well drained soils formed in residuum or glacial till weathered from red shale, siltstone, and sandstone. They are on the uplands.

Udorthents – The Udorthents series consist of deep and gently sloping to very steep, well drained soils formed in overburdened material on uplands from sandstone, quartzite, conglomerate, shale and slate stripped for coal mining, the soil characteristics are variable. Slopes range from 3 to 80 percent. Permeability is slow to rapid.

Watson - The Watson series consists of very deep, moderately well drained soils formed in pre-Wisconsin glacial till derived from sandstone, siltstone, and shale. Slopes range from 0 to 20 percent. Permeability is slow.

A majority of the soils in the watershed are either moderately to well drained. However, most of the watershed is characterized by a water table that is between 0 and 15 feet deep, signifying that bedrock and/or the presence of water is generally close to the surface and making the feasibility of development in certain areas potentially more challenging. More detailed information about the soils can be found in each county's soil survey, produced by the U.S. Department of Agriculture Soil Conservation Service.

The steep slopes are also indicated on the Figure 8 map and are based on the soils data. Topographic maps, such as those prepared by the U.S. Geological Survey, and field surveys prepared by surveyors during the subdivision and land development process, are the most common sources of slope information available to municipalities. County soil surveys also categorize soil types, in part, based on slope, with typical classifications occurring in the following ranges: A: zero to three percent, B: three to 8 percent, C: 8 to15 percent, D: 15 to 25 percent, and E: 25 and up. In Pennsylvania the definition of steep slopes for the purposes of slope regulation is at the discretion of each municipality. The MPC authorizes municipalities to plan and zone for steep slope protection.

17% of the watershed contains moderate slopes, 18% is moderately steep slopes and 20% is steep to very steep slopes (Figure 8 Catawissa Creek Watershed: Generalized Soils and Steep Slopes Map).

Soil Slope Category	Moderate Slope C (8 to 15%)	Moderately Steep D (15 to 25%)	Steep & Very Steep E & F (25% - up)
Acres	16,637.57	17,662.65	19,280.95
Square Miles	25.99	27.59	30.12
Percent of Total	17.03%	18.08%	19.73%

Steep slopes pose significant constraints to land development and resource extraction because they are highly susceptible to erosion, land slippage, and subsidence if disturbed. Such disturbance can harm ecological values such as water quality, damage man-made structures, and present public safety risks. In many settings, however steep slopes provide scenic views for neighboring areas.

Land Ownership (Public/Private)

Publicly owned lands include State Game Lands (SGL), Parks and Forests. SGL 308, SGL 58 and SGL 329, either wholly or in part, are located in the Watershed. SGL 308 is approximately

1,060 acres, SGL 58 is approximately 10,997 acres and SGL 329 is approximately 1,026 acres for a total of 13,083 acres. Other publicly owned lands include county and municipal parks and Pennsylvania Fish and Boat Commission properties. There are many private clubs and associations that also own tracts of land within the Watershed (at least 10 contiguous acres of vacant land).

Landfills

Landfills are facilities specifically designated and constructed for permanent and safe disposal of waste. Historically, landfills were not always located or engineered with these principals in mind and have been a source for soil and groundwater contamination throughout the state. However, current standards require that all landfills treat lechate (liquids) coming from the landfill, conduct methane gas emission collection and control devices have double liners to minimize groundwater contamination and prevent erosion and sedimentation.

According to the PADEP web site there are no municipal waste landfills or resource recovery facilities within the study area. Two facilities do operate in Schuylkill County, Commonwealth Environmental Systems (CES) located in Foster Township and Pine Grove Landfill, Inc located in Pine Grove Township. CES is a solid waste landfill that accepts household municipal, construction/demolition and commercial office waste. Pine Grove Landfill is a solid waste landfill that accepts municipal, industrial and construction/demolition waste.

Hazardous Areas

Illegal Dumpsites

Illegal dumping and littering typically occur in remote or secluded areas, often along streambeds, hillsides, back roads and abandoned coal mine areas. Illegal dumping that occurs in or around the watershed can adversely affect the water quality and groundwater in the watershed, as well as, create adverse economic impacts and reduce the quality of life for residents in the affected communities. PA CleanWays, a non-profit organization whose mission is to eliminate illegal dumping and littering in Pennsylvania, has conducted illegal dumpsite surveys in various counties throughout the Commonwealth. PA CleanWays chapters are organized on a county basis. PA CleanWays surveyed illegal dumpsites in Columbia, Luzerne and Schuylkill Counties but have not yet surveyed Carbon County. According to the PA CleanWays survey of Columbia County, there are eight illegal dumpsites in Conyngham Township. The survey identified approximately 64 tons of garbage at these dumpsites. According to the PA CleanWays survey of Luzerne County, there are three active illegal dumpsites in Black Creek Township with approximately 511 tons of trash and 18 illegal dumpsites in Hazle Township with approximately 68.5 tons of trash. According to the PA CleanWays survey of Schuylkill County, there are two illegal dumpsites in Mahanoy Township with approximately 50.5 tons of trash and two illegal dumpsites in Union township with approximately 6 tons of trash.

Waste Sites

The United States Environmental Protection Agency (USEPA) and PADEP regulate the handling, transportation, storage, and disposal of hazardous waste material through a variety of legislative mechanisms.

In 1980 the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) was passed for the purpose of identifying active and abandoned hazardous waste sites, developing remediation plans, and requiring the remediation funding by the responsible parties. A tax on the chemical and petroleum industries allowed a trust fund to be established to provide for cleanup where no responsible party could be identified. The National Priority List (NPL) (commonly known as Superfund sites) is a compilation of the most hazardous and contaminated sites (Love Canal was initial most well known site) that are eligible for federal funding for remediation.

There is one (1) site listed adjacent to the study area, it is known as the McAdoo Superfund Site 0301540. According to EPA the site consists of two areas approximately 1.3 miles apart, one in the Borough of McAdoo which covers less than 0.2 acres and the other is in Kline Township and covers 10 acres. Above ground and underground tanks were used to store a variety of liquid hazardous wastes. Waste was stored at the site from May 1978 until April 1979, when the Pennsylvania Department of Environmental Resources revoked McAdoo's permit. The McAdoo Borough facility has four underground tanks containing hazardous substances. The Kline Township area, used as a metal reclamation/incineration facility, consists of approximately 7,000 drums and six above-ground tanks. According to the EPA cleanup progress summary, this site has been deleted from the NPL as physical cleanup activities have been completed and it is no longer considered a threat to human health, however the cleanup impact summary states that EPA is working to determine whether there are human exposures to contaminants, as well, the contaminated ground water migration is not under control.

The Resource Conservation and Recovery Act (RCRA) is a federal statute which regulates the transportation, handling, storage and disposal of solid and hazardous materials. The mission of the RCRA is to provide effective regulations and means to comprehensively manage solid and hazardous waste, from generation to disposal. These regulations must be adhered to by any person or organization that deals with solid and hazardous waste, including the production, transportation, storage or disposal of the waste. The RCRA program is overseen by the Environmental Protection Agency.

At the state level, in 1988 Pennsylvania passed the Hazardous Sites Cleanup Act (HSCA). The HSCA provides PADEP with the funding and authority to conduct cleanup actions at sites (which involve bankrupt facility owners, abandoned facilities and inappropriate disposal of hazardous substances) where hazardous substances have been released. One means that PADEP is actively involved in cleaning up contamination that threatens human health and the environment is by conducting response actions. According to the PADEP website a response action has taken place at the PennTex site located in Hazle Township, Luzerne County (Figure 9 Catawissa Creek Watershed: PADEP eFacts Monitored Facilities).

Active and Abandoned Mines/Quarries

The watershed has been adversely impacted by the following five (5) mine drainage tunnels Oneida 1, Oneida 3, Audenreid, Green Mountain and the Catawissa Tunnel. The tunnels were driven from the lower valleys, adjacent to the coal basins, into the deep coal workings to facilitate the dewatering of the mines by gravity. The tunnels were constructed to drain the coal fields in the headwaters of the Catawissa Creek thereby discharging acid mine drainage (AMD) into the adjacent streams. Despite the fact that coal mining operations have ceased, the tunnels still discharge acid mine drainage into the Creek and its tributaries, due to this the Catawissa Creek is classified as polluted for the entire length of the Creek. The Catawissa Creek Restoration Association is working with local and state agencies to address water quality issues and restore the natural surface flow of the creek (rather than infiltrating back into the abandoned mines).

Geologically recent glacial episodes deposited large quantities of sand and gravel in the lower elevations of the watershed. These areas have been and currently are being quarried by various companies. These mining activities have possibly had an impact on the water quality in the watershed. The PADEP Bureau of Mining and Reclamation recently released a 2010 Anthracite Coal Operators list as well as a 2010 Industrial Minerals Operators list (Table 6 2010 Permitted Quarries). Best management practices will reduce the water quality impacts by any on going or future quarrying activities.

Historical industrial mineral (quarry) mining sites have been mapped statewide by the Pennsylvania Spatial Data Access (PASDA) and can be found at www.pasda.psu.edu. Active mining sites statewide are permitted by the Pennsylvania Department of Protection and can be found at www.emappa.dep.state.pa.us.

Water Resources

A watershed is a basin-like geographic landform defined by natural boundaries, such as highpoints and ridgelines that descend into lower elevations and stream valleys. A watershed drains water, sediment and dissolved materials to a common outlet. Because a watershed is an interacting unit of waterways and the surrounding land, pollutants may affect not only the source areas, but areas a distance away. The important thing to remember about watersheds is that what is done on the land in the watershed affects water quality for all communities living downstream.

Major Tributaries

The headwaters of the Catawissa Creek originate in Luzerne and Schuylkill Counties**.** The Catawissa Creek is formed by the confluence of Hunkydory Creek with an unnamed tributary in an active strip mine near the village of Kelyres. The stream flows generally west for approximately 40 miles to its confluence with the North Branch of the Susquehanna River in the Borough of Catawissa. It runs west along the south side of Pismire Ridge, and then drops steeply and turns south into a valley. It turns west again between Green Mountain and Locust Mountain. It then goes north, passing the west end of Green Mountain until it meets the Tomhicken Creek where it turns west again. The creek then heads north through a steep gorge just south of Shumans, where Beaver Run enters the creek. The creek then goes around the west end of McCauley Mountain and flows west again. Just south of Nescopeck Mountain, Scotch Run enters the creek. The stream then flows north through a deep gap between Catawissa and Nescopeck Mountains to Mainville. The creek then turns west-southwest and joins the North Branch Susquehanna River at Catawissa in Columbia County.

The entire drainage area of the Catawissa Creek Watershed is 152 square miles. The tributaries of the watershed drain into the Catawissa Creek which eventually drains into the Susquehanna River eventually draining into the Chesapeake Bay. The summary below describes the following twenty-four main tributaries of the watershed; Beaver Run, Catawissa Creek, Cranberry Run, Crooked Run, Dark Run, Davis Run, Fisher Run, Furnace Run, Hunkydory Creek, Klingermans Run, Little Catawissa Creek, Little Crooked Run, Little Tomhicken Creek, Long Hollow, Messers Run, Mine Gap Run, Negro Hollow, Raccoon Creek, Rattling Run, Scotch Run, Stony Run, Stranger Hollow, Sugarloaf Creek, Tomhicken Creek and Trexler Run.

According to Pennsylvania Code Chapter 93 (a), water may not contain substances attributable to point or nonpoint source discharges in concentration or amounts sufficient to be harmful to the water uses to be protected or to human, animal, plant or aquatic life. In addition to other substances listed within or addressed in this Chapter 93, specific substances to be controlled include, but are not limited to, floating materials, oil, grease, scum and substances that produce color, tastes, odors, turbidity or settle to form deposits (PA Code 1997). PADEP determines a designation for waters by considering the use and value of water for aquatic life, water supply, recreation, fish consumption and special protection. Some of the designated uses adopted by PADEP for Pennsylvania waters are Cold Water Fisheries (CWF) and Trout Stock Fisheries (TSF). CWF are as those that support fish which prefer clear, cold water and are not tolerant of extreme temperature changes. TSF include the maintenance and propagation of fish species and additional flora and fauna which are indigenous to a warm water habitat. A special protection

use designation is High Quality Waters (HQ). HQ waters are surface waters having quality which exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation. Class A wild trout waters are surface waters classified by the PA Fish and Boat Commission, based on species-specific biomass standards, which supports a population of naturally produced trout of sufficient size and abundance to support a long-term and rewarding sport fishery. For a listing of the classifications of the streams within the watershed see Table 7 Major Tributaries and Figure 10 Catawissa Creek Watershed Map: Stream Classes Designated and Existing Uses.

Beaver Run originates in Beaver Township in Columbia County and flows approximately 6.5 miles west to its confluence with the Catawissa Creek in Shumans. Beaver Run is classified as a cold water fishery (CWF) by the Pennsylvania Department of Environmental Protection (PADEP). The Beaver Run watershed covers 59 square miles.

Cranberry Run originates in State Gamelands 58 in Beaver Township, Columbia County and flows approximately 2 miles north to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Cranberry Run is classified as a cold water fishery PADEP. Cranberry Run watershed covers an approximately 10 square mile area.

Crooked Run originates in North Union Township, Schuylkill County where it flows approximately 4.5 miles north to its confluence with the Catawissa Creek in North Union Township. Crooked Run is classified as a high quality cold water fishery by PADEP. The Crooked Run watershed covers a 2.8 square mile area.

Dark Run originates in Union Township, Schuylkill County and flows approximately 4.5 miles north to its confluence with the Catawissa Creek in East Union Township, Schuylkill County. Dark Run is classified as a high quality cold water fishery by PADEP. The Dark Run Watershed drains a 3 square mile area.

Davis Run originates in Mahanoy Township, Schuylkill County and flows approximately 1 mile north to its confluence with the Catawissa Creek in East Union Township, Schuylkill County. Davis Run is classified as a high quality cold water fishery by PADEP. The Davis Run watershed drains an approximately 2.7 square mile area.

Fisher Run originates in State Gamelands 58 in Main Township, Columbia County and flows approximately 3 miles northeast to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Fisher Run is classified as a high quality cold water fishery by PADEP. The Fisher Run watershed drains an approximately 1 square mile area.

Furnace Run originates in State Gamelands 58 in Catawissa Township, Columbia County and flows approximately 2.5 miles northeast to its confluence with the Catawissa Creek in Main Township, Columbia County. Furnace Run is classified as a high quality cold water fishery by PADEP. The Furnace Run watershed drains an approximately 3.3 square mile area.

Hunkydory Creek originates in Kline Township, Schuylkill County and flows approximately 1 mile north to its confluence with the Catawissa Creek in Hazel Township, Luzerne County.

Hunkydory Creek is classified as a cold water fishery by PADEP. The Hunkydory Creek watershed drains a 2.9 square mile area.

Klingermans Run originates in State Gamelands 58 in Roaring Creek Township, Columbia County and flows approximately 2.5 miles north to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Klingermans Run is classified as a high quality cold water fishery by PADEP. The Kingermans Run watershed drains an approximately 9.4 square mile area.

Little Catawissa Creek originates in Conyngham Township, Columbia County and flows approximately 10 miles northeast to its confluence with the Catawissa Creek in North Union Township, Schuylkill County. Little Catawissa Creek is classified as a high quality cold water fishery by PADEP from it's source to Reservoir Rd (T431) crossing and a cold water fishery from Reservoir Rd crossing to mouth. The Little Catawissa watershed drains an approximately 1.2 square mile area.

Little Crooked Run originates in North Union Township, Schuylkill County and flows approximately 2 miles north to its confluence with Tomhicken Creek, in North Union Township, Schuylkill County which then flows into the Catawissa Creek. Little Crooked Run is classified as a high quality cold water fishery by PADEP. The Little Crooked Run watershed drains an approximately .5 square mile area.

Little Tomhicken Creek originates in East Union Township, Schuylkill County and flows approximately 1 mile southwest to its confluence with Tomhicken Creek in North Union Township, Schuylkill County which then flows into the Catawissa Creek. Little Tomhicken Creek is classified as a cold water fishery PADEP. The Little Tomhicken Creek watershed drains a 1.8 square mile area.

Long Hollow originates in State Gamelands 58 in Roaring Creek Township, Columbia County and flows approximately 2.5 miles north to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Long Hollow is classified as a cold water fishery PADEP. The Long Hollow watershed drains an approximately 1.8 square mile area.

Messers Run originates in Kline Township, Schuylkill County and flows approximately 5 miles west to its confluence with the Catawissa in East Union Township, Schuylkill County. Messers Run is classified as a high quality cold water fishery by PADEP. The Messers Run watershed drains an approximately 4.2 square mile area.

Mine Gap Run originates in Roaring Creek Township, Columbia County and flows approximately 1.5 miles north through State Gamelands 58 to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Mine Gap Run is classified as a cold water fishery PADEP. The Mine Gap Run watershed drains an approximately 4.3 square mile area.

Negro Hollow originates in Delano Township, Schuylkill County and flows approximately 2 miles north to its confluence with Messers Run in East Union Township, Schuylkill County and then to the confluence with the Catawissa. Negro Hollow is classified as a high quality cold

water fishery by PADEP. The Negro Hollow watershed drains an approximately 3.6 square mile area.

Raccoon Creek originates in Black Creek Township, Luzerne County and flows approximately 3 miles west to it confluence with Tomhicken Creek in North Union Toenship, Schuylkill County and then flows south to its confluence with the Catawissa Creek. Raccoon Creek is classified as a high quality cold water fishery by PADEP. The Raccoon Creek watershed drains an approximately 4 square mile area.

Rattling Run originates in East Union Township, Schuylkill County and flows approximately 2.5 miles northwest to its confluence with the Catawissa Creek in East Union Township, Schuylkill County. Rattling Run is classified as a high quality cold water fishery by PADEP. The Rattling Run watershed drains an approximately 10.6 square mile area.

Scotch Run originates in Beaver Township, Columbia County and flows approximately 8 miles west to its confluence with the Catawissa Creek in Main Township, Columbia County. Scotch Run is classified as a cold water fishery PADEP. The Scotch Run watershed drains a 2.3 square mile area.

Stony Run originates in Union Township, Schuylkill County and flows approximately 2 miles east to its confluence with the Little Catawissa Creek in Union Township, Schuylkill County and then flows to its confluence with the Catawissa Creek. Stony Run is classified as a cold water fishery PADEP. The Stony Run watershed drains a 4.6 square mile area.

Stranger Hollow originates in State Gamelands 58 in Beaver Township, Columbia County and flows approximately 1 mile north to its confluence with the Catawissa Creek in Beaver Township, Columbia County. Stranger Hollow is classified as a cold water fishery PADEP. The Stranger Hollow watershed drains an approximately 2.9 square mile area.

Sugarloaf Creek originates in Hazle Township, Luzerne County and flows approximately 3.5 miles to its confluence with Tomhicken Creek in North Union Township Schuylkill County and then flows to its confluence with the Catawissa Creek. Sugarloaf Creek is classified as a cold water fishery PADEP. The Sugarloaf Creek watershed drains an approximately 1.9 square mile area.

Tomhicken Creek originates in Black Creek Township, Luzerne County and flows approximately 11 miles west to its confluence with the Catawissa Creek in North Union Township, Schuylkill County. Tomhicken Creek is classified as a cold water fishery PADEP. The Tomhicken Creek watershed drains an approximately 3.8 square mile area.

Trexler Run originates in Conyngham Township, Columbia County and flows approximately 3 miles northwest to its confluence with the Little Catawissa Creek in Union Township, Schuylkill County and then flows to its confluence with the Catawissa Creek. Trexler Run is classified as a high quality cold water fishery by PADEP. The Trexler Run watershed drains an approximately 2.3 square mile area.

Wetlands

The Clean Water Act defines wetlands as areas that are inundated or saturated by surface ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands differ in size, structure and species diversity and each wetland differs according to where it is located on the landscape (i.e. stream headwaters, valleys, slopes) and whether the water is flowing or stagnant. These different scenarios result in bogs and fens, marshes, swamps, floodplain forests, forested wetlands, wet meadows, and seeps. Wetlands play an important part in flood flow attenuation and pollutant removal or filtering, as well as, provide valuable habitat for wildlife and plant species. Wetlands differ in size, structure and species diversity. The United States Fish and Wildlife Service's (USFWS) have identified wetland areas through out the United States, including Pennsylvania (about 1.4 percent of Pennsylvania's total land surface is classified as wetlands). Wetland locations can be obtained from the National Wetlands Inventory (NWI) maps. Since the NWI maps are dated (20-30 years in age) and not all-inclusive, the presence or absence of wetlands should be evaluated on a case-by-case basis by a professional.

According to the Columbia County Natural Areas Inventory, wetlands are rare in Columbia County however, the Beaver Run Wetlands, a locally significant site in Beaver Township is the most extensive and diverse wetland and one of the better quality wetlands in the county (Columbia County Natural Areas Inventory, 2004). According to the Schuylkill County Natural Areas Inventory the wetlands that are present in Schuylkill County are typically associated with streams and rivers and include floodplain forests, forested swamps, shrub swamps, and graminoid marshes with two other wetlands types known from the region including seepage swamps and vernal pools (Schuylkill County Natural Areas Inventory, 2003). Wetlands are most abundant throughout the glaciated portion of the Commonwealth with Luzerne County being one of these areas.

The wetland coverage for the study area was obtained from the U.S. Fish and Wildlife Service's online National Wetlands Inventory. There is approximately 217.88 acres of wetlands within the study area.

Floodplains

The floodplain is valuable and natural land area adjacent to a waterway that has been or may be covered with floodwater during a storm event. The floodplain includes the floodway, the channel of a waterway and the floodfringe, the portion of the floodplain outside of the floodway that becomes covered by flood waters during a flooding event. The floodplain holds the excess water from a storm event and allows it to be slowly released into the waterway system or seep into the groundwater aquifers. Floodplains are not only valuable as flood and storm mitigation they also act as a sediment filter, decrease soil erosion, and provide wildlife habitat.

The 100 year floodplain is the area that is most frequently mapped and referenced in planning documents. The 100 year floodplain is the area of the floodplain that floods during a 100 year

flood. The 100 year floodplain is used by the Federal Insurance Administration as the base flood for purposes of floodplain management.

The streams and waterways within the Watershed support numerous floodplains. The floodplain coverage for the study area was obtained from National Wetlands Inventory. There are approximately 4,036 acres of 100-year floodplains within the study area (Figure 11 Catawissa Creek Watershed Map: 100 Year Floodplains and National Wetland Inventory).

Lakes and Ponds

Lakes and ponds are valuable ecosystems that provide wildlife habitat, are used for recreational purposes and can be a source of drinking water. There are several ponds and lakes are found throughout the watershed. Horseshoe Lake and Scotch Run are located in Columbia County. Scotch Run is an ephemeral/fluctuating pool natural community and serves as an important breeding area for amphibians. The Columbia County Natural Area Inventory, 2004 recommends that the site should be monitored for ATV use and these trails should be blocked as they appear so as not to disturb the sensitive ponds and rock outcrops, as well, if logging should occur a forested buffer around the ponds would be necessary to protect the site. Calumet Lake, Lake Susquehanna and Mt. Pleasant Reservoir are located in Luzerne County. Blue Head Reservoir, Lake Choctow, Lofty Reservoir, Pumping Station Reservoir, Reservoir #8, Ringtown Reservoir and Red Ridge Lake are located in Schuylkill County. Lofty Reservoir, owned by the PA Game Commission, is on Messers Run and is used for drinking water purposes. The Pumping Station Reservoir is on Davis Run and is used for recreational purposes. (Table 8 Lakes and Ponds).

Water Quality

In order to regulate and mitigate pollution in a watershed the sources of pollution are classified into two main categories: point and non-point source pollution. According to the USEPA, non-point sources of pollution can come from many sources including but not limited to agricultural runoff (i.e. fertilizers, herbicides and insecticides), urban runoff (i.e. oil and grease), sediment from construction sites and abandoned mine drainage. The EPA defines point source pollution as “any single identifiable source of pollution from which pollutants are discharged.” A point source of pollution can be traced back to a single origin or source such as a pipe, culvert or container.

PADEP has developed a program, the Statewide Surface Waters Assessment Program (SSWAP) to assess the quality of waters in Pennsylvania and identify streams and other watersheds that do not meet water quality standards. The SSWAP was formulated to locate and identify good quality waters, point and non-point sources of pollution and to determine the extent of water quality impairments. PADEP prepares periodic water quality reports including the Integrated Water Quality Monitoring and Assessment Report which fulfills the water quality reporting requirements of section 305(b) and 303(d) of the Clean Water Act. Section 303(d) of the Clean Water Act requires states to list all impaired waters not supporting uses even after appropriate and required water pollution control technologies have been applied. The report contains summaries of various water quality management programs including water quality standards,

point source control and nonpoint source control. It also includes descriptions of programs to protect lakes, wetlands and groundwater quality.

Point Sources

The National Pollution Discharge Elimination System (NPDES) is a permit program that regulates point source pollution from industrial, municipal and other facilities into surface water. The Federal Clean Water Act and the Pennsylvania Clean Streams laws require wastewater dischargers to have a permit establishing pollution limits, and specifying monitoring and reporting requirements. NPDES permits regulate household and industrial wastes that are collected in sewers and treated at municipal wastewater treatment plants. Permits also regulate industrial point sources and concentrated animal feeding operations that discharge into other wastewater collection systems, or that discharge directly into receiving waters. More than 200,000 sources are regulated by NPDES permits nationwide. A listing of NPDES sites that have been issued permits to discharge wastewater into water bodies can be found on the EPA Envirofacts web site (http://www.epa.gov/enviro/index.html).

Non-Point Sources

Non point pollution is caused by rainfall or snowmelt moving over and through the ground and as the runoff moves, it picks up and carries away natural and human-made pollutants, finally depositing them into lakes, rivers, wetlands and underground sources of drinking water. These pollutants can include: excess fertilizers, herbicides, and insecticides from agricultural lands and residential areas; oil, grease, and toxic chemicals; sediment from improperly managed construction sites, crop and forest lands, and eroding stream banks; bacteria and nutrients from livestock, pet wastes, urban runoff and faulty septic systems; and atmospheric deposition and hydromodification are also sources of nonpoint source pollution. (Watersheds, Non-Point Pollution and Hydrology, Dr. Brian Oram, PG Wilkes University).

Pennsylvania's Nonpoint Source (NPS) Program was developed in response to Section 319 of the federal Clean Water Act to address problems caused by pollution from nonpoint sources. Non-point source problems require treating and controlling runoff from large areas. Treatment and control is accomplished through what are known as best management practices (BMP). BMP's are often specifically adapted to a particular locations and problems. Examples include improving farming practices, reclamation of abandoned mines, installation of sediment ponds, and planting riparian buffers. BMPs are often specifically adapted to a location and problem. A major function of the PADEP non-point source program is to identify the need for and initiate funding of BMP projects. The major sources of non-point pollution in Pennsylvania are agriculture, abandoned mining activities and urban runoff.

Monitoring

Water bodies are monitored by various state, federal, and local agencies, universities, dischargers, and volunteers. Water quality monitoring is the measurement of selected watershed features in order to assess the health of the watershed ecosystem. Water quality data are used to characterize waters, identify trends over time, identify emerging problems, determine whether

pollution control programs are working, help direct pollution control efforts to where they are most needed, and respond to emergencies such as floods and spills. Water quality data can provide communities with important information regarding the health of their watershed in order to make informed decisions regarding existing problems within the watershed as well as guide any future activities which may impact the watershed.

According to the 2010 Pennsylvania Integrated Water Quality Monitoring and Assessment Report, in April 2007 the Pennsylvania Department of Environmental Protection completed a ten year program to assess all wadable streams. The census utilized a biological assessment of the aquatic life use. Other designated uses and non-wadable waters were assessed to a lesser extent as resources and time permitted. According to the 2010 report, 84,867 miles of streams and rivers were assessed for aquatic life use with 68,320 miles listed as attaining that water use. Of the impaired miles, 9,413 require development of a Total Maximum Daily Load (TMDL) to reduce pollutant inputs and 6,105 had an approved TMDL. An additional 65 miles were under compliance agreements and expected to improve within a reasonable amount of time. The two largest problems were found to be agriculture and abandoned mine drainage. The largest stressors were siltation and metals. Also noted in the report was that there were 76,484 acres of lakes assessed for aquatic life use and 39,301 acres were attaining that use. Of the impaired acres, 4,990 required a TMDL, 11,650 had an approved TMDL and 20,543 acres were impaired by pollution but did not require a TMDL. The largest problem source was found to be agriculture and the largest stressors were nutrients, suspended solids, and organic enrichment/low D.O. (PADEP, 2010).

There are a variety of issues affecting water quality in the study area including but not limited to acid mine drainage, agricultural runoff and erosion and sediment. The 303(d) listing process includes waters impaired by point and non-point sources of pollutants. PADEP protects four (4) stream water uses: aquatic life, fish consumption, potable water supply, and recreation. If a stream segment is not attaining any one of its four uses, it is considered an impaired stream. A stream that does not have aquatic life use attainment means that the integrity reflected in any component of the biological community has been impaired (i.e. fish or fish food organisms). Several creeks in the study area are listed as 303(d) impaired waters for aquatic life. The creeks listed as 303(d) impaired waters by acid mine drainage (AMD) include the Catawissa Creek, Fisher Run, Little Tomhicken Creek, Tomhicken Creek and Sugarloaf Creek. Creeks identified on the 303(d) list in the study area for other impairments, including atmospheric deposition (pH) and agriculture-siltation, include Stranger Hollow, Cranberry Run, Crooked Run, Tributary 27542 to Catawissa Creek and Tributary 27559 to Catawissa Creek (Table 9 Integrated List Non-Attaining Use Streams).

PADEP completed a TMDL study for the Catawissa Creek Watershed in 2003. The TMDL calculation was prepared to address the impairments on the 1996 and 1998 303(d) list, the 2000 305(b) report required under the Clean Water Act and the draft 2002 303(d) list (now known as the integrated list) (Figure 12 Integrated List and TMDL Study). According to the report, the watershed is affected by AMD pollution. The pollution has caused high levels of metals and low pH in the mainstem of the Catawissa Creek. The TMDL addresses the three primary metals iron, manganese and aluminum associated with AMD and pH. The sources of the AMD are from drainage tunnels that were created to dewater anthracite coal fields. The Oneida #1 tunnel

discharges into Sugarloaf Creek between the Lake Susquehanna and Lake Choctaw impoundments. The Oneida #3 tunnel discharges into Tomhickon Creek after the confluence of Little Tomhickon Creek and the Audenried, Catawissa, and Green Mountain tunnels discharge directly into the Catawissa Creek.

The PA Fish and Boat Commission examined the Catawissa Creek basin in 1997 in order to provide baseline data on the fishery in those streams which had never been surveyed so that they could be assigned to a resource category and to evaluate past management practices on previously surveyed streams in order to implement new management strategies where appropriate. This study represents the water quality conditions throughout the watershed prior to any treatment systems installations. The PFBC surveyed twenty five (25) named streams in the basin which encompassed thirty five (35) stream segments. The surveyed included an analysis of physical, chemical and biological characteristics at fifty-one (51) sampling stations (Figure 13 Water Quality Prior to Treatment Projects 1997).

The Susquehanna River Basin Commission (SRBC) conducted a water quality and biological survey of the Middle Susquehanna Subbasin from June to October 2008. The Middle Susquehanna Subbasin includes portions of Carbon, Columbia, Luzerne and Schuylkill Counties among others. The study consisted of point-in-time water chemistry, macroinvertebrate, and habitat data collection. The SRBC collected data at three (3) sites along the Catawissa Creek and one (1) site along Tomhicken Creek, all four (4) sites are within the Catawissa Watershed study area. The data was collected along the Catawissa Creek in Catawissa Borough, Columbia County next to a park area near an old railroad bridge pier, in Beaver Township, Columbia County upstream of the T367 bridge (Long Hollow Road) and in East Union Township, Schuylkill County upstream of the T818 bridge (Girard Manor Road); data was also collected along Tomhicken Creek in North Union Township, Schuylkill County upstream of the T806 bridge (Croll Road).

According to the report, the Catawissa Creek had high levels of aluminum (3,660 ug/l), an alkalinity value of zero mg/l, pH value of 4.0 and the highest temperature of all sites surveyed (26.9 degrees Celsius). The Catawissa Creek displays the impacts of AMD with high metals, particularly aluminum. High nutrient conditions were recorded at the Tomhicken Creek site.

There are also many volunteer citizen water monitoring activities occurring throughout watersheds in the Commonwealth. PADEP has compiled a list of volunteer monitoring organizations and this directory is a compilation of all the monitoring groups across the state. The directory only contains information from organizations that responded to a PADEP survey so there may be other organizations not included in the directory. In the study area for example, the Catawissa Creek Restoration Association conducts limited water quality monitoring in the Watershed.

Water Supply

Public/Private

The 1996 Safe Drinking Water Act requires that states develop and implement a Source Water Assessment and Protection Program (SWAP). The program assesses drinking water sources serving public water systems for their susceptibility to water quality threats. The state is required to delineate the boundaries of the areas providing source waters for all public water systems and identify the origins of regulated and certain unregulated contaminants in the delineated area to determine the susceptibility of public water systems to such contaminants (PADEP 2000). The SWAP is a proactive approach to identifying and minimizing any existing or potential threats to the drinking water supply.

Major public water suppliers within the Catawissa Watershed include Aqua America Pennsylvania (serves: 43,000); Catawissa Municipal Water Authority (serves 1,683 people); Eagle Rock Utilities (serves 600 people); Hazleton Water Authority (information not available on population served); Kline Township Municipal Water Authority (serves 6,700 people); Mahanoy Township Municipal Authority (serves 7,300 people); Mifflin Township Municipal Water Authority (serves 900 people); Pennsylvania American Water Company (serves 16,000 people); Ringtown Borough Water Authority (serves 950 people); Schuylkill County Municipal Authority (serves 31,850 people); and United Water Pennsylvania Bloomsburg Operations (serves 21,500 people).

Aqua America operations obtain their water supplies from surface water sources such as reservoirs, lakes, ponds, rivers and streams, in addition to obtaining water from wells and purchasing water from other water suppliers. The water systems for most of the areas served by Aqua America comes from one well per service area, although some are served by two or three wells. The Roaring Creek Division serves Columbia and Schuylkill Counties. Water for the Roaring Creek Division comes from three man-made reservoirs on the South Branch of Roaring Creek and two wells. A source water assessment for the South Branch of Roaring Creek watershed was completed in 2003 by the Pennsylvania Department of Environmental Protection (DEP). During 2008, Aqua America conducted thousands of water quality tests to measure the chemical and physical substances in their source and treated water.

United Water Pennsylvania (UWP) Bloomsburg Operation obtains their water from Fishing Creek. The UWP Irondale Water Treatment Plant processes approximately 2.7 million gallons of water daily to serve customers in the Town of Bloomsburg and six surrounding municipalities. The plant draws raw water from Fishing Creek. A source water assessment for Fishing Creek was completed in 2003 by the Pennsylvania Department of Environmental Protection (DEP).

DEP completed source water assessments for Kline Township Municipal Authority, Mahanoy Township Authority and the Pennsylvania American Water Company-Frackville in 2004.

The SWAPs in general, identified numerous point and non-point sources of pollution affecting the respective source water areas. The sources of point pollution identified in the various source water assessments included but were not limited to, auto repair shops, underground storage

tanks, cemeteries, electrical substation and industrial parks. The non-point sources of pollution with the highest threat or risk of potential pollution included abandoned mine drainage, excessive sediment, nutrient enrichment, fuel oil storage tanks, household cleaning supplies and lawn care chemicals, highway spills and salt applications, wells and bore holes.

Well Head Protection Areas

As required under the Federal Safe Drinking Water Act, the Commonwealth of Pennsylvania has developed a Wellhead Protection Program (WHPP) as a proactive effort to apply proper management techniques and various preventive measures to protect ground-water sources used by public water systems from contamination that may have an adverse effect on public health. The underlying premise of the program is that it is much less expensive to protect ground-water than to remediate it once it becomes contaminated. Ground water used as a public water supply is less expensive to use than surface water due to land acquisition costs and various treatment requirements for surface-water supplies. Once ground water is polluted, it remains contaminated for a long period of time. Even if ground-water remediation is undertaken, it is a long and difficult process to attempt to restore water quality. Participation in the WHPP is voluntary and builds upon the basic requirement for water purveyors to obtain the best available source and to take the appropriate actions to protect the source, thereby ensuring a continual and safe water supply.

Pennsylvania's WHPP was approved by EPA in March 1999. The Department of Environmental Protection (DEP) is the primacy agency for the Safe Drinking Water Act and the Source Protection Section in the Bureau of Watershed Management is responsible for administering the WHPP and other drinking water source protection efforts in Pennsylvania.

The responsibilities for wellhead protection (WHP) in Pennsylvania are shared among many stakeholders. Public water suppliers are responsible for assuring the continuous supply of safe and potable water to the consumer. The authority to regulate land use is primarily seated in the local governments whereas the Commonwealth has primary responsibility in regulating public water supplies and most discharges of potential contaminants. Other interested parties may include facility operators, landowners, local agencies and the public. Recognizing the need to balance the interests of all stakeholders, the WHPP emphasizes technical, financial and educational assistance to facilitate the development of voluntary local WHP programs.

Although wellhead protection is voluntary at the local level, a growing number of municipalities and water systems across the state are already implementing local WHP programs in order to protect public health and safety by ensuring the quality of their drinking water sources. In addition to the public health and economic benefits associated with preventing costly contamination of ground-water sources, an effective local WHP program may help to secure a monitoring waiver for certain synthetic organic chemicals, thereby reducing analytical costs to a water system. Wellhead protection also promotes sound land-use planning and complements the principles of pollution prevention.

According to the PADEP there are no public water systems in the study area involved in the local Well Head Protection Program.

Biological Resources

The Pennsylvania Natural Heritage Program (PNHP) gathers and provides information on the location and status of important ecological resources such as plants, vertebrates, invertebrates, geologic features and natural community types. The counties (Carbon, Columbia, Luzerne and Schuylkill) where the Catawissa Creek Watershed is located contain a number of biological, natural and geologic resources.

The diversity of wildlife in the watershed is largely dependent on the availability of suitable habitat. According to the PNHP, endangered species are in imminent danger of extinction or extirpation throughout their range in Pennsylvania. These species have already been reduced to critically low numbers or have experienced drastic habitat loss or degradation. Immediate management action is required to prevent their extirpation in the state. Threatened species indicate that the species may become endangered within the foreseeable future throughout their range in Pennsylvania unless the impacts affecting their populations are reversed. These species include those that have been heavily depleted by adverse factors and while not actually endangered, are still in critical condition or those that may be relatively abundant but are under severe threat from serious adverse factors that have been identified and documented. Candidate rare species exist only in one of a few restricted geographic areas or habitats within Pennsylvania, or they occur in low numbers. Candidate at risk species, although relatively abundant now, are particularly vulnerable to certain types of exploitation or environmental modification. Several of the species found within the Catawissa Watershed are species of special concern.

Wildlife

Birds and Mammals

The Watershed is home to a variety of bird species. The PNHP identifies species of special concern. The Avian species of special concern located within the counties of the Watershed as identified by PNHP include such species as the American Bittern (Botaurus lentiginosus), Bald Eagle (Haliaeetus leucocephalus), Barn Owl (Tyto alba), Northern Goshawk (Accipiter gentilis) and the Northern Harrier (Circus cyaneus). Of these, the American Bittern and the Appalachian Bewick's Wren are listed as Pennsylvania endangered species. The American bittern has suffered greatly from the loss of wetland habitat. The Bald Eagle is listed as a Pennsylvania threatened species. The Bald Eagle's nesting population in Pennsylvania has increased steadily in recent years, hovering around 70% which signals that environmental conditions and protections have been successful. The Barn Owl and the Northern Goshawk are listed as candidate rare and the Northern Harrier is listed as candidate at risk. Changing land use and agricultural practices have led to a decline in Barn Owl populations specifically the shift from pasture to row crops as well as a loss of nesting sites are the most serious problem for this species. The Northern Goshawk has been most negatively impacted by timber harvesting. Timber harvesting removes nest trees and degrades Goshawk habitat by reducing stand density and canopy cover. The Northern Harrier is most impacted by the loss of wetland habitat.

The Watershed is also home to several mammalian species of special concern as well. Three bat species of special concern found within the Watershed include the Eastern Small-footed Myotis (Myotis leifii), the Indiana or Social Myotis (Myotis sodalist) and the Northern Myotis (Myotis septentrionalis). The Indiana Myotis is listed as Pennsylvania endangered. The Eastern Small-footed Myotis is listed as Pennsylvania threatened and the Northern Myotis is listed as a candidate at risk. Other mammals of special concern within the Watershed include the Allegheny Woodrat, the Least Shrew and the Northern Flying Squirrel.

Fish, Reptiles and Amphibians

The Eastern Mudminnow (Umbra pygmaea) found within the Watershed, is a candidate species which could achieve endangered or threatened status in the future. A variety of reptilian species are also found within the counties of the watershed including the Eastern Hognose Snake (Heterodon platirhinos), the Eastern Ribbon Snake (Thamnophis sauritus) and the Timber Rattlesnake (Crotalus horridus). The Timber Rattlesnake is also considered a candidate species which could achieve endangered or threatened status in the future due to the destruction of habitat. Amphibian species found within the counties of the watershed include the Bog Turtle (Glyptemys muhlenbergii), Eastern Box Turtle (Terrapene Carolina), Spotted Turtle (Clemmys guttata) and the Wood Turtle (Glyptemys insculpta). The Bog Turtle is imperiled or critically imperiled throughout its entire range due to habitat loss, fragmentation and succession. Mussel species of special concern found within the counties of the Watershed include the Dwarf Wedgemussel (Alasmidonta heterodon) and the Eastern Pearlshell (Margaritifera margaritifera).

Insects

According to PA DCNR, invertebrates comprise the large majority of animals in Pennsylvania. Invertebrates are a key foundation block upon which all ecological systems depend. Hundreds of different birds and mammals depend upon the invertebrate populations as food sources. Higher plants also rely on invertebrates as pollinators and seed dispersers. There are several insect species found within the counties of the watershed.

For a listing of the species found within the Counties of the Watershed see Table 10.

Plants

The vegetation of a watershed reflects the environmental conditions (geology, topography, soils, and climate) and disturbance history, both natural and anthropogenic. The Watershed lies predominantly in the Appalachian Oak forest. Much of the watershed is forested with State Gameland #58 in the northwest corner of the Watershed, being one of the largest tracts of forest remaining in Columbia County. This area is primarily deciduous forest dominated by a “dry oak/heath” and “dry oak/mixed hardwood” forest types but also includes pockets of hemlock-hardwood forest and pitch pine-mixed oak forest. The “dry oak/heath community” includes species such as red oak, chestnut oak, scarlet oak, black birch, red maple, pitch pine, American chestnut, serviceberry, lowbush blueberry, mountain laurel, sheep's laurel, black huckleberry, bracken fern, Virginia creeper, and wild sarsaparilla. The mixed hardwood/heath community includes species such as chestnut oak, scarlet oak, red maple, lowbush blueberry, mountain

laurel, and black huckleberry. For a listing of the plant species found within the Counties of the Watershed see Table 11.

Important Habitats

Locally Significant Areas

The Natural Areas Inventory (NAI) documents known outstanding natural features of flora, fauna and geology within the counties and is compiled and written by the Pennsylvania Science Office of The Nature Conservancy. The NAI document contains information on rare, threatened, and endangered plant and animal species and the highest quality natural areas in Counties of the Commonwealth; it is not a complete inventory of open space. A review of the NAI was completed for the Carbon, Columbia, Luzerne and Schuylkill County municipalities located within the Watershed. The NAI also lists sites considered locally significant. An area of local significance may not be considered exemplary at the state level but may be considered ecologically important at the county level. These sites are determined based on size, diversity of wildlife and plant life, water quality protection and recreational potential.

According to the Carbon County NAI, Spring Mountain located in Banks Township is considered a high ranking locally significant site. Spring Mountain is a locally significant site because there is potential for four or more possible community types including scrub oak barrens, hardwood forests and woodlands, forested swamps, woodland wetlands and a rocky summit.

According to the Columbia County NAI the following sites are considered locally significant: Beaver Run Wetlands, Catawissa Creek Outcrops, Catawissa Shrub Swamp, Shenandoah Municipal Authority, Ten Mile Run and McCauley Mountain. Beaver Run Wetlands contains an extensive and diverse wetland that is one of the better quality wetlands in Columbia County. The Catawissa Creek Outcrops includes hemlock and hardwood forested slopes with an under layer of rhododendron along the Catawissa Creek. The Catawissa Shrub Swamp is a shrub swamp floodplain area along the Catawissa Creek and there appears to be an open graminoid-dominated wetland ringed by tall and short shrubs, likely including highbush blueberry and winterberry holly. Shenandoah Municipal Authority contains forested seeps, streams and creeks leading into Shenandoah Reservoir #6. Ten Mile Run contains a “Mixed Hemlock-Hardwood palustrine forest”, which grades into an open smooth alder (*Alnus serrulata*) swamp and cattail (*Typha latifolia*) marsh. McCauley Mountain appears to have a series of wetlands, some of which were likely created as the result of mining exploration, but others appear to be naturally occurring vernal ponds. Several of the ponds are ringed in hemlocks and surrounded in a relatively undisturbed deciduous forest matrix.

The Shenandoah Municipal Authority is also considered an area of local significance in Schuylkill County according to the Schuylkill County NAI. There were no areas identified as locally significant in the Luzerne County municipalities within the study area (Table 12 PNHP Geologic/Natural Communities within the counties of the Watershed).

Pennsylvania Natural Diversity Inventory (PNDI) Species

The Pennsylvania Natural Diversity Inventory (PNDI) is maintained by the Pennsylvania Department of Conservation and Natural Resources (DCNR) for the purpose of describing significant natural resources in Pennsylvania. The information is site specific and includes plants, natural communities, terrestrial invertebrates and geologic features. Based on the PNDI findings, there are nine (9) plants and seven (7) natural communities of concern located within the Watershed (Table 13 PNDI Species/Ecological Resources of Special Concern).

According to the US Fish and Wildlife Service, except for the occasional transient species, no federally listed or proposed threatened or endangered species are known to occur within the project area.

Cultural Resources

Recreation

The Catawissa Creek Watershed has numerous recreational opportunities and amenities. State Gamelands and State Forests are located in and adjacent to the Watershed, as well as, many private gaming clubs and various municipal and community parks (Figure 14 Open Space and Recreation Map).

Gamelands

Portions of Pennsylvania State Gamelands 58 (10,997 acres), 308 (1,060 acres) and 329 (1,026 acres) fall within the study area. The total acreage of these State Gamelands is 13,083 acres, however not all of this acreage is located within the study area. State Gamelands provide a well used opportunity for small game, deer, and turkey hunting. Many non-formal trails exist in the gamelands and provide excellent opportunities for hiking, biking, snowmobiling and cross-country skiing. SGLs 58 and 329 have designated routes for horses and bicycles; however users should consult the Pennsylvania State Gamelands website for permitted dates and times.

Forests

The Weiser State Forest abuts the boundary of the Watershed and consists of eight tracts of State Forest Land located in northern Dauphin, Schuylkill, Carbon and Berks Counties. The total area of Weiser State Forest is 17,961 acres. The Forest contains some very rugged and secluded wooded areas that can be reached by a network of 65 miles of roads constructed for wildfire suppression and administrative use. The forest is open to the public for hunting, fishing and general recreation. A major hiking trail located in the Weiser District is the 2,000 mile Appalachian Trail which travels the entire length of the District. The State Forest provides opportunities for hunting, hiking, biking, cross-country skiing, canoeing, kayaking, boating and fishing.

Municipal Parks

Several locally owned and operated municipal public parks are also located within the watershed, as well as, within a mile of the Watershed boundaries. There are various local playgrounds, community parks, ball fields and ice skating parks within the Watershed.

Trails

Bicycle and pedestrian trails provide a passive recreational opportunity as well as a corridor of green open space. There are numerous trail opportunities within and/or adjacent to the Watershed. These trails are often a link between communities, a link to other facilities (i.e. parks, schools, shopping) and can serve as an alternative means of travel to work. The Pennsylvania Department of Transportation BicyclePA Route V traverses the Watershed along State Routes 2024, 2022, 2009 and 2018 from Beaver Township to Catawissa Borough. The

BicyclePA routes are designed for the more experienced cyclist and are primarily located along state routes. Rails to trails utilize abandoned rail corridors as recreational opportunities. The Hazle Township rails to trails that run from Stockton to Drecks Creek, although over a mile from the Watershed provides a close by free, safe and accessible recreational opportunity for the region's residents. The Columbia County Susquehanna Trail, located in Bloomsburg just across the Susquehanna River from Catawissa Borough is an eight mile long trail located on portions of an old Reading Railroad line and Pennsylvania Canal. Local organizations have also identified and promote various bicycle rides throughout the Watershed (Table 14 Recreational Opportunities).

Private Sports Clubs

There are numerous private clubs and associations that own tracts (at least 10 contiguous acres of vacant land) of open space land. The following are located in Schuylkill County; Shenandoah Archery Club, Blue Nob Rod & Gun Club, Buckfeather Rod & Gun Club Inc., Shenandoah Fish Game Protective Association, Penns Woods Girlscouts Council, Shenandoah Arrowhead, Ringtown Valley Sporting Club, and Rod Benders Fishing Club. The following are located in Columbia County; North Kulp Hunting Club, Pine Tree Hunting Club, Boulder Hill Hunting Camp, Lazy Five Hunting Club Inc., Blackcreek Sportsman Club, Waters Hunt Club LLC, Mainville Sportsmans Club Inc., Little Mill Rod & Gun Club, Bunker Hill Rod & Gun Club Of Beaver County Incorporated, Cranberry Rod And Gun Club, 500 Fish & Game Club, Elk Horn Rod & Gun Club, Tip Top Hunters Inc., Beaver Township Rod & Gun Club, and the Tri-Town Recreational Club.

Fishing

The streams and waterways within the Watershed also offer ample opportunities for fishing. Several of the tributaries to the Catawissa Creek are designated as High Quality Cold Water Fisheries and Cold Water Fisheries. As well, several trout approved waters are also located within the Watershed.

Camping

Four (4) campgrounds are within a short distance from the watershed. Ideal Park, J & D Campgrounds, Lake Glory Campground, Springbrook Family Campground and the Red Ridge Lake Campground is located in Zion Grove within the watershed boundaries. Red Ridge Lake is a mountain top campground with many of the camp sites bordering on streams, the campground offers swimming, fishing and scheduled entertainment.

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Golfing and Skiing

The Eagle Rock Resort located on Route 924 offers skiing, golfing, horseback riding and other seasonal recreational opportunities.

Historic

Carbon County

Carbon County was created on March 13, 1843 from parts of Monroe and Northampton Counties. Its name alludes to its deposits of coal. Jim Thorpe, the county seat, was originally incorporated on January 26, 1850 as the borough of Mauch Chunk, an Indian name meaning "Bear Mountain". It was renamed in 1954 for the famous Indian athlete, Jim Thorpe, who is buried there.

Consisting largely of land Pennsylvania obtained by the Walking Purchase from the Delaware Indians in 1737, it was the scene of Moravian missions to the Indians, frontier fighting during the French and Indian War, and Tory raids during the Revolution.

The Lehigh Coal and Navigation Company, formed in 1822, built an economic base, and Mauch Chunk flourished. Wealthy canal boat builder, Asa Packer led the movement to create the county. In 1851 he formed the Lehigh Valley Railroad and broke the Navigation Company's control, although it revived after another railroad opened the Lackawanna Valley as a route for transporting coal to New York. When New York tycoon J.P. Morgan bought the Lehigh Valley Railroad in the late 1890s, millionaires left Mauch Chunk and the area declined. Deep coal mining lasted until 1973.

Always producing high quality anthracite, the county was still is an area for surface mining. Zinc mining became important after 1898, and the forests produce good lumber. But this was not an agricultural county; only 9 percent of the land is farmed.

The population peak of 63,380 occurred in 1930. The Northeast Extension of the Pennsylvania Turnpike and the thriving tourist attractions of Mauch Chunk sustained the economy. Women's clothing was the largest manufacturing business. The value added to the economy by manufacturing in this county increased 67% between 1987 and 1992.

There was an Underground Railroad station at Palmerton. Carbon County was the scene of much of the Molly Maguires movement against coal mine owners.

Columbia County

Columbia County was created on March 22, 1813 from part of Northumberland and Luzerne Counties. Its name is a poetic allusion to America. Bloomsburg, the county seat since November 30, 1847, was incorporated as a town on March 4, 1870, and was the only incorporated town in the state. Its name comes from Bloom Township, which was named for Samuel Bloom, a commissioner of Northumberland County. Danville, the county seat from 1813 to 1846, is now the seat of Montour County.

Native American communities had long lived here along the Susquehanna River, and the first white settlement was south of the river. Berwick was laid out in 1783. As a North Branch Canal depot and then a railroad station, Catawissa grew and served a thriving farm region. An

anthracite mining and a lumber boom arose but, like Columbia's farming, yielded to competition in the 1930s. Abandoned deep coal mines have burned for decades beneath the town of Centralia. ACF's railroad car complex and Bloomsburg's silk and carpet works prospered until the national trend toward deindustrialization began in recent decades. ACF manufactured tanks during World War II. The county's farming had emphasized fruit and field crops; in 1992 Columbia ranked 37th among all 67 counties in value of farm crops. Farms covered 37 percent of the county's area. There were Underground Railroad stations at Berwick and Millville. Some of the accused Molly Maguires were tried in Bloomsburg in 1877.

Luzerne County

Luzerne County was created on September 25, 1786 from part of Northumberland County and named for Chevalier de la Luzerne, French minister to the United States. Wilkes-Barre, the county seat, was laid out in 1772 and named for two members of the English Parliament, John Wilkes and Isaac Barre, both strong advocates of American rights. It was incorporated as a borough on March 17, 1806 and as a city on May 4, 1871.

Pennsylvania settlers, Indians, and a Connecticut settlement company engaged in a three-way struggle for the Wyoming Valley. The Yankee Pennamite Wars were fought here from 1769 to 1782. In 1786 Connecticut's acceptance of the federal award to Pennsylvania allowed Pennsylvania to form the county, and a 1799 statute compromised the land titles claimed by Connecticut families. Led by the Delaware, "King" Teedyuscung, Indians committed the first Wyoming Massacre of settlers on Oct. 15, 1763; with British assistance Indians perpetrated the second Wyoming Massacre on July 3, 1778.

In 1808, Judge Fell proved anthracite coal's burning potential, and in 1834 the North Branch Canal began to make coal exporting practical. Many canals and railroads followed, and Luzerne's two anthracite fields flourished. In time the city of Scranton rivaled Wilkes Barre, which led to the creation of Lackawanna County in 1887. Textiles and metal products manufacturing developed. Textile factories depended on miners' families for their laborers. Coal strikes of 1902 and 1925–1926 were so bitter that consumers sought alternate fuels, and mining declined. World War II revived anthracite prices, but the Knox Mine disaster of January 22, 1959, resulted again in the drastic decline of anthracite mining. Post that, Luzerne produced about one-fourth of the anthracite coal in the state, mostly by surface operations. Economically, the county had had heavy unemployment since World War II, although new mining machines had made mining labor-efficient long before the market diminished in the 1960s. Only about one-eighth of Luzerne is farmed; harvested crops are more valuable than animal products.

Schuylkill County

Schuylkill County was created on March 1, 1811 from parts of Berkes and Northamption Counties and named for the Schuylkill River. "Schuylkill" is Dutch for "hidden stream." Parts of Columbia and Luzerne Counties were added on March 3, 1818. Pottsville, the county seat after December 1, 1851, was incorporated as a borough on February 19, 1828 and became a city in 1910. It was named for the Pott family, early settlers. The original county seat was Orwigsburg.

Germans from Berks County arrived two years before the land was purchased from the Indians in 1749. This was the scene of Indian raids and frontier forts in the French and Indian and Pontiac Wars, and of brief Indian raids during the Revolution.

In 1790 Necho Allen discovered that anthracite coal would burn, and Col. George Shoemaker proved in 1812 that it could fire a rolling mill. In 1822 the first shipment of anthracite on the Schuylkill Canal spurred mining. The county had some of both the Southern and Middle anthracite fields. From 1880 to 1940 it was second only to Luzerne County in production. In 1842, the Reading Railroad arrived, but the canal continued to carry coal also until 1881.

A second generation began mining the northern area using inclined plains. The railroads owned the majority of the mines. Mining technology was first worked out in Schuylkill, also the scene of early mine labor troubles. Pottsville did not develop an anthracite elite comparable to Wilkes-Barre, Scranton, and Mauch Chunk, because most of its capital came in from Philadelphia. The coal strikes of 1902 and 1925–1926 destroyed consumer confidence and alternative heating fuels cut into anthracite's market. Despite a World War II revival, the industry collapsed.

The population peak of 235,505 occurred in 1930. Strip mining began shortly after 1900. Bootleg coal operators prevailed between 1930 and 1940 due to the collapse of the old corporations. In the heyday of anthracite production, the county competed with Lackawanna as the state's second-most productive county. In 1990 Schuylkill produced half of Pennsylvania's 3.4 million tons. Other county products have included explosives, textiles, apparel, and shoes. One-fifth of the land was farmed, and the county had a strong position in the production of swine and potatoes.

The Catawissa Creek Watershed has a rich history that can be explored through visiting numerous historic and cultural sites (Table 15 for the Historic and Cultural sites within the Watershed and Figure 15 Cultural and Historical Resource Map).

The Pennsylvania Historical and Museum Commission (PHMC) is the official history agency of the Commonwealth of Pennsylvania. The PHMC was created in 1945 and is responsible for the collection, conservation, and interpretation of Pennsylvania's historic heritage, which is accomplished through the Pennsylvania State Archives, the State Museum of Pennsylvania, the Bureau of Historic Sites and Museums, the Pennsylvania Trails of History, the Bureau for Historic Preservation, and the Bureau of Management Services. The properties listed by the PHMC include districts, sites, buildings, structures and other objects significant to American history.

Since 1946, the PHMC has administered a program of historical markers to capture the memory of people, places, and events that have affected the lives of Pennsylvanians. The markers provide information pertaining to Native Americans and settlers, government and politics, athletes, entertainers, artists, struggles for freedom and equality, factories and businesses, and a multitude of other topics. There are several historical markers located within the watershed representing the varied historic events which took place.

The third largest concentration of covered bridges in Pennsylvania is located in Columbia County. There are nineteen covered bridges within Columbia County and four covered bridges span the border between Columbia and Northumberland Counties. There is one existing bridge within the watershed, the Hollingshead Covered Bridge. The Hollingshead Bridge, built in 1850, is single span Burr Arch with a span length of 128 feet. The bridge crosses the Catawissa Creek in Catawissa Borough.

Special Issues/Opportunities

Acid Mine Drainage

A variety of ecological and environmental issues were identified during the preparation of the River Conservation Plan and acid mine drainage (AMD) was one of the most commonly listed critical water related challenge due to the impact historic mining activities have had on the Catawissa Creek.

Pennsylvania's legacy of mining has left lasting impacts on the environment, particularly in the form of abandoned mine drainage (AMD). AMD is drainage flowing from or caused by surface mining, deep mining or coal refuse piles that is typically highly acidic with elevated levels of dissolved metals. The formation of AMD is primarily a function of the geology, hydrology and mining technology employed for the mine site. The resulting water is usually high in acidity and dissolved metals. Mine drainage entering a stream adversely affects aquatic life and water use. Formed through a series of complex chemical reactions, AMD usually pollutes the water with high levels of dissolved metals. Waters may visually appear clean and clear, while being chemically toxic to aquatic organisms and plant life. Often, impaired streams are stained orange from the high levels of iron. Upon entering a stream, metals deposit on the stream bottom and severely degrade the habitat of aquatic plants and animals.

According to Pennsylvania Organization for Watersheds and Rivers (POWR), at least 44 of the 67 counties in Pennsylvania are affected by abandoned coal mines and AMD is the largest contributor to water quality impairment in Pennsylvania. According to POWR, Pennsylvania has been a leader in improving the quality of its environment after many years of mismanagement. In 1968, Pennsylvania passed the Land and Water Conservation and Reclamation Act, the first act to address abandoned mine reclamation. This act spurred Operation Scarlift, which was instituted to clean up the damage caused by abandoned mines. It used a total of $141,000,000 to complete 500 stream pollution abatement projects, extinguish 75 fires, remove 150 areas of subsidence, and prevent air pollution at 30 sites of burning refuse banks.

Other laws and initiatives were passed that improve abandoned mine reclamation efforts. The 1997 Appalachian Clean Streams Initiative provides additional funds to the Appalachian region to address AMD. Incentives for re-mining of abandoned mine sites are provided under the 1992 Amendment to the Pennsylvania Reclamation Act. The Good Samaritan Law was enacted in 1999 to protect landowners from the Pennsylvania Clean Streams Law. Under the Pennsylvania Clean Streams Law, DEP may require a landowner to clean up any pollution resulting from the condition of their property, regardless of fault. The Good Samaritan Law reduces current-owner liability for damages caused by previous owners. It encourages individuals or groups to reclaim areas affected by abandoned mining operations by granting them liability relief.

The Pennsylvania Department of Environmental Protection Bureau of Abandoned Mine Reclamation administers and oversees the Abandoned Mine Reclamation Program in Pennsylvania. The bureau is responsible for resolving problems such as mine fires, mine subsidence, dangerous highwalls and other hazards which have resulted from past mining

practices, and for abating or treating acid mine drainage from abandoned mines. The bureau has two field offices, one in Wilkes-Barre, PA and the other in Edensburg, PA.

The Eastern Pennsylvania Coalition of Abandoned Mine Reclamation (EPCAMR) is a non-profit, non-partisan, local, state, federal, and industry partnership dedicated to improving water quality. EPCAMR accomplishes its mission through the following:

- Endorsement of the reclamation of abandoned mine lands in their region;
- Promotion of cooperation among all parties with an interest in resolving AMD/AML problems;
- Encouragement of partnerships among the various governmental agencies (Federal, State, County, and Local), watershed associations, industry, and conservationists;
- Education of the public regarding mine drainage and mine reclamation issues
- Seeks funding for restoration, reclamation, and assessment projects; and
- Provide assistance in developing watershed associations and coalitions interested in AMD/AMR.

The Catawissa Creek Watershed lies in the Eastern Middle Anthracite fields. Mining in the Eastern Middle Anthracite fields where the Jeansville and Green Mountain Coal Basins lie began in the mid-1800s. To alleviate groundwater pumping problems in the deep mines, drainage tunnels were driven through the enclosing ridges of the coal fields. The tunnels were completed in the early 1930s. Mining was the major industry in the eastern portion of the Catawissa Creek Watershed until the early 1970s. Major deep mining was then discontinued because of dwindling coal reserves, reduced markets, and rising production costs. Strip mining continued after 1970, and additional coal is being reclaimed from the refuse banks in the basin (PADEP, 2007).

Many tributaries of the Catawissa Creek have either excellent native brook trout populations or recreational trout fisheries maintained by stocking by the Pennsylvania Fish and Boat Commission. The main stem Catawissa Creek and its largest tributary, Tomhickon Creek, however, are degraded by acid mine drainage and are essentially devoid of resident fish. Stream flow drainage patterns, surface runoff, and the landscape of the upper watershed have also been altered by past surface and underground coal mining activities. Vast coal refuse piles and numerous abandoned open surface mining pits cover extensive areas of the upper watershed. The coal seams are steeply pitched and mine workings penetrate deep into the ridge tops, hillsides, and valleys. Five abandoned mine tunnels, drilled during active coal mining, have discharged abandoned mine drainage and severely degraded the water quality of Catawissa Creek for the past 80 years.

Treatment of AMD includes both active and passive treatment systems. Active treatment uses chemicals and equipment to neutralize the AMD. In these chemical treatment systems, the acidity is buffered by the addition of alkaline chemicals such as calcium carbonate, sodium hydroxide, sodium bicarbonate or anhydrous ammonia. These chemicals raise the pH to acceptable levels and decrease the solubility of dissolved metals. Precipitates form and are settled from the solution. Some drawbacks to active treatment systems include expensive chemicals and these systems have additional costs associated with the need for ongoing operation and maintenance.

AMD passive treatment systems allow naturally occurring chemical and biological processes to reduce AMD in the controlled environment of the treatment system, and not in the receiving water body. Wetlands, open limestone channels, anoxic limestone drains, vertical flow systems, or diversion wells can be constructed according to the needs and conditions of the site. The materials used are not hazardous and, after construction, there are few costs, creating a cost-effective and efficient means of treating AMD.

In July 2001, the Catawissa Creek Restoration Association (CCRA) along with various partners including the Schuylkill and Columbia County Conservation Districts, EPCAMR, the Eagle Rock Homeowner's Association and others constructed a passive treatment system on the Oneida #1 Mine Tunnel discharge. The treatment system consists of three series of buried limestone cells where the acidity in the discharge water is neutralized and the pH and alkalinity are increased. The series of oxic limestone drains (OLD) passive treatment system showed significant improvements soon after construction of the passive treatment system was completed.

Public Participation Process

An integral component of the rivers conservation planning process is the public participation process. This process allows PEC to obtain information on the concerns, needs and opinions of the stakeholders in order to better plan for the future of the Watershed. PEC provided opportunities for public input via a variety of means including public meetings, steering committee meetings, municipal questionnaires, public surveys and key person interviews. The information gathered from the public participation process was used to develop the final Plan.

Steering Committee

The steering committee had several responsibilities including providing data and information regarding the Watershed, participation in the creation of the municipal survey and general questionnaire, suggesting potential key persons from the watershed to be interviewed and reviewing the possible questions that would be asked during the interview process. The steering committee met several times throughout the course of the project.

During the final stages of the project, the steering committee developed an Action Plan. The list of projects in the Action Plan addresses the concerns of the community for Catawissa Creek Watershed and reflects their vision for the future. Finally, the steering committee reviewed the draft Rivers Conservation Plan report at the final public meeting. The commitment and efforts of the steering committee enabled this Rivers Conservation Plan to reflect the local values and needs, concerns and values and to develop locally relevant projects to address these issues.

Surveys

Municipal Survey

PEC distributed a municipal survey to all twenty (20) municipalities in the Catawissa Creek Watershed (Appendix C Municipal Surveys). Fifteen (15) municipalities completed the survey, including Banks Township in Carbon County, Beaver, Catawissa, Conyngham, Franklin and Roaring Creek Townships and Catawissa Borough in Columbia County, Hazle Township in Luzerne County and East Union, Kline, Mahanoy, North Union and Union Townships and McAdoo and Ringtown Boroughs in Schuylkill County. Black Creek Township, Luzerne County indicated that there is so little area of the township located within the study area that they would not be participating in the study.

The purpose of the survey was to determine how the municipalities felt about the importance of water protection issues, to gauge their concerns regarding the watershed, and obtain recommendations for the Action Plan of the Rivers Conservation Plan. Not all the municipalities actively participated on the steering committee therefore the survey provided municipal representatives with an alternative to contribute concerns/potential actions to this Rivers Conservation Plan. The results of the municipal surveys are summarized below.

Municipalities were asked to indicate which benefits they would like to see emphasized in the Plan, both from the perspective of the municipalities and the entire Watershed.

- The municipalities were questioned as to which of the following benefits and uses; fishing, hunting, bicycling, hiking/walking, habitat protection, historic preservation, stream bank erosion improvements, improved water quality, open space protection, wetland protection, eco-tourism, scenic beauty, acid mine drainage, and combined sewers they would like to see emphasized in the Rivers Conservation Plan. Of the municipalities that returned a survey, there was at least some support for every item listed above to be addressed in the Rivers Conservation Plan from both the perspective of the municipalities and their concern for the Watershed as a whole. When the municipalities responded to the question from the perspective of the Watershed, fishing, improved water quality, scenic beauty, protection of habitat and acid mine drainage ranked as high priorities to be emphasized in the Plan. When the municipalities responded to the question from their own municipal perspective, stream bank erosion and scenic beauty ranked as high priorities.
- The municipalities were also questioned as to how to successfully implement the recommendations of the Action Plan. Nine (9) of the fifteen (15) municipalities felt that some type of management structure will be necessary to implement the plan. Nine (9) respondents preferred the Catawissa Creek Restoration Association as the appropriate organization to implement the plan's recommendations rather than a new non-profit organization. Seven (7) respondents felt that a joint municipal body could be used as the appropriate management structure to implement the plan. Six (6) respondents indicated that they felt that individual municipalities, with as needed informal cooperation could implement the Action Plan and six (6) respondents indicated that they felt that an inter-municipal Environmental Advisory Council could also implement the Action Plan.
- The municipalities were also asked to rank the importance (not important, somewhat important, important, very important) of the following land and water protection issues to the watershed: cultural resource protection, farmland protection, habitat protection and enhancement, land ownership, management and stewardship, land development, stormwater and flooding, recreation, state and federal regulations/funding, stream water quality/quantity). Only one (1) municipality felt that cultural resource protection was not important and seven municipalities felt that it was important. Eight (8) of the municipalities considered the recreational value of the watershed and state and federal regulations/funding as very important. The following issues were also ranked as very important by six (6) municipalities: habitat protection and enhancement; land development; stormwater/flooding; and stream water quality and quantity. Eight (8) municipalities classified land development and stream water quality and quantity as important. The following issues were also considered important by at least six (6) municipalities: cultural resource protection; farm land protection; land ownership management and stewardship; stormwater/flooding; and state and federal regulations/funding. Only one (1) municipality responded that any issue was not important and that issue was cultural resource protection.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection	1	2	7	1
Farmland Protection	0	3	6	3
Habitat Protection and Enhancement	0	4	4	6
Land Ownership, Management and Stewardship	0	5	6	3
Land Development	0	1	8	6
Stormwater/Flooding	0	2	7	6
Recreation	0	1	4	8
State and Federal Regulations/Funding	0	0	6	8
Stream Water Quality and Quantity	0	0	8	6

- When questioned regarding the most critical water-related projects that each municipality would like to undertake in the next 3 to 5 years, various projects were listed by the municipalities. These projects included; stream bank restoration and flood control, water quality and quantity monitoring, open space preservation, recreation, stormwater runoff, illegal dumping and educational workshops.
- A few of the respondents made additional comments. Ringtown Borough stated that they would like to work with neighboring Union Township to undertake a stormwater management study; and Catawissa Borough indicated that it is committed to improving the environment for its citizens to enjoy.

General Questionnaire

A general survey questionnaire was developed and distributed to get a sense of how residents perceive and utilize the resources in the Watershed. The survey was distributed to local residents via a variety of means. Representative John Yudichak published a shortened version of the survey in his quarterly newsletter. The full survey was also made available for download on the following web sites; Pennsylvania Environmental Council (www.pecpa.org), the Eastern Pennsylvania Coalition for Abandoned Mine Reclamation (www.epcamr.org), and the Catawissa Creek Restoration Association (www.ccra.org). PEC received forty questionnaires from Representative Yudiachak's newsletter distribution and four were returned via the websites (Appendix D for Questionnaire Surveys).

Residents were asked to identify the types of problems they notice near areas of water in Watershed. The majority of respondents indicated that pollution in the form of trash and garbage, illegal dumping, agricultural runoff, acid mine drainage and raw sewage were major concerns for the Watershed. Other responses included poor water quality, runoff from construction, sinkholes and reduced/diminished water flow.

When questioned as to the benefits of living near a water body, respondents indicated scenery, wildlife, increased property values and walking opportunities. Eroding streambanks, flooding and water pollution were indicated as the greatest drawbacks to living near a body of water.

The majority of the respondents felt that the local municipalities were not doing an adequate enough job of protecting area water resources, such as limiting development, monitoring the sewage treatment plant or dealing with stormwater. Some respondents indicated that they were unsure and others indicated that they felt the municipality was doing an adequate job.

When questioned as to what areas they felt were most important to address in the Watershed RCP, many respondents indicated that issues to include in the plan should be promotion of recreational opportunities which ties into better water quality for fishing and canoeing, as well as, drinking water quality, decreased water quantity, dealing with stormwater, erosion, acid mine drainage, agricultural runoff, farmland preservation, sewage, illegal dumping and education for land owners.

Key Person Interviews

The intent of the key person interviews was to obtain information regarding the concerns, potential uses and attributes of the watershed from another segment of the local communities. Representatives from local community and watershed organizations participated in the planning process through the steering committee meetings, therefore, it was determined that it was not necessary to conduct extensive key person interviews. However valuable information was provided by committee members regarding the Catawissa Watershed.

The Catawissa Watershed is currently utilized for a variety of purposes including duck hunting, fishing, hiking, swimming and kayaking. The primary area of concern and/or critical issue facing the Watershed is industrial and residential development especially in the area of the headwaters. Concern was expressed regarding the potential development of a Cargo Airport at the headwaters of the Catawissa Creek in Luzerne and Schuylkill Counties. Specifically the concerns were with regards to stormwater runoff, water withdrawals, future development potential, water treatment and a potential negative impact of a cargo airport on the passive treatment system at the Audenreid Mine Tunnel. There was also concern expressed regarding the water draw downs in the Catawissa and Brandewine Valley that would potentially ruin the streams. Other issues included concerns regarding flooding, and maintaining the rural characteristics of the Watershed. AMD, flooding and lack of access to the stream are some of the most important environmental issue confronting the Watershed according to the committee. AMD is a major impediment to the future potential of the Catawissa Creek for fishing. Lack of public access to the stream is also a hindrance to the recreational potential of the Catawissa. Flooding and the devastation it can cause in terms of stream bank erosion, surrounding land damage and property damage is also of concern for the committee.

Public Meetings

An initial public meeting was held on March 21, 2007 at the Beaver Township Fire Hall to announce the project to the local communities. Attendees were provided with the project overview, scope of work and timetable. Attendees were invited to participate on the steering committee. The final public meeting was held on December 16, 2009 at the Beaver Township Fire Hall to present the draft Plan and allow for comment.

Action Plan Management Recommendations

On December 19, 2009 a meeting was held at the Beaver Township Firehall to present the Executive Summary and potential action plan projects to date. The meeting attendees were then asked to include their own respective projects to address their issues and concerns regarding the watershed. The key person interviewees, local municipalities, and representatives from local non-profit organizations were also asked to develop specific projects that would address the local community's concerns for and assets of the watershed. Municipalities, county agencies, and other local non-profit organizations were also sent mailings asking for their input. Additionally, follow up phone calls were made to solicit more input.

Based upon available resources identified through the planning and public participation process, several action plan management options and recommendations have been developed to address the various issues, concerns, constraints, and opportunities within the Catawissa Creek Watershed. Recommendations include resource protection, land use issues, and habitat issues. Implementation of these recommendations will help restore, maintain, and enhance the Watershed. The recommended Action Plan Projects are varied in type and scope, therefore implementation of the Plan recommendations will require cooperation and coordination among many different organizations. There are many agencies and organizations immediately available to assist in the Watershed with implementation and management of these recommendations. An organization that has been very active in the watershed and could be the primary organization to oversee the implementation of these recommendations is the Catawissa Creek Restoration Association (CCRA), a local watershed organization formed with a mission to preserve and improve the water quality in the Catawissa Creek Watershed.

The recommendations were developed as a guide towards improving the quality of life and protecting the resources within the Catawissa Creek Watershed. The recommendations are organized to correspond to the resource topics of this report; water, land, education, recreation and historic. A listing of the specific proposed projects compiled based on the public participation process can be seen in Table 16 Action Plan Projects. This report also provides general suggestions and recommendations that can be utilized to further benefit the watershed. Potential sources of funding and technical assistance to support the implementation of these recommendations can be found in Table 17.

Water Resources

A variety of ecological and environmental issues were identified during the preparation of the River Conservation Plan. Acid mine drainage (AMD), flooding, stormwater runoff and management and stream bank erosion were the most commonly listed critical water related challenges. Other critical water related needs or challenges included water quality and clean drinking water and water quantity issues.

Historic mining activities, stream bank erosion, and storm water runoff have impacted much of the study area. A variety of suggested projects to address these concerns were recommended by the steering committee. These projects included conducting water quality monitoring projects,

addressing storm water runoff, developing flood control projects, stabilizing stream banks and addressing stream bank erosion, remediating acid mine drainage and conducting a sewer service area study.

Other recommendations to address the water resources in the watershed include the following:

- Conduct watershed-wide water conservation programs designed to educate the public on the values of reducing water consumption and utilizing water conservation products (i.e. low flow devices) and techniques.
- Outreach to municipal and county officials regarding the importance of the implementation of wetland mitigation, encourage the acquisition of important wetlands for protection of groundwater recharge areas and promote the establishment and maintenance of wetlands and riparian vegetation as a cost effective means of addressing non-point source pollution.
- Educate the general community regarding the importance of wetlands for habitat and water quality.
- Utilize the County Natural Area Inventories to establish an inventory of existing plants and animals in the watershed wetlands and take action if necessary to eradicate any invasive species that threaten to out-compete the native species within the wetlands.
- Encourage the monitoring and reporting of existing and proposed water withdrawls within the watershed especially at the headwaters of the Catawissa Creek.
- Update municipal floodplain ordinances and strengthen their enforcement.
- Develop educational programs about flood prevention and encourage the use of non-structural best management practices (BMPs) in flood prone areas.
- Acquire properties that are frequently impacted by serious flooding and convert them to public recreational venues.
- Prepare a riparian buffer inventory within the watershed that will locate areas in need of riparian buffer restoration.
- Educate all watershed stakeholders about the importance of riparian corridors and their role in protecting water resources.
- Educate homeowners about water use designations and water quality issues, as well as, ways they can minimize nonpoint source pollution caused by the overuse of fertilizers, pesticides, and herbicides.
- Implement TMDLs that have been developed.
- Implement the recommendations from the Susquehanna River Tributaries Watershed Act 167 Stormwater Management Plan.
- Conduct educational outreach with municipal and county officials about planning for future stormwater BMP implementation.
- Reduce erosion and sedimentation by incorporating BMPs in all earth-moving activities, including logging and deforestation, construction and development, and natural resource extraction.
- Work with local sewage enforcement officers, PA DEP, and municipalities to regularly update and enforce Act 537 Sewage Plans.
- Encourage farmers to have nutrient management plans developed to boost productivity and protect water resources.
- Host workshops or trainings regarding water quality monitoring and conduct seasonal water quality monitoring on all streams within the watershed.

Land Resources

Preservation of green space, open space, farmlands, and floodplains throughout the Catawissa Creek Watershed is also a priority for the study area according to the results of the public participation process. This can be achieved through a variety of projects listed in the Action Plan. Projects that address this issue include cleaning up illegal dump sites, as well as, initiating tree planting programs in riparian zones and preserving the scenic beauty and open space of the Watershed.

Other recommendations to address the land resources in the watershed include the following:

- Encourage the development of joint and multi-municipal comprehensive plans.
- Encourage municipalities to establish Environmental Advisory Committees.
- Implement smart growth practices.
- Incorporate County Natural Area Inventories into county and municipal plans.
- Enroll agricultural landowners in the Conservation Reserve Enhancement Program (CREP), a voluntary program, to take marginal farmland out of production for wildlife habitat, or other similar programs.
- Promote and utilize the County farmland preservation programs to sustain agricultural base and rural heritage and protect active farmlands by designating them as agricultural security areas.
- Establish land-use planning and zoning to limit development in floodplains and other critical areas subject to erosion and sedimentation problems.
- Encourage the development and use of Forest Stewardship Plans or forest management plans and educate landowners and municipal officials regarding sustainable forestland management.
- Educate citizens about the economic and environmental impacts of illegal dumping.
- Partner with local landowners, businesses, and community groups to sponsor community cleanups to remove trash along roadways, streambanks, and at illegal dumpsites.
- Work with county planning departments to prohibit any new or proposed landfills near water sources and residential areas.
- Utilize the Illegal Dump Site Surveys completed for Columbia, Luzerne and Schuylkill Counties to identify and clean up existing illegal dumpsites within the watershed and encourage Keep Pennsylvania Beautiful to complete an Illegal Dump Site Survey for Carbon County.
- Create an educational program targeting the local community regarding the importance of recycling and provide convenient and affordable alternative disposal options, such as offering special collection days and drop-off locations for appliances and household hazardous wastes in areas where these programs are not currently available.
- Continue streambank restoration and riparian buffer initiatives along streambanks with no or inadequate riparian buffers and on agricultural lands in order to minimize nutrients and sediments entering the waterways.
- Promote the inclusion or preservation of open space in community development programs.
- Promote the redevelopment of Brownfields sites.

Recreation Resources

During the public participation process, the public expressed many times that the region needs to address the recreational amenities located in the study area. There is a great deal of interest in improving the water quality in the Watershed in order to bring back the aquatic life in the streams so fishing and canoeing opportunities can be realized. The Steering Committee also

recognized early on in the project that tourism currently benefits the region and could be greatly enhanced. Eco-tourism opportunities abound in the watershed. Other recommendations regarding the recreational resources of the watershed include the following:

- Work with private landowners to inventory, assess and develop public access locations to the Catawissa Creek to promote fishing, canoeing and kayaking.
- Enhance existing community parks and playgrounds through the maintenance and upgrade of out dated equipment and establish community parks in municipalities that currently do not have recreational facilities.
- Protect and improve area waterways to maintain fisheries.
- Support the development of trails within the watershed and create connections to trails within the state game and forest lands of the watershed, as well as, connections to trails in adjacent areas of the watershed.

Education Resources

The Steering Committee also suggested a limited number of projects regarding information and educational development regarding watershed specific issues. One educational project included an educational workshop for kids regarding the watershed and its importance to the quality of life in their communities, as well as, other educational and outreach programs for local residents and businesses. Other recommendations to address educational needs with the watershed include the following:

- Provide environmental educational programs for municipal officials, local residents, businesses owners and school-aged children regarding what a watershed is, the importance of protecting the watershed, issues and challenges facing the watershed and what they can do to assist in the protection of the valuable watershed resources.
- Promote the education of developers and municipal officials regarding "green" development techniques and practices.

Historical Resources

The study area for this project is rich with historic sites including covered bridges (one within the Watershed and many others adjacent to the Watershed). Schuylkill County recommended projects to establish a county historical advisory board and updating the cultural resources inventory. The preservation and enhancement of historical aspects of the communities would not only provide educational opportunities, but also bring economic opportunities to the region through the development of eco-tourism. Other recommendations to address the historical resources of the watershed include the following:

- Expand on existing driving, walking, and/or bicycling tours within and adjacent to the watershed (covered bridge tours) in order to highlight the historical sites and structures.
- Partner with county and local historical societies to preserve existing historical sites and structures.
- Work with Pennsylvania Historic Museum Commission, individuals, and agencies to determine if local historical sites and structures could be added to the National Register.

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Appendix A

Figures

Figure 1: Catawissa Creek Watershed Map: Base Aerial Map

Cities and Towns

Catawissa Creek Watershed Boundaries

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

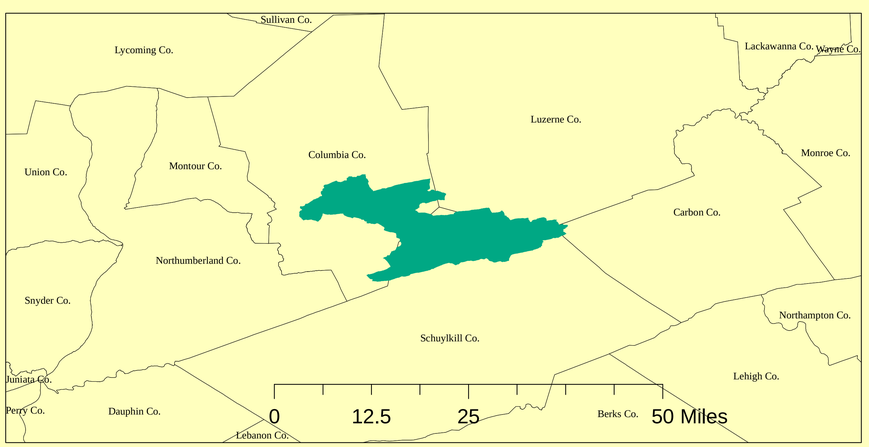
State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other
- County Boundaries
- Municipalities

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles



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Eastern PA Coalition for Abandoned Mine Reclamation

Catawissa Creek Restoration Association

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Figure 2: Catawissa Creek Watershed Map: Topography

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Catawissa Creek Watershed Boundaries
- County Boundaries
- Municipalities

Digital Elevation

Value (Ft)

- High : 2,500
- Low : 350

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

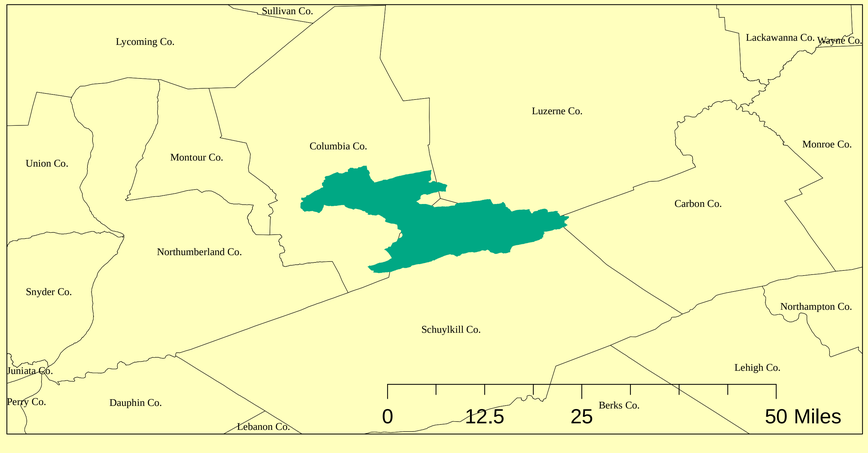

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Figure 3: Catawissa Creek Watershed Map: Sub-Watersheds

Cities and Towns
Population
- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads
Traffic Type
- Interstate
- US Route
- PA Route
- Other

- Waterbodies

Streams (Complete List 2004)
Strahler Stream Order
- 1
- 2
- 3
- 4

- Catawissa Creek Watershed Boundaries
- County Boundaries
- Municipalities
- Small Watersheds

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

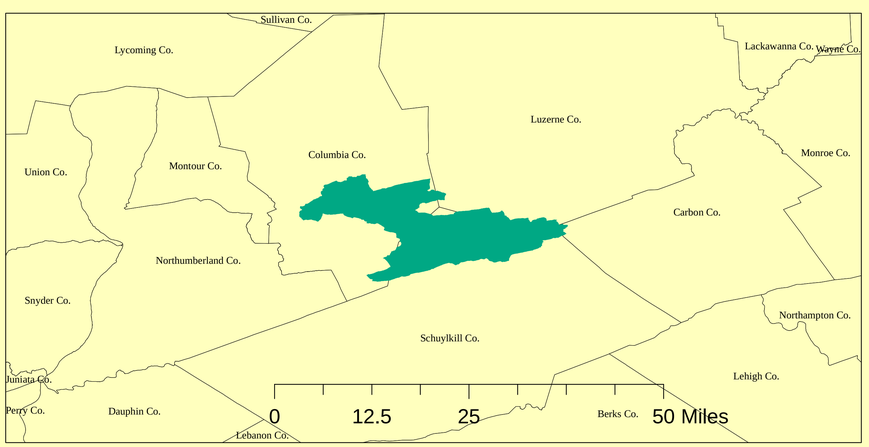

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Figure 4: Catawissa Creek Watershed Map: Base Land Use Map

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other
- County Boundaries
- Municipalities

- Catawissa Creek Watershed Boundaries
- <No Data>
- Open Water
- Low Intensity Residential
- High Intensity Residential
- Commercial / Industrial / Transportation
- Bare Rock / Sand / Clay
- Quarries / Strip Mines / Gravel Pits
- Transitional
- Deciduous Forest
- Evergreen Forest
- Mixed Forest
- Pasture / Hay
- Row Crops
- Urban / Recreational Grasses
- Woody Wetlands
- Emergent Herbaceous Wetlands

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

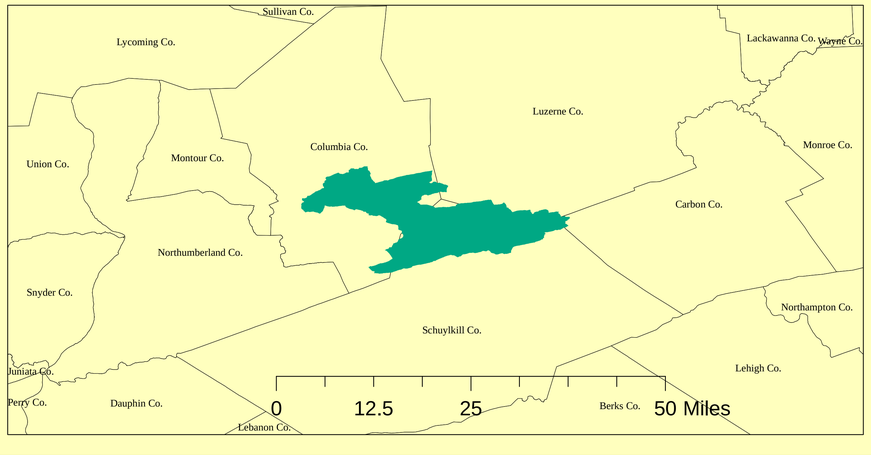

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Figure 5: Catawissa Creek Watershed Map: County Zoning

Cities and Towns

Population
- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type
- Interstate
- US Route
- PA Route
- Other

- County Boundaries
- Municipalities
- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order
- 1
- 2
- 3
- 4

- Catawissa Creek Watershed Boundaries

Carbon Co. Zoning
- Unknown

LU
- Commercial
- Institutional
- Misc. Residential Imp
- Residential
- Exempt; Taxable Vacant/Miscel

Columbia Co. Zoning
- Unknown

LU
- A; AC; AT; AX
- C; CA; CB; CC; CG; CL; CR; CS; CT; CW; CX
- I
- L1; L2; L3; LX
- R; RA; RC; RS; RT; RX
- V; VX

Schuylkill Co. Zoning
- Unknown

PROPTYPE
- A; AC; AO; AS; AT; AX
- C; CA; CB; CC; CG; CH; CL; CM; CS; CT; CW; CX
- I
- IL
- L1; L2; L3; LX
- R; RA; RC; RO; RS; RT; RX
- U
- V; VX

Luzerne Co. Zoning
- Unknown

LAND_USE
- B-1; B-2
- C-1
- I-1; M-1
- PRD
- R-1; R-2

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

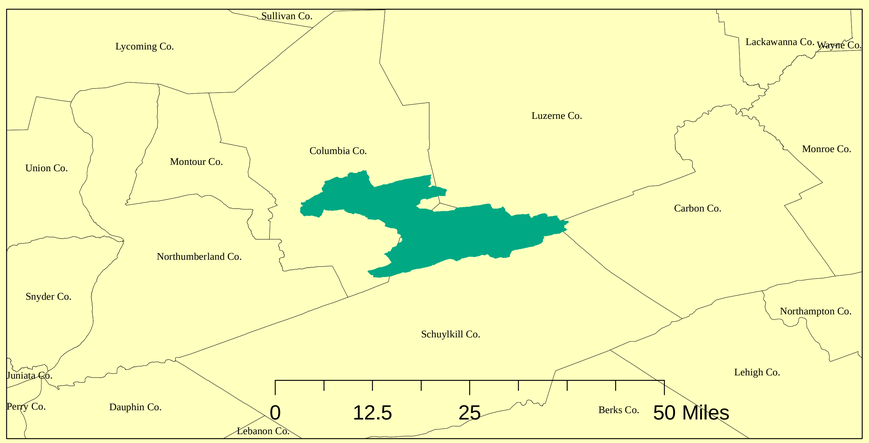

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Figure 6: Catawissa Creek Watershed Map: Municipalities with Population Density

Cities and Towns
Population
- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads
Traffic Type
- Interstate
- US Route
- PA Route
- Other

- Catawissa Creek Watershed Boundaries
- County Boundaries
- Municipalities
- Waterbodies

Streams (Complete List 2004)
Strahler Stream Order
- 1
- 2
- 3
- 4

Municipalities
Pop. Density (Residents per Sq. Mi.)
- 21.05 - 87.20
- 87.21 - 200.36
- 200.37 - 592.88
- 592.89 - 2942.59
- 2942.60 - 6890.91

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

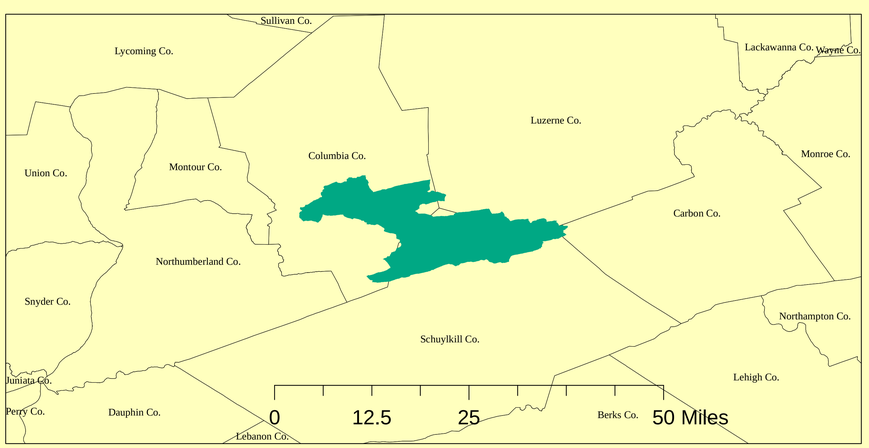

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Figure 7: Catawissa Creek Watershed Map: Surface Geology and Mine Lands

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other
- Catawissa Creek Watershed Boundaries
- County Boundaries
- Municipalities
- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Active Quarry

Active Coal Mining Operations

Facility Type

- REFUSE REPROCESSING, ACTIVE
- SURFACE MINE, ACTIVE
- SURFACE MINE, INACTIVE
- Reclamation Complete

AMLIS Points

Problem Type

- Open Shaft/Mine Entry; Mine Entry
- Abandoned Structure; Abandoned Structure
- Erosion-Prone Area
- AMD Discharge Area
- Flooded Strip Mine
- Vertical Mine Shaft
- Crop Fall or Subsidence Opening
- Untreated Discharge (Deep Mine)
- Untreated Discharge (Surface Mine)
- Impacted Waterway (AMD)
- Flooded Deep Mine Pool
- Reclamation Complete

AMLIS Polygons

Problem Type

- Dry Strip Mine
- Flooded Strip Mine
- Open Shaft/Entry/Slope
- Spoil Pile
- Known Subsidence Prone Area

AMLIS Problem Areas

FEATURES_R / TOTAL_FEAT

- Unreclaimed
- 1 to 25% Reclaimed
- 26 to 50% Reclaimed
- 51 to 75% Reclaimed
- 76 to 100% Reclaimed
- Limit of Coal

Bedrock Geology

MAP_SYMBOL

- DSkt - Keyser and Tonoloway Formations, undivided
- Dcb -Buddys Run Member of Catskill Formation
- Dcd - Duncannon Member of Catskill Formation
- Dciv - Irish Valley Member of Catskill Formation
- Dcsc - Sherman Creek Member of Catskill Formation
- Dh - Hamilton Group
- Doo - Onondaga and Old Port Formations, undivided
- Dtr - Trimmers Rock Formation
- MDsk - Spechty Kopf Formation
- Mmc - Mauch Chunk Formation
- Mp - Pocono Formation
- Pl - Llewellyn Formation
- Pp - Pottsville Formation
- Sbm - Bloomsburg and Mifflintown Formations, undivided
- Sc - Clinton Group
- Swc - Wills Creek Formation

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

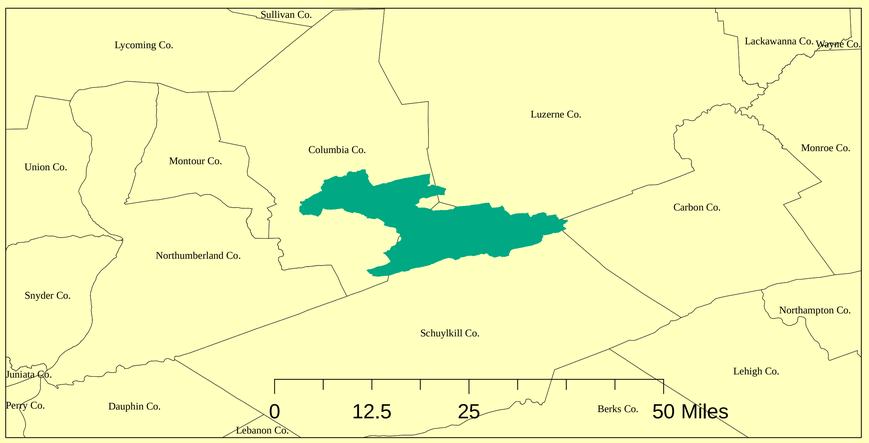

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Figure 8: Catawissa Creek Watershed Map: Generalized Soils and Steep Slopes

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

- County Boundaries
- Municipalities
- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Catawissa Creek Watershed Boundaries

Moderate To Steep Slopes

Slope

- C - 8 - 15%
- D - 15 - 25%
- E & F - 25% and above

Generalized Soils (STATSGO)

COMPNAME

- BERKS
- HAZLETON
- LECK KILL
- UDORTHENTS
- WATSON

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

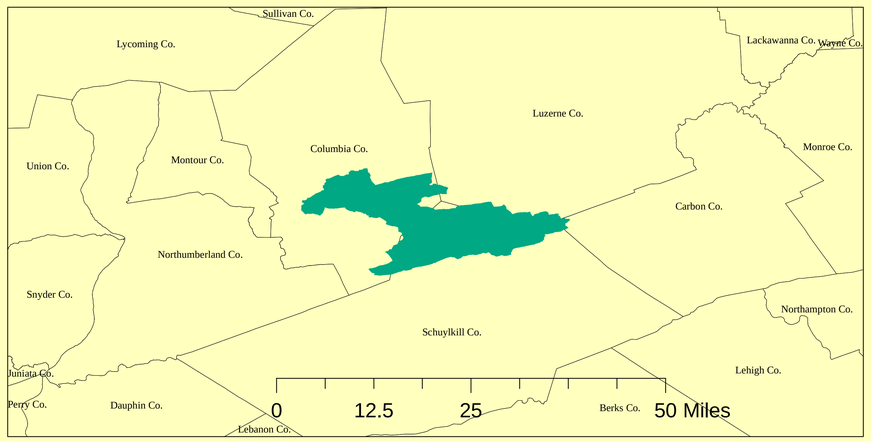

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Figure 9: Catawissa Creek Watershed Map: PA DEP eFacts Monitored Facilities

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

- County Boundaries
- Municipalities
- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Catawissa Creek Watershed Boundaries

- Water Pollution Control Facilities
- Air Emission Plants
- Beneficial Land Uses
- Brownfields
- Captive Hazardous Waste Operations
- Commercial Hazardous Waste Operations
- Industrial Mineral Mining Operations
- Land Recycling Cleanup Locations
- Municipal Waste Operations
- Oil Gas Water Pollution Control Facilities
- Radiation Facilities
- Residual Waste Operations
- Storage Tank Locations
- Water Resources

Absolute Scale
1:40,000

0 0.45 0.9 1.8 2.7 3.6 4.5 Miles

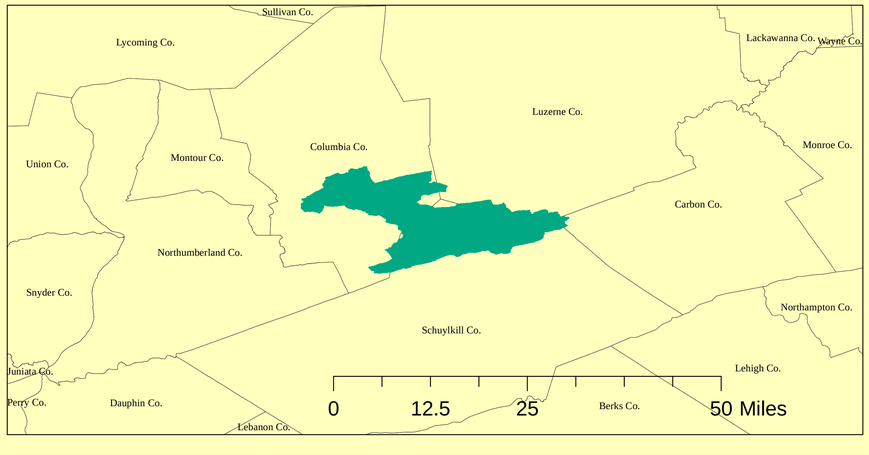

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Figure 10: Catawissa Creek Watershed Map: Stream Classes: Designated and Existion Uses

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

- County Boundaries
- Municipalities
- Waterbodies

Streams (Existing Use 2008)

FBC_USE08

- Approved Trout Waters
- Class A Wild Trout Waters

Streams (Ch 93 Designated Use 2008)

USE_DESCRI

- HQ-CWF(HIGH QUALITY-COLD WATER FISHES)
- CWF(COLD WATER FISHES)
- TSF(TROUT STOCKING)
- Catawissa Creek Watershed Boundaries

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

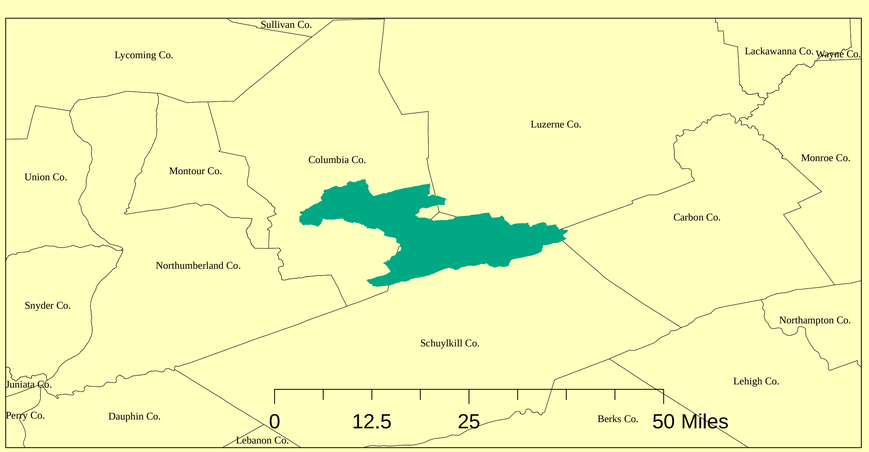

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Figure 11: Catawissa Creek Watershed Map: 100 Year Floodplains and National Wetland Inventory

Cities and Towns
Population
- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads
Traffic Type
- Interstate
- US Route
- PA Route
- Other

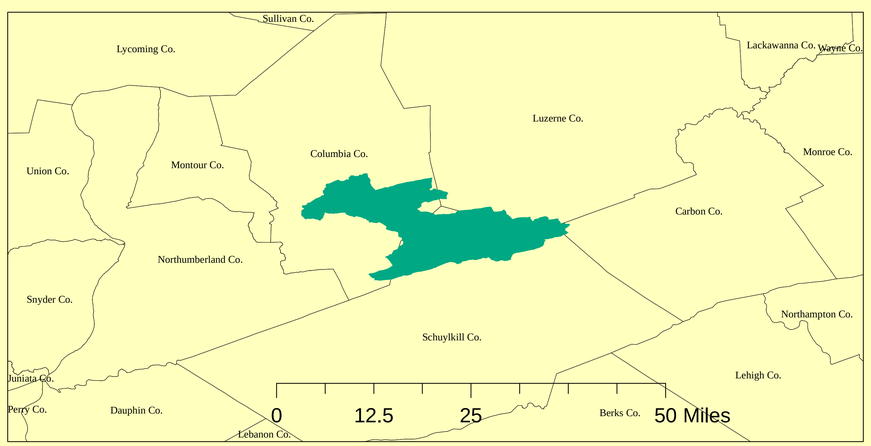
- County Boundaries
- Municipalities
- Waterbodies
- National Wetlands Inventory
- Flood Prone Areas 100 Year

Streams (Complete List 2004)
Strahler Stream Order
- 1
- 2
- 3
- 4

Catawissa Creek Watershed Boundaries

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles



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		Measured Sample Data		Allowable	Reduction Identified	
Station	Parameter	Conc. (mg/l)	Load (lb/day)	LTA Conc. (mg/l)	Load (lb/day)	Percent *
CC1	Fe	0.34	-	0.34	-	0.00 %
	Mn	1.74	-	0.00	-	99.90 %
	Al	3.20	-	0.38	-	88.00 %
	Acidity	34.50	-	0.03	-	99.90 %
	Alkalinity	0.17	-			
C Tunnel	Fe	1.01	6.90	0.58	4.00	43.00 %
	Mn	0.31	2.10	0.31	2.10	0.00 %
	Al	1.27	8.70	0.39	2.70	69.00 %
	Acidity	18.44	126.10	1.84	12.60	90.00 %
	Alkalinity	4.11	28.10			
A Tunnel	Fe	0.70	71.30	0.56	57.10	21.00 %
	Mn	2.28	232.40	0.61	62.20	73.00 %
	Al	7.93	808.20	0.40	40.80	95.00 %
	Acidity	68.08	6938.40	0.68	69.30	99.00 %
	Alkalinity	2.31	235.40			
GM Tunnel	Fe	0.44	5.30	0.23	2.80	49.00 %
	Mn	0.64	7.70	0.62	7.40	3.00 %
	Al	2.97	35.70	0.33	4.00	89.00 %
	Acidity	28.06	337.00	2.25	27.00	92.00 %
	Alkalinity	3.29	39.50			
CC6	Fe	0.25	46.80	0.25	46.80	0.00 %
	Mn	1.05	196.50	0.40	74.90	0.00 %
	Al	3.62	677.50	0.29	54.30	0.00 %
	Acidity	33.26	6224.60	0.10	18.70	0.00 %
	Alkalinity	0.41	76.70			
CC7	Fe	0.22	46.70	0.22	46.70	0.00 %
	Mn	0.93	197.40	0.34	72.20	0.00 %
	Al	3.28	696.20	0.23	48.80	0.00 %
	Acidity	28.58	6066.20	0.60	127.40	0.00 %
	Alkalinity	1.24	263.20			
CC8	Fe	1.51	507.90	0.09	30.30	94.00 %
	Mn	0.85	285.90	0.12	40.40	65.00 %
	Al	1.97	662.60	0.18	60.50	0.00 %
	Acidity	16.77	5640.60	0.34	114.40	0.00 %
	Alkalinity	2.78	935.10			
TC5	Fe	0.50	4.80	0.40	3.90	21.00 %
	Mn	0.08	0.80	0.08	0.80	0.00 %
	Al	0.69	6.70	0.07	0.70	90.00 %
	Acidity	0.83	8.00	0.82	7.90	0.00 %
	Alkalinity	23.37	226.10			
O3 Tunnel	Fe	0.18	5.70	0.18	5.70	0.00 %
	Mn	0.59	18.80	0.12	3.80	79.00 %
	Al	1.59	50.70	0.46	14.70	71.00 %
	Acidity	17.35	552.80	1.91	60.90	89.00 %
	Alkalinity	7.40	235.80			
TC1	Fe	0.15	19.30	0.15	19.30	0.00 %
	Mn	0.17	21.80	0.17	21.80	0.00 %
	Al	0.42	53.90	0.30	38.50	0.00 %
	Acidity	10.92	1401.60	1.31	168.10	82.00 %
	Alkalinity	6.04	775.20			
CC9	Fe	0.10	48.80	0.10	48.80	0.00 %
	Mn	0.53	258.70	0.40	195.20	0.00 %
	Al	1.30	634.50	0.27	131.80	0.00 %
	Acidity	23.88	11654.80	0.24	117.10	96.00 %
	Alkalinity	2.16	1054.20			
CC10	Fe	0.11	82.20	0.11	82.20	0.00 %
	Mn	0.33	246.60	0.33	246.60	0.00 %
	Al	0.85	635.20	-	-	-
	Acidity	12.80	9565.00	-	-	-
	Alkalinity	18.16	13570.30			

Catawissa Creek TMDL Study Table 5. Summary Table–Catawissa Creek Watershed
*The percent reduction for CC6, CC7, CC8, TC1, CC9 are found in Attachment E Tables: E7, E10, E13, E18, E21

Figure 12: Catawissa Creek Watershed Map: Integrated List & TMDL Study

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

County Boundaries
Municipalities
Sampling Points (SRBC)
Waterbodies

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Integrated List Non Attaining 2008 (AMD Only)
- Integrated List Non Attaining 2008 (General)
- Catawissa Creek Watershed Boundaries

AMD Treatment Systems

Anthracite Discharges (USGS)

by Flow (CFS)

- 0.00 - 3.70
- 3.71 - 11.00
- 11.01 - 27.00
- 27.01 - 45.00
- 45.01 - 97.00
- Water Pollution Control Facilities
- Water Resources

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles

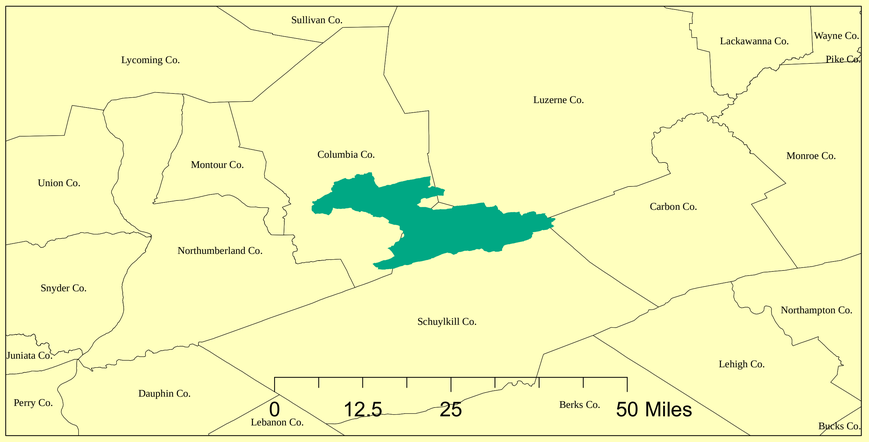

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Figure 13: Catawissa Creek Watershed Map: Water Quality Prior to Treatment Projects (1997)

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other

- County Boundaries
- Municipalities
- Sampling Points (SRBC)
- Waterbodies

Stream Data (PA F&BC)

Fishery Class

- Native Trout
- Class A
- Stocked
- Polluted
- Closed to Fishing

Stream Data (PA F&BC)

- Unknown

In Stream pH 1997

- 4.0 - 4.9
- 5.0 - 5.9
- 6.0 - 6.9
- 7.0 - 7.5
- Catawissa Creek Watershed Boundaries

Surface Water Infiltration

- <all other values>

Type

- Reclaimed
- Stream Flow Loss
- Surface Water Loss

Anthracite Discharges (USGS)

by Flow (CFS)

- 0.00 - 3.70
- 3.71 - 11.00
- 11.01 - 27.00
- 27.01 - 45.00
- 45.01 - 97.00
- Mine Drainage Tunnels

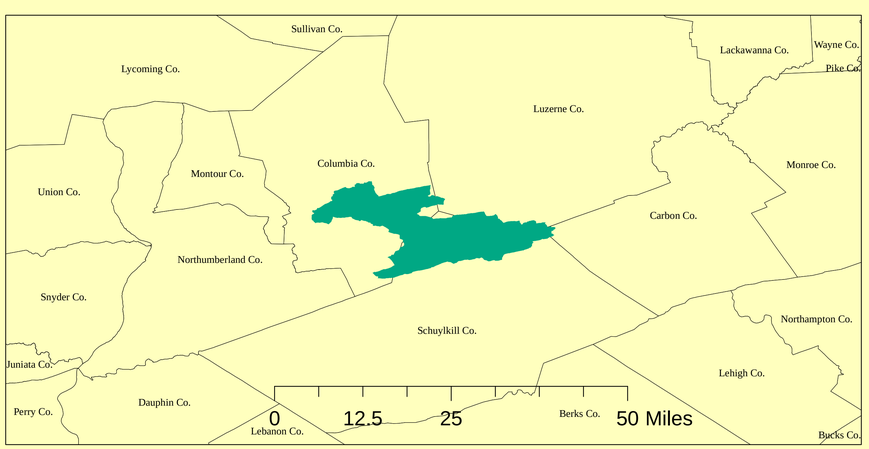
Underground Mine Basins

Type

- Drianage Basin
- Mine Pool

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles



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CATAWISSA CREEK Restoration Association

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Figure 14: Catawissa Creek Watershed Map: Open Space / Recreation Map

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other
- County Boundaries
- Municipalities

- Catawissa Creek Watershed Boundaries
- Active Railroads
- Inactive Railroads
- Fishing and Boating Access points
- Fishing Hotspots
- Waterbodies

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4

- PA Bike Rte V
- Nature Conservancy Priority Forest Hubs
- State Game Land
- State Forest Land
- State Park Lands

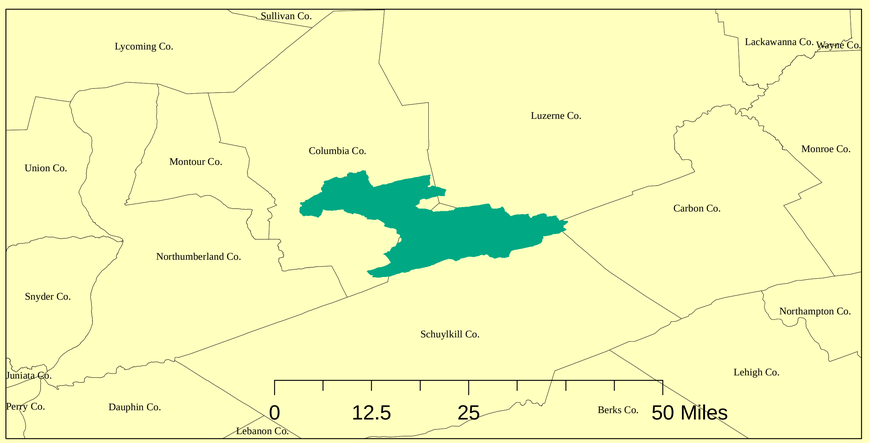
Co. Parcels Data

LUTYPE

- Recreational/Health
- Vacant Exempt Land
- Other Miscellaneous Exempt
- Municipal Park Land (Col. Co. only)
- Club & Association Land
- Ag. Security Areas (Col. Co. only)
- Agricultural

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles



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EPCAMR

Eastern PA Coalition for Abandoned Mine Reclamation

Catawissa Creek Restoration Association

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Figure 15: Catawissa Creek Watershed Map: Cultual & Historical Resource Map

Cities and Towns

Population

- less than 10,000
- 10,000 to 49,999
- 50,000 to 99,999

State Roads

Traffic Type

- Interstate
- US Route
- PA Route
- Other
- County Boundaries
- Municipalities

Historical & Cultural Resources

Type

- Bridge
- Building
- Cemetery
- Church
- Farmstead
- Golf Club
- Historical
- Park

- Active Railroads
- Inactive Railroads
- PA Bike Rte V
- Catawissa Creek Watershed Boundaries
- Run of the River Dams

Streams (Complete List 2004)

Strahler Stream Order

- 1
- 2
- 3
- 4
- Waterbodies

- State Game Land
- State Forest Land
- State Park Lands

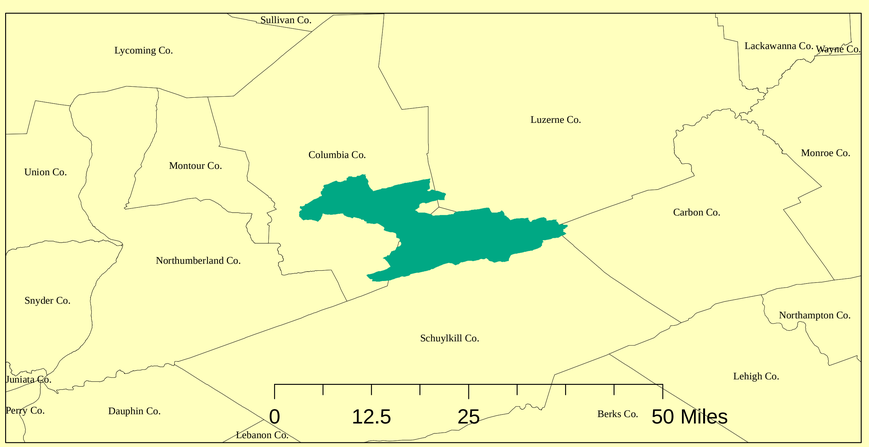
Co. Parcels Data

LUTYPE

- Cemetery
- Police Or Fire Station
- Recreational/Health
- Religious
- Municipal Park Land (Col. Co. only)

Absolute Scale
1:40,000

0 1 2 4 6 8 10 Miles



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Appendix B

Data Tables

Catawissa Creek Watershed
Rivers Conservation Plan
Table 1
Municipalities in the Watershed

County	Name	Estimated Area within Catawissa Watershed (Sq. Miles)	Percent within Catawissa Watershed
Carbon	Banks Township	1.11	0.73
Columbia	Beaver Township	32.47	21.27
	Catawissa Borough	0.31	0.20
	Catawissa Township	6.50	4.26
	Conyngham Township	2.56	1.68
	Franklin Township	0.69	0.45
	Main Township	14.71	9.64
	Mifflin Township	0.43	0.28
	Roaring Creek Township	5.88	3.85
Luzerne	Black Creek Township	4.05	2.65
	Hazle Township	8.05	5.27
Schuylkill	Delano Township	1.52	1.00
	East Union Township	25.53	16.73
	Kline Township	6.94	4.55
	Mahanoy Township	2.09	1.37
	McAdoo Borough	0.41	0.27
	North Union Township	19.23	12.60
	Ringtown Borough	0.56	0.37
	Union Township	19.44	12.74
	West Mahanoy Township	0.11	0.07
	TOTAL	152.60	100.00

Catawissa Creek Watershed
Rivers Conservation Plan
Table 2
Municipal Ordinance Data Summary

County	Municipality	Comprehensive Plan	Zoning Ordinances	Subdivision Ordinance	Municipal Planning Commission	Stormwater Mgt. Plan
Carbon	Carbon County	yes, 1998; updating	no	no	yes	no, but plan to update in 2008
	Banks Township	yes	yes	yes	no	no
Columbia	Columbia County	yes, 1995	no	yes		yes, Susquehanna River Watersheds
	Beaver Township	yes	yes	follow county	no	no
	Catawissa Borough	yes	yes	follow county	no	no
	Catawissa Township	yes	yes	follow county	inactive	no
	Conyngham Township	no	no	follow county	no	no
	Franklin Township	no	yes	follow county	yes	no
	Main Township	no	yes	follow county	inactive	no
	Mifflin Township	yes	yes	yes	yes	no
	Roaring Creek Township	yes	yes	follow county	no	no
Luzerne	Luzerne County	yes, 1964/1965; currently updating	yes, 1964	yes, 1976	yes	yes, 1990; currently updating
	Black Creek Township	no	yes, 1975; currently updating	yes, 1975	yes	no
	Hazle Township	yes, 1974; update planned	yes, 2003; currently updating	yes, 2001	yes	
Schuylkill	Schuylkill County	Yes, 2006	yes		yes	no
	Delano Township	no	follow county	yes	no	no
	East Union Township	no	yes	yes	yes	no
	Kline Township	yes	yes	yes	yes	no
	Mahanoy Township	yes	yes	yes	yes	no
	McAdoo Borough	yes	yes	follow county	yes	no
	North Union Township	no	follow county	follow county	no	no
	Ringtown Borough	yes	yes	yes	yes	no
	Union Township	no	follow county	follow county	no	no
	West Mahanoy Township	yes	yes	yes	yes	no

Data Sources: Pennsylvania Department of Community and Economic Development; Carbon, Columbia, Luzerne and Schuylkill Counties Planning Commissions

Catawissa Creek Watershed
Rivers Conservation Plan
Table 3
Population Data Summary

County	Municipality	Census 1990 Population	Census 2000 Population	% Change, 1990 to 2000	Square Miles	Population Density
Carbon	Banks Township	1,485	1,359	-8.48%	10.99	124
Columbia	Beaver Township	928	885	-4.63%	35.68	25
	Catawissa Borough	1,683	1,589	-5.59%	0.54	2,943
	Catawissa Township	1,037	944	-8.97%	12.46	76
	Conyngham Township	1,038	792	-23.70%	20.16	39
	Franklin Township	624	597	-4.33%	13.17	45
	Main Township	1,241	1,289	3.87%	16.20	80
	Mifflin Township	2,305	2,251	-2.34%	19.18	117
	Roaring Creek Township	478	495	3.56%	23.51	21
Luzerne	Black Creek Township	1,937	2,132	10.07%	24.45	87
	Hazle Township	9,323	9,000	-3.46%	44.92	200
Schuylkill	Delano Township	573	487	-15.01%	8.19	59
	East Union Township	1,374	1,419	3.28%	26.00	55
	Kline Township	1,722	1,591	-7.61%	12.20	130
	Mahanoy Township	1,273	1,112	-12.65%	20.85	53
	McAdoo Borough	2,459	2,274	-7.52%	0.33	6,891
	North Union Township	1,143	1,225	7.17%	20.00	61
	Ringtown Borough	853	826	-3.17%	0.44	1,877
	Union Township	1,458	1,308	-10.29%	22.06	59
	West Mahanoy Township	4,539	6,166	35.84%	10.40	593

Data Source: US Census Bureau

Catawissa Creek Watershed
Rivers Conservation Plan
Table 4
Major Employers

Top 10 Employers 1st Quarter 2010	
CARBON COUNTY	
Blue Mountain Ski Area	Arts, Entertainment and Recreation
Kovatch Partners LP	Manufacturing
Gnaden Huetten Memorial Hospital	Health Care and Social Assistance
Carbon County Courthouse	Public Administration
Vacation Charters LTD	Accomodation and Food Services
Lehighton Area School District	Educational Services
Jim Thorpe Area School District	Educational Services
State Government	Public Administration
Blue Ridge Cable Technologies	Information
Palmerton Hospital	Health Care and Social Assistance
COLUMBIA COUNTY	
State System of Higher Education	Educational Services
Wise Foods Inc	Manufacturing
Del Monte Corporation	Manufacturing
Berwick Hospital Co LLC	Health Care and Social Assistance
Magee Reiter Automotive Systems	Manufacturing
Bloomsburg Hospital	Health Care and Social Assistance
Berwick Area School District	Educational Services
Kawneer Company Inc.	Manufacturing
Metropolitan Trucking	Transportation and Warehousing
Wal-Mart Associates Inc	Retail Trade
LUZERNE COUNTY	
Federal Government	Public Administration
State Government	Public Administration
Luzerne County Government	Public Administration
Wilkes-Barre Hospital Company	Health Care and Social Assistance
Hazleton Area School District	Educational Services
Geisinger Wyoming Valley	Health Care and Social Assistance
Wal-Mart Associates Inc	Retail Trade
NBC Pittston Merchants Inc	Transportation and Warehousing
PPL Susquehanna LLC	Utilities
Sallie Mae Inc	Finance and Insurance

Catawissa Creek Watershed
Rivers Conservation Plan
Table 4
Major Employers

SCHUYLKILL COUNTY	
Wal-Mart Associates Inc.	Retail Trade
State Government	Public Administration
Pottsville Hospital	Health Care and Social Assistance
Lowe's Home Centers Inc.	Transportation and Warehousing
Sapa Extrusions Inc.	Manufacturing
Schuylkill County	Public Administration
Schuylkill Medical Center	Health Care and Social Assistance
Federal Government	Public Administration
Cargill Meat Solutions Corporation	Manufacturing
Wegmans Food Markets Inc.	Transportation and Warehousing

Data Source:Center for Workforce Information & Analysis- 2010 1st Quarter

Catawissa Creek Watershed
Rivers Conservation Plan
Table 5
Breakdown of Employment in the Counties of the Watershed

	Carbon County		Columbia County		Luzerne County		Schuylkill County		Total	
Industry	**Employment**	**%**	**Employment**	**%**	**Employment**	**%**	**Employment**	**%**	**Employment**	**%**
Agriculture, forestry, fishing, hunting, and mining	42	0.25%	131	0.51%	107	0.08%	615	1.19%	895	0.38%
Mining	31	0.19%	46	0.18%	366	0.26%	527	1.02%	970	0.41%
Utilities	0	0.00%	35	0.14%	1,521	1.07%	0	0.00%	1,556	0.66%
Construction	627	3.75%	1,085	4.24%	5,885	4.13%	1,637	3.16%	9,234	3.90%
Manufacturing	2,150	12.85%	6,316	24.68%	17,031	11.96%	11,329	21.87%	36,826	15.57%
Wholesale trade	282	1.69%	369	1.44%	6,130	4.30%	1,036	2.00%	7,817	3.30%
Retail trade	1,957	11.69%	3,656	14.29%	18,250	12.81%	6,379	12.31%	30,242	12.78%
Transportation and warehousing	485	2.90%	1,035	4.05%	8,638	6.06%	5,396	10.41%	15,554	6.57%
Information	994	5.94%	379	1.48%	3,440	2.41%	448	0.86%	5,261	2.22%
Finance, insurance, real estate, and rental and leasing	483	2.89%	758	2.96%	6,239	4.38%	1,357	2.62%	8,837	3.74%
Professional and technical services	219	1.31%	900	3.52%	3,960	2.78%	1,113	2.15%	6,192	2.62%
Management of Companies and Enterprises	48	0.29%	65	0.25%	1,423	1.00%	414	0.80%	1,950	0.82%
Admin/Support, Waste Mgmt/Remediation services	205	1.23%	753	2.94%	8,317	5.84%	1,133	2.19%	10,408	4.40%
Educational services	109	0.65%	112	0.44%	2,887	2.03%	378	0.73%	3,486	1.47%
Health Care and Social Assistance	2,872	17.16%	2,873	11.23%	22,756	15.97%	8,136	15.70%	36,637	15.49%
Arts, entertainment and recreation	987	5.90%	293	1.15%	1,980	1.39%	246	0.47%	3,506	1.48%
Accommodations and food service	1,776	10.61%	2,212	8.65%	11,338	7.96%	2,845	5.49%	18,171	7.68%
Other services	446	2.67%	606	2.37%	3,929	2.76%	1,215	2.35%	6,196	2.62%
Federal Government	124	0.74%	163	0.64%	3,541	2.49%	648	1.25%	4,476	1.89%
State Government	364	2.18%	1,297	5.07%	3,499	2.46%	1,674	3.23%	6,834	2.89%
Local Government	2,533	15.14%	2,503	9.78%	11,212	7.87%	5,285	10.20%	21,533	9.10%
TOTAL	**16,734**	**100%**	**25,587**	**100%**	**142,449**	**100%**	**51,811**	**100%**	**236,581**	**100%**

Data Source:Center for Workforce Information & Analysis- 2010 1st Quarter

Catawissa Creek Watershed
Rivers Conservation Plan
Table 6
2010 Permitted Quarries

Municipality	Quarry Name	Permit #	Permit Type	Primary Facility Kind
CARBON COUNTY				
Banks Twp	Pagnotti Enterprises Spring Mountain Colliery	13743002	Anthracite Coal Mining	Surface
	Rossi Excavating Coleraine Mine	13010201	Anthracite Coal Mining	Refuse Reprocessing Permit
	Rossi Excavating Banks Mine	13940201	Anthracite Coal Mining	Refuse Reprocessing Permit
	Rossi Excavating Centtown Mine	13980201	Anthracite Coal Mining	Refuse Reprocessing Permit
COLUMBIA COUNTY				
Beaver Twp	Schell Cranberry Quarry	19950802	Industrial Mineral Mining	Small Surface Mining <2,000 tons
Catawissa Borough	none			
Catawissa Twp	none			
Conyngham Twp	Gilberton Coal Potts Bank 45A	19793201	Anthracite Coal Mining	Refuse Reprocessing
	Mid Valley Coal Sales Conyngham Mine	19000201	Anthracite Coal Mining	Refuse Reprocessing
	Blaschak Logan Mine	19950101	Anthracite Coal Mining	Surface Mining
	Burnrite Coal Conyngham Mine	19930101	Anthracite Coal Mining	Surface Mining
	L & E Coal (Jac-Mar T/A) Mine	19860101	Anthracite Coal Mining	Surface Mining
	Kovalchick Super 7 Mine	19980101	Anthracite Coal Mining	Surface Mining
	N & L Coal Morris Ridge Mine	19950102	Anthracite Coal Mining	Surface Mining
	Phila Continental Mine	19960101	Anthracite Coal Mining	Surface Mining
	UAE Coal Corp Harmony Mine	19881301	Anthracite Coal Mining	Underground Mining
Franklin Twp	none			
Main Twp	none			
Mifflin Twp	none			
Roaring Creek Twp	none			
LUZERNE COUNTY				
Black Creek Twp	Valley Seeding SNC Tank 1 Quarry	40072803	Industrial Mineral Mining	Surface <10,000 tons
	Valley Seeding Tank Pile Quarry	40050802	Industrial Mineral Mining	Small Surface Mining <2,000 tons
Hazle Twp	Beaver Brook Coal Beaver Brook Mine	40850201	Anthracite Coal Mining	Refuse Reprocessing
	Mammoth Anthracite Penney's Mine	40840203	Anthracite Coal Mining	Refuse Reprocessing
	Bonner Shale Quarry	40880301	Industrial Mineral Mining	Large Surface Mining
	Coal Contr 1991 Stockton Mine	40663024	Anthracite Coal Mining	Surface Mining
	Jeddo Highland Coal Jeddo 7 Mine	40663013	Anthracite Coal Mining	Surface Mining
	Jeddo Basin W Mine	40663027	Anthracite Coal Mining	Surface Mining
	Mammoth Anthracite Lattimer Basin Mine	40930102	Anthracite Coal Mining	Surface Mining
	Meckleys Limestone Stockton Quarry	40930301	Industrial Mineral Mining	Large Surface Mining

Catawissa Creek Watershed
Rivers Conservation Plan
Table 6
2010 Permitted Quarries

Municipality	Quarry Name	Permit #	Permit Type	Primary Facility Kind
	No 1 Contr Jeansville Mine	40980103	Anthracite Coal Mining	Surface Mining
	Pagnotti Ent Hazleton Shaft W Mine	40663023	Anthracite Coal Mining	Surface Mining
	Pagnotti Ent Jeddo Area 1 Mine	40663025	Anthracite Coal Mining	Surface Mining
	Pagnotti Ent Jeddo Area 2 Mine	40663026	Anthracite Coal Mining	Surface Mining
	Pagnotti Jeddo Basin E Mine	40663028	Anthracite Coal Mining	Surface Mining
	South Tamaqua Coal Pockets Yorktown Bank	40020201	Anthracite Coal Mining	Refuse Reprocessing
	Stockton Anthracite Prep Pltc	40041601	Anthracite Coal Mining	Prep Plant
SCHUYLKILL COUNTY				
Delano Twp	RJBB Coal Delano Bank	54783205	Anthracite Coal Mining	Refuse Reprocessing
East Union Twp	none			
Kline Twp	AC Fuels Audenreid Mine	54980201	Anthracite Coal Mining	Refuse Reprocessing
	Northeastern Power Honeybrook Mine	54960201	Anthracite Coal Mining	Refuse Reprocessing
	Northeastern Power Silverbrook Mine	54920201	Anthracite Coal Mining	Refuse Reprocessing
Mahanoy Twp	BD Mining Ellangowen Mine	54773214	Anthracite Coal Mining	Refuse Reprocessing
	BD Mining BD Overall Plt Mine	54850202	Anthracite Coal Mining	Refuse Reprocessing
	BD Mining Shen Penn Mine	54920203	Anthracite Coal Mining	Refuse Reprocessing
	Blaschak Coal Mahanoy Twp Mine	54803201	Anthracite Coal Mining	Refuse Reprocessing
	Blaschak Coal Primrose Mine	54060101	Anthracite Coal Mining	Surface Mining
	Blaschak Coal St Nicholas Mine	54830207	Anthracite Coal Mining	Refuse Reprocessing
	Gilberton Coal Mahanoy City Mine	54763207	Anthracite Coal Mining	Refuse Reprocessing
	Gilberton Coal N Mahanoy Mine	54950202	Anthracite Coal Mining	Refuse Reprocessing
	Jeddo Highland Park & Primrose Mine	54683043	Anthracite Coal Mining	Surface Mining
	Pagnotti Ent Morea & New Boston Mine	54693047	Anthracite Coal Mining	Surface Mine
	Pagnotti Ent Shenandoah Area Mine	54840201	Anthracite Coal Mining	Refuse Reprocessing
	Park Mine Coal Park Mine	54050101	Anthracite Coal Mining	Surface Mine
	Reading Anthracite Knickerbocker M-112A Mine	54663010	Anthracite Coal Mining	Surface Mine
	Schuylkill Reclamation Park Place Mine	54850101	Anthracite Coal Mining	Surface Mine
	Skytop Coal 1 Mine	54840203	Anthracite Coal Mining	Refuse Reprocessing
	Stoudts Ferry Prep Mahanoy Twp Bank	54020201	Anthracite Coal Mining	Refuse Reprocessing
	Wheelabrator Culm Svc Park Bank	54040203	Anthracite Coal Mining	Refuse Reprocessing
	Wheelabrator Culm Svc Morea Cogen	54900205	Anthracite Coal Mining	Refuse Reprocessing
	Reading Anthracite Ellangowan Bank 45A Mine	54793206	Anthracite Coal Mining	Refuse Reprocessing
McAdoo Borough	none			
North Union Twp	Caln Bldg Stone Caln Quarry	54950301	Industrial Mineral Mining	Large Surface Mining

Catawissa Creek Watershed
Rivers Conservation Plan
Table 6
2010 Permitted Quarries

Municipality	Quarry Name	Permit #	Permit Type	Primary Facility Kind
Ringtown Borough	none			
Union Twp	Grow Hill Quarry	54030801	Industrial Mineral Mining	Small Surface Mining <2,000 tons
West Mahanoy Twp	Penn Equipment Frackville Bank	54910205	Anthracite Coal Mining	Refuse Reprocessing
	N & L Coal Brownsville Mine	54920101	Anthracite Coal Mining	Surface Mining
	N & L Lost Creek Mine	54753035	Anthracite Coal Mining	Surface Mining
	Penn Equipment Mammoth Hammond Mine	54683045	Anthracite Coal Mining	Surface Mining
	Phila City Trustee Girard Estate Bear Ridge Mine	54950104	Anthracite Coal Mining	Surface Mining
	Phila City Trustee Girard Estate Packer V Mine	54840106	Anthracite Coal Mining	Surface Mining
	White Pine Coal Bear Ridge Mine	54940201	Anthracite Coal Mining	Refuse Reprocessing

Data Source:PADEP Bureau of Mining and Reclamation-January 2010

Catawissa Creek Watershed
Rivers Conservation Plan
Table 7
Major Tributaries

Tributary	Designated Use	PFBC Classification
Beaver Run	CWF	
Catawissa Creek	CWF source to Rattling Run TSF Rattling Run to mouth	
Cranberry Run	CWF	
Crooked Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Dark Run	HQ-CWF	
Davis Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for mixed brook/brown trout
Fisher Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Furnace Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Hunkydory Creek	CWF	
Klingermans Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Little Catawissa Creek	HQ-CWF source to Reservoir Rd CWF from Reservoir Rd crossing to	Class A Stream-headwaters downstream to Reservoir Rd for brook trout
Little Crooked Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Little Tomhicken Creek	CWF	
Long Hollow	CWF	
Messers Run	HQ-CWF	Class A Stream-Lofty RS downstream to Blue Head RS for brook trout
Mine Gap Run	CWF	
Negro Hollow	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Raccoon Creek	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Rattling Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brook trout
Scotch Run	CWF	
Stony Run	CWF	
Stranger Hollow	CWF	
Sugarloaf Creek	CWF	
Tomhicken Creek	CWF	
Trexler Run	HQ-CWF	Class A Stream-headwaters downstream to mouth for brown trout

Data Source: PFBC; PA DEP

Catawissa Creek Watershed
Rivers Conservation Plan
Table 8
Lakes and Ponds

Body of Water	Municipality(ies)	County(ies)
Blue Head Reservoir	East Union Township	Schuylkill
Calumet Lake	Black Creek Township	Luzerne
Horseshoe Lake	Conyngham Township	Columbia
Lake Choctow	Black Creek Township, North Union Township	Luzerne, Schuylkill
Lake Susquehanna	Black Creek Township	Luzerne
Lofty Reservoir	Kline Township	Schuylkill
Mt. Pleasant Reservoir	Hazle Township	Luzerne
Pumping Station Reservoir	East Union Township	Schuylkill
Red Ridge Lake	North Union Township	Schuylkill
Reservoir # 8	Kline Township	Schuylkill
Ringtown Reservoir	Union Township	Schuylkill
Scotch Run	Beaver Township	Columbia

Data Source:Susquehanna River Basin Commission

Catawissa Creek Watershed
Rivers Conservation Plan
Table 9
Integrated List Non-Attaining Use Streams

Tributary	Impaired For	Attainment Status	Cause
Catawissa Creek	Aquatic Life	Impaired	Abandoned Mine Drainage - Metals
Cranberry Run	Aquatic Life	Impaired	Atmospheric Deposition - pH
Crooked Run	Aquatic Life	Impaired	Atmospheric Deposition - pH
Fisher Run	Aquatic Life	Impaired	Abandoned Mine Drainage - Metals
Little Tomhicken Creek	Aquatic Life	Impaired	Abandoned Mine Drainage - pH
Stranger Hollow	Aquatic Life	Impaired	Atmospheric Deposition - pH
Sugarloaf Creek	Aquatic Life	Impaired	Abandoned Mine Drainage - pH
Tomhicken Creek	Aquatic Life	Impaired	Abandoned Mine Drainage - pH
Trib 27542 of Catawissa Creek	Aquatic Life	Impaired	Agriculture - Siltation
Trib 27559 to Catawissa Creek	Aquatic Life	Impaired	Atmospheric Deposition - pH

Data Source:PADEP

Catawissa Creek Watershed
Rivers Conservation Plan
Table 10
PNHP Species List within the Counties of the Catawissa Creek Watershed

	Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Birds	Botaurus lentiginosus	American Bittern	S1B	PE	PE
	Haliaeetus leucocephalus	Bald Eagle	S2B	PT	PT
	Tyto alba	Barn Owl	S3B,S3N	CR	CR
	Nycticorax nycticorax	Black-crowned Night-heron	S2,S3B		PE
	Ardea herodias	Great Blue Heron	S3,S4B,S4		
	Ixobrychus exilis	Least Bittern	S1B		PE
	Cistothorus palustris	Marsh Wren	S2,S3B		CR
	Accipiter gentilis	Northern Goshawk	S2,S3B,S3	CR	CR
	Circus cyaneus	Northern Harrier	S3B,S4N	CA	CA
	Pandion haliaetus	Osprey	S2B	PT	PT
	Falco peregrinus	Peregrine Falcon	S1B,S1N	PE	PE
	Podilymbus podiceps	Pied-billed Grebe	S3B,S4N		CR
	Porzana carolina	Sora	S3B		CR
	Catharus ustulatus	Swainson's Thrush	S2,S3B,S5	CR	CR
	Rallus limicola	Virginia Rail	S3B		
	Gallinago delicata	Wilson's Snipe	S3B,S3N		CR
	Empidonax flaviventris	Yellow-bellied Flycatcher	S1S2B	PE	PE
Mammals	Neotoma magister	Allegheny Woodrat	S3	PT	PT
	Sciurus niger vulpinus	Eastern Fox Squirrel	SU		CR
	Myotis leibii	Eastern Small-footed Myotis	S1B,S1N	PT	PT
	Myotis sodalis	Indiana or Social Myotis	SUB,S1N	PE	PE
	Cryptotis parva	Least Shrew	S1	PE	PE
	Glaucomys sabrinus	Northern Flying Squirrel	SU	PE	
	Myotis septentrionalis	Northern Myotis	S3B,S3N	CR	CR
	Lontra canadensis	Northern River Otter	S3		CA
	Microtus chrotorrhinus	Rock Vole	S2		CA
	Sorex palustris albibarbis	Water Shrew	S3		CR
Reptiles	Glyptemys muhlenbergii	Bog Turtle	S2	PE	PE
	Agkistrodon contortrix	Copperhead	S3S4		
	Terrapene carolina	Eastern Box Turtle	S3S4		
	Heterodon platirhinos	Eastern Hognose Snake	S3		
	Thamnophis sauritus	Eastern Ribbon Snake	S3		
	Acris crepitans	Northern Cricket Frog	S1	PE	PE
	Regina septemvittata	Queen Snake	S3		
	Clemmys guttata	Spotted Turtle	S3		
	Crotalus horridus	Timber Rattlesnake	S3S4	PC	CA
	Glyptemys insculpta	Wood Turtle	S3,S4		
Fish	Umbra pygmaea	Eastern Mudminnow	S3	PC	
Insects	Apamea burgessi	A Cutworm Moth	SH		
	Lithomoia solidaginis germana	A Moth	S3S4		
	Platyperigea meralis	A Noctuid Moth	S1		
	Apharetra dentata	A Noctuid Moth	S2		
	Aplectoides condita	A Noctuid Moth	S2,S3		

Catawissa Creek Watershed
Rivers Conservation Plan
Table 10
PNHP Species List within the Counties of the Catawissa Creek Watershed

	Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Insects	Chaetaglaea cerata	a sallow moth	S2,S3		
	Lestes eurinus	Amber-winged Spreadwing	S3		
	Cordulia shurtleffi	American Emerald	S3,S4		
	Carterocephalus palaemon mandan	Arctic Skipper	S2		
	Speyeria atlantis	Atlantis Fritillary	S3		
	Enallagma aspersum	Azure Bluet	S3,S4		
	Euphydryas phaeton	Baltimore	S3		
	Sympetrum semicinctum	Band-winged Meadowhawk	S3,S4		
	Hemileuca maia	Barrens Buckmoth	S1,S2		
	Itame sp. 1 nr. inextricata	Barrens Itame (Cf I. Inextricata)	S1		
	Euphyes conspicuus	Black Dash	S3		
	Aeshna tuberculifera	Black-tipped Darner	S2,S3		
	Glena cognataria	Blueberry Gray	S1		
	Lycaena epixanthe	Bog Copper	S2		
	Enallagma boreale	Boreal Bluet	S2		
	Xylotype capax	Broad Sallow Moth	S3		
	Lycaena hyllus	Bronze Copper	S3		
	Somatochlora walshii	Brush-tipped Emerald	S2		
	Gomphus vastus	Cobra Clubtail	S3,S4		
	Amblyscirtes vialis	Comet Darner	S1,S2		
	Amblyscirtes vialis	Common Roadside Skipper	S2		
	Satyrium titus	Coral Hairstreak	S3		
	Leucorrhinia glacialis	Crimson-ringed Whiteface	S3,S4		
	Merolonche dolli	Doll's Merolonche	S1		
	Satyrium edwardsii	Edwards' Hairstreak	S3		
	Nannothemis bella	Elfin Skimmer	S1		
	Satyrodes eurydice	Eyed Brown	S3		
	Papaipema sp. 1	Flypoison Borer Moth	S2		
	Metaxaglaea semitaria	Footpath Sallow Moth	S2		
	Callophrys irus	Frosted Elfin	S2		
	Libellula auripennis	Golden-winged Skimmer	S1		
		Green-striped Darner	S3,S4		
	Celithemis eponina	Halloween Pennant	S2,S3		
	Gomphaeschna furcillata	Harlequin Darner	S2		
	Gomphus descriptus	Harpoon Clubtail	S1,S2		
	Chlosyne harrisii	Harris' Checkerspot	S3		
	Somatochlora incurvata	Incurvate Emerald	S1		
	Aeshna constricta	Lance-tipped Darner	S3,S4		
	Hesperia leonardus	Leonard's Skipper	S3		
	Arigomphus furcifer	Lilypad Clubtail	S2		
	Ischnura kellicotti	Lilypad forktail	S1		
	Ophiogomphus mainensis	Maine Snaketail	S3		
	Aeshna clepsydra	Mottled Darner	S2,S3		
	Poanes massasoit	Mulberry Wing	S2		
	Gomphus adelphus	Mustached Clubtail	S3S4		

Catawissa Creek Watershed
Rivers Conservation Plan
Table 10
PNHP Species List within the Counties of the Catawissa Creek Watershed

	Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Insects	Enallagma laterale	New England Bluet	S1		
	Enallagma annexum	Northern Bluet	S3		
	Phyciodes cocyta	Northern Crescent	S2		
	Boyeria grafiana	Ocellated Darner	S3		
	Erynnis persius persius	Persius Duskywing	S1		
	Dorocordulia lepida	Petite Emerald	S2		
	Zanclognatha martha	Pine Barrens Zanclognatha	S1S2		
	Psectraglaea carnosa	Pink Sallow	S1		
	Epiglaea apiata	Pointed Sallow	S3,S4		
	Leucorrhinia proxima	Red-waisted Whiteface	S2		
	Ophiogomphus carolus	Riffle Snaketail	S2S3		
	Calopteryx aequabilis	River Jewelwing	S2		
	Argia bipunctulata	Seepage Dancer	S3		
	Boloria selene myrina	Silver Bordered Fritillary	S3		
	Somatochlora elongata	Ski-tailed Emerald	S2		
	Libellula incesta	Slaty Skimmer	S3,S4		
	Hemipachnobia monochromatea	Sundew Cutworm Moth	S2S3		
	Calopteryx amata	Superb Jewelwing	S2,S3		
	Lestes forcipatus	Sweetflag Spreadwing	S3,S4		
	Enallagma divagans	Turquoise Bluet	S3		
	Helocordulia uhleri	Uhler's Sundragon	S3		
	Diarsia rubifera		SU		
	Sideridis maryx		S1,S3		
	Sphinx gordius		S1,S3		
Mussels	Anodonta implicata	Alewife Floater	S3,S4		CU
	Alasmidonta heterodon	Dwarf Wedgemussel	S1	PE	PE
	Margaritifera margaritifera	Eastern Pearlshell	S1	PE	PE
	Alasmidonta marginata	Elktoe	S4		N
	Lasmigona subviridis	Green Floater	S2		CU
	Alasmidonta undulata	Triangle Floater	S3,S4		N
	Lampsilis cariosa	Yellow Lampmussel	S3,S4		CU

Data Source:PNHP

For more information about the ranking codes, please visit http://www.naturalheritage.state.pa.us/RankStatusDef.aspx

S1-Critically imperiled in state because of extreme rarity or because of some factor(s) making it especially vulnerable to extirpation from the state.

S2-Imperiled in state because of rarity or because of some factor(s) making it very vulnerable to extirpation from the state.

S3-Rare or uncommon in state

S4-Accidental in state, including species which only sporadically breed in the state.

SH-Historical-Element occurred historically in the state, perhaps having not been verified in the past 20 years, and suspected to be still extant.

S#S#-Range Rank-A numeric range rank (e.g., S2S3) is used to indicate the range of uncertainty about the exact status of the Element.

SU-Unrankable-Currently unrankable due to lack of information or due to substantially conflicting information about status or trends.

PE-Pennsylvania Endangered- Plant species which are endanger of extinction throughout most or all of their natural range within this Commonwealth, if critical habitat is not maintained if the species is greatly exploited by man. This classification shall also include any populations of plant species

that have been classified as Pennsylvania Extirpated, but which subsequently are found to exist in this Commonwealth.

PT-Pennsylvania Threatened- Plant species which may become endangered throughout most or all of their natural range within this Commonwealth, if critical habitat is not maintained to prevent further decline in this Commonwealth, or if the species is greatly exploited by man.

PR-Pennsylvania Rare- Plant species which are uncommon within this Commonwealth. All species of native wild plants classified as Disjunct, Endemic, Limit of Range and Restricted are included within the Pennsylvania Rare classification.

TU-Tentatively Undetermined- Plant species which are believed to be in danger of population decline, but which cannot presently be included within another classification due to taxonomic uncertainties, limited evidence within historical records, or insufficient data.

None- Plant species which are believed to be endangered, rare, or threatened, but which are being considered by the required regulatory review processes for future listing.

CA-Candidate at Risk-Species that although relatively abundant now are particularly vulnerable to certain types of exploitation or env. modification.

CR-Candidate Rare-Species which exist only in one of a few restricted geographic areas or habitats within Pennsylvania, or they occur in low numbers over a relatively broad area of the Commonwealth.

CP-Candidate Proposed-Species comprising taxa for which the Pennsylvania Biological Survey (PBS) currently has substantial information on hand to support the biological appropriateness of proposing to list as Endangered or Threatened.

CU-Condition Undetermined-Species for which there is insufficient data available to provide an adequate basis for their assignment to other classes or categories.

Catawissa Creek Watershed
Rivers Conservation Plan
Table 11
PNHP Plant Species List within the Counties of the Watershed

Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Alopecurus aequalis	Short-awn Foxtail	S3	N	PT
Amelanchier bartramiana	Oblong-fruited Serviceberry	S1	PE	PE
Amelanchier humilis	Serviceberry	S1	TU	PE
Amelanchier obovalis	Coastal Juneberry	S1	TU	PE
Andromeda polifolia	Bog-rosemary	S3	PR	PR
Aplectrum hyemale	Puttyroot	S3	PR	PR
Arabis missouriensis	Missouri Rock-cress	S1	PE	PE
Arceuthobium pusillum	Dwarf Mistletoe	S2	PT	PT
Arethusa bulbosa	Swamp-pink	S1	PE	PE
Artemisia campestris ssp. caudata	Beach Wormwood	S1	PE	PE
Baptisia australis	Blue False-indigo	S2	N	PT
Bartonia paniculata	Screw-stem	S3	N	PR
Bidens discoidea	Small Beggar-ticks	S3	N	PR
Bouteloua curtipendula	Tall Gramma	S2	PT	PT
Bromus kalmii	Brome Grass	S3	N	PT
Carex bicknellii	Bicknell's Sedge	S1	PE	PE
Carex diandra	Lesser Panicled Sedge	S2	PT	PT
Carex disperma	Soft-leaved Sedge	S3	PR	PR
Carex lasiocarpa	Slender Sedge	S3	PR	PR
Carex limosa	Mud Sedge	S2	TU	PT
Carex longii	Long's Sedge	S2S3	TU	PT
Carex lupuliformis	False Hop Sedge	S1	TU	PE
Carex meadii	Mead's Sedge	S1	TU	PE
Carex oligosperma	Few-seeded Sedge	S2	PT	PT
Carex ormostachya	Spike Sedge	S2	N	PT
Carex pauciflora	Few-flowered Sedge	S1	PE	PE
Carex paupercula	Bog Sedge	S3	PT	PR
Carex polymorpha	Variable Sedge	S2	PE	PT
Carex retrorsa	Backward Sedge	S1	PE	PE
Carex siccata	A Sedge	S2	N	PE
Chenopodium foggii	Fogg's Goosefoot	S1	PE	PE
Cladium mariscoides	Twig Rush	S2	PE	PE
Cuscuta coryli	Hazel Dodder	SH	TU	PT
Cynoglossum boreale	Northern Hound's-tongue	SH	PX	PX
Cyperus diandrus	Umbrella Flatsedge	S2	PE	PE
Cypripedium calceolus var.	Small Yellow Lady's-slipper	S1	PE	PE
Dodecatheon radicatum	Jeweled Shooting-star	S2	PT	PT
Dryopteris campyloptera	Mountain Wood Fern	S1	PE	PE

Catawissa Creek Watershed
Rivers Conservation Plan
Table 11
PNHP Plant Species List within the Counties of the Watershed

Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Dryopteris clintoniana	Clinton's Wood Fern	S2	N	PT
Elatine americana	Long-stemmed Water-wort	SU	PX	PE
Eleocharis olivacea	Capitate Spike-rush	S4	PR	WATCH
Eleocharis robbinsii	Robbins' Spike-rush	S2	PT	PT
Elymus trachycaulus	Slender Wheatgrass	S3	N	TU
Epilobium palustre	Marsh Willow-herb	S1	TU	TU
Eriophorum tenellum	Rough Cotton-grass	S1	PE	PE
Eurybia radula	Rough-leaved Aster	S2	N	PT
Filipendula rubra	Queen-of-the-prairie	S1S2	TU	TU
Galium trifidum	Marsh Bedstraw	S2	N	PR
Gaultheria hispidula	Creeping Snowberry	S3	PR	PR
Geranium bicknellii	Cranesbill	S1	PE	PE
Goodyera repens	Lesser Rattlesnake-plantain	S2	N	PX
Helianthemum bicknellii	Bicknell's Hoary Rockrose	S2	PE	PE
Hieracium umbellatum	Umbellate Hawkweed	S1	N	PE
Hierochloe odorata	Vanilla Sweet-grass	SX	PE	PX
Isoetes valida	Quillwort	S1S3	N	PR
Juncus debilis	Weak Rush	S3	N	PT
Juncus filiformis	Thread Rush	S3	PR	PR
Juncus gymnocarpus	Coville's Rush	S4	PR	WATCH
Juncus militaris	Bayonet Rush	S1	PE	PE
Lactuca hirsuta	Downy Lettuce	S3	N	TU
Ledum groenlandicum	Common Labrador-tea	S3	PR	PR
Liatris scariosa	Round-head Gayfeather	S2	N	PT
Listera cordata	Heart-leaved Twayblade	S1	PE	PE
Lobelia dortmanna	Water Lobelia	S2	PT	PT
Lonicera hirsuta	Hairy Honeysuckle	S1	TU	PE
Lupinus perennis	Lupine	S3	PR	PR
Lysimachia hybrida	Lance-leaf Loosestrife	S1	N	PT
Malaxis bayardii	Bayard's Malaxis	S1	PR	PE
Malaxis monophyllos var.	White Adder's-mouth	S1	TU	PE
Megalodonta beckii	Beck's Water-marigold	S1	PE	PE
Minuartia glabra	Appalachian Sandwort	S2	PT	PT
Muhlenbergia uniflora	Fall Dropseed Muhly	S2	PE	PT
Myrica gale	Sweet-gale	S2	PT	PT
Myriophyllum heterophyllum	Broad-leaved Water-milfoil	S4	PE	SP
Myriophyllum tenellum	Slender Water-milfoil	S2	PT	PT
Nuphar microphylla	Yellow Cowlily	S1	TU	PE

Catawissa Creek Watershed
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Table 11
PNHP Plant Species List within the Counties of the Watershed

Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Nymphoides cordata	Floating-heart	S2	PT	PT
Orontium aquaticum	Golden Club	S4	PR	WATCH
Oryzopsis pungens	Slender Mountain-ricegrass	S2	PE	PE
Panicum bicknellii	Bicknell's Panic Grass	S1S3	TU	TU
Panicum boreale	Panic-grass	SH	TU	TU
Panicum xanthophysum	Slender Panic-grass	S1	PE	PE
Phoradendron leucarpum	Christmas Mistletoe	SX	PX	PX
Pinus echinata	Short-leaf Pine	S1S2	N	PT
Platanthera blephariglottis	White Fringed-orchid	S2S3	N	PE
Platanthera ciliaris	Yellow-fringed Orchid	S2	TU	PT
Platanthera hookeri	Hooker's Orchid	S1	TU	PE
Poa languida	Drooping Bluegrass	S2	TU	PT
Poa paludigena	Bog Bluegrass	S3	PT	PR
Polemonium vanbruntiae	Jacob's-ladder	S1	PE	PE
Polygonum careyi	Carey's Smartweed	S1	PE	PE
Polystichum braunii	Braun's Holly Fern	S1	PE	PE
Potamogeton confervoides	Tuckerman's Pondweed	S2	PT	PT
Potamogeton gramineus	Grassy Pondweed	S1	PE	PE
Potamogeton oakesianus	Oakes' Pondweed	S1S2	TU	PE
Potamogeton obtusifolius	Blunt-leaved Pondweed	S1	PE	PE
Potamogeton vaseyi	Vasey's Pondweed	S1	PE	PE
Potentilla tridentata	Three-toothed Cinquefoil	S1	PE	PE
Prunus pumila var. susquehanae		S2		PT
Pyrola chlorantha		S1	N	PE
Ranunculus ambigens		S3	N	TU
Ranunculus aquatilis var. diffusus	White Water-crowfoot	S3		PR
Ranunculus flammula	Lesser Spearwort	SH	TU	PX
Ribes lacustre	Swamp Currant	S1	TU	PE
Ribes triste	Red Currant	S2	PT	PT
Rosa virginiana	Virginia Rose	S1	TU	TU
Rubus setosus	Small Bristleberry	SH	TU	PE
Scheuchzeria palustris	Pod-grass	S1	PE	PE
Schoenoplectus subterminalis	Water Bulrush	S3	N	PR
Schoenoplectus torreyi	Torrey's Bulrush	S1	PE	PE
Scirpus ancistrochaetus	Northeastern Bulrush	S3	PE	PT
Scleria triglomerata	Whip Nutrush	SH	TU	PE
Sisyrinchium atlanticum	Eastern Blue-eyed Grass	S1	PE	PE
Sparganium angustifolium	Bur-reed	S2	N	PT

Catawissa Creek Watershed
Rivers Conservation Plan
Table 11
PNHP Plant Species List within the Counties of the Watershed

Scientific Name	Common Name	State Rank	State Status	Proposed State Status
Stellaria borealis	Mountain Starwort	S1S2	N	TU
Streptopus amplexifolius	White Twisted-stalk	S1	PT	PE
Symphyotrichum boreale	Rush Aster	S1	PE	PE
Trichostema setaceum	Blue-curls	S1	PE	PE
Triosteum angustifolium	Horse-gentian	S1	TU	PE
Triphora trianthophora	Nodding Pogonia	SH	PE	PE
Utricularia cornuta	Horned Bladderwort	S2	N	PT
Utricularia intermedia	Flat-leaved Bladderwort	S2	PT	PT
Viola selkirkii	Great-spurred Violet	S3S4	N	PR
Vittaria appalachiana	Appalachian Gametophyte Fern	S2	PT	PT

Data Source:PNHP

Catawissa Creek Watershed
Rivers Conservation Plan
Table 12
PNHP Geologic/Natural Communities within the Counties of the Watershed

Geologic Features within Upper Susquehanna-Lackawanna Watershed

Scientific Name	Common Name	State Rank	State Status
Potholes	Potholes	SNR	
Waterfalls and rapids	Waterfalls and Rapids	SNR	
Erosional remnant	Erosional Remnant	SNR	

Natural Communities within Upper Susquehanna-Lackawanna Watershed

Oligotrophic glacial kettlehole bog	Glacial Bog	S3	
Acidic broadleaf swamp	Acidic Broadleaf Swamp	S3	
Talus cave community	Talus Cave Community	S2S4	
Northern appalachian calcareous cliff	Northern Appalachian Calcareous Cliff	S2	
Acidic glacial lake	Acidic Glacial Lake	S2S3	
Mesic central forest	Mesic Central Forest	S2	
Broadleaf-conifer swamp	Broadleaf-conifer Swamp	S3S4	
Northern appalachian acidic cliff community	Northern Appalachian Acidic Cliff	S5	
Leatherleaf - bog rosemary peatland		S2S3	
Ridgetop dwarf-tree forest	Quercus Ilicifolia-kalmia Latifolia-p.	S3	
Northern appalachian calcareous rocky	Northern Appalachian Calcareous Rocky	S1	
High-gradient clearwater creek	High-gradient Clearwater Creek	S3	
Talus slope forest	Talus Slope Forest	S2?	
Northern conifer forest	Northern Conifer Forest	S3S4	
Northern appalachian acidic rocky summit	Northern Appalachian Acidic Rocky	S2	
Heath barrens	Heath Barrens	S1?	N
Northern appalachian shale cliff community	Northern Appalachian Shale Cliff	S2	
Scrub oak shrubland		S3	
Silver maple floodplain forest		S4	
Ephemeral/fluctuating natural pool	Ephemeral/fluctuating Natural Pool	S3	
Boreal conifer swamp	Boreal Conifer Swamp	S3	
Hemlock palustrine forest		S3	

Data Source:PNHP

Catawissa Creek Watershed
Rivers Conservation Plan
Table 13
Species/Ecological Resources of Special Concern

Category	Scientific Name	Common Name	Habitat	Known Occurrence within 1 Mile of Watershed	Known Occurrence within 5 Miles of Watershed	Current Status	Proposed State Status
Plants	Arabis missouriensis	Missouri Rockcress	Dry slopes		yes	PE	PE
	Bartonia paniculata	Screw-stem	Bogs and peaty lake margins		yes	N	TU
	Carax longii	Long's Sedge	Wet sandy soils in swamps, thickets, and meadows (found in thickets, woods and open woods)	yes		TU	TU
	Dodecatheon radicatum	Jeweled Shooting-star	Open woods, wooded slopes, bluffs and meadows, on calcareous soils	yes	yes	PT	PT
	Geranium bicknelliI	Cranesbill	Dry, open woods, clearings and rocky ledges	yes		PE	PE
	Juncus filiformis	Thread Rush	Bogs and sandy shores	yes		PR	PR
	Muhlenbergia uniflora	Fall Dropseed Muhly	Marshes, bogs and moist sandy roadsides		yes	PE	PT
	Platanthera ciliaris	Yellow-fringed Orchid	Bogs, moist meadows and woods		yes	TU	PT
	Schoenoplectus subterminalis	Water Bulrush	Quiet water of lakes and ponds		yes	N	PT
Natural Communities			**Description**				
	Talus Slope Forest	Birch (black-gum) rocky slope woodland	This community type most often occurs on talus, scree or other rocky slopes. Although most typical of slopes, it may als occur on benches, ridgetops, or boulderfields.				
		Calcareous opening/cliff	This community type occurs on calcareous cliffs, outcrops, and rocky slopes. There is generally some degree of shading from the surrounding forest or woodland community or from the land form itself. Species composition varies with the amount of moisture, shade and exposure.				
		Herbaceous vernal pond	This community type is characterized by seasonally fluctuating water levels; it may dry out completely in the summer. The substrate is mineral soil with or without a layer of muck. The species composition is variable between sites, as well as, annually and seasonally. Large examples of this community type may exhibit strong zonation. Many smaller, shaded vernal ponds are unvegetated, their bottoms covered by dead leaves and algae. Cover may be sparse, speicies compostion is extremely variable.				
		Hemlock palustrine forest	These are wetland forests dominated or co-dominated by eastern hemlock. The canopy may also contain a mixture of other conifers. There is generally a pronounced mound and pool microtopography. This community type may occur as a zone around a wetter community type of a more northern affinity. It may also occur in basins or on slopes fed by groundwater seepage.				
		Mixed mesophytic forest	This is specific to the southwestern part of the state and includes several species that find their northern and eastern limits in Pennsylvania. This is an extremely rich community type that typically occurs on deep soils at a lower slope position.				
		Ridgetop Dwarf Tree forest	The Ridgetop acidic barrens complex represents a group of open-canopy ridgetops and summits which occur throughout central and northeastern Pennsylvania. This complex is found on high ridgetops and summits where low soil mositure, shallow soils, high wind velocities, frequent fires, and usually a history of cutting, limit tree growth. Structurally these areas contain a mosaic of physiognomic types, including woodlands, shrublands, and open grassy areas. Where trees become established they are typically stunted and in areas exposed to high winds, flagged.				
		Scrub oak shrubland	This community type occurs either on sandy soils or on thin soils over bedrock. Conditions are dry; soils are acidic. It most commonly occurs on rocky ridgetops. In this case, it may be part of the Ridgetop barren complex. It also may occur on sites where frequent or recent disturbance has removed tree layer. This type also includes most of what is referred to as sand barrens.				

Data Source: PA DCNR

Catawissa Creek Watershed
Rivers Conservation Plan
Table 14
Recreational Opportunities

County	Municipality	Park Name	Location	Services												
				1	2	3	4	5	6	7	8	9	10	11	12	13
Carbon	Banks Township	Little League Field (within mile of Watersh	Chestnut Street	X				X		X	X					M
		Playground (within mile of Watershed)	Maple Street						X							M
Columbia	Beaver Township	none currently however the township owns 10 acres of land and has plans to development for community activities														
	Catawissa Borough	Catawissa Community Park	4th and Creek Road	X			X		X		X					
		CARA Park		X		X	X	X	X		X					
		CARA Park Extension		X			X	X								
		Catawissa Playground						X	X		X					
	Main Township	Mainville Park		X		X	X	X	X		X					
	Mifflin Township	Mifflinville Park				X	X		X							
		Memorial Park														
		Little League Complex		X												
		Kids Park				X	X		X							
		River Park												X		
Luzerne	Hazle Township	Harwood Ball Field (within mile of Watershed)	Harwood	X												NP
Schuylkill	East Union Township	Shenandoah Archery Club	Phineyville Road													
		Sheppton Playground	Center Street						X							
		Columbia Hose Fire Company	Spruce Street											X		
		Pumping Station	Pole Road												X	
		Eagle Rock Country Club	Valley of the Lakes													
	Kline Township	Veterans Memorial Park	Hancock Street	X					X		X					
		Kline Township Park-skating rink	Lofty Road								X					
		Kelyares Playground	James Street						X							
	Mahanoy Township	East End Park	East End Road	X			X		X							
		Mahanoy City High School		X	X	X					X	X				
		Morea Park	Rt 53035													
	McAdoo Borough	St. Michael's	Grant Street						X		X					
		Adams Street	Hancock Street						X		X					
	North Union Township	North Union Twp Community Park	Mahanoy Street	X	X	X	X		X		X	X		X		X
		Shenandoah Arrowhead Club	Red Ridge													
	Ringtown Borough	North Schuylkill School District	Hancock Street	X							X					
	Union Township	Shenandoah Fish and Game	Zions Grove											X	X	
		Ringtown Little League	Rt 4033	X					X							
	West Mahanoy Township	Shenandoah Soccer Field	Rt 54										X			
		Shenandoah Softball Field	Lost Creek #2	X												
		Altamont Playground	Green Street				X		X							
		Heights Fire Company Playground	Swatara Road				X		X		X					
		Whipporwill Dam	Morea Road				X		X						X	

Catawissa Creek Watershed
Rivers Conservation Plan
Table 14
Recreational Opportunities

KEY	4.Pavilion	8.Basketball & Other Courts	12.Fishing
1.Baseball/Softball	5.Bleachers	9.Running Water	13.Owned by: M-Municipality; NP-Non-Profit
2.Lighting	6.Playground equip./ children	10.Soccer Fields	
3.Bathrooms	7.Concession stand	11.Picnic Area	

Trails/Bicycle Ride Routes	**Location**	**Length in miles**
Bicycle PA Route V	Hazle, Black Creek, Beaver, Main and Catawissa Townships; Catawissa Borough	
Scenic Covered Bridges Tour "60"	Loop Bicycle Ride which begins at Knoebels Amusement Resort	60
Scenic Covered Bridges Tour "100"	Loop Bicycle Ride which begins at Knoebels Amusement Resort	100
Rails to Trails	Hazle Township Stockton to Drecks Creek (over mile from Watershed)	6
Columbia County Susquehanna Trail	Loop Bicycle Ride which begins in Bloomsburg (within a mile of the Watershed)	8
Columbia County 50	Loop Bicycle Ride which begins in Bloomsburg (within a mile of the Watershed)	50

Catawissa Creek Watershed
Rivers Conservation Plan
Table 15
Historic and Cultural Sites

County	Municipality	Name	Type	Location	Description
Carbon	Banks Township	Cemetery	Cemetery	Treskow	
		Cemetery	Cemetery	Beaver Brook	
Columbia	Beaver Township	Farm on Vandermark Property	Farmstead		Building
		St. Peters Lutheran & Reformed Church	Church		Italianate built 1892
		Building	Building		Built 1880, 1899
		Building	Building		Built 1860, 1879
		Building	Building		Gothic Revival built 1860, 1879
	Catawissa Township	Hollingshead Covered Bridge	Bridge	Spans Catawissa on Old Reading Road	Wooden covered bridge built 1850
	Catawissa Borough	Cemetery	Cemetery		
		Paper Mill Site	Building		Paper Mill built 1800, 1819
		Civil War Memorial	Marker		Civil War Memorial built 1899
		All Ware Shoe Factory	Building	704 - 706 Shuman St.	Built 1880, 1889
		Building	Building	551 Shuman St	Colonial Revival built 1884
		Building	Building	517 - 519 Shuman St	Italianate built 1880, 1899
		Building	Building	234 4th St	Queen Anne built 1900, 1919
		Building	Building	233 S 4th St	Colonial Revival built 1860, 1879
		Union Cemetery Monument	Marker		Historical Marker
		Building	Building	211 4th St	Italianate built 1860, 1879
		Building	Building	201 4th St	Italianate built 1880, 1899
		Friends Meeting House	Building	South St between 3rd & 4th Streets	Built 1789
		Building	Building	South St	Colonial Revival built 1860, 1879
		Building	Building	227 - 235 3rd St	Multi Dwelling Built 1880, 1899
		Building	Building	Mill St	Colonialal Revival built 1860, 1879
		Opera House	Building		Italianate built 1869
		Building	Building	464 - 466 Mill St	Italianate built 1860, 1879
		Building	Building	338 Main St	Italianate built 1860, 1870
		Building	Building	336 Main St	Eclectic built 1880, 1899
		Building	Building	326 - 328 Main St	Built 1860, 1879
		Building	Building	Main St	Greek Revival built 1898
		Building	Building	248 Main St	Gothic Revival built 1860, 1879
		Building	Building	247 - 251 South St	Italianate built 1860, 1879
		Building	Building	South St	Gothic Romanesque Eclectic built 1869
		Building	Building	233 South St	Built 1860, 1879
	Franklin Township	Riegel Covered Bridge	Bridge	Spanned Roaring Creek on TR 312	The bridge was built in 1870 but was destroyed by arson in 1979
		Rohrbach Covered Bridge	Bridge	was located on TR 369 southwest of Catawissa	
	Main Township	Fisher Cemetery	Cemetery		
		Emmanuel Evangelical Lutheran Church	Church		Gothic Revival built 1884
		Building	Building		Greek Revival built 1860

Catawissa Creek Watershed
Rivers Conservation Plan
Table 15
Historic and Cultural Sites

County	Municipality	Name	Type	Location	Description
		Building	Building		Gothic built 1881
Columbia	Main Township	Building	Building		Italianate built 1880, 1899
		Building	Building		Italianate built 1880, 1899
		Building	Building		Built 1860, 1879
		Building	Building		Built 1880, 1899
		Building	Building		Built 1880,1979
		Building	Building		Colonial Revival Built 1860, 1879
		Building	Building		Built 1860, 1879
		Building	Building		Gothic Revival Built 1880, 1899
		Building	Building		Built 1860, 1879
		Building	Building		Built 1860, 1879
		Building	Building		Stick/Eastlake built 1860, 1879
		Main Hotel	Building		Built 1860, 1879
		Building	Building		Built 1860, 1879
		Building	Building		Built 1880, 1899
		Building	Building		Colonial Revival built 1860, 1879
		Building	Building		Gothic Revival bulit 1860, 1879
		Building	Building		Colonial Revival built 1860, 1879
		Building	Building		Built 1800, 1819
		Building	Building		Built 1860, 1879
		Building	Building		Built 1800, 1819
Luzerne	Hazle Township	Stockton Mine Disaster	Marker	SR 3019 between T 444 and SR 0093	Historical Marker
		Lattimer Massacre	Marker	T 550 and T 336	Historical Marker
Schuylkill	East Union Township	Sheppton Mine Disaster	Marker	School House Road	Historical Marker
	Kline Township	Kelayres Massacre Site	Marker		Historical Marker
	McAdoo Borough	Borough Cemetery			
		Cemetery	Cemetery		
	North Union Township	Nuremburg Cemetery	Cemetery		
		Cemetery	Cemetery		
	Union Township	Old White Church/Cemetery	Cemetery		
		St. Pauls Union Cemetery	Church	Intersection of T-798 & SR 4037	
		Zion Grove Road Bridge	Bridge		Concrete Arch 77 feet 1 span built 1930

Data Source:Pennsylvania Historical and Museum Commission

Catawissa Creek Watershed
Rivers Conservation Plan
Table 16
Action Plan

RESOURCE CATEGORY	Location	Project Description	Organization	Estimated Cost	Estimated Implementation Timetable
WATER					
	Hazle Twp Luzerne County has no action plan project per letter dated 8/25/08				
	East Union Township, Schuylkill County	Stormwater Improvement	East Union Township	$45,000	5-10 years
		Conduct water quality monitoring	East Union Township	$20,000	<5 years
		Clean up illegal dumping	East Union Township	$10,000	<5 years
	North Union Township, Schuylkill County	Educational workshops for kids	North Union Township	unknown	unknown
		Streamside Plantings	North Union Township	unknown	unknown
		Water quality monitoring	North Union Township	unknown	unknown
	Ringtown Borough, Schuylkill County	Address stormwater runoff	Ringtown Borough	$10,000	2 years
		Conduct water quality monitoring	Ringtown Borough	$5,000	1 year
		Conduct educational workshops	Ringtown Borough	unknown	2 years
		Clean up illegal dumping	Ringtown Borough	unknown	2 years
	McAdoo Borough, Schuykill County	Flood control and walking trail	McAdoo Borough	$25,000	over 2 years
		Curb and inlet at end of D Street	McAdoo Borough	$3,500	1 year
	Beaver Township, Columbia County	Conduct streambank restoration	Beaver Township	unknown	unknown
		Flood control	Beaver Township	unknown	unknown
		Conduct water quality monitoring	Beaver Township	unknown	unknown
		Address acid mine drainage	Beaver Township	unknown	unknown
		Preserve scenic beauty and open space	Beaver Township	unknown	unknown

Catawissa Creek Watershed
Rivers Conservation Plan
Table 16
Action Plan

RESOURCE CATEGORY	Location	Project Description	Organization	Estimated Cost	Estimated Implementation Timetable
WATER					
	Catawissa Borough, Columbia County	Conduct streambank restoration and clearing waterway of debris	Catawissa Borough	$75,000-$100,000	2-5 years
		Develop park, trail and bridge across Catawissa Creek - hiking	Catawissa Borough	$150,000-$200,000	3-6 years
		Develop River Run Park with small boat launch	Catawissa Borough	$40,000-$50,000	1-3 years
	Catawissa Township, Columbia County	Conduct streambank stabilization	Catawissa Township	$75,000	unknown
		Address stormwater runoff	Catawissa Township	$50,000	unknown
	Franklin Township, Columbia County	Conduct streambank restoration	Franklin Township	$1,000	2 years
	Main Township, Columbia County	Imnstall permanent USGS Stream Monitoring Station at bridge near Mainville	Main Township, USGS	unknown	within 1 year
	Schuylkill County	Undertake Sewer Service Area Study	Schuylkill County Office of Planning & Zoning/Planning Commission	unknown	within 1 year
	Multiple Municipalties	Restore the Catawissa Creek headwaters to the surface / AML Reclamation	Columbia, Luzerne, Schuylkill Counties	unknown	unknown
	Multiple Municipalties	Continue to support the operations, maintenance and replacements necessary for passive treatment systems in the watershed	Columbia, Luzerne, Schuylkill Counties	unknown	unknown
	Multiple Municipalties	Install and support water quality sampling programs	Columbia, Luzerne, Schuylkill Counties	unknown	unknown

Catawissa Creek Watershed
Rivers Conservation Plan
Table 16
Action Plan

RESOURCE CATEGORY	Location	Project Description	Organization	Estimated Cost	Estimated Implementation Timetable
LAND					
	Multiple Municipalities	Initiate tree planting programs in riparian zones	Conservation District, PEC, watershed organizations, Watershed Organizations	unknown	unknown
	Multiple Municipalities	Preservation of scenic beauty and open space	Municipalities	unknown	unknown
	Multiple Municipalities	Implementation the Community Illegal Dump Site Clean Up Program to clean up illegal dumpsites and prevent illegal dumping	PEC, PA DEP, non-profit organizations, and municipalities	unknown	unknown
	Schuylkill County	Adopt the Comprehensive Plan	Schuylkill County Commissioners	unknown	within 1 year
		Establish a County Environmental and Open Space Subcommittee	Schuylkill County Commissioners	unknown	within 1 year
		Update County Zoning Ordinance	Schuylkill County Planning Commission	unknown	within 2 years
		Update County Subdivision & Land Development Ordinance	Schuylkill County Planning Commission	unknown	within 2 years
		Update Municipal Zoning and Subdivision & Land Development Ordinances	Schuylkill County Municipalities	unknown	within 3 years
		Implement Mine Reclamation Plan	Schuylkill County Planning Commission	unknown	within 3 years

Catawissa Creek Watershed
Rivers Conservation Plan
Table 16
Action Plan

RESOURCE CATEGORY	Location	Project Description	Organization	Estimated Cost	Estimated Implementation Timetable
RECREATION					
	Multiple municipalities	Rail Trail Deveopment from Catawissa to McAdoo	Multiple Municipalities	unknown	within 10 years
	Multiple Municipalities	Park, trail, bridge access across the Catawissa Creek	Multiple Municipalities	$32,000	ongoing
	Schuylkill County	Adopt the Open Space and Greeway Plan	Schuylkill County Commissioners	unknown	ongoing
		Implement Open Space and Greenway Network	Schuylkill County Environmental and Open Space Commission	unknown	within 5 years
	Columbia County	Install boat access on the Catawissa Side of the Susquehanna River	Catawissa Borough, PFBC	unknown	unknown
EDUCATION					
	Multiple municipalities	Workshops for kids/educational workshops	Multiple Municipalities	unknown	unknown
	Multiple municipalities	Support the creation and maintenance of web sites as tools to educate the communty residents and others regarding the Watershed	Multiple Municipalities	unknown	unknown
HISTORIC					
	Schuylkill County	Establish County Historical Advisory Board/Commission	Schuylkill County Commissioners	unknown	within 1 year
		Update Cultural Resources Inventory	Schuylkill County Historical Advisory Board/Commission	unknown	within 2 years
	Columbia County	Historically preserve and revamp covered bridges-Hollingshead Covered Bridge	Catawissa Township	unknown	unknown

Cattawissa Creek Watershed
Rivers Conservation Plan
Table 17
Potential Funding and Technical Assistance Sources

AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
WATER RESOURCE				
Pennsylvania Department of Community and Economic Development (DCED)	Water Supply and Wastewater Infrastructure Program (PennWorks)	For water and sewer projects not used solely for residential purposes: Land and building acquisition; Demolition; Water/sewer project construction costs; Engineering and other fees associated with project.	Municipalities; Industrial Development Corporations; Municipal Authorities; Investor-owned water or wastewater enterprise. **Apply to DCED single application.**	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=43
Pennsylvania Infrastructure Investment Authority	Drinking Water, Wastewater and Storm Water Loans and Non-point Source Financing	Loan program for the design, engineering and construction costs associated with capital improvement projects with demonstrated water quality benefits.	Owners and/or operators of public water systems, wastewater collection/treatment facilities, or storm water management or other non-point source pollution protection projects. **Apply to PennVEST**	http://www.portal.state.pa.us/portal/server.pt/community/available_funding/11211/drinking%2C_waste_and_storm_water_loans/560726
Pennsylvania Infrastructure Investment Authority	On-Lot Sewage Disposal Loans	Low-cost financing for wastewater systems across the Commonwealth. In some parts of the Commonwealth, particularly rural areas, it may be more cost-effective for individual home owners to use their own on-lot sewage disposal systems rather than incur the high costs of constructing long collection lines to service widely scattered properties. As with larger systems, however, these individual on-lot sewage disposal systems may require improvement, repair or replacement to meet public health and environment standards.	All citizens of the Commonwealth, with limited exceptions. Specific eligibility information can be obtained from a participating local lending institution or your local Sewage Enforcement Officer. Family Income must not exceed 150 percent of the statewide median household income, adjusted annually for inflation. All areas are eligible for project location unless a community wastewater collection and treatment system is either in place or will be constructed in the next five years. **Contact a participating local lending institution to see if you qualify for credit approval of a loan. See the PHFA Participating Lender List below or call PHFA at 1-800-822-1174 for a current listing**	http://www.portal.state.pa.us/portal/server.pt/community/available_funding/11211/on-lot_sewage_disposal/560727
Pennsylvania Infrastructure Development Program	Pennsylvania Infrastructure Development Program	Transportation facilities, airports; Clearing and preparation of land and environmental remediation; Water and sewer systems, storm sewers; Energy facilities; Parking facilities; Bridges, waterways; Rail and Port facilities; At former industrial sites only: land and building acquisition, construction and renovation by private developers; Telecommunications infrastructure	Municipalities, industrial development authorities and corporations, municipal authorities, redevelopment authorities and local development districts may apply for IDP assistance for themselves or on behalf of eligible private companies engaged in: agriculture, industrial, manufacturing, research and development, and export services; Real estate developers who are developing sites for eligible private companies. **Apply to Industrial Development Corporation and Authorities; Municipalities; Municipal authorities; Redevelopment authorities; Local development districts.**	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=26

Cattawissa Creek Watershed
Rivers Conservation Plan
Table 17
Potential Funding and Technical Assistance Sources

AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
Pennsylvania Department of Community and Economic Development (DCED)	H2O PA - Flood Control Project	Projects which involve construction, improvement, repair or rehabilitation of all or part of a flood control system.	The Commonwealth, indepdendent agencies, municipalities or municipal authorities. **Apply to DCED single application.**	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=189
Pennsylvania Department of Community and Economic Development (DCED)	H2O PA - Water Supply, Sanitary Sewer and Storm Water Projects	Activities to assist with the construction of drinking water, sanitary sewer and storm sewer projects.	Municipalities, Municipal Authorities. **Apply to DCED single application.**	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=188
Department of Conservation and Natural Resources (DCNR)	C2P2- Rivers Conservation Projects	Funding to plan, acquire or develop projects that conserve and enhance river resources.	Municipalities and municipal authorities, charitable and educational organizations that are 501(c)3, tax-exempt organizations and registered with the PA Dept. of State, Bureau of Charitable Organizations.	http://www.dcnr.state.pa.us/brc/grants/
Pennsylvania Department of Environmental Protection (PA DEP)	Various Grant Programs	Numerous grants and loans to assist individuals, groups and businesses with environmental issues.	Non-profit organizations, municipalities, watershed organizations	www.depweb.state.pa.us
U.S. Department of Agriculture (USDA)	C-SAW	The goal of the C-SAW program is not to offer direct assistance, but rather to provide training to build the capacity of groups to plan, conduct watershed assessments, and conduct post-implementation monitoring in the future.	Watershed Groups, non-profit organziations	www.nrcs.usda.gov/programs/rcd
U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS)	Conservation Innovation Grants	The State component of the program emphasizes projects that have a goal of providing benefits within a limited geographic area. Projects may be farm-based, multi-county, small watershed, or Statewide in scope. Public notices in each participating State will announce the availability of funds for the State CIG competitions. **Once funds for CIG become available, a funding notice is posted on the federal eGrants portal, www.grants.gov. The funding notice also may be accessed from the NRCS website at: http://www.nrcs.usda.gov/programs/cig. The notice will specify the information required from applicants. Complete applications must be mailed to the NRCS National office at the address identified in the notice.**	CIG applications will be accepted from State or local units of government, Federally recognized Tribes, non-governmental organizations, and individuals	http://www.pa.nrcs.usda.gov

Cattawissa Creek Watershed
Rivers Conservation Plan
Table 17
Potential Funding and Technical Assistance Sources

AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
U.S. Environmental Protection Agency (EPA)	Clean Water Act – 319 Program	Grants to states and tribes to implement nonpoint source projects and programs in accordance with Section 319 of the Clean Water Act (CWA). Non-point source pollution reduction projects can be used to protect source water areas and the general quality of water resources in a watershed. In Pennsylvania the 319 program is administered by the Pennsylvania Department of Environmental Protection.	Local governments, community groups, non-profit conservation, watershed, greenway and trail organizations	www.epa.gov
EPA	State Revolving Fund Programs: Clean Water Act and Safe Drinking	The Safe Drinking Water Act, as amended in 1996, established the Drinking Water State Revolving Fund (DWSRF) to make funds available to drinking water suppliers to finance infrastructure improvements.The program also emphasizes providing funds to small and disadvantaged communities and to programs that encourage pollution prevention as a tool for ensuring safe drinking water.	Municipalities, local governments	www.epa.gov
EPA	Watershed Assistance Grants	Grants are founded on building cooperative agreements with one or more non-profit ogranizations to support watershed partnerships and long term effectiveness, supports organizational development and capacity building for watershed partnerships and diverse membership.	Watershed partnerships, non-profit organizations	www.epa.gov
Trout Unlimited	Embrace-A-Stream	Conservation projects that best address the needs of native and wild trout following TU's Protect, Reconnect, Restore, and Sustain conservation model.	Trout Unlimited Chapters and Councils	www.tu.org
U.S. Army Corps of Engineers (USACE)	National Corporate Wetlands Restoration Partnership (CWRP)	Grants to protect, enhance and restore wetlands and other aquatic habitats by partnering to leverage the collective resources, skills and processes of the private and public sectors.	Participating private foundations or state trust funds to protect aquatic ecosystem restoration projects.	www.usace.army.mil

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
U.S. Fish and Wildlife Service (USFWS)	National Fish And Wildlife Foundation (NFWF) Keystone Initiatives	Funds, on a competitive basis, projects that sustain, restore and enhance the Nation's fish, wildlife, plants and their habitats through Keystone Initiative Grants and Charter Program Grants. Funds projects that address priority actions promoting fish and wildlife conservation and the habitats on which they depend, work proactively to involve other conservation and community interests, leverage Foundation-provided funding, and evaluate project outcomes.	Federal, state, and local governments, educational institutions, and non-profit organizations	www.nfwf.gov
Federal Emergency Management Agency (FEMA)	Pre-Disaster Mitigation Program	Helps communities reduce losses from flood events by restoring and protecting healthy more natural ecosystems	Municipalities, local governments	www.fema.gov
National Park Service (NPS)	Rivers Trails and Conservation Assistance Program (RTCA)	RTCA staff provide technical assistance regarding conserving rivers, preserving open space, and developing trails and greenways. The RTCA program implements the natural resource conservation and outdoor recreation mission of the National Park Service in communities across America.	Community groups and local, state, and federal government agencies	www.nps.gov
Natural Resources Conservation Service (NRCS)	Wetlands Reserve Program	The WRP is a voluntary program offering landowners financial and technical assistance to restore, protect, and enhance wetlands and associated uplands through permanent easements, 30-year easements, and long-term restoration agreements. The program is designed to achieve maximum wetland functions and values while obtaining optimum wildlife habitat.	Land owners	www.pa.nrcs.usda.gov

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
NRCS	Wildlife Habitat Incentives Program	WHIP is a voluntary technical assistance and cost-share program to install wildlife habitat practices including conservation buffers according to a site-specific wildlife habitat development plan. NRCS helps participants prepare the habitat plan in consultation with the local conservation district. NRCS and the participant enter into a cost-share agreement that generally lasts from five to 10 years, that requires the landowner to install and maintain the practices and allow NRCS to monitor the effectiveness of the practices and NRCS agrees to provide technical assistance and cost-share payments. WHIP can be used to restore aquatic habitat and riparian areas and to establish native plant communities. Landowners are not required to grant public access to their land.	Land owners	www.pa.nrcs.usda.gov

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
LAND RESOURCE				
Pennsylvania Department of Community and Economic Development (DCED)	Industrial Sites Reuse Program	Phase I, II and III environmental assessments; Remediation of hazardous substances	Public entities, private nonprofit economic development entities, and companies involved in reuse of former industrial land; Entities that did not cause or contribute to environmental contamination. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=25
Pennsylvania Department of Community and Economic Development (DCED)	Community and Business Development Program	Improve the stability of the community; Promote economic and/or community development; Improve existing and/or develop new civic, cultural, recreational, industrial and other facilities or activities. Assist in business retention, expansion, creation or attraction; Promote the creation of jobs and employment opportunities; Enhance the health, welfare and quality of life of citizens of this Commonwealth.	Local government; including, but not limited to, counties, cities, boroughs, townships, and home rule municipalities. Municipal and redevelopment authorities and agencies. Industrial development authorities and agencies. Non-profit organizations incorporated under the laws of the Commonwealth.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=218
Pennsylvania Department of Community and Economic Development (DCED)	Pennsylvania Infrastructure Bank	Roadway and bridge construction and repair, traffic signals, roadway drainage improvements, airport runways, hangars and equipment, railroad track, equipment and signals, and public transportation capital facilities and purchases.	All public highways and bridges as well as airports, rail freight and public transportation facilities are eligible to apply. Apply to the Pennsylvania Department of Transportation	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=172
Pennsylvania Department of Transportation	Rail Freight Assistance (RFA)	Rail Freight: Maintenance; construction. Up to $750,000 or no greater than 75% of total cost, whichever is less, for maintenance projects; Up to $100,000 or no greater than 50%, whichever is less, for construction projects	Railroads; Rail freight users. Apply to PennDOT.	http://www.dot.state.pa.us
Pennsylvania Department of Community and Economic Development (DCED)	Tax Increment Financing Guarantee	Promotes and stimulates the general economic welfare of various regions and communities in the Commonwealth and assists in the development, redevelopment and revitalization of Brownfield and Greenfield sites in accordance with the TIF Act. The program provides credit enhancement for TIF projects to improve market access and lower capital costs through the use of guarantees to issuers of bonds or other indebtedness.	Any issuer of TIF obligations for a project located within a municipality, other than a city of the first or second-class, may apply to the Tax Increment Financing Guarantee Program. Eligible issuers under the TIF Act include all municipal authorities, industrial and commercial development authorities, and redevelopment authorities including boroughs, townships, towns, counties and home rule municipalities. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=45
Pennsylvania Infrastructure Investment Authority	Brownfield Redevelopment Loans	Low-interest loans for the remediation of sites that have been contaminated by past industrial or commercial activity and pose a threat to local groundwater or surface water sources (“brownfield”).	Owner of property that needs to be remediated in order to mitigate water quality impacts. Apply to PennVEST	http://www.portal.state.pa.us/portal/server.pt/community/available_funding/11211/brownfield_redevelopment/560728

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
Department of Conservation and Natural Resources (DCNR)	C2P2-Land Trust Projects	Grants for pre-qualified land trusts to plan for or acquire land for critical habitat, open space and natrual area protection. The public value of the project, including public access is an important consideration in project selection.	Municipalities and municipal authorities, charitable and educational organizations that are 501(c)3, tax-exempt organizations and registered with the PA Dept. of State, Bureau of Charitable Organizations, and pre-qualified land trusts.	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-TreeVitalize	TreeVitalize is a statewide tree planting program that provides matching grants (minimum of $5,000) for tree-planting and technical assistance to help establish urban forest management programs.	Municipalities or municipal agencies within the Commonwealth's metropolitan counties (as defined by the 2000 U.S. Census Bureau). This program has a separate application, manual and deadlines.	http://www.dcnr.state.pa.us/brc/grants/
NRCS	Conservation Reserve Program	Provides incentives to farmers and ranchers to implement conservation practices on their lands	Farmers, ranchers and conservation districts	www.pa.nrcs.usda.gov
NRCS	Environmental Quality Incentives Program (EQIP)	This program offers assistance to agriculture and forestry producers to install or implement structural, vegetative, and management practices. Help is available for erosion control practices, livestock grazing, livestock manure and nutrient management systems, improvement of irrigation systems efficiency, wildlife habitat establishment, forest management, pest management/IPM, conversion to No Till; cover crops, and CNMP Plan Development.		www.pa.nrcs.usda.gov
NRCS	Agricultural Management Assistance Program	This program offers assistance to agriculture and forestry producers to install or implement structural, vegetative, and management practices. Help is available for erosion control practices, livestock grazing, livestock manure and nutrient management systems, improvement of irrigation systems efficiency, wildlife habitat establishment, forest management, pest management/IPM, conversion to No Till; cover crops, and CNMP Plan Development.		www.pa.nrcs.usda.gov

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
Pennsylvania Farm Bureau Farmland Preservation	American Farmland Trust	The Agricultural Land Preservation Fund's, administered by the Bureau of Farmland Protection within the Department of Agriculture, purpose is to purchase development rights (agricultural conservation easements) on lands containing high-ranking soil classification, for the purpose of keeping the land open for agriculture. The program requires that each county that wishes to participate must create an Agricultural Land Preservation Board to administer the program. The county must also contribute some of its own funds, which are then matched with substantially more money by the state.	Farmers and ranchers	www.pfb.com
U. S. Forest Service (USFS)	Forest Legacy Program (FLP)	FLP is a Federal program in partnership with States, that supports State efforts to protect environmentally sensitive forest lands. Designed to encourage the protection of privately owned forest lands, FLP is an entirely voluntary program. To maximize the public benefits it achieves, the program focuses on the acquisition of partial interests in privately owned forest lands. FLP helps the States develop and carry out their forest conservation plans. It encourages and supports acquisition of conservation easements, legally binding agreements transferring a negotiated set of property rights from one party to another, without removing the property from private ownership. Most FLP conservation easements restrict development, require sustainable forestry practices, and protect other values.	Private forest owners	http://www.fs.fed.us/spf/coop/programs/loa/aboutflp.shtml
USFS	Land and Water Conservation Fund	Created by Congress in 1964, the LWCF provides money to federal, state and local governments to purchase land, water and wetlands for the benefit of all Americans. Land is bought from landowners at fair-market value (unless the owner chooses to offer the land as a donation or at a bargain price).	Federal, State, Local governements	http://www.fs.fed.us/land/staff/LWCF/about.shtml

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
Pennsylvania Department of Community and Economic Development (DCED)	Community Development Block Grant (CDBG)	Grants and technical assistance for federal designated municipalities for any type of community development including housing rehabilitation, public services, community facilities, infrastructure improvement, development and planning	Two components: Entitlement program which provides annual funding to designated municipalities. Competitive program is available to all non-federal entitlement municipalities	http://www.newpa.com/programFinder.aspx
DCED	Community Revitalization Program (CRP)	Provides grant funds to support local initiatives that promote community stability and quality of life. Grants are for construction or rehabilitation of infrastructure, building rehabilitation, acquisition and demolition of structures/land, revitalization or construction of community facilities, purchase or upgrade of machinery and equipment, planning of community assets, public safety, crime prevention, recreation, and training.	Local Government, municipal and redevelopment authorities and agencies, industrial development authorities and agencies, non-profit organizations incorporated under the laws of the Commonwealth, community organizations engaged in activities consistent with the program guidelines	http://www.newpa.com/programFinder.aspx
DCED	Elm Street	Grant funds for planning, technical assistance and physical improvements to residential and mixed use areas in proximity to central business districts including the revitalization of residential and mixed use neighborhoods; administration costs to support an Elm Street Program.	Municipalities; Redevelopment Authorities; Non-profit Main Street Organizations; Economic Development Organizations; Neighborhood Improvement districts	http://www.newpa.com/programFinder.aspx
DCED	Floodplain Land Use Assistance Progrm	Provides grants and technical assistance to encourage the proper use of land and the management of floodplain lands within Pennsylvania. Including the preparation, administration and enforcement of floodplain management regulations.	Pennsylvania Municipalities participating in the National Flood Insurance Program (NFIP), complying with Act 166 and submitting an Annual Report	http://www.newpa.com/programFinder.aspx
DCED	Gowing Greener II	Growing Greener II - Main Street and Downtown Redevelopment Grants to municipalities and nonprofits to help a community's downtown redevelopment effort, focusing on the improvement of downtown sites and buildings. The eligible projects may include approaches that assist in business development and/or public improvements in core communities. Uses of the grant include capital improvement costs and those costs directly related to such physical building improvements such as acquisition and pre-development costs.	Grants to municipalities and nonprofits to help a community's downtown through community development and housing activities, downtown reinvestment, facade and anchor building activities, residential reinvestment, and business assistance.	http://www.newpa.com/programFinder.aspx

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
DCED	Land Use Planning and Technical Assistance Program (LUPTAP)	Provides grant funds for the preparation of community comprehensive plans and the ordinances to implement them. Funds can be used for preparing and updating of comprehensive community development plans, policies and implementing mechanisms such as zoning ordinances, subdivision regulations, functional plans such as downtown revitalization, water resource plans and land development regulations.	Priority is given to any county government acting on behalf of its municipalities, any group of two or more municipalities, or a body authorized to act on behalf of two or more municipalities	http://www.newpa.com/programFinder.aspx
DCED	Local Municipal Resources and Development Program (LMRDP)	Grants to municipalities for improving quality of life within the community such as construction or rehabilitation of infrastructure, building rehabilitation, acquisition and demolition of structures/land, revitalization or construction of community facilities, purchase or upgrade of machinery and equipment, planning of community assets, public safety, crime prevention, recreation, and training.	Municipalities; Non-profit entities	http://www.newpa.com/programFinder.aspx
Governor's Center for Local Government Services	State Planning Assistance Program (SPAG)	Provides 50-50 matching funds for visioning and comprehensive planning projects involving multi-municipal efforts. The World Class Communities Program also provides funds up to 50 percent for multimunicipal planning and visioning efforts.	Local governments and communities	http://www.newpa.com/default.aspx?id=20

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
RECREATION RESOURCE				
Department of Conservation and Natural Resources (DCNR)	C2P2-Community Recreation and Conservation Projects	Grants are awarded to municipalities to plan, acquire, develop and rehabilitate public park, trail and recreational facilities; acquire land for park and conservation purposes, and undertake feasibility studies, site development planning and comprehensive recreation, greenway and open space planning.	Municipalities and municipal authorities, charitable and educational organizations that are 501(c)3, tax-exempt organizations and registered with the PA Dept. of State, Bureau of Charitable Organizations.	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-PA Recreational Trails Projects	Grants to develop and maintain recreational trails and trail related facilities for motorized and non-motorized recreational trails.	Municipalities, federal and state agencies, non-profits and in some cases for-profit enterprises	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-Rails-to-Trails Projects	Funding to plan, acquire or develop rail-trail corridors.	Municipalities and municipal authorities, charitable and educational organizations that are 501(c)3, tax-exempt organizations and registered with the PA Dept. of State, Bureau of Charitable Organizations.	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-Snowmobile/All Terrain Vehicle Projects	Funding for construction, rehabilitation and maintenance of snowmobile and ATV Trails.	Municipalities, nonprofits and in some cases for-profit enterprises.	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-Peer-toPeer Technical Assistance	These projects help municipalities improve their park, recreation and conservation services through a collaborative process. Projects are accomplished through consultant contracts with experienced park, recreation and conservation professionals working closely with community leaders	Municipalities	http://www.dcnr.state.pa.us/brc/grants/
Department of Conservation and Natural Resources (DCNR)	C2P2-Circuit Rider Projects	These projects provide grant funds for county and regional organizations to hire a professional full-time staff person. The circuit rider's purpose is to initiate new programs and services for counties and municipalities that individually do not have the financial resources to hire a professional staff person.	Municipalities	http://www.dcnr.state.pa.us/brc/grants/
National Park Service (NPS)	Rivers, Trails and Conservation Assistance (RTCA)	RTCA provides technical assistance to locally-led natural resource conservation and outdoor recreation projects. RTCA does not provide financial assistance to support project implementation.	State or local agency, tribe, non-profit organization, citizens' group, Federal agencies, including the National Park Service, may apply only in collaboration with a non-federal partner	http://www.nps.gov/state/pa

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
EDUCATION RESOURCE				
Pennsylvania Historical and Museum Commission (PHMC)	Certified Local Government Grant Program	Funding is available for the following: cultural resource surveys, national register nominations, technical and planning assistance, educational and interpretive programs, staffing and training, and pooling CLG grants and third party administration.	Federally designated Certified Local Governments	www.phmc.state.pa.us
PHMC	Keystone Historic Preservation Grant Program	Funding is available for the following: preserving or restoring historic resources listed in or eligible for listing in the National Register of Historic Places.	Non-profit organizations and local governments	www.phmc.state.pa.us
PHMC	Pennsylvania History and Museum Grant Program	Funding under this program is designated to support a wide variety of museum, history, archives and historic preservation projects	Non-profit organizations and local governments	www.phmc.state.pa.us
US Department of Housing and Urban Development (HUD)	State Community Development Block Grant (CDBG) Program	Funding is available for the following: acquisition of property for public purposes; construction or reconstruction of streets, water and sewer facilities, neighborhood centers, recreation facilities, and other public works; demolition; rehabilitation of public and private buildings; public services; planning activities; assistance to nonprofit entities for community development activities; and assistance to private, for profit entities to carry out economic development activities. The State must ensure that at least 70 percent of its CDBG grant funds are used for activities that benefit low- and moderate-income persons over a one to three-year time period.	Local governments and communities	http://www.hud.gov
Department of Conservation and Natural Resources (DCNR)	C2P2-Education, Training and Implementation Projects	Projects that develop, promote or conduct training or education programs; prepare and distribute technical assistance or education manuals, brochures or videos and/or otherwise provide for the training and education of both professionals and the general public on a local, county, regional or statewide basis. These projects must address issues related to plan implementation, training or education programs related to natural resource conservation, natural area protection, land and open space preservation, greenways, recreation and parks, or snowmobiles and ATV's (S/ATV).	Local communities, non-profits, and other organizations	http://www.dcnr.state.pa.us/brc/grants/

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
HISTORIC & CULTURAL RESOURCES				
Pennsylvania Department of Community and Economic Development (DCED)	The Cultural Activities, Exhibits and Expositions Program	The program provides funding to support activities that positively stimulate the local and regional economy by promoting, sponsoring and/or operating cultural festivals, fairs and events. Cultural events promote the local tourism industry. By enhancing quality of life factors, communities are made more attractive to business relocation. Funds may be used to support facility enhancements, new construction and/or renovations, or for the development of marketing, advertising and public relations campaigns to build attendance. Other eligible activities may include: film presentations, show case activities, workshops and symposia, special promotions, preview events, open dialogs, pre and post viewing discussions, and familiarization programs. A primary goal of the program is to promote overnights stays. Applicants must, as part of the project narrative, explain how their project will meet this goal.	Non-profit organizations with a significant interest in the promotion of cultural activities that provides a visitor experience to a tourist region, destination and/or attractions are eligible to apply. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=215
Pennsylvania Department of Community and Economic Development (DCED)	Festival Grant Program	The Pennsylvania Festival Marketing Initiative is an initiative of the Pennsylvania Tourism Office in association with the Pennsylvania Council on the Arts (PCA). The goal of this initiative is to identify a roster of local and regional festivals and special events which can help Destination Marketing Organizations (DMO) to increase inbound traffic and overnight hotel stays in Pennsylvania's seven tourism regions.	Festivals and special events that have received support from either the Pennsylvania Partners in the Arts (PPA) fund administered by the Pennsylvania Council of the Arts or from a Destination Marketing Organization are eligible to apply for "festival incubator quick grants. Apply to DCED - Pennsylvania Tourism Office c/o Kalin Miller.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=177
Pennsylvania Department of Community and Economic Development (DCED)	First Industries Fund	The First Industries Fund is a loan, loan guarantee, and grant program aimed at strengthening Pennsylvania's agriculture and tourism industries. The program is administered by both the Commonwealth Financing Authority (CFA) and the Department of Community and Economic Development.	An eligible applicant for an agriculture planning grant may be a for-profit business enterprise (including a corporation, limited liability company, sole proprietor, cooperative or partnership), or a non-profit organization, including an institution of higher education. An eligible applicant for a tourism planning grant may be a for-profit business enterprise (including a corporation, limited liability company, sole proprietor, or partnership), or a non-profit organization. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=47

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AGENCY	PROGRAM	DESCRIPTION	ELIGIBLE APPLICANTS	WEB SITE
Pennsylvania Toursim Office	Regional Marketing Partnership Grant Program	Eligible expenses include all activities associated with marketing a destination such as advertising, public relations, printing, postage, etc.	It is desirable that the applicants not be a TPA, but preferably a 501 c 3 or 501 c 6 or similar entity, whose board is represented by the counties and or TPA's of the marketed region or a statewide association. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=159
Pennsylvania Toursim Office	Tourism Promotion Assistance Grant Program	Eligible expenses include all activities associated with marketing a destination such as advertising, public relations, printing, postage, etc.	Only designated TPA's may receive grants under the Tourism Promotion Assistance Grant Program. Apply to DCED single application.	http://www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=105
Department of Conservation and Natural Resources (DCNR)	C2P2-Heritage Area Projects	Funding to promote public-private partnerships to preserve and enhance natural, cultural, historical and recreational resources to stimulate economic development through heritage tourism. Grants are only available in Pennsylvania's 12 designated heritage areas.		http://www.dcnr.state.pa.us/brc/grants/

Appendix C

Meeting Minutes

CATAWISSA CREEK WATERSHED
RIVERS CONSERVATION PLAN PROJECT

1st Public Meeting
March 21, 2007
6:30 pm
Beaver Township Fire Hall

Meeting Minutes

Meeting Attendees:

Janet Sweeney	Pennsylvania Environmental Council
Julie McMonagle	Pennsylvania Environmental Council
Michael Hewitt	Luzerne Conservation District/EPCAMR
Cathy Haffner	Columbia County Conservation District
Dennis Conti	Brandonville Fish and Game
Tom Davidock	Schuylkill County Conservation District
Arnold Halye	Resident
Chuck Henry	Beaver Twp Supervisor/CCRA
Maryruth Wagner	Columbia County Conservation District
Dan Grow	Schuylkill County/CCRA
Barbara Bartusik	CCRA
Cheryl Brobst	Columbia County Conservation District/CCRA
Richard Roulin	CCRA
Matthew Roulin	CCRA
Leonerd G. Schumack	CCRA
Frank Onuschak	
Lou Karan	

Julie McMonagle, Director, Pennsylvania Environmental Council NE Region Office welcomed everyone to the meeting and gave a brief overview of the agenda and asked that everyone introduce themselves.

Julie then gave an overview of the Pennsylvania Department of Conservation and Natural Resources (DCNR) Rivers Conservation Plan Program (RCP) and reviewed the proposed scope of work, goals, and partner responsibilities for the Catawissa Creek Watershed RCP project. According to Julie, the DCNR Rivers Conservation Program was designed to conserve and enhance river resources through the development and implementation of locally initiated RCPs. The RCP program provides technical and financial assistance to municipalities and river support groups to carry out both planning and implementation activities. Also, DCNR has established a river registry to recognize completed river conservation plans and designate eligibility for implementation funding. Julie stressed that there is no regulatory component of the RCP program, and communities that develop a rivers conservation plan are not subject to additional state or federal regulations.

Julie explained that PEC was awarded a grant from DCNR to conduct the RCP and had been in the process of securing the matching funds. PEC applied to three foundations for the matching funds and was finally successful with the Western Pennsylvania Watershed Program. She also explained that Michael Hewitt form the Luzerne Conservation District is providing in-kind services to prepare GIS maps of the watershed.

According to Julie, the watershed encompasses four (4) counties including Columbia, Luzerne, Schuylkill, and Carbon and within these counties, twenty local municipalities. According to Julie, the plan will address environmental, cultural and natural resource issues within the watershed and make locally relevant recommendations for preservation or restoration of environmental integrity to the watershed. The project will work closely with the Catawissa Creek Restoration Association, local municipalities, government agencies, and other environmental non-profit organizations to formulate these recommendations. Julie stated that the anticipated timeframe for this project will be approximately 12 to 18 months.

Julie explained that a large portion of the project is an inventory of existing conditions in the watershed. She stated that PEC would be compiling data and information regarding a variety of issues in the watershed including; land use, transportation, cultural, historic and recreational resources, water quality, history, etc. PEC will be looking to the steering committee to acquire much of this information. The steering committee will also be responsible for reviewing the data for accuracy and completeness, as well as, reviewing and possibly revising the survey forms to go local municipalities, the general public, and key person interviewees.

Julie explained that an Action Plan for the RCP will be developed via the public participation process. The Action Plan will be a wish list of project to be implemented in the watershed and address the issues and concerns of the residents of the watershed. Julie stated the RCP will not be update for another 5 years so it will be important for any projects to be included in the plan. She added that any projects coming out of the plan are not only eligible for DCNR Rivers Conservation funding but will get extra points from DEP for being in a RCP if they are going after DEP funding.

Julie then explained that the RCP includes extensive community involvement from the private and public sector. According to Julie this involvement is essential to the success of the RCP.

There were many questions regarding the purpose and content of the RCP. Many meeting attendees had questions regarding the impending development of a cargo airport at the headwaters of the Catawissa Creek in Luzerne and Schuylkill Counties. These issues included how that development may affect the study area, specifically, with regards to stormwater runoff, water withdrawals, future development potential and water treatment. Some attendees felt that this RCP process may be a good opportunity to develop a dialogue with the airport developers. It was suggested that perhaps the airport could become a good community partner and possibly provide matching funds for some of the future action plan projects. Meeting attendees also wanted to make PEC aware of the Audenreid Mine Tunnel passive treatment system at the headwaters of the creek and the potential issues of the cargo airport development on that project.

The meeting attendees also informed PEC regarding other water draw downs in the Catawissa and Brandewine Valley, specifically that CANDO wants to drain 2,000 gallons per day and the attendees feel this would ruin the stream. It was noted that the Susquehanna River Basin Commission monitors water withdrawals and should be contacted regarding these concerns. On the flip side of water withdrawals is the need to look at the issue of critical recharge areas. Maybe we want to map those areas in the watershed.

Other concerns raised were how to get people interested and engaged in the process and the watershed. Julie stated that we would rely on the steering committee to get the word out on the project, and we would also work with the local legislators, send out press releases and put information on our web site and perhaps the Catawissa Creek Restoration Association's web site.

Also, PEC was made aware of an abandoned rail bed which runs from one end of the study area to the other as a potential action plan trail project. It was also noted that Columbia County is currently undergoing an Open Space plan project and should have a draft Open Space Plan that may be available for our information, PEC will look into this.

Julie concluded by saying that PEC is looking for as much information as possible regarding the watershed and we are going to be looking to the steering committee and others for assistance in the data collection process.

The next meeting date was scheduled for Wednesday, May 9, 2007 at 6:30 pm at a site to be determined in Catawissa Township. Once PEC secures a meeting location we will send out meeting notices.

The meeting adjourned at 8:00 pm.

CATAWISSA CREEK WATERSHED
RIVERS CONSERVATION PLAN PROJECT

Steering Committee Meeting
May 9, 2007
6:30 pm
Catawissa Township Building

Meeting Minutes

Meeting Attendees:

Janet Sweeney	Pennsylvania Environmental Council
Julie McMonagle	Pennsylvania Environmental Council
Cathy Haffner	Columbia County Conservation District
Steve Rier	Bloomsburg University
Tom Davidock	Schuylkill County Conservation District
Michael Hewitt	Luzerne Conservation District/EPCAMR
Fred Shaffer	
Cheryl Brobst	Columbia County Conservation District/CCRA
Maryruth Wagner	Columbia County Conservation District
Tom Levan	CCRA
Tom Long	CCRA
Bill Soberick	Columbia County Commissioner
David Kovach	Columbia County Commissioner
Ed Wytovich	CCRA

Julie McMonagle, Director, Pennsylvania Environmental Council NE Region Office welcomed everyone to the meeting and gave a brief overview of the agenda and asked that everyone introduce themselves.

Julie then explained that the RCP includes extensive community involvement from the private and public sector. According to Julie this involvement is essential to the success of the RCP. Julie then informed everyone that an important aspect of the public participation component of the plan is surveying the local municipalities, general public, and key individuals in the community. Julie explained that in addition to these steering committee meetings, PEC sends out two different types of surveys and conducts key person interviews. Julie then distributed copies of the three survey forms (key person interview, municipal survey, and general community questionnaire) for the committees review and comments. Julie then explained the intended audience for each of the surveys and what we hope to accomplish via these surveys. She then went over the surveys and reviewed the specific questions on each.

According to Julie, the general questionnaire is an opportunity for community residents to provide their input and comments to the plan. Julie stated that we would like to disseminate the general community questionnaire via on-line web sites and perhaps local legislator newsletters. Cathy Haffner recommended that we include a watershed map with the surveys and also some text explaining just what a watershed is. Cathy and Michael Hewitt stated that they would put the survey on the CCRA and EPCAMR web sites. PEC will also post the survey on our web site.

According to Julie the municipal survey is a tool to gage the issues and concerns of the local municipalities with regards to the watershed and ultimately get a listing of projects for the Action Plan.

According to Julie, the type of organizations that are typically contacted for key person interviews include: county engineers, non-profits, sewer authorities, municipal officials, local businesses, and planning commissions. She then asked that the committee to think about whom else should be contacted for key person interviews and get that information back to PEC as soon as possible.

Julie reiterated that the Plan opens up funding for municipalities and other organizations to conduct their various projects listed in the plan. There is no regulatory component to the Plan just because a community develops a plan does not mean that they are subject to any additional state or federal regulations because of the existence of the Plan. Once the Plan is final and approved by DCNR, it will be available on the DCNR Rivers Registry web site. This web site lists all of the approved RCPs. The Plan must be listed on the registry for projects to qualify for future funding.

The committee provided PEC with the following information regarding the study area:

- Columbia County has an existing very active farmland preservation program and they would be an excellent source of information and guidance for this project.
- The National Resource Conservation Service (NRCS) is already doing riparian zone projects in the county.
- A buffer already exists along 95% of the tributaries in the watershed, but there is a need to educate the public about the importance of the buffer and not cutting it down to gain access to the creek; we need to maintain the existing buffer.
- There is currently legislation in the house regarding riparian zone buffers.
- There are 14 high quality exceptional value streams in the watershed and one stream is naturally acidic.

Julie then explained that she would like to conduct a session with the attendees regarding their vision, concerns and the assets of the watershed. Several broad topics were listed by Julie and then the committee was asked to brain storm regarding specific issues under each topic. The topics included education and outreach, historical, land resources, water resources, and recreation. The committee listed the following under each of these topics:

Education and outreach

- Education regarding what is a watershed
- Education regarding the importance of riparian buffers, including what to plant and the economic benefits of buffers.
- Providing public access to the creek
- Smart planning-development issues
- Stormwater management planning/ordinances
- Regional/inter-municipal planning
- Education of municipal officials regarding wind power and clean energy; zoning related issues

Historical

- Enhance the local Native American heritage
- Rebuild/repair covered bridges

- Local lumber history
- An historical curved tunnel on the railroad in Shumanstown
- Catawissa Dam
- Iron furnace and grist mill
- Restoration of the Opera House in Catawissa

Land Resources

- Need for regional planning
- Zoning
- Address the potential impacts of the proposed cargo airport
- Clean-up illegal dumpsites
- Address AMD; reduce infiltration into the mine pool at the headwaters of Catawissa Creek
- Continue to enhance existing farmland preservation program
- Remove invasive species
- Maintain the rural integrity of the watershed

Water Resources

- Maintain the existing riparian buffers
- Stormwater management
- Address AMD
- Put treatment systems on Catawissa and Green Mountain
- Improve on existing AMD treatment systems
- Remove invasive species

Recreation Resources

- Access to stream for recreation (i.e. fishing)
- Restore native fish
- Trail development – a rail bed runs from one end of the study area to the other and this would be a nice rail-to-trail
- Regional park development
- Tourism development and special events
- Access to State Gamelands (SGL 57 is in the study area)
- Expand Schuylkill County park system and provide a connection to Catawissa Creek

Julie concluded by saying that PEC is still looking for as much information as possible regarding the watershed and we are going to be looking to the steering committee and others for assistance in the data collection process. She reiterated that she would like the committee to review the questionnaires and get any comments back to PEC as soon as possible.

The next meeting date was scheduled for Wednesday, September 12, 2007 at 6:30 pm at the Ringtown Fire Company Building. PEC will contact the fire company and make the arrangements and send out a meeting notice as the date approaches.

The meeting adjourned at 7:30 pm.

CATAWISSA CREEK WATERSHED
RIVERS CONSERVATION PLAN PROJECT

Steering Committee Meeting
February 25, 2008
6:30 pm
Semanchyk's Restaurant
Ringtown Borough

Meeting Minutes

Meeting Attendees:

Janet Sweeney	Pennsylvania Environmental Council
Angela Vitkoski	Pennsylvania Environmental Council
Cathy Haffner	Columbia County Conservation District
Dan Grow	Schuylkill County/CCRA
Michael Hewitt	Luzerne Conservation District/EPCAMR
Carly Trumann	Luzerne County Conservation District/EPCAMR
Rick Roulin	Ringtown Borough Sewer Authority
Vickie Dash	CCRA
Larry Dash	CCRA
Cheryl Brobst	Columbia County Conservation District
Maryruth Wagner	Columbia County Conservation District
Jim Gotta	CCRA
Barbara Barusik	CCRA
Ed Wytovich	CCRA

Janet Sweeney, Project Manager, Pennsylvania Environmental Council NE Region Office welcomed everyone to the meeting and gave a brief overview of the agenda and asked that everyone introduce themselves.

Janet Sweeney then explained the Survey process that PEC has been conducting for the study area. Municipal Surveys were sent to each municipality in the study area which includes: Banks Township in Carbon County; Beaver Township, Catawissa Borough, Catawissa Township, Conyngham Township, Franklin Township, Main Township, Mifflin Township and Roaring Creek Township in Columbia County; Black Creek, Township and Hazle Township in Luzerne County; Delano Township, East Union Township, Kline Township, Mahanoy Township, McAdoo Borough, North Union Township, Ringtown Borough, Union Township, and West Mahanoy Township in Schuylkill County.

Public Surveys were distributed at meetings and published on the following websites: www.catawissacreek.org, www.pecpa.org, www.orangewaternetwork.org. The public survey was also published in the (LIST PAPER) and was made available on their website.

We received 13 municipal surveys and 3 public surveys. Janet discussed the results of the surveys received to date. (Preliminary Results Attached)

Janet then reviewed the list of contacts for the key person interviews and asked the committee for comment. The committee suggested adding Rotary Clubs, Lions Clubs, Recreation Committees (Ringtown), Scouting Groups and American Legions. Janet then asked the committee to please let

her know if they have any contact information for anyone on the list that she does not have. PEC will begin the process of key person interviews in the coming weeks.

Michael Hewitt of the Luzerne Conservation District/Eastern Pennsylvania Coalition of Abandoned Mine Reclamation presented the committee with the maps that have been prepared to date for comment. All four maps presented include watershed boundaries, lakes, reservoirs, streams, roads county boundaries, municipal boundaries with a locational map at the bottom of each map with scales.

The first map was the Open Space and Recreation Map which showed the state parks, state game lands, trails, active and abandoned rail roads, forest hubs (Eco score to 40) (Define), and boat access points. The committee discussed the following: Double-check the area of State Game Lands-should be 11, 060 acres; Trexler Creek and Roaring Creek Headwaters.

The second map was the Topography which showed DEM (digital elevation map high 2000-2500), steep slopes (Luzerne and Columbia complete, still adding in for Schuylkill), major rivers, streams are labeled, major state road are labeled. The committee discussed the following: Continue gathering information on Schuylkill data.

The third map was the Sub-Watershed which showed the lakes, streams, county boundaries and roads. The committee discussed the following: List of streams on map including Reservoir #8. (A discussion ensued regarding Mine Gap Run pollution-303D, could be due to pH, acidic bug, natural run-off, storm water drainage, etc.)

The fourth map was the Geology Mine Lands which showed geological formations, reclaimed, and active coal and now coal. Map looks good. No Comments.

Michael stated that he met with Julie McMonagle and Janet Sweeney of the Pennsylvania Environmental Council, at which time they suggested that the following maps for the study area be created also:

- Land Use and Data;
- Fishery Classification;
- Agriculture;
- Polluted Waters.

The committee agreed on the importance of these maps to be included and did not have any other suggestions for any other maps to be created.

The committee discussed the next meeting. It was decided that the committee would meet again on April 30th and that the meeting would be held at Eagle Rock passive treatment plant. Jim Gotta would check the date and make the arrangements for the committee and contact Janet Sweeney.

Addendum: It was later determined that a meeting could not be held on June 30th due to a conflict with PEC. The next meeting will be held on …. at …..
We will reschedule the site visit to Eagle Rock, hopefully for the June meeting.

CATAWISSA CREEK WATERSHED
RIVERS CONSERVATION PLAN PROJECT

Steering Committee Meeting
February 25, 2009
6:30 pm
Beaver Township Fire Hall
Beaver Township

Meeting Minutes

Meeting Attendees:

Janet Sweeney	Pennsylvania Environmental Council
Angela Vitkoski	Pennsylvania Environmental Council
Cathy Haffner	Columbia County Conservation District
Dan Grow	Schuylkill County/CCRA
Michael Hewitt	Luzerne Conservation District/EPCAMR
Rick Roulin	Ringtown Borough Sewer Authority
Cheryl Brobst	Columbia County Conservation District
Jim Gotta	CCRA
Ed Wytovich	CCRA
Ken Ikeda	
Mike Fulton	
Len Schumack	
Russel Levan	
Barbara Bartusik	
Dave Barsky	

Janet Sweeney, Project Manager, Pennsylvania Environmental Council NE Region Office discussed the background and history of the Catawissa Rivers Conservation Plan project. Handouts of the RCP fact sheet and the DCNR fact sheet were given.

Janet Sweeney then explained that we are currently focused on obtaining Action Plan Projects and the importance of having all potential projects in the study area included in the plan. She explained the funding opportunities open to projects listed in the RCP. Janet distributed to all in attendance the draft action plan table which included information gathered from municipal surveys and the Schuylkill County Comp Plan

.

Janet asked CCRA if they have any projects.

Janet discussed the DCNR map and spreadsheet listing all DCNR RCP's and Implemented Projects.

Janet discussed and distributed a listing she compiled of other types of potential funding and the Survey process that PEC has been conducting for the study area. Municipal Surveys were sent to each municipality in the study area which includes: Banks Township in Carbon County; Beaver Township, Catawissa Borough, Catawissa Township, Conyngham Township, Franklin Township, Main Township, Mifflin Township and Roaring Creek Township in Columbia County; Black Creek, Township and Hazle Township in Luzerne County; Delano Township, East Union Township, Kline Township, Mahanoy Township, McAdoo Borough, North Union Township, Ringtown Borough, Union Township, and West Mahanoy Township in Schuylkill County.

Public Surveys were distributed at meetings and published on the following websites: www.catawissacreek.org, www.pecpa.org, www.orangewaternetwork.org. The public survey was also published in the (LIST PAPER) and was made available on their website.

Janet then reviewed the list of contacts for the key person interviews and handed out a copy of the questions to those in attendance. Janet asked all in attendance if they were interested in completing a Key Person interview, to please review the questions on the survey handed out and either fill out the form and return to PEC, or contact PEC to complete the Key Person Interview via phone with PEC staff. She also asked if anyone knew of anyone else that should be included as a Key Person Interview to please call her with their contact information. PEC will begin the process of key person interviews in the coming weeks.

Michael Hewitt of the Luzerne Conservation District/Eastern Pennsylvania Coalition of Abandoned Mine Reclamation presented the committee with the maps that have been prepared to date for comment. All four maps presented include watershed boundaries, lakes, reservoirs, streams, roads, county boundaries, municipal boundaries with a locational map at the bottom of each map with scales.

The first map was the Open Space and Recreation Map which showed the state parks, state game lands, trails, active and abandoned rail roads, forest hubs (Eco score to 40) (Define), and boat access points. The committee discussed the following: Double-check the area of State Game Lands-should be 11, 060 acres; Trexler Creek and Roaring Creek Headwaters.

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The third map was the Sub-Watershed which showed the lakes, streams, county boundaries and roads. The committee discussed the following: List of streams on map including Reservoir #8. (A discussion ensued regarding Mine Gap Run pollution-303D, could be due to pH, acidic bug, natural run-off, storm water drainage, etc.)

The fourth map was the Geology Mine Lands which showed geological formations, reclaimed, and active coal and now coal. Map looks good. No Comments.

Michael stated that he met with Julie McMonagle and Janet Sweeney of the Pennsylvania Environmental Council, at which time they suggested that the following maps for the study area be created also:

- Land Use and Data;
- Fishery Classification;
- Agriculture;
- Polluted Waters.

The committee agreed on the importance of these maps to be included and did not have any other suggestions for any other maps to be created.

PEC will contact the committee regarding the next meeting.

CATAWISSA CREEK WATERSHED
RIVERS CONSERVATION PLAN PROJECT

Steering Committee Meeting
December 16, 2009
6:00 pm
Beaver Township Fire Hall
Beaver Township

Meeting Minutes

Meeting Attendees:

Jim Gotta	CCRA
Arnold Hayle	CCRA
Margie Hayle	CCRA
Ed Wytovich	CCRA
Cheryl Brobst	Columbia County Conservation District
Cathy Haffner	Columbia County Conservation District
Mary Wagner	Columbia County Conservation District
Michael Hewitt	Luzerne Conservation District/EPCAMR
Janet Sweeney	Pennsylvania Environmental Council
Angela Vitkoski	Pennsylvania Environmental Council

Janet Sweeney, Project Manager, Pennsylvania Environmental Council NE Regional Office discussed the background and history of the Catawissa Rivers Conservation Plan project. Handouts of the RCP fact sheet and the DCNR fact sheet were given.

Janet Sweeney then explained that currently the report is basically completed and in draft form with the exception of the completion of the action plan portion. She then handed out the Executive Summary to all in attendance and asked if anyone has comments to please get them to her. She also gave a report on the results of the compilation of the received Municipal Surveys.

Janet discussed the necessity of submitting Action Plan Projects and handed out the input form for the Action Plan Projects along with the current table of the action plans that have been submitted to date. She explained that the current focus is obtaining more action plans to include in the report. Janet explained some of the potential funding for projects and handed out the report's table of potential funding sources. Everyone was asked to submit their action plans to PEC by January 15, 2010.

Janet also indicated that we would still like to have more Key Person Interviews included in the plan and asked all in attendance if they were interested in completing a Key Person interview, to please review the questions on the survey handed out and either fill out the form and return to PEC, or contact PEC to complete the Key Person Interview via phone with PEC staff. She also asked, if anyone knew of anyone else that should be included as a Key Person Interview, to please call her with their contact information.

Michael Hewitt of the Eastern Pennsylvania Coalition of Abandoned Mine Reclamation (EPCAMR) presented the committee with the maps that have been prepared to date for comment. All of the maps presented include watershed boundaries, lakes, reservoirs, streams, roads, county boundaries, municipal boundaries with a locational map at the bottom of each map with scales.

The maps presented consisted of the following: Base; Topography; Sub-Watershed; Surface Geology/Mine Lands; Stream Classification; Land Use/Zoning; Generalized Soils/Steep Slopes; Open Space and Recreation; Flood Plains/Wetlands; Historic/Cultural; Population Density; Water Quality Before Treatment; Water Quality After Treatment; PA DEP Regulated Facilities; & project Proposal/Action Plan Maps. (EPCAMR's detailed listing of the maps is attached)

Michael brought two mark-up maps in which everyone was asked to mark up with the action plans they wanted listed in the plan. Several committee members made suggestions and some action plans were marked up on the map. After all feed back is received from the committee on action plans by January 15th, 2010 – Michael will then use this mark-up map along with submitted action plans to create a map indicating all of the Catawissa Creek RCP Action Plans.

PEC will contact the committee regarding the next meeting.

Appendix D

Municipal Surveys

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality BANKS TWP

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☑	fishing
☐	☑	hunting
☐	☑	bicycling
☐	☑	hiking/walking
☐	☑	protection of habitat in watershed
☐	☑	historic preservation
☐	☑	stream bank erosion
☐	☑	improved water quality
☐	☑	protected open space
☐	☑	wetland protection
☐	☑	eco-tourism opportunities
☐	☑	scenic beauty
☐	☑	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☑	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	☑	☐
d. Inter-municipal Environmental Advisory Council	☑	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☐	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☒
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste.		

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box (**if one or more of the listed examples are particularly important please circle them**).

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☒	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☒	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☒	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☒	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☒	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☒
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☒

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): CHARLES J SCHALLES

Name (council president/supervisor chairman): NICK PETROLE

Address: Box 231 (street) MESCHCW (city) PA (state) 18254 (zip)

E-mail: BTBS@PTD.NET Phone: _____ Fax: 570-501 1849

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Roaring Twp / Columbia Co.

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☑	fishing
☐	☑	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☐	☑	protection of habitat in watershed
☐	☐	historic preservation
☐	☑	stream bank erosion
☐	☑	improved water quality
☐	☑	protected open space
☐	☑	wetland protection
☐	☐	eco-tourism opportunities
☐	☑	scenic beauty
☐	☑	acid mine drainage
☐	☑	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☑	☐
b. Individual municipalities, with as needed informal cooperation	☑	☐
c. Joint municipal body, such as a Commission or Authority	☑	☐
d. Inter-municipal Environmental Advisory Council	☑	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☑	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☑	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☑
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☑
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☑
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☑	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☑
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☑
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☑

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☑	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☑
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
Streambank Restoration / Flood Control	?	?
Water Quality / Mine acid drainage	?	?
Scenic beauty preservation / Open Space	?	?

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Richard King - Secretary

Name (council president/supervisor chairman) Chuck Henry

Address: 472 Beaver Valley Rd. Bloomsburg Pa. 17815
street city state zip

E-mail: — Phone: (570) 784-3046 Fax: —

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Catawissa Borough

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☒	☒	fishing
☐	☒	hunting
☒	☒	bicycling
☒	☒	hiking/walking
☐	☒	protection of habitat in watershed
☐	☒	historic preservation
☒	☐	stream bank erosion
☐	☒	improved water quality
☐	☒	protected open space
☐	☒	wetland protection
☐	☒	eco-tourism opportunities
☒	☒	scenic beauty
☐	☒	acid mine drainage
☒	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☒	☐
b. Individual municipalities, with as needed informal cooperation	☐	☒
c. Joint municipal body, such as a Commission or Authority	☒	☐
d. Inter-municipal Environmental Advisory Council	☒	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☒
f. New nonprofit association	☐	☒
g. Existing nonprofit. If so, which one: _____	☒	☐
h. Catawissa Creek Restoration Association	☒	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☒	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☒
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☒
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☒	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☒
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☒	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☒

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☒
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
stream bank restoration & clearing waterway of debris	75 - 100 thousand	2 - 5 years
park, trail & bridge across catawissa creek - hiking	150 - 200 thousand	3 - 6 years
river run park with small boat launch	40 - 50 thousand	1 - 3 years

5. Other thoughts or comments?

The possibility of this project moving forward with cooperation from all agency is exciting and will provide a most needed resource for our communities. This action has possibilities way beyond the obvious to preserve the watershed for future generations to enjoy. Catawissa Borough is committed to improving the environment for its citizens to enjoy.

PLEASE COMPLETE

Name (secretary): Kimberly Rhoades

Name (council president/supervisor chairman) George J. Romania

Address: P.O. Box 44 307 MAIN ST. Catawissa PA 17820
street city state zip

E-mail: Catabaro@verizon.net Phone: (570)356-2561 Fax: (570)356-2794

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality CATAWISSA TOWNSHIP

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☒	fishing
☐	☐	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☐	☒	protection of habitat in watershed
☐	☐	historic preservation
☒	☒	stream bank erosion
☒	☒	improved water quality
☐	☐	protected open space
☐	☒	wetland protection
☐	☐	eco-tourism opportunities
☐	☒	scenic beauty
☐	☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☐	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	☒	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☒	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☒	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☒	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☒	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☒
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☒	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☒	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☒	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years**? In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
STREAMBANK STABILIZATION	75,000	
STORMWATER RUNOFF	50,000	

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): MELISSA WEBER

Name (council president/supervisor chairman) WILLIAM NUSS

Address: 153 OLD READING RD CATAWISSA PA 17820
street city state zip

E-mail: _____ Phone: 570-356-2686 Fax: 570-356-2686

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Conyngham Twp – Columbia Co.

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☒	fishing
☐	☒	hunting
☐	☒	bicycling
☐	☒	hiking/walking
☐	☐	protection of habitat in watershed
☐	☐	historic preservation
☐	☐	stream bank erosion
☐	☐	improved water quality
☐	☐	protected open space
☐	☐	wetland protection
☐	☐	eco-tourism opportunities
☐	☐	scenic beauty
☐	☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☒	☐
b. Individual municipalities, with as needed informal cooperation	☒	☐
c. Joint municipal body, such as a Commission or Authority	☒	☐
d. Inter-municipal Environmental Advisory Council	☒	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☒
f. New nonprofit association	☐	☒
g. Existing nonprofit. If so, which one: _____	☐	☒
h. Catawissa Creek Restoration Association	☐	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☒	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☒	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☒
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☐	☒
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☒
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☒	☐	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☒

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☒
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste.		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary):_____

Name (council president/supervisor chairman) James Tarleci

Address: PO Box 10 Wilburton PA 17888
street city state zip

E-mail:_____ Phone:_____ Fax:_____

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality: Franklin Twp Col Co_____

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	**For the Entire Watershed**	
☐	☐	fishing
☐	☐	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☐	☐	protection of habitat in watershed
☐	☐	historic preservation
X ☐	☐	stream bank erosion
☐	☐	improved water quality
☐	☐	protected open space
☐	☐	wetland protection
☐	☐	eco-tourism opportunities
X ☐	☐	scenic beauty
☐	X ☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	**No**
a. Is management necessary?	☐	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	X ☐	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☐	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	X
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☐	X
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	X
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	X	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☐
Other Very little Franklin Twp water runs into Catawissa Creek			☐	☐ ☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years**? In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
Stream bank restoration	**$1000.00**	**Next 24 months**

5. Other thoughts or comments?

The tributary in Franklin Twp is very close to Long Woods Road and is washing away the road side in some places.

PLEASE COMPLETE

Name (secretary): Richard Fetterman

Name (council president/supervisor chairman) Edwin Lease

Address: 277 Long Woods Road, Catawissa PA 17820

e-mail: eflease@ptd.net Phone:570-356-2070 Fax:570-356-2071

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Roaring Creek Twp

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☒	☒	fishing
☒	☒	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☒	☒	protection of habitat in watershed
☒	☒	historic preservation
☒	☒	stream bank erosion
☒	☒	improved water quality
☐	☐	protected open space
☐	☐	wetland protection
☐	☐	eco-tourism opportunities
☒	☒	scenic beauty
☐	☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☒	☐
b. Individual municipalities, with as needed informal cooperation	☒	☐
c. Joint municipal body, such as a Commission or Authority	☐	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☒
g. Existing nonprofit. If so, which one: _____	☐	☒
h. Catawissa Creek Restoration Association	☒	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them).**

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☒	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☒	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☒	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☒	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☒
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☒
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☒	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☒	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): MELISSA WEBER

Name (council president/supervisor chairman) DANIEL KEHOE

Address: 153 OLD READING RD CATAWISSA PA 17820
street city state zip

E-mail: _____ Phone: 570-356-2686 Fax: 570-356-2686

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Hazle Township

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☑	☐	fishing
☑	☐	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☑	☐	protection of habitat in watershed
☐	☐	historic preservation
☑	☐	stream bank erosion
☑	☐	improved water quality
☑	☐	protected open space
☑	☐	wetland protection
☑	☐	eco-tourism opportunities
☑	☐	scenic beauty
☑	☐	acid mine drainage
☐	☑	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☐	☑
b. Individual municipalities, with as needed informal cooperation	☑	☐
c. Joint municipal body, such as a Commission or Authority	☐	☑
d. Inter-municipal Environmental Advisory Council	☑	☑
e. County level agency. If so, which one: (i.e. Planning) Availability	☑	☐
f. New nonprofit association	☐	☑
g. Existing nonprofit. If so, which one: _____	☐	☑
h. Catawissa Creek Restoration Association	☑	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☑	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☑	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☑	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☑	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☑	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☑	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☑	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☑
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☑	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste.		
Due To Limited		
Time Frame (did not get 1st Letter)		
Cost & Time Table) will Be Sent		
To you IF you Can give us More		
Time. Please Send Letter To us		
STATing As So.		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Francis E. Boyarski

Name (council president/supervisor chairman) Supervisor (Sec.T. - Treasurer)

Address: PO Box 506 (street) Harleigh (city) PA (state) 18225 (zip)

E-mail: Supervisors@HazleTwp.Com Phone: 570-455-2039 Fax: 570-455-6184

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality East Union Township

1. Which of these benefits and uses would you like to see emphasized in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☐	fishing
☐	☐	hunting
☐	☐	bicycling
☑	☑	hiking/walking
☐	☐	protection of habitat in watershed
☐	☐	historic preservation
☐	☐	stream bank erosion
☑	☑	improved water quality
☑	☑	protected open space
☑	☑	wetland protection
☐	☐	eco-tourism opportunities
☑	☑	scenic beauty
☑	☑	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☐	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	☑	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☐	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them).**

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☑	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☑	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☑
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☑	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☑	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☑
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☑

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☑	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☑	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
stormwater improvement	$45,000	5 - 10 years
water quality monitoring	$20,000	< 5 years
illegal waste cleanup	$10,000	< 5 years

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Annie Jeane

Name (council president/supervisor chairman) Jon Ochenz

Address: P.O.Box 235 (street) Shepptn (city) PA (state) 18248 (zip)

E-mail: eutpeshenhjts.net Phone: 570-384-0739 Fax: 570-384-4257

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Kline Township, Schuylkill County

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☐	fishing
☐	☐	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☐	☑	protection of habitat in watershed
☐	☐	historic preservation
☐	☑	stream bank erosion
☐	☐	improved water quality
☐	☐	protected open space
☐	☑	wetland protection
☐	☐	eco-tourism opportunities
☐	☐	scenic beauty
☐	☑	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☑	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	☐	☐
d. Inter-municipal Environmental Advisory Council	☑	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☐	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☑	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☑	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☑	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☑
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☑
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years**? In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste.		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Jean Wargo

Name (council president/supervisor chairman) Carmen Cera

Address: 102 Haddock Rd McAdoo Pa. 18237
street city state zip

E-mail: _____ Phone: 570-929-1775 Fax: 570-929-1362

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Mahanoy Township

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☑	fishing
☐	☑	hunting
☐	☑	bicycling
☐	☑	hiking/walking
☐	☑	protection of habitat in watershed
☐	☑	historic preservation
☐	☑	stream bank erosion
☐	☑	improved water quality
☐	☑	protected open space
☐	☑	wetland protection
☐	☑	eco-tourism opportunities
☐	☑	scenic beauty
☐	☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☑	☐
b. Individual municipalities, with as needed informal cooperation	☐	☐
c. Joint municipal body, such as a Commission or Authority	☐	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☑	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary):_____

Name (council president/supervisor chairman)_____

Address:_____
street city state zip

E-mail:_____ Phone:_____ Fax:_____

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Madison Borough

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☒	fishing
☐	☒	hunting
☒	☒	bicycling
☒	☒	hiking/walking
☐	☒	protection of habitat in watershed
☒	☒	historic preservation
☒	☒	stream bank erosion
☐	☒	improved water quality
☒	☒	protected open space
☒	☒	wetland protection
☒	☒	eco-tourism opportunities
☒	☒	scenic beauty
☐	☒	acid mine drainage
☐	☒	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☐	☒
b. Individual municipalities, with as needed informal cooperation	☐	☒
c. Joint municipal body, such as a Commission or Authority	☐	☒
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☒	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box (**if one or more of the listed examples are particularly important please circle them**).

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☒	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☒	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☐	☒
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☐	☒
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☒	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☐	☒
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☒

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☒	☐
Other _____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
Flood Control Walking Trail	25,000.00	one, 2 yrs
Curb & INLET at end off D. ST	3,500.00	1 years

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Mary Beth Bahney

Name (council president/supervisor chairman) Joseph Madachuck

Address: 49 N Sheridan St., McAdoo PA 18237
street city state zip

E-mail: marybb@ptd.net Phone: 570-929-1182 Fax: 570-929-2479

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality North Union Township

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☑	fishing
☐	☑	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☐	☐	protection of habitat in watershed
☐	☐	historic preservation
☑	☐	stream bank erosion
☐	☑	improved water quality
☐	☐	protected open space
☐	☐	wetland protection
☐	☑	eco-tourism opportunities
☐	☑	scenic beauty
☑	☐	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☐	☐
b. Individual municipalities, with as needed informal cooperation	☑	☐
c. Joint municipal body, such as a Commission or Authority	☐	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☑	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☑	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box (**if one or more of the listed examples are particularly important please circle them**).

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☐	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☐	☑	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☑	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☑	☐	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☑	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☑

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☑	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☑	☐
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
LIKE TO BUT DON'T HAVE FINANCES OR VOLUNTEERS		
WORKSHOPS FOR KIDS		
STREAMSIDE PLANTING		
WATER QUALITY MONITORING		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): DIANNE THOMPSON

Name (council president/supervisor chairman) GARY CROLL, CHAIRMAN

Address: 185 MAHANOY ST (street) PO BOX 657 (city) NUREMBERG (state) PA (zip) 18241

E-mail: nutwpsup@gmail.com Phone: 570-384-3611 Fax: 570 384 0488

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Ringtown Borough

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☐	☑	fishing
☐	☑	hunting
☐	☐	bicycling
☑	☑	hiking/walking
☑	☑	protection of habitat in watershed
☑	☑	historic preservation
☑	☑	stream bank erosion
☐	☑	improved water quality
☑	☑	protected open space
☑	☑	wetland protection
☐	☐	eco-tourism opportunities
☐	☑	scenic beauty
☐	☑	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☑	☐
b. Individual municipalities, with as needed informal cooperation	☐	☑
c. Joint municipal body, such as a Commission or Authority	☐	☑
d. Inter-municipal Environmental Advisory Council	☑	☐
e. County level agency. If so, which one: (i.e. Planning) SCHUYLKILL COUNTY CONSERVATION	☑	☐
f. New nonprofit association	☐	☑
g. Existing nonprofit. If so, which one: _____	☐	☑
h. Catawissa Creek Restoration Association	☐	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☐	☐	☑	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☑	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☑	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☑	☐	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☑	☐
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☐	☑	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☑	☐	☐

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☐	☒
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☑	☐
Other_____	☐	☐	☐	

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years?** In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		
STORMWATER RUN OFF	$10,000.	2008-2009
WATER QUALITY MONITOR	5,000	2007
EDUCATIONAL WORKSHOP	UNKNOWN	2009-2010
CLEAN-UP ILLEGAL DUMPING	UNKNOWN	2009-2010

5. Other thoughts or comments?

RINGTOWN BOROUGH HAS BEGN TRYING TO GET NEIGHBORING UNION TOWNSHIP TO UNDERTAKE A STORMWATER MANAGEMENT STUDY. ANY HELP PUSHING THIS FORWARD WOULD BE APPRECIATED.

PLEASE COMPLETE

Name (secretary): Angel Mays

Name (council president/supervisor chairman) Julian Milewski

Address: 31 S. Center St. P.O. Box 350 Ringtown Pa 17967
street city state zip

E-mail: ringboro@epix.net Phone: 570-889-3095 Fax: 570-889-5082

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Catawissa Creek Watershed
Rivers Conservation Plan

Municipal Questionnaire

Municipality Township of Union, Schuylkill County

1. Which of these benefits and uses would you like to see **emphasized** in the Catawissa Creek Watershed Rivers Conservation Plan? Check box of any that apply-either to your individual municipality or the entire watershed.

In Your Municipality	For the Entire Watershed	
☒	☒	fishing
☐	☐	hunting
☐	☐	bicycling
☐	☐	hiking/walking
☒	☒	protection of habitat in watershed
☐	☐	historic preservation
☐	☒	stream bank erosion
☒	☒	improved water quality
☐	☐	protected open space
☐	☐	wetland protection
☐	☒	eco-tourism opportunities
☒	☒	scenic beauty
☐	☒	acid mine drainage
☐	☐	combined sewers
☐	☐	_____(other)
☐	☐	_____(other)

2. Successful implementation of the plan's recommendations may lead to situations where inter-municipal cooperation will be important. Please indicate below your preferences in this regard. You may indicate more than one "yes".

	Yes	No
a. Is management necessary?	☒	☐
b. Individual municipalities, with as needed informal cooperation	☒	☐
c. Joint municipal body, such as a Commission or Authority	☐	☐
d. Inter-municipal Environmental Advisory Council	☐	☐
e. County level agency. If so, which one: (i.e. Planning) _____	☐	☐
f. New nonprofit association	☐	☐
g. Existing nonprofit. If so, which one: _____	☐	☐
h. Catawissa Creek Restoration Association	☒	☐

3. Please consider the list of important land and water protection issues below. Indicate which are the most important by checking the box **(if one or more of the listed examples are particularly important please circle them)**.

	Not Important	Somewhat Important	Important	Very Important
Cultural Resource Protection (ex: preservation of important industrial agricultural, or architectural artifacts and scenery/viewsheds)	☒	☐	☐	☐
Farmland Protection (ex: purchase of development rights, maintaining a farm economy, conflicts with residential neighbors)	☐	☐	☒	☐
Habitat Protection and Enhancement (ex: loss of streamside forests, protection of rare species and habitats, stabilization of stream banks, and removal of invasive vegetation)	☐	☒	☐	☐
Land Ownership, Management and Stewardship (ex: management of common open spaces by homeowners' associations, management of public parks, litter/dumping, unauthorized use of private property, private and institutional land management)	☐	☐	☒	☐
Land Development (ex: inappropriate development near stream, inadequate controls on density, effective regulations controlling character and appearance of development, lack of desired development)	☐	☐	☐	☒
Stormwaters/Flooding (ex: floodwater damage, development in floodplain, stormwater management infrastructure)	☐	☒	☐	☐
Recreation (ex: fishing access/impacts, hunting, general public access, public trail systems, increasing public park acreage, connecting neighborhoods to streamside open space)	☐	☐	☐	☒

	Not Important	Somewhat Important	Important	Very Important
State and Federal Regulations/Funding (ex: sewage treatment plants, hazardous wastes industrial discharge, brownfields, wetlands, adequacy of enforcement, sufficiency of funding)	☐	☐	☒	☐
Stream Water Quality and Quantity (ex: acidity, stream bank erosion, dams, ground water quality, non-point source pollution point source pollution, sewage discharge, acid mine drainage, drought management plan)	☐	☐	☐	☒
Other_____	☐	☐	☐	☐

4. Please indicate in the space provided below **at least 3 to 5 projects related to this rivers conservation plan that your municipality would like to undertake within the next 5-10 years**? In addition, please include an estimate of the approximate cost and time frame of these projects.

PROJECT DESCRIPTION	ESTIMATED COST	ESTIMATED IMPLEMENTATION TIMETABLE
Example projects: Streambank restoration; stormwater runoff; AMD issues; farmland and open space preservation; park and trail development; preservation of historic buildings; educational workshops and seminars; streamside plantings; water quality monitoring; clean up illegally dumped waste		

5. Other thoughts or comments?

PLEASE COMPLETE

Name (secretary): Robert F. Murray

Name (council president/supervisor chairman) ~~Township of~~ Union Edward Hart, Chairman

Address: _____ Ringtown PA 17967
street city state zip

E-mail: _____ Phone: 570-889-5797 Fax: _____

Please send this questionnaire back to PEC via fax or mail to:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, PA 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: jsweeney@pecpa.org

Appendix E

Questionnaire Surveys

Catawissa Creek Watershed Rivers Conservation Plan

Questionnaire

1. What County and Municipality do you live in? Schuylkill, Ringtown

2. Do you live in the Catawissa Creek Watershed? ☒ Yes ☐ No

3. Do you have a water body or wet area on your property? ☐ Yes ☒ No

   If Yes, what is it? (If No, skip to question # 5)

   ☐ River
   ☐ Wetland
   ☐ Spring
   ☐ Small Stream/Creek (<4' wide)
   ☐ Large Stream/Creek (>4' wide)
   ☐ Pond/Lake

   Does this water body have a specific name? *(ex. Catawissa Creek)* _____

4. Recently scientists have learned that the presence of a band of natural vegetation (such as trees and brush) along a water body (called a buffer) can absorb storm water and pollutants and decrease erosion. Do you have a water related buffer (grass alone doesn't count) (Skip question if you do not have a water body on your property)

   ☐ Yes ☐ No

   How wide is it?

   ☐ Less than 5 feet ☐ 5-10 feet ☐ 10-20 feet ☐ Over 20 feet

5. Living beside water can have benefits. Do you consider any of the following water related advantages to be a benefit to you (If you do not have a water body on your property please answer anyway)

   ☐ Scenery
   ☒ Wildlife
   ☐ Play area for children
   ☐ Fishing
   ☒ Increased property value
   ☐ Walking

Other_____

6. Living beside the Catawissa Creek can have drawbacks. Have any of the following issues caused you problems or caused problems in the watershed that you are aware of?

   ☐ Flooding
   ☐ Eroding Banks
   ☐ Wet Basement
   ☐ Water Pollution
   ☐ Trespassers Liability
   ☐ Trash in Stream or Bank (litter)
   ☐ Sewer lines/outfalls
   ☐ Sinkholes

Other_____

7. Local municipalities are responsible for most of the regulation that can help protect their creeks and water bodies. In your opinion are your municipality's ordinances:

☐ Adequately protective
☒ Not protective enough
☐ Too restrictive
☐ Don't know
☐ No opinion

8. Would you favor having all the municipalities in the Catawissa Creek Watershed work together with county officials, landowners, businesses, industry and the Catawissa Creek Restoration Association to improve the quality of the watershed through the Rivers Conservation Plan?

☒ Yes ☐ No

9. What would be the most important recommendation(s) to include in a plan for conserving the Catawissa Creek Watershed? *(Ex. address AMD; address stormwater erosion; protect open space and farmland; conduct education and outreach; preserve historic structures.)*

_____Open access for recreation - canoeing, fishing_____

OPTIONAL

If you are interested in receiving more information about the rivers conservation plan as the project progresses please complete the following:

Name: Phone: Richard Roulin 570-889-5264

Address: PO Box 24

E-Mail: RMR5002@epix.net

For more information, please contact:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, Pa 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: sweeney@pecnepa.org

Catawissa Creek Watershed Rivers Conservation Plan

Questionnaire

1. What County and Municipality do you live in? Ringtown & Union Twp.- Schuylkill County

2. Do you live in the Catawissa Creek Watershed? ☒Yes ☐No

3. Do you have a water body or wet area on your property? ☒Yes ☐No

   If Yes, what is it? (If No, skip to question # 5)

   ☐River
   ☐Wetland
   ☒Spring
   ☒Small Stream/Creek (<4' wide)
   ☐Large Stream/Creek (>4' wide)
   ☒Pond/Lake

   Does this water body have a specific name? *(ex. Catawissa Creek)* Trexler Run

4. Recently scientists have learned that the presence of a band of natural vegetation (such as trees and brush) along a water body (called a buffer) can absorb storm water and pollutants and decrease erosion. Do you have a water related buffer (grass alone doesn't count) (Skip question if you do not have a water body on your property)

   ☒Yes ☐No

   How wide is it?

   ☐Less than 5 feet ☐5-10 feet ☒10-20 feet ☐Over 20 feet

5. Living beside water can have benefits. Do you consider any of the following water related advantages to be a benefit to you (If you do not have a water body on your property please answer anyway)

   ☒Scenery
   ☒Wildlife
   ☒Play area for children
   ☒Fishing
   ☒Increased property value
   ☒Walking

   Other Irrgation

6. Living beside the Catawissa Creek can have drawbacks. Have any of the following issues caused you problems or caused problems in the watershed that you are aware of?

   ☒Flooding
   ☒Eroding Banks
   ☐Wet Basement
   ☐Water Pollution
   ☐Trespassers Liability
   ☒Trash in Stream or Bank (litter)
   ☐Sewer lines/outfalls
   ☐Sinkholes

   Other Bridge wash outs

7. Local municipalities are responsible for most of the regulation that can help protect their creeks and water bodies. In your opinion are your municipality's ordinances:

☐ Adequately protective
☒ Not protective enough
☐ Too restrictive
☐ Don't know
☐ No opinion

8. Would you favor having all the municipalities in the Catawissa Creek Watershed work together with county officials, landowners, businesses, industry and the Catawissa Creek Restoration Association to improve the quality of the watershed through the Rivers Conservation Plan?

☒ Yes ☐ No

9. What would be the most important recommendation(s) to include in a plan for conserving the Catawissa Creek Watershed? *(Ex. address AMD; address stormwater erosion; protect open space and farmland; conduct education and outreach; preserve historic structures.)*

_1) AMD Treatment & elimination
2) Wildcat sseptic systems
3) Illegal Dumping

OPTIONAL

If you are interested in receiving more information about the rivers conservation plan as the project progresses please complete the following:

Name: Phone: Dan Grow CCRA V.P.

Address: _____

E-Mail: _____

For more information, please contact:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, Pa 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: sweeney@pecnepa.org

Catawissa Creek Watershed Rivers Conservation Plan

Questionnaire

1. What County and Municipality do you live in? Franklin

2. Do you live in the Catawissa Creek Watershed? ☐Yes ☒No

3. Do you have a water body or wet area on your property? ☐Yes ☒No

   If Yes, what is it? (If No, skip to question # 5)

   ☐River
   ☐Wetland
   ☐Spring
   ☐Small Stream/Creek (<4' wide)
   ☐Large Stream/Creek (>4' wide)
   ☐Pond/Lake

   Does this water body have a specific name? *(ex. Catawissa Creek)* _____

4. Recently scientists have learned that the presence of a band of natural vegetation (such as trees and brush) along a water body (called a buffer) can absorb storm water and pollutants and decrease erosion. Do you have a water related buffer (grass alone doesn't count) (Skip question if you do not have a water body on your property)

   ☐Yes ☐No

   How wide is it?

   ☐Less than 5 feet ☐5-10 feet ☐10-20 feet ☐Over 20 feet

5. Living beside water can have benefits. Do you consider any of the following water related advantages to be a benefit to you (If you do not have a water body on your property please answer anyway)

   ☒Scenery
   ☒Wildlife
   ☐Play area for children
   ☐Fishing
   ☐Increased property value
   ☒Walking

Other_____

6. Living beside the Catawissa Creek can have drawbacks. Have any of the following issues caused you problems or caused problems in the watershed that you are aware of?

   ☐Flooding
   ☒Eroding Banks
   ☐Wet Basement
   ☐Water Pollution
   ☐Trespassers Liability
   ☐Trash in Stream or Bank (litter)
   ☐Sewer lines/outfalls
   ☐Sinkholes

Other_____

7. Local municipalities are responsible for most of the regulation that can help protect their creeks and water bodies. In your opinion are your municipality's ordinances:

☒ Adequately protective
☐ Not protective enough
☐ Too restrictive
☐ Don't know
☐ No opinion

8. Would you favor having all the municipalities in the Catawissa Creek Watershed work together with county officials, landowners, businesses, industry and the Catawissa Creek Restoration Association to improve the quality of the watershed through the Rivers Conservation Plan?

☒ Yes ☐ No

9. What would be the most important recommendation(s) to include in a plan for conserving the Catawissa Creek Watershed? *(Ex. address AMD; address stormwater erosion; protect open space and farmland; conduct education and outreach; preserve historic structures.)*

_Raise ph of the stream and preserve farmland.

OPTIONAL

If you are interested in receiving more information about the rivers conservation plan as the project progresses please complete the following:

Name: Phone: Ed Lease 356-2093

Address: 260 Orchard Dr, Catawissa PA

E-Mail: eflease@ptd.net

For more information, please contact:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, Pa 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: sweeney@pecnepa.org

Catawissa Creek Watershed Rivers Conservation Plan

Questionnaire

1. What County and Municipality do you live in? SCHUYLKILL, ZION GROVE

2. Do you live in the Catawissa Creek Watershed? [X] Yes [ ] No

3. Do you have a water body or wet area on your property? [ ] Yes [X] No

   If Yes, what is it? (If No, skip to question # 5)
   - [ ] River
   - [ ] Wetland
   - [ ] Spring
   - [ ] Small Stream/Creek (<4' wide)
   - [ ] Large Stream/Creek (>4' wide)
   - [ ] Pond/Lake

   Does this water body have a specific name? *(ex. Catawissa Creek)* _____

4. Recently scientists have learned that the presence of a band of natural vegetation (such as trees and brush) along a water body (called a buffer) can absorb storm water and pollutants and decrease erosion. Do you have a water related buffer (grass alone doesn't count) (Skip question if you do not have a water body on your property)

   [ ] Yes [ ] No

   How wide is it?

   [ ] Less than 5 feet [ ] 5-10 feet [ ] 10-20 feet [ ] Over 20 feet

5. Living beside water can have benefits. Do you consider any of the following water related advantages to be a benefit to you (If you do not have a water body on your property please answer anyway)

   - [X] Scenery
   - [X] Wildlife
   - [X] Play area for children
   - [X] Fishing
   - [X] Increased property value
   - [X] Walking

   Other_____

6. Living beside the Catawissa Creek can have drawbacks. Have any of the following issues caused you problems or caused problems in the watershed that you are aware of?

   - [X] Flooding
   - [ ] Eroding Banks
   - [ ] Wet Basement
   - [ ] Water Pollution
   - [ ] Trespassers Liability
   - [ ] Trash in Stream or Bank (litter)
   - [ ] Sewer lines/outfalls
   - [ ] Sinkholes

   Other_____

7. Local municipalities are responsible for most of the regulation that can help protect their creeks and water bodies. In your opinion are your municipality's ordinances:

☐ Adequately protective
☐ Not protective enough
☐ Too restrictive
☒ Don't know
☐ No opinion

8. Would you favor having all the municipalities in the Catawissa Creek Watershed work together with county officials, landowners, businesses, industry and the Catawissa Creek Restoration Association to improve the quality of the watershed through the Rivers Conservation Plan?

☒ Yes ☐ No

9. What would be the most important recommendation(s) to include in a plan for conserving the Catawissa Creek Watershed? *(Ex. address AMD; address stormwater erosion; protect open space and farmland; conduct education and outreach; preserve historic structures.)*

COLLECT AND ESTABLISH DATA ON ALL STREAM FLOWS AND THE AQUAFER, SO WE KNOW WHEN WE'RE GETTING IN TROUBLE AND NOT WAIT TILL WE RUN OUT OF WATER

OPTIONAL

If you are interested in receiving more information about the rivers conservation plan as the project progresses please complete the following:

Name: Phone: DAVID BOEHMER 570-384-4380

Address: 157 MILLERS RD, ZION GROVE, PA 17985

E-Mail: _____

For more information, please contact:

Janet Sweeney
Pennsylvania Environmental Council
175 Main Street, Luzerne, Pa 18709
(Ph): 570-718-6507
(Fax): 570-718-6508
E-mail: sweeney@pecnepa.org

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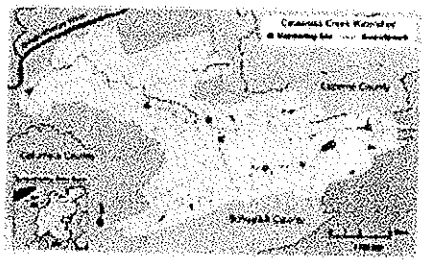
District Links
State Information
Photo Gallery
Government Links
State Form Downloads
Homework Help
My Audio Library
My Video Library
Teacher's Resource Guide
Share Your Thoughts on Gun Control Measures
Kid's Corner
House of Representatives Scholarship Information
Catawissa Creek Survey
Telephone Town Hall Meeting

Search
Keyword:
Entire Site
This Section

Catawissa Creek Survey

The Catawissa Creek Watershed is an important regional asset. From drinking water to recreational activities, it provides our citizens with life's essentials and its amenities.

Generations of people from our area have relied on this watershed. Yet, it has not always received the care and attention it deserved. Efforts are underway to restore this watershed so that it can be enjoyed by future generations.



The area of the Catawissa Creek Watershed is shown in the map above. ***(Please click on the map above to see a larger view of the Catawissa Creek Watershed.)***

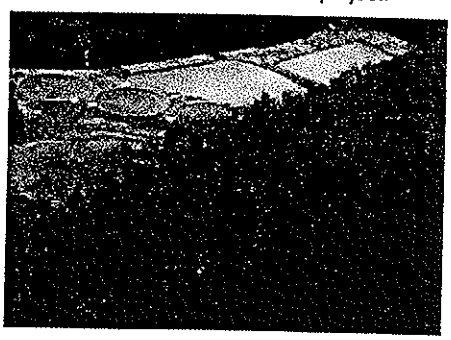
Efforts are moving forward in northern Schuylkill County pertaining to the Catawissa Creek Watershed in an attempt to protect and improve the quality of the water near and around local rivers and streams.

The Catawissa Creek Watershed covers 152 square miles and runs through 19 municipalities throughout Carbon, Columbia, Luzerne, and Schuylkill counties. The watershed then joins with the Susquehanna River in Catawissa, which eventually empties into the Chesapeake Bay.

Over the past few years, several projects aimed at solving pollution problems in the Catawissa Creek Watershed have moved forward, including the Oneida Mine Tunnel Number One project in the Eagle Rock development off of Route 924, the Audenreid Tunnel project which is located 2 miles east of Sheppton, the Oneida Tunnel Number Three project and the Green Mountain project.

Oneida Mine Tunnel Number One was one of four tunnels contributing a high amount of acid mine drainage to Sugarloaf Creek. The Catawissa Creek Restoration Association completed a treatment system to limit the acid mine discharge in July 2001. The Oneida Mine Tunnel Number One project neutralized acid mine drainage and raised the pH level of Sugarloaf Creek.

The Audenreid Tunnel discharged 84 percent of acid mine drainage into the Catawissa Creek. In December 2005, a water treatment system was installed in the Audenreid Tunnel. Since the beginning of the project, the pH level has increased in the Catawissa Creek 30 miles downstream from the tunnel.



An aerial view of the treatment system at the Audenreid Tunnel.

The silver streak to the left side of the creek is the presence of aluminum, a problem associated with acid mine drainage.

Oneida Mine Tunnel Number Three is another tunnel that creates a problem for the Catawissa Creek Watershed. This tunnel discharges acid mine drainage into the Little Tomhickon Creek. The Pennsylvania Fish and Boat Commission discovered that, due to the drainage, no fish species could survive. In November 2006, $956,000 in grant money was awarded to remedy the problems associated with Oneida Mine Tunnel Number Three. The Catawissa Creek Restoration Association hopes that a similar treatment system used for Oneida Mine Tunnel Number One and the Audenreid Tunnel will work for the Oneida Mine Tunnel Number Three.

The Green Mountain Tunnel also adds acid mine drainage to the Catawissa Creek Watershed. Waters discharging from the Green Mountain Tunnel increases the aluminum concentration in the Catawissa Creek, which makes it difficult if not impossible for aquatic life to survive. The water treatment systems used in Oneida Mine Tunnel Number Three and the Audenreid Tunnel could also

be the answer for the Green Mountain Tunnel.

If you are interested in receiving more information about this project as it progresses, please complete the form below:

All fields marked with an * are required

First Name:*

Last Name:*

Home Phone:

E-mail Address:*

Address:*

City:*

State:*

Select One

Zip Code(5-Digit):*

Zip Code(4-Digit):

1. Are you concerned with nearby water quality?

Yes

No

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)

3. What municipality do you live in?

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)

Submit & Join

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 3/7/2008 7:12 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

Richard Roulin
Email: rmr5002@epix.net

Residential Address

po box 24
Ringtown PA 17967

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   Trash

3. What municipality do you live in?
   Ringtown

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   Doing OK

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   Promotion of recreation such as canoeing and hiking on the rail bed.

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/23/2008 11:40 AM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey
Contact Information
Ron Hartz
Home Phone: 5703843538
Email: hartz1@frontiernet.net

Residential Address
77 w.market st.
Sheppton PA 18248

Mailing Address

Survey
1. Are you concerned with nearby water quality?
Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
Flooding,poor water quality due to mine pollution.

3. What municipality do you live in?
North Union-Sheppton

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
No,We have the space to install a limestone filtration system yet no one seems to care.Well I DO !!!

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
Quality of the water for consumption,fishing and recreation.

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/21/2008 3:09 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

Bernadette Brewer
Home Phone: 5708895086
Email: bbb1313@epix.net

Residential Address

340 Ringtown Blvd
Ringtown PA 17967

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

3. What municipality do you live in?
   Union Township

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   Unsure, as we are new to the area

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   storm water erosion, acid mine drainage

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/20/2008 7:05 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information
Ruth Milosh
Email: myboys@losch.net

Residential Address
356 Pattersonville Rd.
Ringtown PA 17967

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   pollution, sewage runoff

3. What municipality do you live in?
   Union Township

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   NO To address complaints from residents with sewage polluted wells when they have been presented for 3 years at Twp. meetings. Have residents schedule regular septic tank cleanings.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   acid mine drainage

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/22/2008 10:50 AM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey
Contact Information
Dennis Conti
Home Phone: 5708895752
Email: hooter@epix.net

Residential Address
143 Main Blvd
Ringtown PA 17967

Mailing Address

Survey
1. Are you concerned with nearby water quality?
Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
High nitrates from overfertilizing

3. What municipality do you live in?
East Union Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
No Stop taking farm subsubsidies from Bootsy

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
Runoff from farms, excess nitrogen and phosphorus which has polluted the groundwater

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/15/2008 7:10 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

Gary Croll
Home Phone: 5703844448
Email: glcroll@pa.metrocast.net

Residential Address

147 Croll Road
Zion Grove PA 17985

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   Sediment from sewage treatment plants upstream of my house, which is on the Tomhicken Creek, A Catawissa Creek tributary. Mine waste runoff in periods of heavy rain from the silt dams behing Oneida.

3. What municipality do you live in?
   North Union Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   The areas of concern listed above come under the review of DEP, not the municipality.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   If you address acid mine drainage and sewage plant outflows the creek will return on its own. There ARE (and have been for 6-8 yrs.) trout and other species in the Tomhicken Creek.

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/16/2008 9:56 AM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information
Bruce Sheluga
Email: theoutlet@netscape.com

Residential Address
RR 1 Box 2217
Zion Grove PA 17985

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   Pollution in the form of illegal dumping. Also destruction of habitat due to over development at Humbolt Industrial Park. Which is one main reason out of many that I am opposed to the cargo airport.

3. What municipality do you live in?
   North Union

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   My apologies, sir, I am not well informed on their actions or lack of same.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   Your examples are fine, I would add chemical drainage from farming ops, and education of private landowners along the creek about ways they can help protect it.

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/14/2008 6:53 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information
thomas jevit
Home Phone: 5709291836
Email: coinsrus56@verizon.net

Residential Address
sixth street
kelayres PA 18231

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   poor quality of water from kline twp. mun. authority

3. What municipality do you live in?
   kline twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   no higher standards to meet levels of chemicals are too high.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   quality of water for fishing. I went to the site myself to view the area.

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/20/2008 1:35 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey
Contact Information
Rose Herbinko
Email: missrose24@msn.com

Residential Address
412 s cleveland st
mcadoo PA 18237

Mailing Address

Survey
1. Are you concerned with nearby water quality?
Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
pollution

3. What municipality do you live in?
borough of mcadoo

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
unsure

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
all

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/19/2008 7:02 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

Ken Ikeda
Home Phone: 5703841226
Email: ikeda1571@epix.net

Residential Address

Box 254, JA 15 Lake Valley Dr.
Nuremberg PA 18241

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   Runoff from construction Silting in of streams feeding into Lake Susquehanna Acid mine run-off into lakes Dead streams, such as Black Creek running out of Hazleton and through Tomhicken, Fern Glen, Rock Glen then on to the Susquehanna

3. What municipality do you live in?
   Hazle Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   They seem to be trying. Commercial and residential development appear to be strongarming their way to get what they want, despite the wishes of the residents. There is a golf course that was built without permission from the township and there will be a freight airport built even though most people we talk to DO NOT want it.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   Clean water for fishing, boating, and drinking. Continuation of projects to clean up the acid mine run-off. Farmland run-off of chemicals A dead Black Creek stream. Who is responsible?

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/19/2008 4:52 PM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

Robert Wickiser
Home Phone: 5709292755
Email: silverxpres@yahoo.com

Residential Address

103 W. Snyder Ave.
McAdoo PA 18237-1325

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   Old strip mines being filled with FLY ASH!!!!!!!!!!!!

3. What municipality do you live in?
   Kline Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   NO! They can't keep steady water pressure, how can they protect our water?

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   All of the above!

Linda Rice - District 124 form entry: Catawissa Creek Survey

From: <website submission>
To: <Lrice@pahousegop.com>
Date: 2/21/2008 9:59 AM
Subject: District 124 form entry: Catawissa Creek Survey

There was a form submission on your website: Catawissa Creek Survey

Contact Information

James Abicunas
Home Phone: 5708895705
Email: jabicun@localnet.com

Residential Address

box 22
Ringtown PA 17967

Mailing Address

Survey

1. Are you concerned with nearby water quality?
   Yes

2. What types of problems do you notice near areas with water? (For example: excessive flooding, pollution, nearby sinkholes, etc.)
   pollution,garbage

3. What municipality do you live in?
   Ringtown

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   clean it up! It's been polluted for the past 70 years or so, don't you think it's time?

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc.)
   This could be a boon to fisherman and bring in tourists, it's a beautiful stream going to waste!!!

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(13)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   WATER FLOW IS DISAPPEARING. I'D ESTIMATE 2/3 OF THE FLOW HAS GONE IN THE LAST 20 TO 25 YEARS.

continued on page 2....

NORTH UNION TWP.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

THE STATE NEEDS TO BE INVOLVED.

6. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) THE AQUIFER

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: DAVID BOEHMER

Address: 157 MILLERS RD, ZION GROVE, PA 17985

Phone: 384-4380 Email: ———

[redacted]

FEB 16

I'M ENCLOSING THIS NOTE, BECAUS
THE 5 QUESTIONS DOESN'T BEGIN T
ADDRESS OUR WATER PROBLEMS.

THE FIRST IS THE WATER FL
OF OUR STREAMS. LET ME STATE
ALMOST 71 YEARS OLD, AND HAVE
SPENT A LOT OF TIME ROAMING T
TOMHICKON WATERSHED, POSSIBILITY
MUCH AS ANYONE. TWO OF THE FEE
STREAMS, THE "COVE" AND "LITTLE CRO
RUN", HAVE NOW BECOME SO SMA
THEY NO LONGER CAN SUSTAIN TH
NATIVE BROOK TROUT. THE RACCOON
CREEK IS ALMOST GONE. THESE STRE
USED TO YIELD DOZENS OF TROUT EACH
YEAR. WHAT USED TO BE 6' WIDE STR
12 TO 16" DEEP, NOW IN THE SUMMER
12" WIDE AND 4' DEEP SPRING RUNS

THE TOMHICKON USED TO BE BIG
ENOUGH TO SWIM IN, ON MY GRANDFA
FARM WE HAD A SWIMMING HOLE, PRO
75' LONG AND 30' WIDE. NOW IT MAY B
10' X 10'

BUT EAGLE ROCK CAN PUMP, LEGALL
1,000,000 GAL. OF WATER A DAY FOR
IT'S SKI SLOPES AND GOLF COURSE.
CAN DO" CAN FILL IN THE WETLANDS
AND PUT BUILDINGS ON THEM. TAK

ANOTHER PROBLEM WAS THE FILTRATION SYSTEM AT EAGLE RO IT WORKED GOOD, AT FIRST. INSEC LIFE AND FISH STARTED COMING BACK TO THE TOMHICKON CREEK, THE INTAKE BLOCKED. (BECAUSE WASN'T PUT IN CORRECTLY, WHICH WO HAVE COST ABOUT $25,000 MORE) CALL TO TOM DAVIDOCK ABOUT THE PLIG OF THE STREAM, WERE OF NO USE. THE STATE, AFTER SPENDING $200,00 PLUS, FOR THE BEDS, DIDN'T HAV THE FORESIGHT TO HAVE ANY MAINTE MONEY FOR THE SYSTEM. TWO PLUS YEARS LATER THEY GOT ENOUGH MO TO FIX IT, BUT NOW THE STREA HAS TO START OVER TO GET THE INSECTS AND FISH BACK

FOR THE PAST YEAR, AFTER HEA RAINS, THE TOMHICKON TURNS BLACK I FOLLOWED IT TILL I FOUND THE AUSE. AN OLD SILT DAM IN A STRIPPING HOLE AT EAGLE ROCK. THE DIRT SIDE WASHED AWAY,

SILT STARTED WASH
DOWN THE TOMHICKON CREEK. I
CALLED TOM DAVIDOCK, HE SAID
COULDN'T DO ANYTHING ABOUT IT,
HE WAS TAKING ANOTHER JOB
A WEEK OR TWO. HE CONTACTED
THE "DER", AND HAD THEM CAL
ME. THEY WANTED TO KNOW IF
ANY EARTH WAS MOVED IN THE
IT WASN'T, AND THE SILT DAM W
AT LEAST SIXTY YEARS OLD. WHAT I
BASICALLY SAID, IF THEY COULDN'T
GET A FINE FROM SOMEONE, THEY
WEREN'T INTERESTED. I ASKED T
IF THEY WEREN'T RESPONSIBLE T
STOP THE SILT, WHO WAS? THEY S
"THE COUNTY SOIL CONSERVATION". I
CALLED THEM, THEY SAID IT WAS
THEIR AREA, AND I SHOULD CALL
TOM DAVIDOCK. AT THIS POINT I
SAID TO HELL WITH IT, AND THE
SILT IS STILL COMING WITH
EVERY RAIN

SHOULD HAVE ONE PERSON
CHARGE OF WATER, AND HE SHO
HAVE TO SEE THAT PROBLEMS
CORRECTED.

IF THE AIRPORT GETS PUT
I'LL GUARANTEE YOU "CANDO" WILL
CRYING FOR MORE MONEY TO HE
THEM GET MORE WATER. AND
WILL HELP THE HOMEOWNERS W
WELLS. BUT WHERE WILL IT COM
FROM? IF THE AIRPORT TAKES TI
WATER FROM THE AUDENREID TUNN
WHICH THEY MUST, THE CATAWISS
WILL TURN INTO A SERIES OF STAG
POOLS.

WE BETTER START MONITERING
OUR AQUIFER, OR WE'LL HAVE PROBLE
YOU'LL NEVER SOLVE. WITHOUT WATE
NOTHING ELSE MATTERS.

DAVID BOEHMER
157 MILLERS RD.
ELON GROVE, PA 179

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(14)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
YES X NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2...

3. What municipality do you live in?

MCADOO

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

DRAINAGE

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

PLEASE SEND ME THE MAP "CATAWISSA CREEK WATERSHED & ACCESS ROADS"

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: ANDREW BIAS

Address: 112 W. GRANT ST

Phone: MCADOO, PA. 18237 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(15)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO ____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   None – live in private community, wells are regularly checked!

continued on page 2....

3. What municipality do you live in? Zion Grove
The Crest Grun Mtn.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? A-OK
See #2

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: EDWARD A. FRENOCK

Address: RR1 Box 2106

Phone: ZION GROVE, PA. 17985 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(16)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

   Stains on rocks.
   Lifeless streams.

continued on page 2....

3. What municipality do you live in?

Ringtown

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

In Ringtown I think we are.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

Mine drainage
water quality for wildlife

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Rev. Christopher C. Wollyung

Address: P.O. Box 217 Ringtown, PA 17967-0217

Phone: 570 889 3605 Email: ringmeth@epix.net

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(17)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example; excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

Joseph Besitka
24 E Garfield St
McAdoo PA 18237-1743

D. ARGALL'S OFFICE
237 WEST BROAD ST
TAMAQUA, P.A. 18252

18252+1818

What municipality do you live in?

McAdoo

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

WE HAVE A BRAND NEW SEWAGE TREATMENT SYSTEM

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: ITS NOT NESSARY TO MAIL ME ANYTHING

Address: BUT THANK YOU ANYWAYS

Phone: _____ Email: _____

[redacted]

Joseph Besitka
24 E Garfield St
McAdoo PA 18237-1743

P. ARGALL'S OFFICE
237 WEST BROAD ST
TAMAQUA, P.A. 18252

18252+1818

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(18)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO ____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

   pollution

continued on page 2....

3. What municipality do you live in?

Ringtown

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

Yes

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

Fishing would result in economic value.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: EDWARD THOMAS

Address: 311 SPRING ST RINGTOWN, PA

Phone: 570-889-5284 Email: Redleg83@ptd.net

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(19)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   Flooding

continued on page 2....

ZION GROVE

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

STOP BUILDING IN EAGLE ROCK AND STOP AIR PORT

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

CLEAN UP ACID DRAINAGE STOP CAN-DO FROM BUILDING MORE FACTORIES TO POLUTE

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: RONALD TRUHAN

Address: 502 BUCK MOUNTAIN ROAD - ZION GROVE, PA. 17985

Phone: 570 384-2471 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(20)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

Kline Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? yes

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) All of the above.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Anne Daniter

Address: 4 Pine St. Mcadoo, Pa. 18237

Phone: _____ Email: _____

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(21)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO ____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

3. What municipality do you live in? RINGTOWN AREA

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? MAKE MORE AWARENESS PUBLIC TO PEOPLE WHERE THE CATAWISSA CREEK FLOWS.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: GARY WILLIAMS

Address: 41 JERRY'S RD RINGTOWN PA 17967

Phone: 570 889 3955 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(21)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

1- All of the above.

2- I have concerns about our water-Table in light of the Fact that the Humboldt Ind. PK continues to expand & the possibility of the CARGO AIRPORT being built

continued on page 2....

3. What municipality do you live in?
SHEPPTON - East Union Twp.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
Yes.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)
1- All the above.
2- How many mine tunnels feeding the upper Catawissa are being Treated?
I believe there are Three Tunnels that feed the upper Catt.
I can't even read this map with a magnifying glass → 3- Send me a bigger detailed map.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Michael KaKaley

Address: 993 Center St. PaB.-67 Sheppton, Pa. 18248

Phone: 570-384-4313 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(23)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

3. What municipality do you live in?

   KINGTOWN

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

   I think so

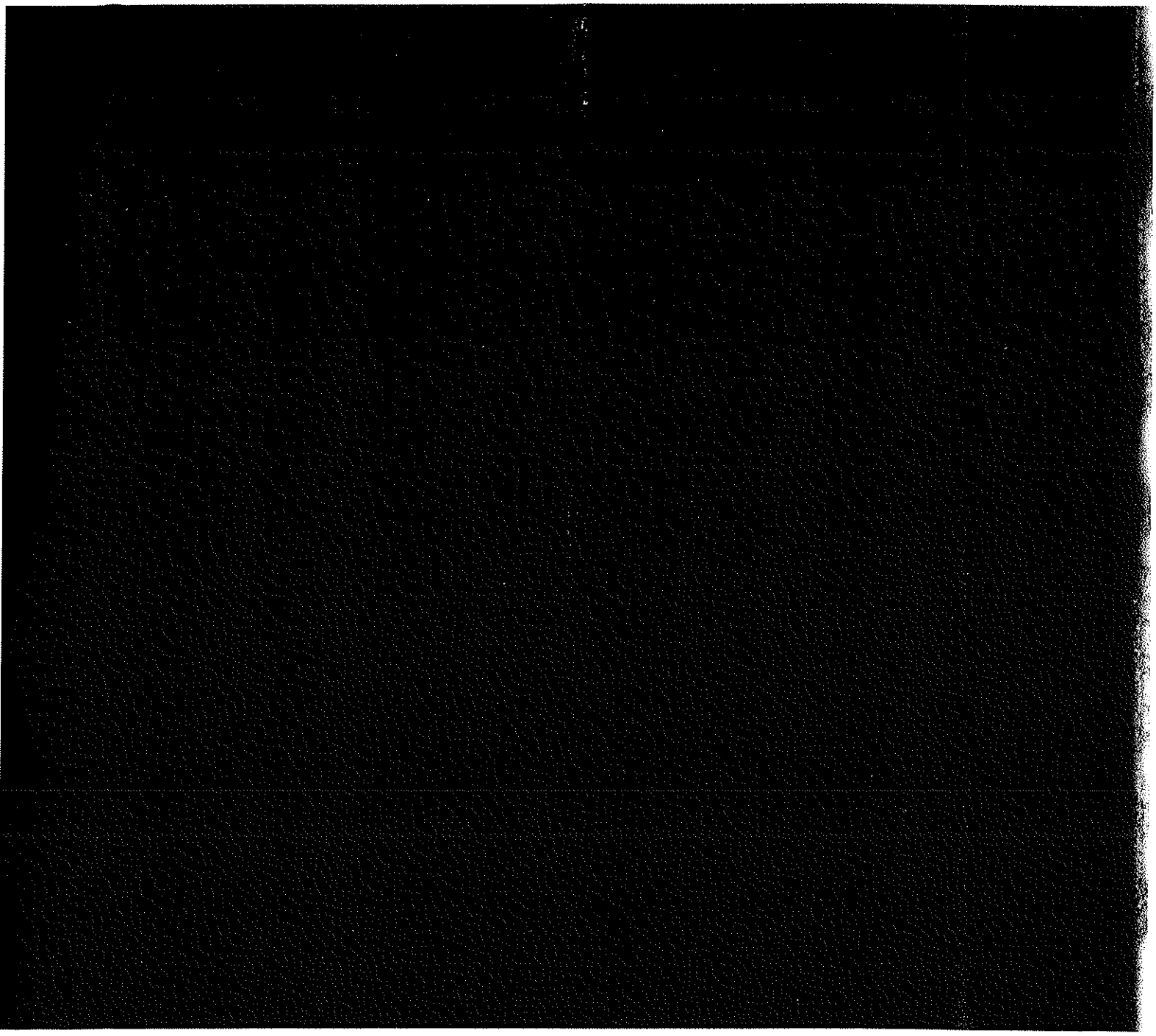
5. Which areas do you feel are the most important to address in the ~~Catawissa Creek Watershed~~ Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) ALL

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: _____ _____

Address: _____ Gary Roshoe
P.O. Box 301
28 South Center Street
Ringtown, PA 17967 _____

Phone: _____ Email: _____



Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(24)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
YES ✓ NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

POLLUTION

continued on page 2....

NORTH SCHUYLKILL TWP.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? YES

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

ACID MINE DRAINAGE
STORM WATER EROSION

(24)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: ROBERT W. BACHER

Address: RR 1 # Box 2535 ZION GROVE, PA. 17985

Phone: 570-384-1221 Email:

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(25)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality? YES X NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

Mainly flooding. Pollution doesn't seem to be so bad as it once was. Our group has clean-ups along the Creek,

continued on page 2...

3. What municipality do you live in? Rural Zion Grove - Beaver Twp. Columbia Co.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

I think locally people must be made aware of things that are being attempted to better the watershed.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

I think the Cat. Creek Restoration group is on the right track, ~~starting~~ with the headwaters & improving these areas.

If you are interested in receiving more information about this project as it progresses, please complete the following: I think I'm pretty well informed, as I go to most general meetings of the [illegible]

Name: George Houser - member - Cat. Creek Restoration group.

Address: 1355 State Rd. Zion Grove, Pa. 17985

Phone: 889-3956 Email: ——

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(26)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES K NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

3. What municipality do you live in?
Ringtown Boro

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
Storm Water Management

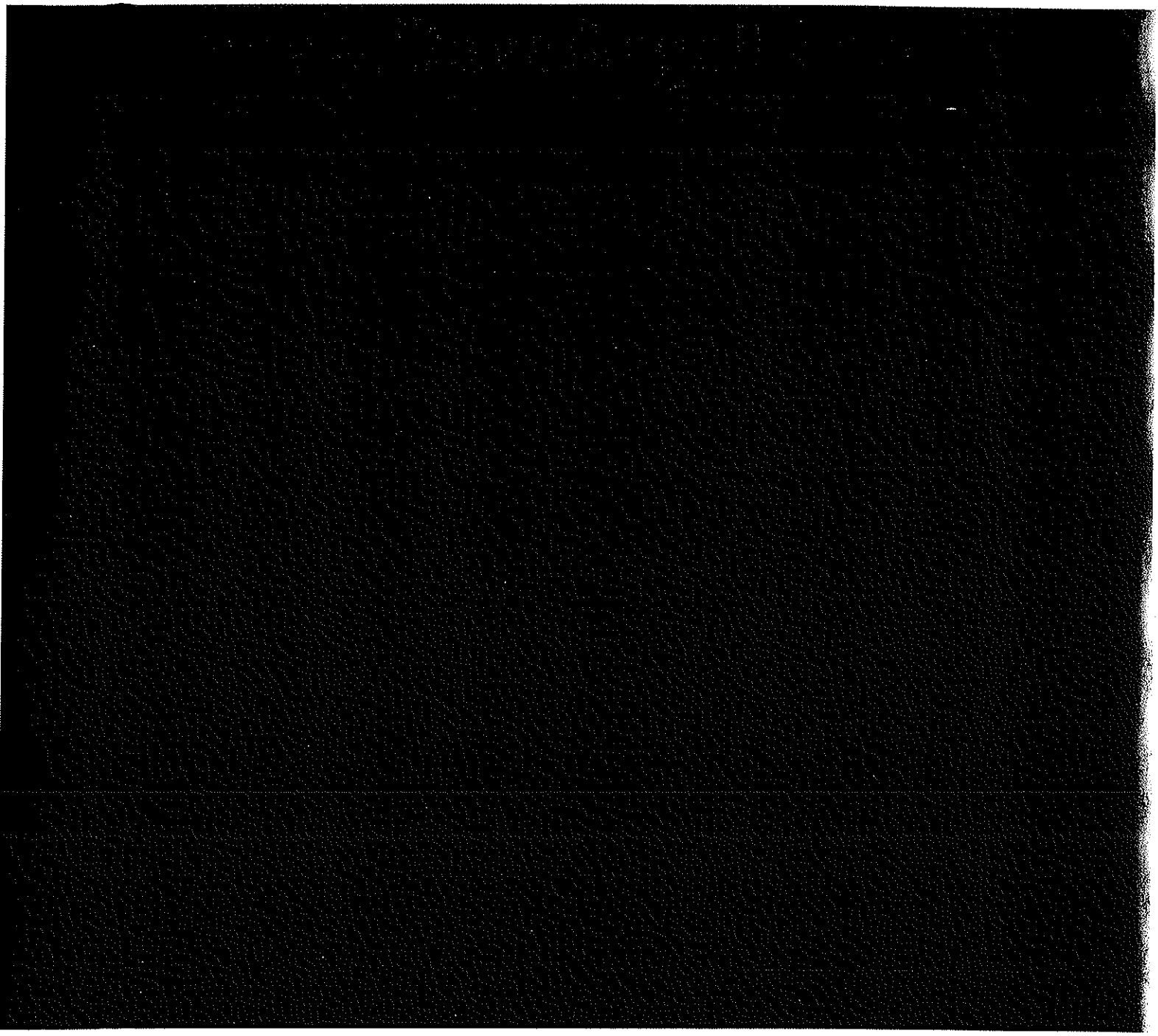
5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Burton L. Hetherington, Boro Council Member

Address: 378 W Main Street

Phone: 570-889-5925 Email: NA



Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(27)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

[redacted]

3. What municipality do you live in?

MCADOO

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

YES

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: RAYMOND KAPUSCINSKI

Address: 140 E. GRANT ST. MCADOO PA

Phone: _____ Email: _____

[redacted]

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(28)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

[redacted]

3. What Municipality do you live in?
McAdoo

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
Our democratic Council isn't interested in helping the people of this town

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)
Locally don't know much about this area

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Helen Ellis

Address: 15 N Kennedy Dr McAdoo Pa 18237

Phone: 570-929-2933 Email: NONE

[redacted]

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(29)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   Pollution

continued on page 2....

municipality do you live in?
Relaxes

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? Water quality has deteriorated because of new sewer system

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) Not sure

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: _____

Address: _____

Phone: _____ Email: _____

[redacted]

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(30)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

   POLLUTION PROBABLY FROM SEWER PLANT OVERFLOW

continued on page 2....

[redacted]

3. What municipality do you live in?

NORTH UNION

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

NO LIMIT DEVELOPMENT

& MONITER SEWER PLANT OPERATIONS

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

ALL.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: EDWARD S. PALUSINSKI

Address: BOX 7 NORELA BERWICK PA 18241

Phone: 570-354-5364 Email:

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(31)

237 West Broad Street
Tamaqua, PA 18252

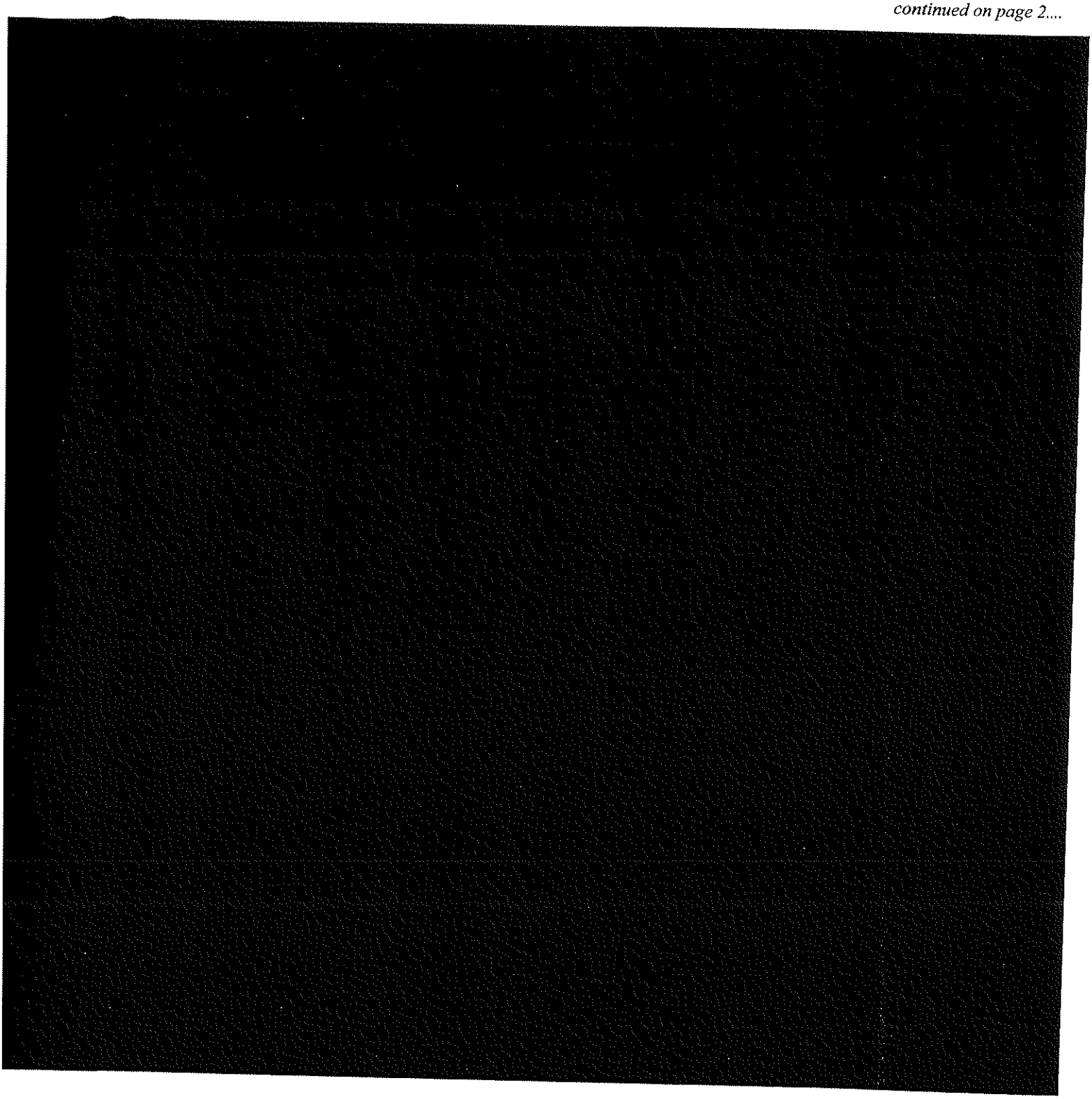
You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

Pollution

continued on page 2....



in protecting area water? If no, what do you think your municipality can do better? water erosion, etc...)

South of Tunkhannock Rd.; East of Eagle Rock
NO, Reduced Mine > North? Rasco Chavez Land
Area
Water Runoff? Step Sewage Above? Below
dumping? Trash Pickup Through Fern Glen!
Rock Glen

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: _____

Address: PO Box 65 Nuremberg, PA 18241

Phone: _____ Email: _____

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(32)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

3 FLY ASH SITES SURROUNDING McADOO

FLY ASH, CHEMICAL, McADOO ASSOC.

continued on page 2....

[redacted]

KLINE TWP (McAdoo)

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

No. STOP IMPORTATION OF FLY ASH

Well are CONTAMINATED With (ARSENIC)

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: ~~quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...~~)

FLY ASH

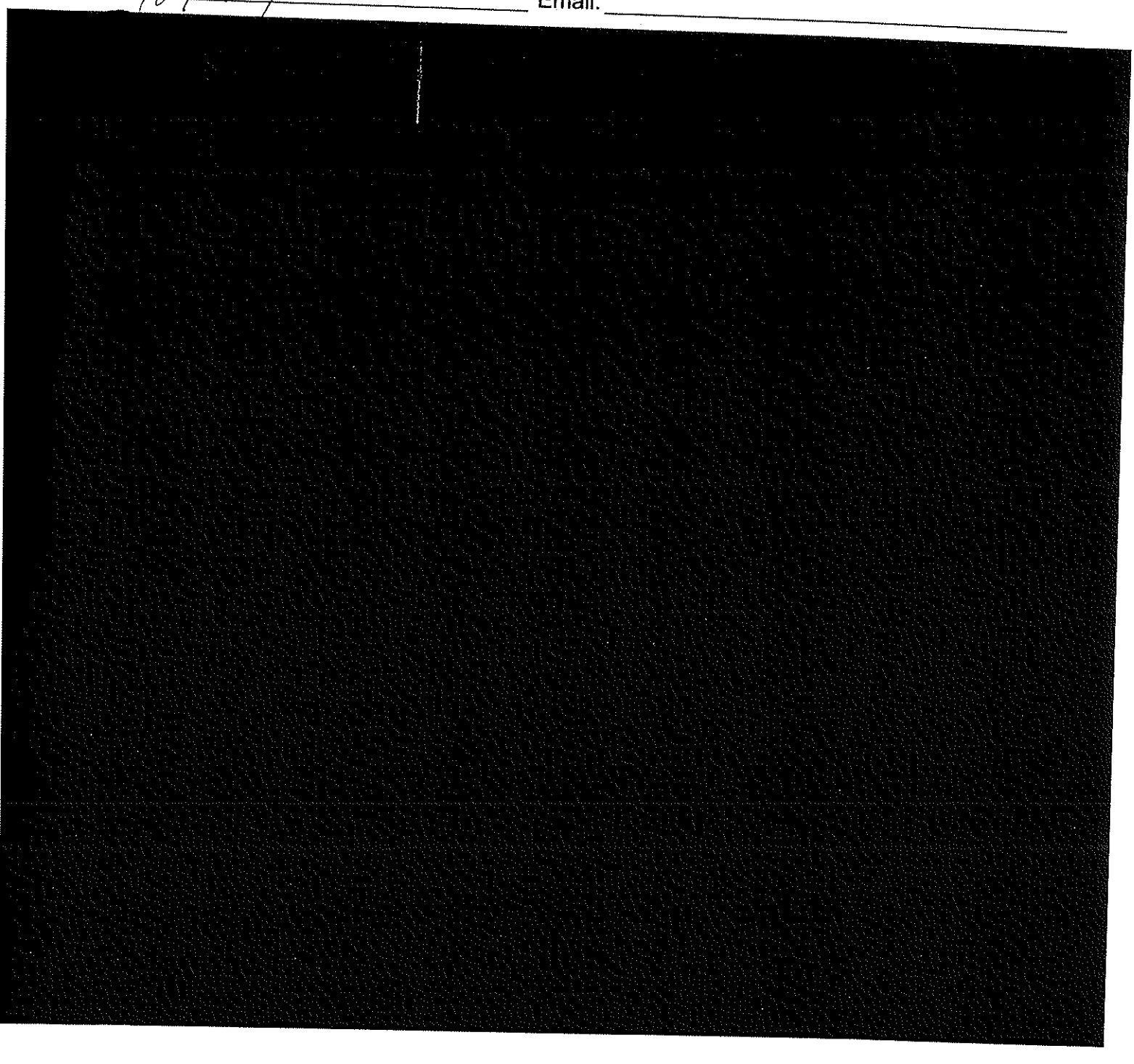
CHEMICAL

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: JOHN J. KOLBASH

Address: 112 GROVE ST. McADOO, PA 18237

Phone: 929 1349 Email:



Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(33)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   Flooding

continued on page 2....

[redacted]

3. What municipality do you live in?

Union Twp. Ringtown Valley

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

Yes

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

Storm Water erosion is #1.

But all are important.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: JOHN K. DILLMAN

Address: 149 RINGTOWN BLVD, RINGTOWN, PA. 17967

Phone: 570-889-3686 Email: N/A

[redacted]

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(34)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES X NO____

2. What types of problems do you notice near areas with water? None Noticed
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

3. What municipality do you live in?

East Union Township

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better? yes.

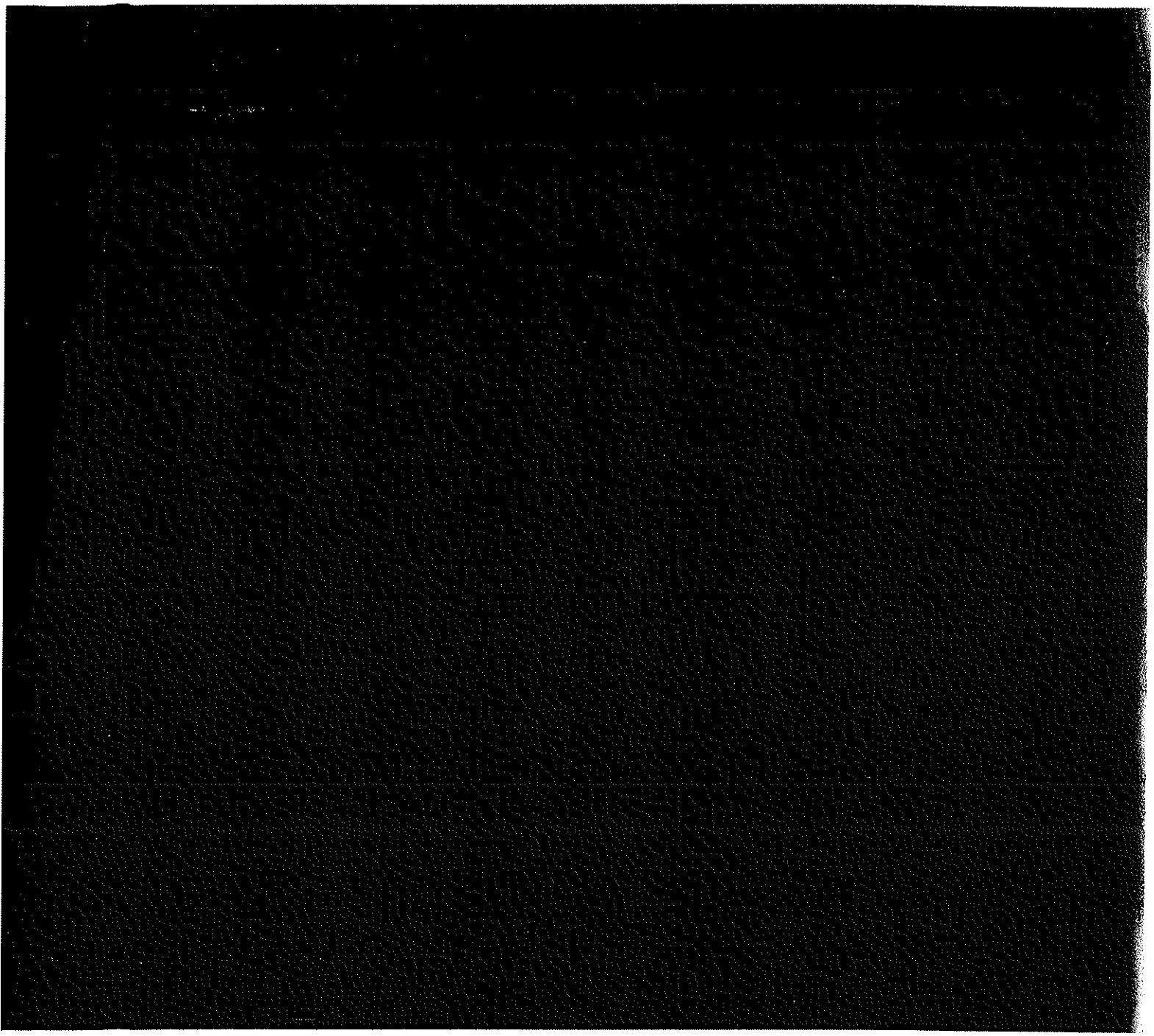
5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) I feel all are equally important and I think it is necessary to build a better tomorrow for our children.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Theresa Gaizick

Address: PO Box 60, Sheppton, PA 18248

Phone: 570-384-7386 Email:



Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(35)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO ____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   Pollution from acid mine drainage, raw sewage, fly ash dumping, fertilizer run off from VH Flowers.

continued on page 2....

State Representative
Dave Argall

The Catawissa Creek Project in my opinion is very important in preserving our natural resources & I think it is worthy of any funding you can acquire.

Great Job!

Thanks!

Jack M Wheeler

61 N. Third St.
Hamburg, PA 19526
Phone: (610) 562-3411
Fax: (610) 562-6895

237 W. Broad St.
Tamaqua, PA 18252
Phone: (570) 668-1240
Fax: (570) 952-3374

P.O. Box 128
209 N. Warren St.
Orwigsburg, PA 17961
Phone: (570) 366-2735
Fax: (570) 366-3106

3. What municipality do you live in?

McAdoo

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

No. Our town has never done anything to protect our environment except for the mandated Sewage Treatment Plant. Our former Council did everything they could to prevent this project from being finished.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

Restoring a proper ph and controlling other heavy metals will bring back aquatic life, in turn bringing back trout and other water species providing food for animals balancing the ecosystem.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: Joseph M Walko

Address: 130 N Cleveland St. McAdoo, Pa 18237

Phone: 929-2501 Email:

ECRWSS
Postal Customer

36

Dear Friend:

The Catawissa Creek Watershed is an important regional asset. From drinking water to recreational activities, it provides our citizens with life's essentials and its amenities.

Generations of people from our area have relied on this watershed. Yet, it has not always received the care and attention it deserved. Efforts are underway to restore this watershed so that it can be enjoyed by future generations.

Please take a moment to read the information in this newsletter and fill out the brief questionnaire located at the bottom. Your thoughts and opinions matter to me.

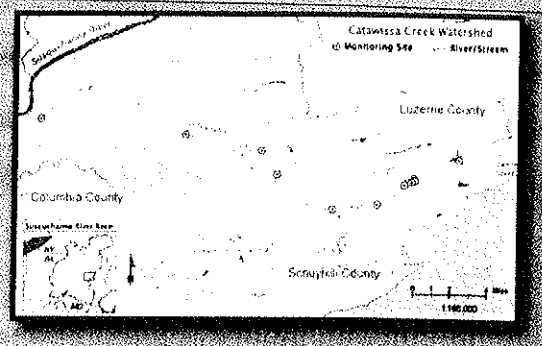
Dave Argall

Dave Argall
State Representative
124th Legislative District

Efforts are moving forward in northern Schuylkill County pertaining to the Catawissa Creek Watershed in an attempt to protect and improve the quality of the water near and around local rivers and streams.

The Catawissa Creek Watershed covers 152 square miles and runs through 19 municipalities throughout Carbon, Columbia, Luzerne, and Schuylkill counties. The watershed then joins with the Susquehanna River in Catawissa, which eventually empties into the Chesapeake Bay.

The area of the Catawissa Creek Watershed is shown in the map below.



continued on page 2....

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once complete please mail the survey to my Tamaqua district office at:

19 FEB 2008 PM 2 L

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
YES X NO_____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

drainage to Sugarloaf Creek. The Catawissa Creek Restoration Association completed a treatment system to limit the acid mine discharge in July 2001. The Oneida Mine Tunnel Number One project neutralized acid mine drainage and raised the pH level of Sugarloaf Creek.

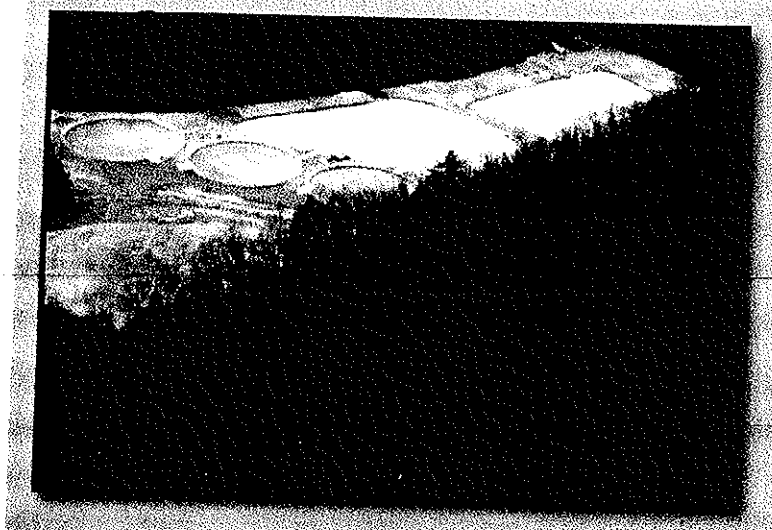
The Audenreid Tunnel discharged 84 percent of acid mine drainage into the Catawissa Creek. In December 2005, a water treatment system was installed in the Audenreid Tunnel. Since the beginning of the project, the pH level has increased in the Catawissa Creek 30 miles downstream from the tunnel.

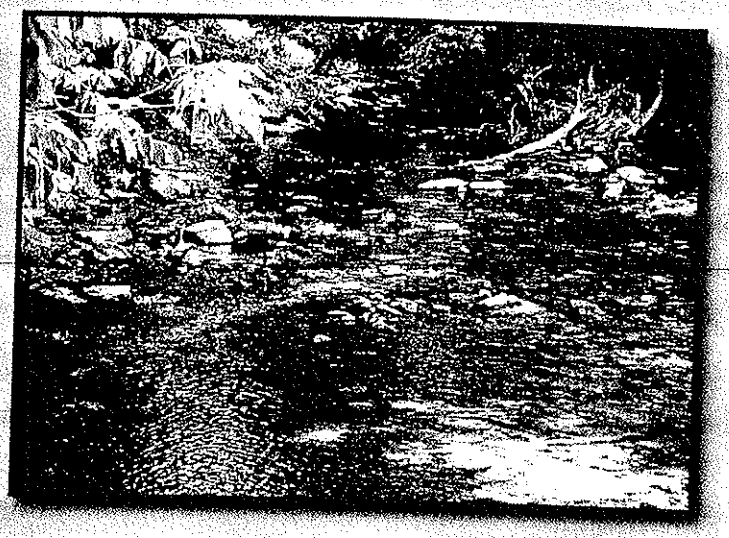
Below is an aerial view of the treatment system at the Audenreid Tunnel.

Creek Restoration Association hopes that a similar treatment system used for Oneida Mine Tunnel Number One and the Audenreid Tunnel will work for the Oneida Mine Tunnel Number Three.

The Green Mountain Tunnel also adds acid mine drainage to the Catawissa Creek Watershed. Waters discharging from the Green Mountain Tunnel increases the aluminum concentration in the Catawissa Creek, which makes it difficult if not impossible for aquatic life to survive. The water treatment systems used in Oneida Mine Tunnel Number Three and the Audenreid Tunnel could also be the answer for the Green Mountain Tunnel.

In the picture below, the silver streak to the left side of the creek is the presence of aluminum, a problem associated with acid mine drainage.





continued...Questionnaire

3. What municipality do you live in?

ZION GROVE

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

Quality of water and aquatic plants and fauna, which, of course inter alia is a function of acidity.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: _____

Address: _____

Phone: _____ Email: _____

[redacted]
[redacted]
237 W. BROAD ST.
TAMAQUA PA 18252

18252+1818 C005

(37)

Dear Friend:

The Catawissa Creek Watershed is an important regional asset. From drinking water to recreational activities, it provides our citizens with life's essentials and its amenities.

Generations of people from our area have relied on this watershed. Yet, it has not always received the care and attention it deserved. Efforts are underway to restore this watershed so that it can be enjoyed by future generations.

Please take a moment to read the information in this newsletter and fill out the brief questionnaire located at the bottom. Your thoughts and opinions matter to me.

Dave Argall

Dave Argall
State Representative
124th Legislative District

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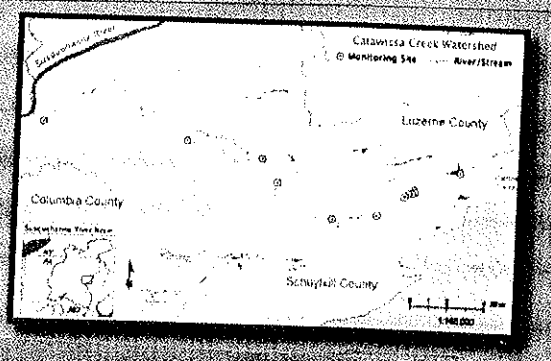

continued on page 2....

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
YES ✓ NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

Cloudy drinking water,

continued on page 2....

four tunnels contributing a high amount of acid mine drainage to Sugarloaf Creek. The Catawissa Creek Restoration Association completed a treatment system to limit the acid mine discharge in July 2001. The Oneida Mine Tunnel Number One project neutralized acid mine drainage and raised the pH level of Sugarloaf Creek.

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Below is an aerial view of the treatment system at the Audenreid Tunnel.

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In the picture below, the silver streak to the left side of the creek is the presence of aluminum, a problem associated with acid mine drainage.

continued...Questionnaire

3. What municipality do you live in?
   North Union Twp, Schuylkill Cty.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?
   Yes, it seems so.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)
   quality of water for drinking & fishing), acid mine drainag protecting farm lands and storm water erosion.

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: M/M Joe Austin

Address: R.R. 1 - Box 2417, Zion Grove, PA 17985

Phone: 570-384-0730 Email: daustinzap@aol.com

ECRWSS
Postal Customer

38

Dear Friend:

The Catawissa Creek Watershed is an important regional asset. From drinking water to recreational activities, it provides our citizens with life's essentials and its amenities.

Generations of people from our area have relied on this watershed. Yet, it has not always received the care and attention it deserved. Efforts are underway to restore this watershed so that it can be enjoyed by future generations.

Please take a moment to read the information in this newsletter and fill out the brief questionnaire located at the bottom. Your thoughts and opinions matter to me.

Dave Argall

Dave Argall
State Representative
124th Legislative District

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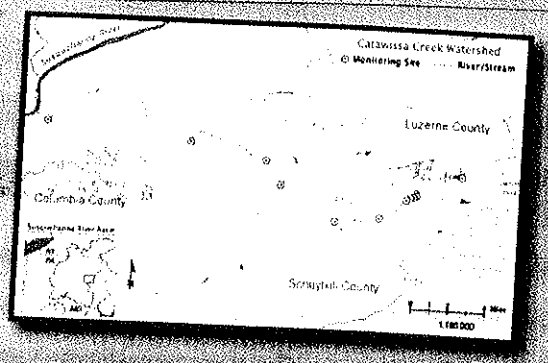

continued on page 2....

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershe
lease mail the survey to my Tamaqua district office at:

PA 187
06 MAR 2008 PM 2 L

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

Are you concerned with nearby water quality?
YES ✓ NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

emissions from plants in the area. illegal dumping.

continued on page 2....

www.DaveArgall.com

four tunnels contributing a high amount of acid mine drainage to Sugarloaf Creek. The Catawissa Creek Restoration Association completed a treatment system to limit the acid mine discharge in July 2001. The Oneida Mine Tunnel Number One project neutralized acid mine drainage and raised the pH level of Sugarloaf Creek.

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In the picture below, the silver streak to the left side of the creek is the presence of aluminum, a problem associated with acid mine drainage.

continued...Questionnaire

3. What municipality do you live in?

McAdoo Hgts.

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

Give more information to the residents what they are or are not doing.

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) all of above

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: William Reshetar

Address: 2 Bayview Ave. McAdoo Hgts. Pa.

Phone: 570-929-3781 Email: _____

ECRWSS
Postal Customer

39

Dear Friend:

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Dave Argall

Dave Argall
State Representative
124th Legislative District

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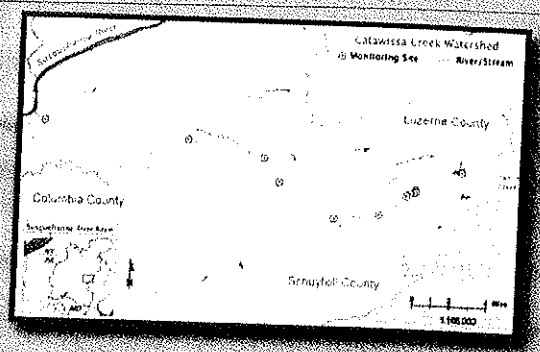

continued on page 2....

Constituent Questionnaire

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237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
YES ✓ NO ____

2. What types of problems do you notice near areas with water?
(For example: excessive flooding, pollution, nearby sinkholes, etc...)

continued on page 2....

four tunnels contributing a high amount of acid mine drainage to Sugarloaf Creek. The Catawissa Creek Restoration Association completed a treatment system to limit the acid mine discharge in July 2001. The Oneida Mine Tunnel Number One project neutralized acid mine drainage and raised the pH level of Sugarloaf Creek.

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In the picture below, the silver streak to the left side of the creek is the presence of aluminum, a problem associated with acid mine drainage.

continued...Questionnaire

3. What municipality do you live in?

Kline Twp. - Schuylkill

4. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...)

If you are interested in receiving more information about this project as it progresses, please complete the following:

Name: _____

Address: _____

Phone: _____ Email: _____

Constituent Questionnaire

Please take the time to fill out the following survey about the Catawissa Creek Watershed. Once completed, please mail the survey to my Tamaqua district office at:

(40)

237 West Broad Street
Tamaqua, PA 18252

You may also visit my Web site at RepArgall.com to fill out the survey online.

1. Are you concerned with nearby water quality?
   YES ✓ NO_____

2. What types of problems do you notice near areas with water?
   (For example: excessive flooding, pollution, nearby sinkholes, etc...)
   See letter enclosed)

continued on page 2....

Dear Mr. Argall:

My concern regarding the Catawissa Watershed is related to the land being considered for the proposed cargo airport. This land was coal company property and reverted to private hands (Butler enterprise most recently) and other coal magnates. There was no economic use of the land, and it was mostly used by locals for berry picking (a source of extra income for families in the 20's,30's,40's and 50's). Hunting and fishing was practiced by the locals. I caught my first brook trout in a little steam which flows through beautiful hemlock swamps and forests, and cascades in a myriad number of waterfalls and pools til it meets the Catawissa very near the now placed treatment facility below the Audenried tunnel.

Well a few years ago the owners found an economic use and handed the access rights over to land ravagers using gasoline vehicles priced into the 50 thousand dollar range, and coming from as far away as Va.. They even had a billboard on 81 North of the junction with 78. They destroyed the soil, the old trails, and had little regard for the watershed aspects of the Catawissa. The local users were under much duress to continue the long practice of hunting and fishing on the coal lands. Which was kind of an unwritten right because we worked for the coal company.

When the owners say $ signs anew, Cargo Airport. They formed up with Gladstone (which was the telephone exchange name for Hazleton phone numbers). If this airport is ever built my little trout stream definitely will be destroyed, and the Catawissa will be put in added danger-erosion,chemical spills, de-icing liquids, and who knows what else the diabolical owners can incur on the land.

Too bad a land conservancy or game commission purchase couldn't have been made. Of course county and state funding is not available to those groups, but the Gladstone group hopes to tap state ,local and federal funds for their project. The sellers of the land make out, the new developers make out, the taxpayers lose and the natural beauty is destroyed. Well some new low paying jobs for locals can be had, good paying jobs will be filled by imports. I pray this airport idea dies a well earned (dead on arrival) by the authorities who can stop its possibility.

. What municipality do you live in?

McAdoo

. Do you feel that your municipality is doing its job in protecting area water? If no, what do you think your municipality can do better?

Well we have a Sewage Plant. I was on the original authority at age 22. I'm 66 now. Took long enough!

5. Which areas do you feel are the most important to address in the Catawissa Creek Watershed Conservation Plans? (For example: quality of water for fishing, acid mine drainage, protecting farmlands, storm water erosion, etc...) See letter

If you are interested in receiving more information about this project as it progresses, please complete the lowing:

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