

# **Introduction & Background**

## ***Plan Purpose***

The purpose of the Brodhead Watershed Conservation Plan is to create a conservation plan to help guide and prioritize conservation actions in the Brodhead watershed. This document will also be used to petition the commonwealth to have the Brodhead Creek put on the Pennsylvania Rivers Conservation Registry. After obtaining this status, the Brodhead watershed will be eligible for matching funds for the implementation of projects that are directly related to the actions and strategies identified in this plan. Thus, municipalities, the County, the conservation district, and non-profit conservation groups will be able to leverage funds for these purposes.

Ultimately the plan is a means to assemble and focus planning efforts on a watershed-wide basis and identify specific water-related conservation and restoration projects. While much inventory information was gathered and collected from prior related plans and studies, other information was obtained through meetings with the public and watershed partners regarding significant resources within the watershed. The identification of watershed-specific problems, issues, concerns, and constraints was a major focus of the public involvement process performed in developing the plan.

The plan was produced with financial assistance obtained under the *Rivers Conservation Program* administered by the Pennsylvania Department of Conservation and Natural Resources (DCNR), and matching funds and in-kind services from the many partners acknowledged herein. The Brodhead Watershed Association (BWA) has spearheaded the development of the plan. Formed in 1989 as a non-profit, non-governmental, educational organization, BWA was awarded a DCNR River Conservation Planning Grant and on March 25, 1999 signed a contract with DCNR to develop the Brodhead Watershed Conservation Plan. The mission of BWA is to inform and involve watershed residents and visitors about the watershed and ways to protect and conserve watershed resources and values.

A Steering Committee composed of a diverse array of partners and stakeholders, including local, regional and federal representatives, riparian landowners, and members of the public at large, provided advice and assistance throughout the development of the plan and served to underpin the planning process. These partners have worked diligently for more than two years to produce this conservation plan. Their commitment to preserving and protecting the watershed bolsters the plan.

During the implementation phase of this plan, BWA will encourage municipalities, non-profit groups, and other appropriate grantee organizations to apply for funding to implement the strategies and actions included in this conservation plan. Implementation projects will bring this document to life. The BWA and its partners are committed to supporting local communities in the watershed as they begin to implement this plan.

Also, BWA will continue to partner with other organizations, entities, and government agencies to assist in the implementation of the recommendations herein.

## ***The Brodhead Watershed***

The Brodhead watershed drains an area of about 285 square miles, almost half of Monroe County, emptying into the Delaware River just north of where the Delaware River flows through the dramatic cut in Kittatinny Mountain known as the Delaware Water Gap. The Brodhead enters the Delaware River at the southern end of the Delaware Water Gap National Recreation Area, which encompasses a forty-mile reach of the River and is one of three reaches of the Delaware River that are included in the National Wild and Scenic Rivers System.

The Brodhead watershed includes the Brodhead Creek and its major tributaries: Marshalls, McMichael, Paradise, and Pocono Creeks, extending from Barrett Township and Mount Pocono in the north to Brodheadsville in the west to the Delaware River. The watershed includes all or part of 17 of Monroe County's 20 municipalities and part of Greene Township, Pike County.

In addition to being an important source of recreation and habitat, the Brodhead watershed provides the drinking water supply for area residents and visitors. The boroughs of Stroudsburg and East Stroudsburg and surrounding areas are served by public water systems which draw on the Brodhead and Sambo creeks and nearby wells. Most of the rest of the watershed population uses groundwater drawn from private wells.

Much of Monroe County's recent growth has occurred with little consideration of its impact on both the quality and quantity of surface and groundwater of the watershed. As rooftops, parking lots and streets spread across the landscape, replacing forests and fields, streams suffer. Rain and snowmelt run rapidly off these man-made surfaces instead of soaking into the ground. This stormwater runoff carries pollutants into the streams, accelerates streambank erosion, and raises stream temperatures. Future development and planning need to take watershed protection into consideration.

## ***Challenges***

Although the Brodhead watershed currently enjoys excellent water quality overall, there are existing problems and threats to maintaining this state. The case for protection of the Brodhead Watershed is therefore apparent. Major challenges known in the watershed at the start of the planning process include the following:

- ***Water Quality and Quantity*** – Although water quality is generally excellent in most areas, impacts have been documented below some sewage treatment plants and in some built-up areas. In the future, development must consider the quality and quantity of surface and groundwater so that we will have sufficient clean

water for in-stream aquatic life and for human consumption. Sewage treatment plants and on-lot septic systems must be maintained in proper working order so that wastewater does not degrade surface or groundwater. Both point and non-point sources of pollution must be mitigated. Continued use of streams for discharge of effluent from sewage treatment plants should be discouraged and opportunities for beneficial use of discharges explored.

- ***Stormwater and Flood Control*** – Uncontrolled stormwater runoff degrades streams by carrying pollutants, including sediment, to streams and by eroding streambanks causing more sediment to be washed into streams. Uncontrolled stormwater is also lost as a potential resource for recharge of groundwater. Stormwater runoff should be managed to decrease stream pollution and maintain groundwater recharge. Although municipal ordinances do require stormwater management for new developments, they do not require control or treatment of pollutants that stormwater carries, nor do they encourage or require infiltration systems so as to use stormwater to recharge groundwater. The revision to the Brodhead Stormwater Management Plan currently underway will address these concerns if municipalities adopt, and vigorously enforce, ordinances to implement the plan. Still to be addressed is the impact of runoff from existing development. Wetlands play a vital role in storing, treating and slowly releasing stormwater and should be protected from filling or other encroachments. Development on high-risk areas such as floodplains, wetlands, and steep slopes increases stormwater runoff impacts and should be discouraged.
- ***Watershed Protection and Land Conservation*** – The current interest in “*Growing Greener*” and “*Growing Smarter*” techniques for future land development is encouraging. This kind of planned growth recognizes the connections between land use and water resources and attempts to minimize impacts of development on the land and water resources of the Brodhead watershed. Such planned or “smart” growth will help protect land and water habitat for diverse species of flora and fauna. County and regional open space planning efforts can incorporate protection and connections of riparian areas both to provide public access to streams in some areas and to protect those riparian areas from development. Special consideration should be given to the protection of endangered species and habitat types already existing within the watershed.
- ***Recreation*** – Rapid growth has created a need for increased recreational areas in Monroe County. More and affordable recreational opportunities are needed near where people live. Educational opportunities are abundant in the Brodhead watershed and should be expanded. The four school districts within the watershed as well as the Monroe County Conservation District and East Stroudsburg University use the watershed to teach concepts of biology, chemistry, ecology, and conservation “in the field.” The Tannersville Cranberry Bog, a Natural National Landmark, is used for study of its unique bog habitat. The Cranberry Bog, as well as other areas used as outdoor classrooms, should be protected from encroaching development by expansion of the area into public, or

private protected, ownership. Historical resources should also be preserved and made accessible and affordable. Cultural resources unique to this area should also be catalogued and preserved. The development of a system of greenways and trails would also help further the recreation opportunities.

- ***Economic Development*** – Economic development that sustains communities and natural systems should be encouraged throughout the watershed. A principle economic development goal of the Monroe County Comprehensive Plan (Monroe 2020) is to “conserve the environmental quality that is the County’s principal attraction for visitors and residents alike (p. 100).” The Brodhead Watershed Conservation Plan is complementary to the Monroe 2020 planning effort and assumes that economic development and environmental quality go hand in hand.