

Connoquenessing Creek Watershed Conservation Plan



Draft Report
February 2008



Western Pennsylvania
Conservancy



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The Pennsylvania Rivers Conservation Program

Connoquenessing Creek Watershed Conservation Plan

Draft February 2008

Prepared for:

Connoquenessing Watershed Community and the
Connoquenessing Watershed Alliance

Prepared by:

Western Pennsylvania
Conservancy



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This project was financed in part by a grant from the Community Conservation Partnership Program under the administrations of the Department of Conservation and Natural Resources, Bureau of Recreation and Conservation.

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ACKNOWLEDGEMENTS

A sincere acknowledgement and thank-you goes out to all the organizations, agencies, and individuals who dedicated their time and resources to make this project a success. Our apologies to anyone inadvertently omitted.

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Western Pennsylvania Conservancy provided all of the photographs unless otherwise noted.

ACRONYMS

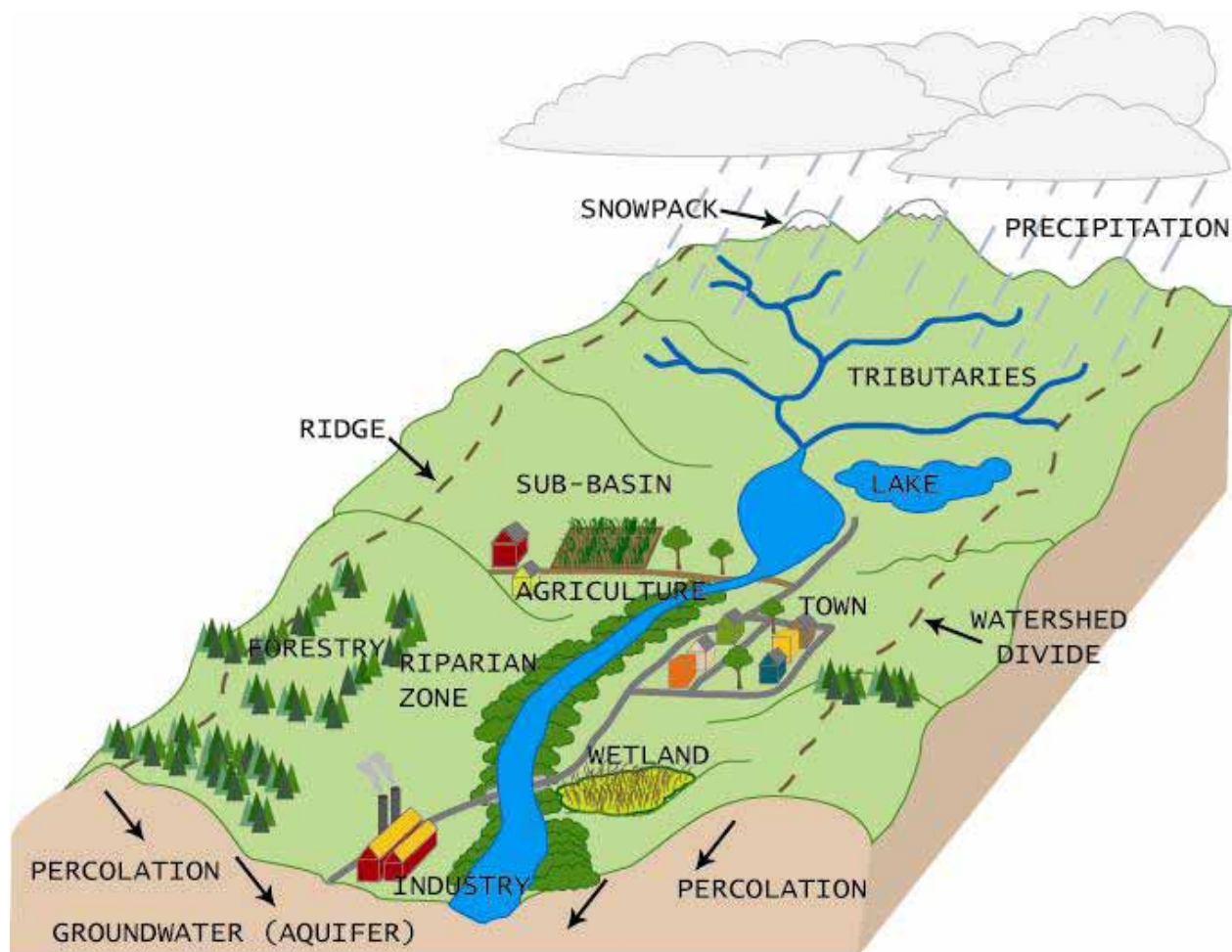
ACB	Alliance for the Chesapeake Bay
ACC	Aquatic Community Classification
AMD	Abandoned Mine Drainage
AMR	Abandoned Mine Reclamation
APHIS	Animal and Plant Health Inspection Service
AQI	Air Quality Index
ASA	Agricultural Security Areas
ATV	All Terrain Vehicles
BASA	Butler Area Sewer Authority
BAT	Brownfield Action Team
BDA	Biological Diversity Area
BMP	Best Management Practices
CAFO	Concentrated Animal Feeding Operation
CERCLA	Comprehensive Environmental Response Compensation and Liability Act
CREP	Conservation Reserve Enhancement Program
CSO	Combined Sewage Overflow
CWA	Clean Water Act
CWA	Connoquenessing Watershed Alliance
CWF	Cold Water Fishery
DA	Dedicated Areas
DCNR	Department of Conservation and Natural Resources
DEP	Department of Environmental Protection
DMAP	Deer Management Assistance Program
EAB	Emerald Ash Borer
ECOZ	Ecologically Concerned of Zeligople
EPA	Environmental Protection Agency
EQB	Environmental Quality Board
EV	Exceptional Value
FEMA	Federal Emergency Management Agency
GFCC	Government Financed Construction Contract
HQ	High Quality
HUC	Hydrologic Unit Code
IBA	Important Bird Area
IMAP	Important Mammal Area
IPM	Integrated Pest Management
KARE	Keystone Aquatic Resource Education
LCA	Landscape Conservation Area
LEEP	Lutherlyn Environmental Education Program
MF	Migratory Fishes
MSWLF	Municipal Solid Waste Landfills

NFIP	National Flood Insurance Program
NISIC	National Invasive Species Information Center
NHI	Natural Heritage Inventories
NOMA	Nutrient and Odor Management Act
NOx	Nitrogen Oxides
NPDES	National Pollutant Discharge Elimination System
NPL	National Pollutant List
NRCS	Natural Resource Conservation Service
OLDS	On-lot Disposal Systems
PASS	Pennsylvania Archaeological Site Survey
PDA	Pennsylvania Department of Agriculture
PDE	Pennsylvania Department of Education
PEC	Pennsylvania Environmental Council
PFBC	Pennsylvania Fish and Boat Commission
PGC	Pennsylvania Game Commission
PNHP	Pennsylvania Natural Heritage Program
POWR	Pennsylvania Organization for Watersheds and Rivers
RCRA	Resource Conservation Recovery Act
SAC	Sewage Advisory Council
SARA	Superfund Amendments and Reauthorization Act
SEO	Sewage Enforcement Officer
SFHA	Special Flood Hazard Areas
SMCRA	Surface Mine Conservation Recovery Act
TMDL	Total Maximum Daily Loads
TSF	Trout Stocked Fishery
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USGS	United States Geological Survey
WPC	Western Pennsylvania Conservancy
WWF	Warm Water Fishery

WATERSHED DEFINITION

A watershed is an area of land that drains to a common waterway, such as a stream, lake, wetlands, aquifer, or ocean. Each waterbody has its own watershed; some are small, such as the Connoquenessing Creek and others are larger, such the Beaver River, Ohio River, and Gulf of Mexico. The highest elevation surrounding the waterbody defines its watershed boundary. A drop of water falling outside the boundary will drain to another watershed.

Land uses and human influences can impact the quality of the watershed. Everyone lives in a watershed and “We all live downstream.” Local impacts on the waterbody affect the quality of the watershed downstream, just as impacts upstream affect the local quality of the watershed.



Executive Summary

Connoquenessing Creek, a tributary of the Beaver River, flows 54.1 square miles and encompasses 830 square miles in Allegheny, Beaver, Butler, Lawrence, Mercer, and Venango counties. The focus of this report includes 430 square miles and six of the seven tributaries. Slippery Rock Creek, although a major tributary to the Connoquenessing watershed, has been omitted due to its dissimilar characteristics with the remainder of the Connoquenessing Creek watershed. A separate plan focusing on its specific characteristics is being prepared for the Slippery Rock Creek watershed, therefore it is not included in this study.



Connoquenessing Creek from its confluence with the Beaver River

The Connoquenessing Creek Watershed Conservation Plan is a comprehensive study of the natural and cultural resources within the Connoquenessing watershed. The plan compiles broad-based data about recreational, historical, socio-economic, and natural resources throughout the region, and involves a strong community participation element through the identification of local needs and concerns.

This is a non-regulatory document, and serves as a reference and educational tool promoting the conservation of natural resources, monitoring and improvement of water quality, and advocates sound community-planning practices. Recommendations identified in this plan are not enforceable by any agency. Implementation of this plan is the responsibility of the entire watershed community, and depends upon cooperation and collaboration among many different organizations.

In 2005, Western Pennsylvania Conservancy (WPC), in cooperation with Connoquenessing Watershed Alliance (CWA), received funding for the Connoquenessing Creek Watershed Conservation Plan from Pennsylvania Department of Conservation and Natural Resources (DCNR).

The Pennsylvania Rivers Conservation Program aids groups in accomplishing local initiatives through planning, implementation, acquisition, and development activities. As part of the program, DCNR has established the Pennsylvania Rivers Registry to validate the completion of approved watershed conservation plans. The registry serves to promote public awareness of completed plans, while fostering support for future projects that will enhance the overall quality of the watershed.

The purpose of this study is to document the current conditions and identify additional initiatives aimed at improving the livability and attractiveness of the region. Local stakeholders were actively involved in developing a vision for the future through public meetings, interviews, surveys, and project committees. A goal of this plan is to develop a strategy to make the vision for the future a reality. Practical solutions, action steps, and resources have been identified to assist stakeholders in achieving the vision set forth. This plan can and should be used to assist groups and citizens working and/or living within the region to improve the quality of life. It should also be used in planning for long-term growth.

Project Background

In February 2006, the watershed conservation planning process was initiated with the establishment of the local project steering committee comprised of representatives from various community and conservation groups, residents, businesses, and agencies. The steering committee was the local driving force guiding the plan's development. The mission of the Connoquenessing Watershed Conservation Plan



Project steering committee discussing the status of the project

additional opportunities for involvement through personal interviews and/or participation on advisory committees. Municipalities were asked for their involvement through a phone questionnaire and follow-up survey.

In February 2008, with the completion of the draft plan, area residents were given another opportunity to participate by reviewing the plan at a series of public meetings. Comments about the draft plan were collected for 30 days following the public meetings, and were then incorporated into the final plan. A copy of the plan is available on the WPC website at <http://www.paconserve.org/rc/wac-rcp.html>.

Report Summary

Project Area Characteristics

- A diversity of lifestyles and a variety of impacts and attributes exist within the Connoquenessing Creek watershed. As the waterway progresses from its headwaters as a calm, slow-flowing stream mostly surrounded by rural landscapes, it enters into urbanized areas where impacts and attributes change.
- Thirty-three municipalities compose the watershed, of which 55 percent have completed municipal comprehensive plans, 37 percent utilize subdivision regulations, and 67 percent utilize zoning.
- Between 1990 and 2000 the watershed population increased by 10,803 people to a total population of 149,910 people.
- Transportation through the region is sufficient, with two interstates, two U.S. Routes, 11 state highways, and numerous state, township, and private roadways. Five active railroads and four airports also exist.
- Forty-two emergency service facilities exist, including four hospitals, 15 police departments, 20 fire departments, and three ambulance service centers.
- The average household income is \$60,020, and manufacturing leads the employment industries.



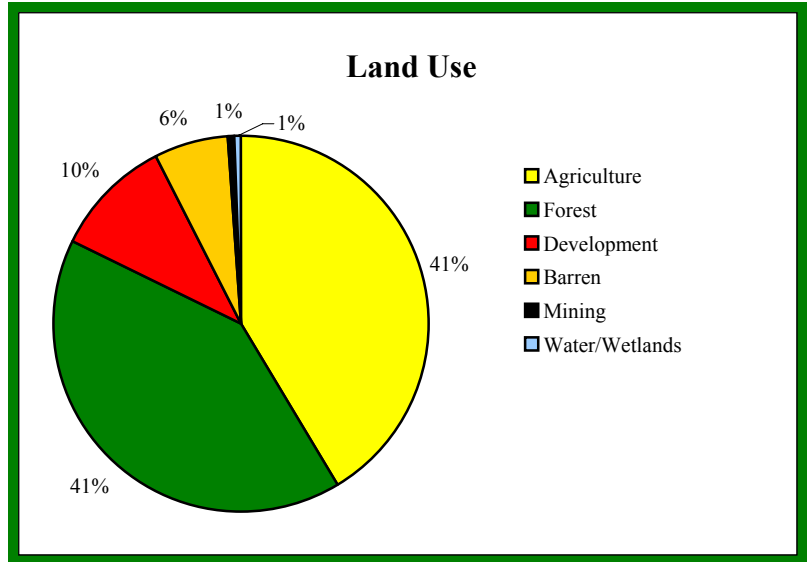
Seneca Landfill

is: “to actively engage the watershed community while addressing water quality concerns, promoting planning, and protecting the cultural and historical resources of this diverse rural-urban watershed through educational and recreational opportunities, highlighting positive attributes, and by acknowledging the relationship between humans and their environment.”

Outreach to the community, a key component of the planning process, had begun by June 2006 with the development of brochures, surveys, and a traveling display. In September of that year, a series of public meetings were held in Butler, Harmony, Ellwood City, and Mars to engage participation from area residents. Individuals were given

Land Resources

- Agricultural and forests dominate the land cover, with 82 percent.
- Approximately 178 square miles are used for agricultural purposes. Identified within this area are 13 soil associations, 31 prime agricultural soils, and 108 soils classified as farmland of statewide importance.
- Enrolled in agricultural security areas are 252 parcels.
- Approximately 176 square miles of forestland exist, of which the majority—79 percent—is deciduous forest.
- A variety of potential hazardous areas exist, including 13 auto salvage yards, 409 Resource Conservation and Recovery Act sites, two Superfund sites, two active landfills, four inactive landfills, seven brownfield sites, 90 inactive coal mines, and four abandoned coal mines.



Water Resources

- Connoquenessing Creek provides local residents with drinking water, businesses with water for their operations, outdoor recreation enthusiasts with a place to paddle or fish, and wildlife with an essential element of their habitat needs.
- Surface water, groundwater, floodplains, riparian zones, stormwater, dams, and wetlands are important components to water quality.

Table ES-1. Major Tributaries

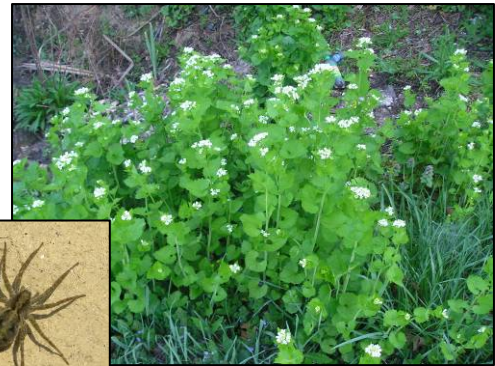
Tributary	Percent Area	Drainage Area (square miles)
<i>Upper Connoquenessing Creek</i>		136.43
Thorn Run	1.63	7.69
Bonnie Brook	4.33	20.44
<i>Middle Connoquenessing Creek</i>		147.99
Thorn Creek	8.95	42.22
Glade Run	8.65	40.79
Breakneck Creek	8.83	41.64
<i>Lower Connoquenessing Creek</i>		187.21
Little Connoquenessing Creek	13.67	64.49
Camp Run	3.14	14.8
Brush Creek	11.89	56.1
<i>Slippery Rock Creek (subwatershed)</i>		366.12

Biological Resources

- The Connoquenessing region is home to a diversity of plants and animals, including 101 species of concern, 42 state listed threatened or endangered species, three federally listed threatened or endangered species, including the clubshell (endangered mussel), bog turtle (endangered), and bald eagle (threatened).
- Habitat loss, fragmentation, and degradation; urban sprawl; pollution; and invasive species are the main threats to biodiversity.
- There are many benefits to protecting biological diversity and natural areas, including recreational opportunities; public health and safety; economic sustainability; and land, air, and water quality.



Shore spider



Garlic mustard, an invasive plant species located along Connoquenessing Creek

Cultural Resources

- A variety of recreational opportunities are available, including: 98 park sites, 24 golf courses, two trails, four campgrounds, three camps, four approved trout water streams, two special regulation areas, and one state game land.
- The region possesses a rich history, including the assassination attempt of George Washington and first settlement of the Harmonie Society. The National Register of Historic Places identifies eight historical structures and three historical districts within the region. One historic district, Harmony Historic District, is identified as a National Historic Landmark.

Issues and Concerns

- Visions and goals identification is a fundamental element of watershed conservation planning. In order to obtain these visions and goals, local stakeholders were contacted using a variety of methods, including a traveling display, educational brochure, public meeting workshops, student workshops, public surveys, municipal surveys, key individual interviews, personal communication, community events, and project website.
- Survey and interview participants identified priority concerns, including development, stormwater, septic and sewage, farmland protection, illegal dumping, industrial pollution, environmental education, flooding, public access, municipal cooperation, and all-terrain vehicles.

Management Recommendations

- Management recommendations are suggestions to maintain or improve the conditions that affect many aspects of life within the region. The recommendations were compiled from municipal and public surveys, public meeting workshops, and key individual interview comments.
- The recommendations cover a broad range of topics, but should not be considered all encompassing. The suggestions are non-regulatory in nature, and best used as a guide to conserving, restoring, or improving important watershed characteristics.
- Creativity in implementing the identified recommendations or developing additional suggestions is highly encouraged.

Identified Goals

Project Area Characteristics

1. Identify impacts of acid precipitation to minimize or remediate these impacts.
2. Enhance transportation infrastructure.
3. Carefully plan development to ensure economic enhancement while preserving community character without adversely affecting quality of life.
4. Encourage economic growth with minimal impacts to the environment.
5. Establish economic stability needed to maintain a balanced workforce.
6. Enhance marketability of the region to prospective businesses.
7. Increase communication and cooperation among municipalities and counties within the region to promote sharing of services and improve conditions collectively affecting the watershed.
8. Proactively plan for the future.
9. Enhance financial support and services to prepare and train emergency response providers.

Land Resources

1. Work with agricultural community to implement best management practices on their property.
2. Maintain agricultural uses on lands.
3. Encourage environmental responsibility in industrial farming operations.
4. Promote local agricultural products, producers, markets, and related programs.
5. Establish or enhance incentives for land protection and conservation practice implementation.
6. Protect agricultural and ecologically significant lands.
7. Promote management practices on active mine sites to minimize impacts, prevent mine drainage, and improve conditions where possible.
8. Reclaim abandoned wells, mines, and quarries.
9. Minimize damages and financial hardship caused by mine subsidence.
10. Encourage remediation and removal of refuse piles.
11. Prevent future dumping activities by providing alternative methods of disposal and cleaning up existing dumpsites.

Water Resources

1. Minimize potential flooding damages by taking a proactive approach to managing floodplains.
2. Encourage non-structural approaches to floodplain management.
3. Reduce industrial and sewage waste discharges.
4. Install, maintain, or upgrade public and private water and sewage treatment facilities.
5. Minimize impacts from stormwater through planning.
6. Decrease the amount of impervious cover by 10 percent.
7. Utilize riparian corridors to improve water quality and wildlife habitat.
8. Protect wetlands.
9. Further investigate wetlands and their functions.
10. Reduce the amount of erosion and sedimentation entering waterways.
11. Monitor water quality to ensure demand does not exceed water supply.
12. Investigate the need and effectiveness of establishing a water quality trading program within the Connoquenessing Creek watershed.
13. Develop a monitoring plan for the watershed or completed project areas, integrating quality assurance/quality control standards into the plan.
14. Establish and implement water conservation practices to reduce water consumption.
15. Conduct an assessment of natural and man-made impoundments, and implement recommendations to enhance their ecosystems.
16. Reduce impacts caused by point and non-point source impairments.
17. Investigate methods to reduce impacts of acid precipitation.

18. Identify, study, and treat abandoned mine drainage discharges.
19. Monitor the use and effectiveness of dams.

Biological Resources

1. Develop, adopt, and implement management plans to protect forest and wildlife resources.
2. Implement best management practices to protect forest resources.
3. Identify Important Bird and Mammal Areas.
4. Identify and protect biologically diverse areas.
5. Enhance aquatic habitats.
6. Protect rare, threatened, and endangered species and their habitats.
7. Identify and protect important habitats for plant and animal species.
8. Monitor and control invasive species.
9. Implement strategies to conserve rare and unique plant and animal communities.
10. Promote the use of native plants.
11. Implement wildlife management practices to protect biodiversity.

Cultural Resources

1. Increase awareness of recreational resources through marketing and outreach.
2. Enhance recreational opportunities for sportsmen and outdoor enthusiasts.
3. Establish recreational programs for youth.
4. Improve recreational facilities and ensure availability and access.
5. Establish additional recreational facilities.
6. Establish, expand, and improve area trails.
7. Convert abandoned rail lines into trails and tours.
8. Link recreational facilities to each other.
9. Encourage environmentally sound practices when operating recreational vehicles, and enforce existing laws to minimize intrusions on private lands.
10. Establish recreation facilities and programs for senior citizens and youth.
11. Expand awareness, appreciation, and support for the arts.
12. Highlight and preserve local history within the region.
13. Promote appreciation for the local history.
14. Promote community involvement in conservation and educational initiatives.

Education and Funding

1. Educate stakeholders on how land-use planning can be affective.
2. Educate stakeholders about impacts associated with poor air quality.
3. Increase awareness about practices to assist agricultural and forest landowners in managing their lands effectively.
4. Increase awareness about impacts from litter, illegal dumps, and abandoned vehicles.
5. Increase awareness about the benefits of riparian corridors.
6. Educate stakeholders about the value and importance of wetlands.
7. Increase awareness about water quality issues affecting communities.
8. Establish ongoing environmental education programs.
9. Increase awareness about water quality, quantity, and conservation practices.
10. Educate stakeholders about the importance of wildlife and natural resources.
11. Increase awareness of the importance of biodiversity and protecting wildlife habitats.
12. Educate recreation users about proper and safe practices.
13. Increase funding to address issues important to the Connoquenessing Creek watershed communities.
14. Increase funding to create, maintain, and enhance existing recreational facilities and opportunities.