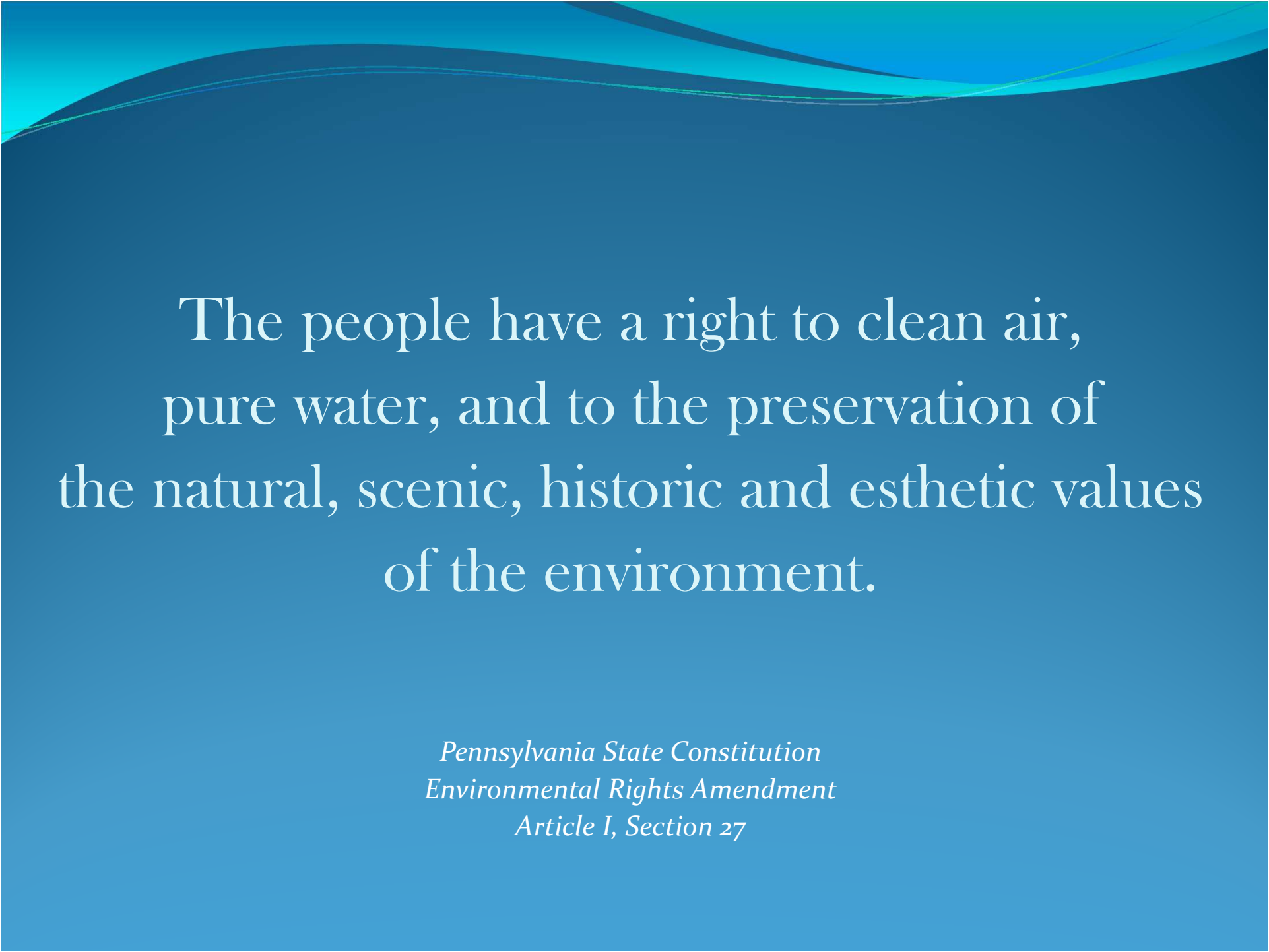


Pike County Conservation District



Water Wonders of Pike County



The people have a right to clean air,
pure water, and to the preservation of
the natural, scenic, historic and esthetic values
of the environment.

*Pennsylvania State Constitution
Environmental Rights Amendment
Article I, Section 27*

What is Water Quality?

A measure of the condition of water relative to the needs of aquatic life or for human use.

A reference to a set of standards against which regulatory compliance can be assessed.



Stream Classifications

Pennsylvania Fish and Boat Commission

*Classification based on
existence of self-sustaining
wild trout populations*

Class A Trout Waters —
excellent standing stock of
wild trout

Class B Trout Waters — good
standing stock of wild trout

Class C Trout Waters — fair
standing stock of wild trout

Class D Trout Waters — few
wild trout



Pike County Class A Wild Trout Waters

Pennsylvania Fish and Boat Commission



- Birchey Creek – brook trout
- Burchards Creek – brook trout
- Bush Kill (Millrift) Creek – brook trout
- Kleinhans Creek – brook trout
- Mill Brook – brook trout
- Pond Eddy Creek – brook & brown trout
- Sawkill Creek – brown trout
- Toms Creek – brown trout
- Unnamed tributary to Shohola Creek – brook trout
- Vantine Creek – brook trout

Stream Classifications

Pennsylvania Department of Environmental Protection

Classification based on the aquatic life in a stream and/or PFBC stream classification

Exceptional Value (EV) – high quality streams that are wilderness trout streams, flow through state natural areas or federally protected wilderness areas, or meet other standards.

High Quality (HQ) – streams that meet biological, chemical, or class A trout stream standards.

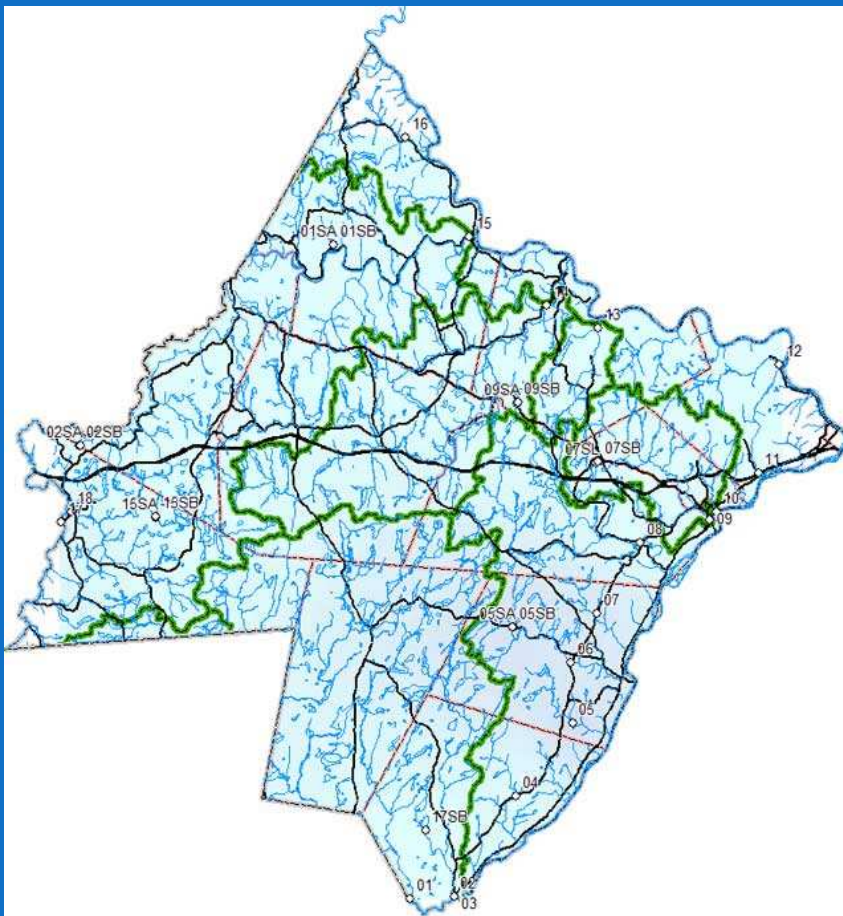
Trout Stocked Fishery (TSF) – includes all streams capable of supporting a stocked trout fishery.

Warm Water Fishery (WWF) – the baseline protection level for all water bodies in Pennsylvania including those incapable of supporting a stocked trout fishery.



A map of Pennsylvania with county boundaries and names labeled. The map is overlaid with a grid of colored squares, likely representing a spatial analysis or data distribution across the state. The colors include shades of blue, green, and yellow, indicating different categories or values for each geographic area.

Pike County Waterways



- 13 square miles of surface water
- 6 major watersheds including the Delaware and Lackawaxen Rivers, and the Bushkill, Wallenpaupack, Shohola, and Sawkill Creeks

Pike County Waterways



Virtually all Pike rivers and streams are granted special protection status by the PA Department of Environmental Protection

Pike County Waterways



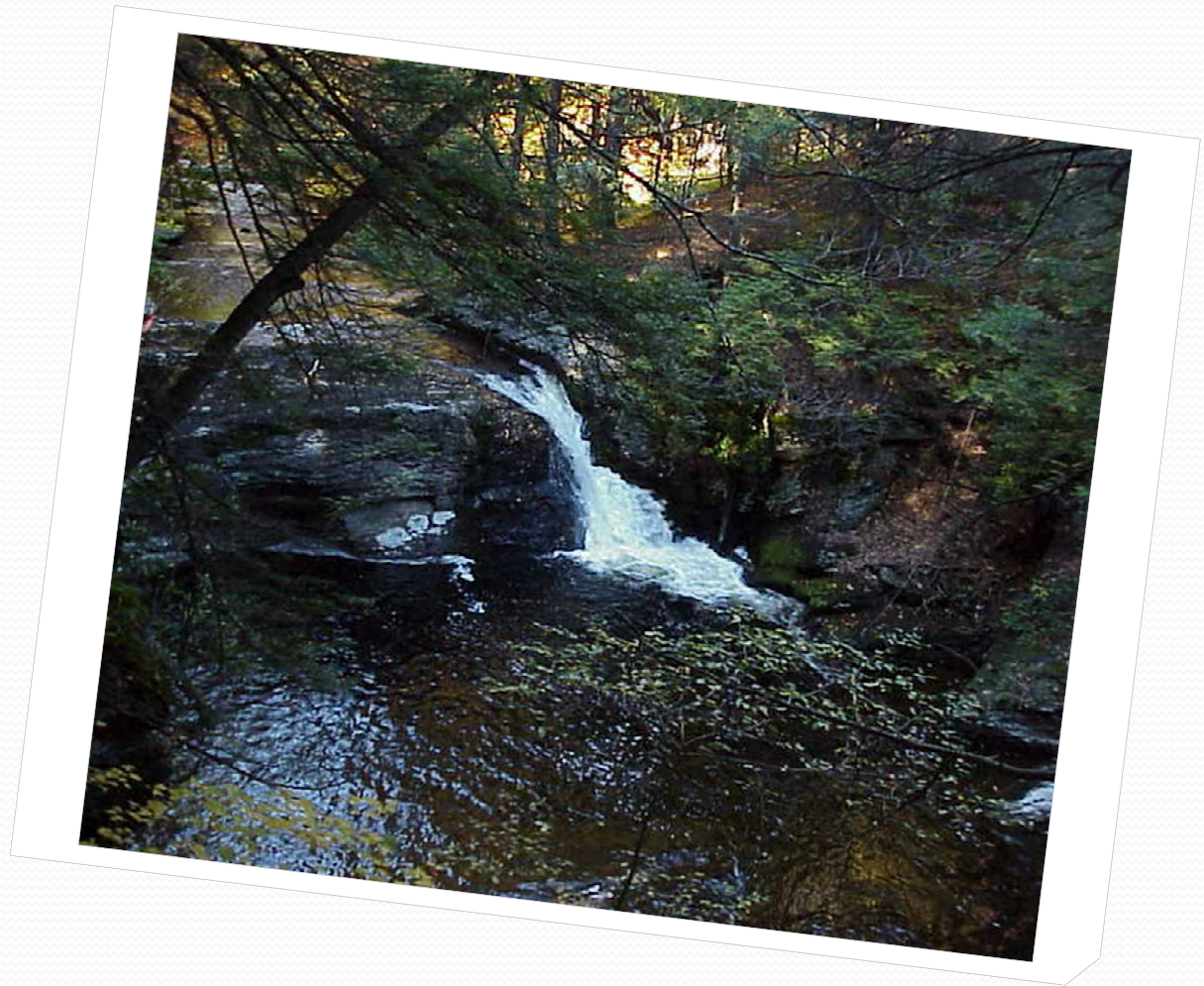
The Delaware – River of the Year for 2011



The Lackawaxen – River of the Year for 2010

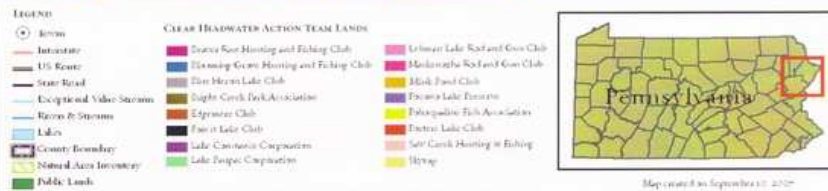
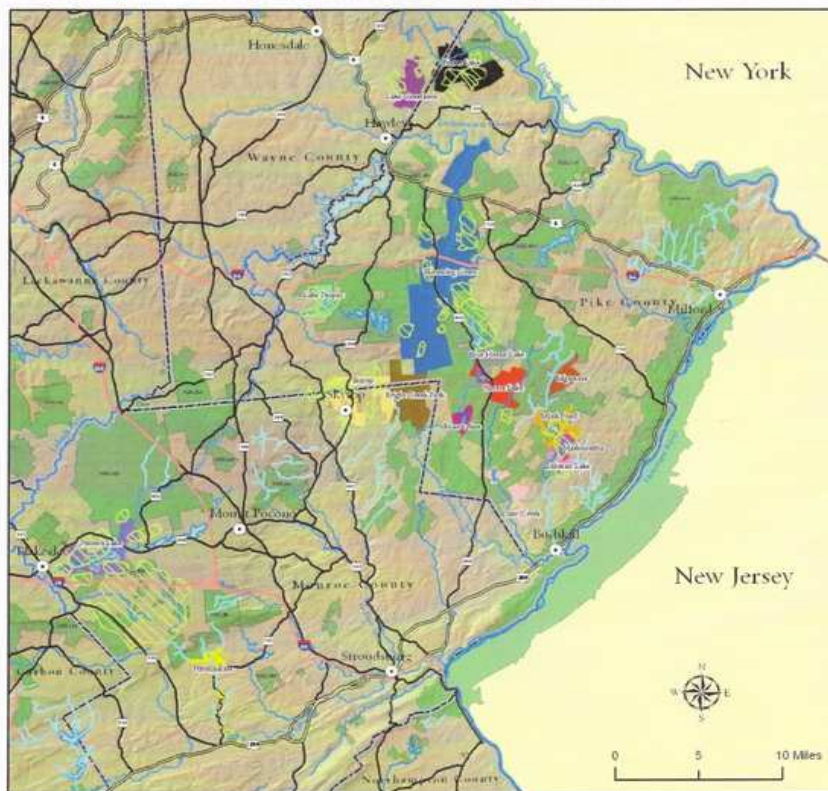
Exceptional Value Streams in Pike County

- Bush Kill Creek (Millrift)
- Deep Brook
- Saw Kill Creek
- Adams Creek
- Toms Creek
- Little Bush Kill Creek
- Un-named tributaries
to Little Bush Kill





Clear Headwater Action Team Lands



Lands in Pike County

350,208 acres of land in Pike County (545 sq. miles)

67,768 acres of State forest (19%)

50,000+ acres of private fishing and hunting clubs (10%)

24,293 acres of State Game lands (7%)

15,602 acres of Federal land (4%)

2,971 acres of State parks (1%)

Economy of Recreation in Pike County

In 2004, tourists spent more than \$220 million in Pike County, generating \$53 million in taxes and supporting about 7,000 tourism related jobs.



The Roebling Bridge: Connecting Pike County, Lackawanna, PA and Sullivan County, Minisink Ford, NY



“There’s definitely been an increase in ecotourism and heritage tourism to Pike County. We’ve seen that in increased visits to parks, hotels, and bed and breakfasts.” – Sean Strub, Pike County Visitors Bureau

Water Recreation in Pike County

Bird watchers and waterfowl hunters seek out a diverse selection species who reside in and around our many wetlands and waterways.



Anglers enjoy numerous opportunities fishing for game fish in our many high quality rivers and streams or catching an array of sports fish in our beautiful lakes and ponds.



Water Recreation in Pike County

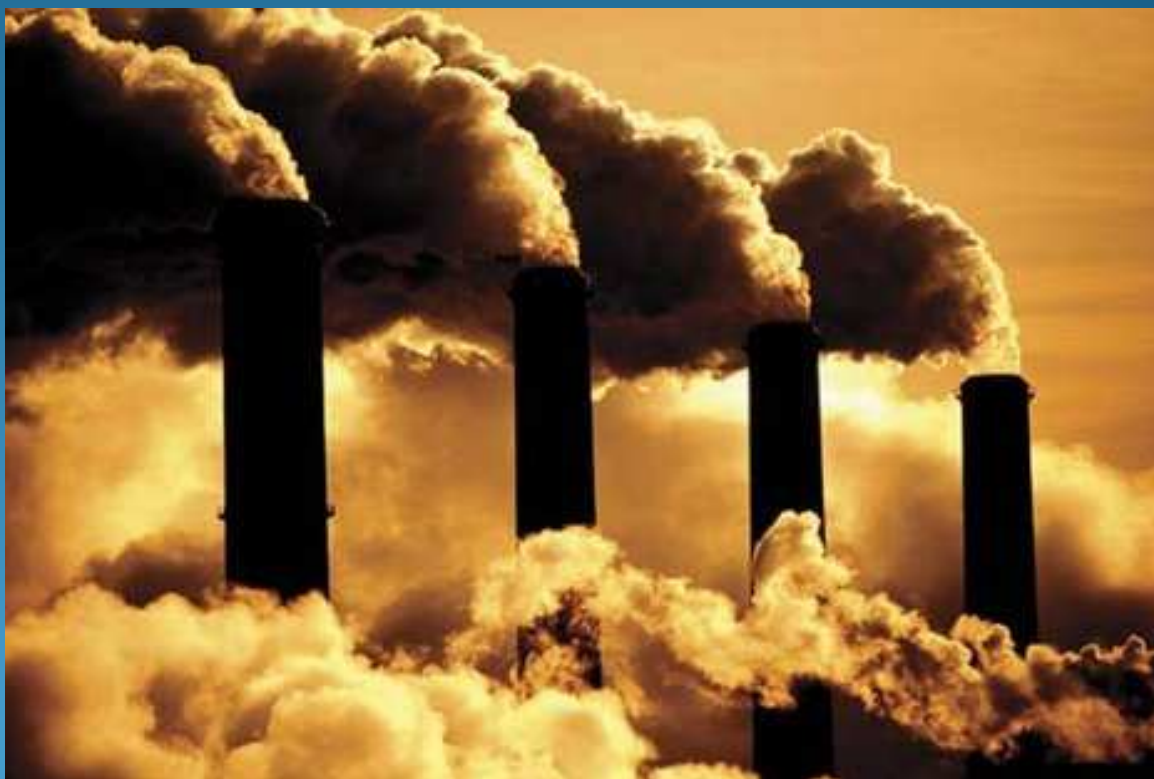
Hikers enjoy the natural beauty of trails and views along flowing waters and lakes and ponds.



Residents and visitors enjoy the natural serenity and unparalleled beauty of the flora and fauna that abound in and around our scenic and rich watery heritage.

Environmental Concerns to Pike County's Waterways

Atmospheric
pollution



Accidental spills of chemical pollutants

Environmental Concerns to Pike County's Waterways



**Aging on-lot and
community
sewage systems**

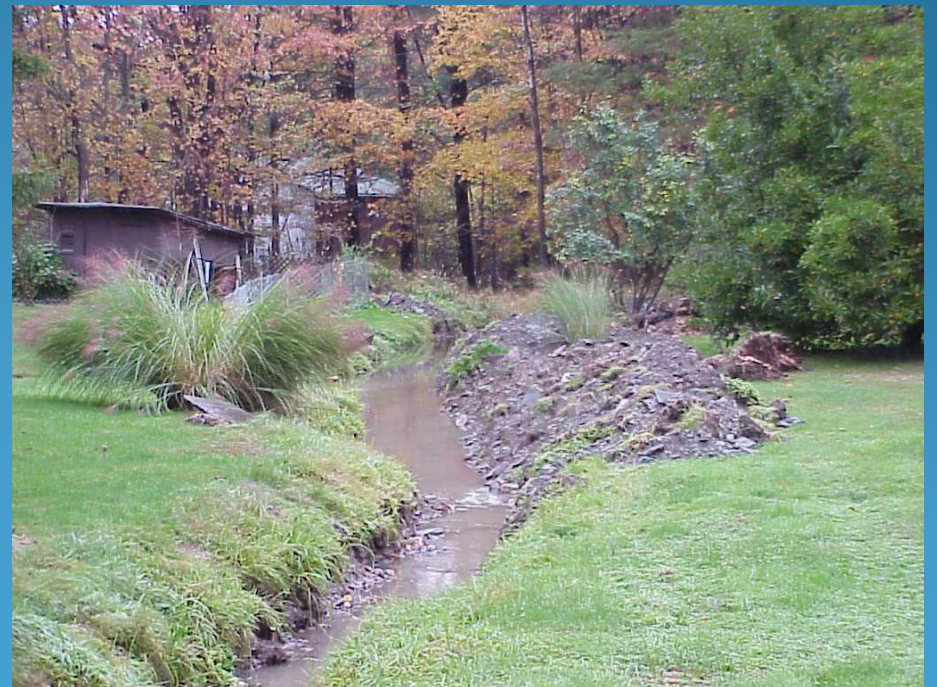


Construction of Westfall Sewage Treatment plant.

Environmental Concerns to Pike County's Waterways

Stormwater Runoff

Riparian habitat alterations



Environmental Concerns to Pike County's Waterways



Building of the
Tennessee pipeline
across the
**Lackawaxen
River.**

Environmental Concerns to Pike County's Waterways

Earth disturbance



Forest fragmentation



Immediate Threats to Pike County Watersheds



Electric transmission lines



Gas transmission lines



Water withdrawals for gas industry

Immediate Threats to Pike County Watersheds



Commercial development

Residential development

Aquatic Resource Consulting



Why Conserve and Protect our Water?

“Water has the peculiar quality of being an inexhaustible natural resource which is nevertheless in short supply.”

Water is our most precious resource.

Water is the great ecosystem purifier.

Water is the foundation of food and life.

therefore

We cannot live without clean water.

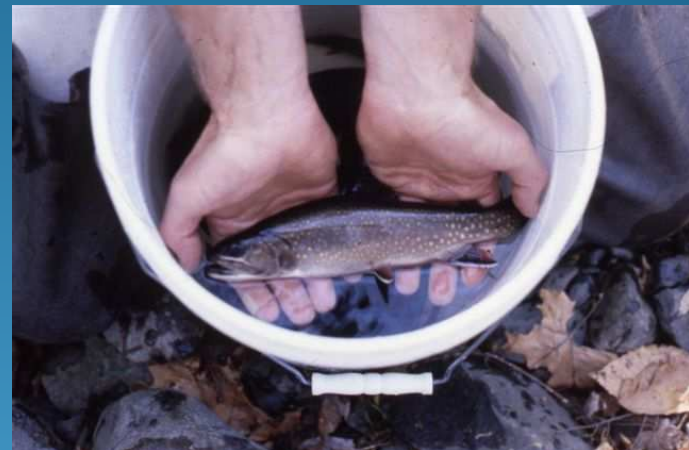
Saving water helps to preserve our environment.



Why Monitor Our Water Resources?

"Our ability to protect biological resources depends on our ability to identify and predict the effects of human actions on biological systems, especially our ability to distinguish between natural and human-induced variability in biological condition" (Karr and Chu 1998).

- ~ provides an early warning of hazardous changes in water quality.
- ~ detects episodic events such as pollution spills.
- ~ evaluates recovery from disturbed conditions.
- ~ reveals environmental trends and cycles.



Pike County Conservation District Surface Water Quality Monitoring Program

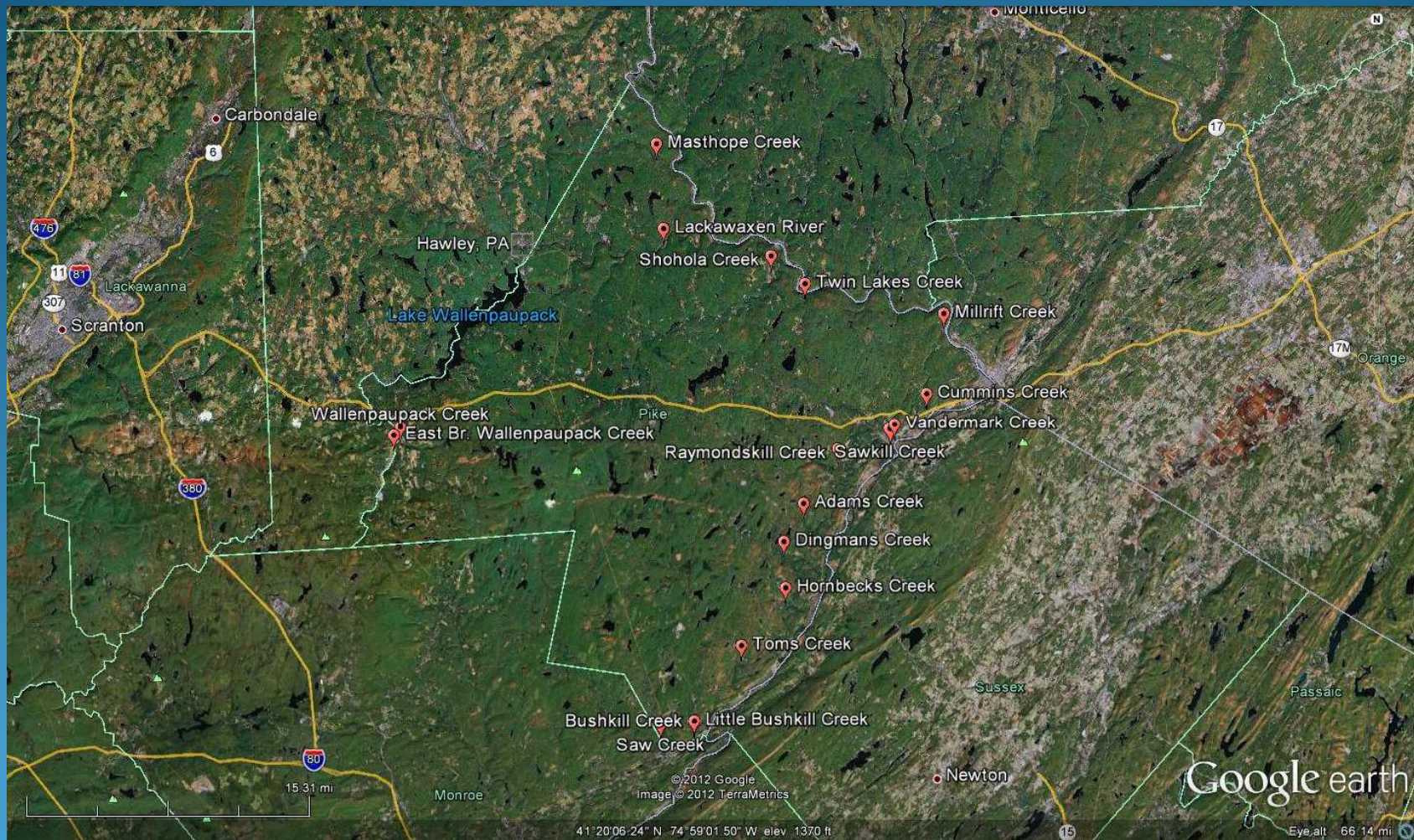
- 1987 – started sampling chemical and physical parameters at 80 to 100 sites during high and low flows
- 1990 - macroinvertebrate evaluations added at 20 sites
- 1994 - stream habitat assessments began.
- 1995 - fish population surveys initiated at 18 sites

Current Surface Water Quality Monitoring Program

- Nearly 50 stream monitoring sites including 18 baseline stations
- Field tests for physical and chemical parameters
- Habitat assessments using PADEP protocols
- Macroinvertebrate and fish community surveys using PADEP and USEPA rapid bioassessment protocols



Baseline Sampling Sites



Assessment of Pike County Surface Waters



The Clean Water Act challenges us to answer critical questions about the physical, chemical, and biological conditions of the Nation's waters.

Evaluating the health of a body of water through the use of biological indicators is called biological assessment.

Bioassessment utilizes a variety of measurements to assess the biological condition, or health, of streams.

Biological Integrity

An index of biological integrity is the standard by which stream water quality is assessed by regulatory agencies.

It is built on the assumption that a decline in biological integrity is primarily caused by human activity or natural catastrophic events that alter a stream ecosystem.



Index of Biological Integrity (IBI) for Macroinvertebrates and Fish

What does it measure?

- Diversity and richness of aquatic community
- Pollution sensitivity of aquatic life to chemical contaminants and oxygen depleting wastes
- Indirectly measures temperature, habitat, and stability of stream conditions for aquatic life



Top Ranked Water Wonders of Pike County

Vandermark Creek

Toms Creek**

Twin Lakes Creek

Cummins Creek

Pond Eddy Creek*

Sawkill Creek**

Kleinhans Creek*

Saw Creek

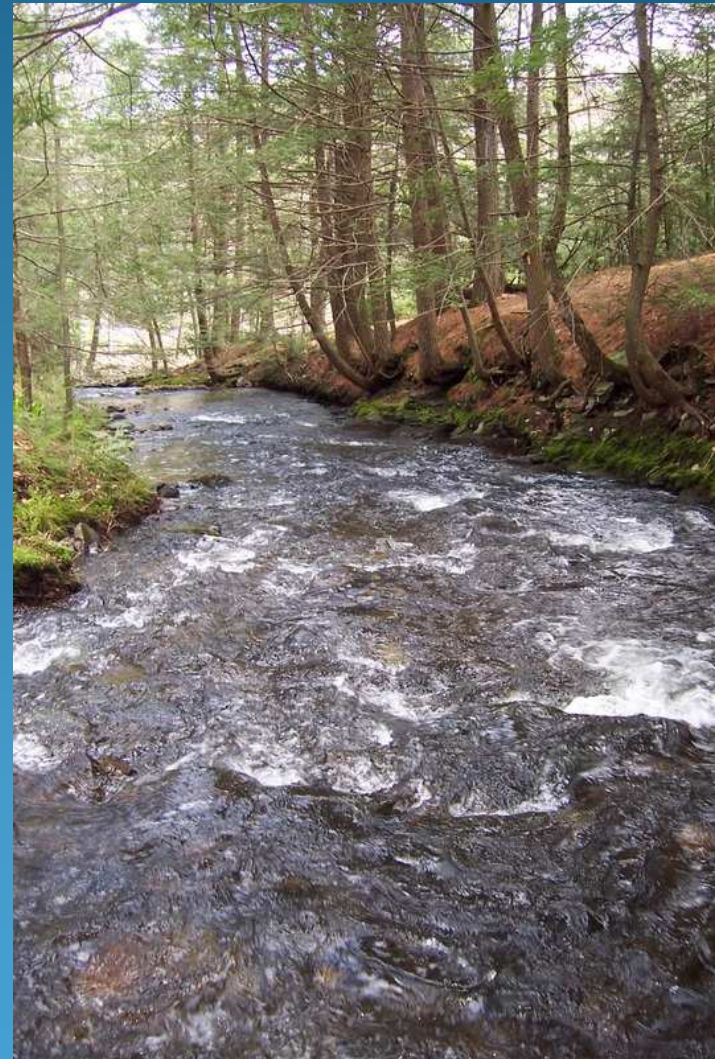
Dwarfskill Creek

Bush Kill (Millrift) Creek**

Shohola Creek

* Class A Trout Water

* Exceptional Value





We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

~Aldo Leopold, A Sand County Almanac