

Marsh Creek Watershed



Welcome to the Marsh Creek Watershed! The Watershed Alliance of Adams County (WAAC) is involved in the monitoring, protection and restoration of this watershed, one of several watersheds that originate in, or flow through Adams County. This fact sheet is designed to provide you with information on the watershed including its history, natural history, threats to its health, information on what you can do to protect the waters of Marsh Creek, and contact information for other groups working to protect and restore its waters.

What is a Watershed?

A watershed is the area of land from which surface and groundwater drain to the lowest point. This point could be another stream, a lake, a river, a bay, or an ocean. Synonyms for a watershed include drainage basin or catchment basin.

Everyone lives in a watershed!

Watersheds can be large or small. Every stream, tributary, or river has an associated watershed, and small watersheds join to become larger watersheds. It is relatively easy to delineate watersheds using a topographic map that shows stream channels. Watershed boundaries generally follow major ridgelines around channels and meet at the bottom, where water flows out of the watershed, a point commonly referred to as a stream or river.

Why is the concept of a watershed important?

The idea of a watershed is important because it connects the water in a stream, lake, or river with the land that surrounds it. Water moves from the land into a waterway and activity that impacts the water quality or quantity in a watershed can affect all the locations downstream of this point. Because we all live in a watershed, we all need to do our part to protect our watershed's health!



What is your "watershed address?" Everyone lives in a watershed.

Marsh Creek Watershed Profile



A barn, one of many, in the 64,000 square mile Chesapeake Bay watershed.

Marsh Creek is a 77 square mile watershed in Adams County, Pa. At the confluence with Rock Creek, Marsh Creek becomes the Monocacy River, which then drains to the Potomac River and finally to the Chesapeake Bay. The Marsh Creek Watershed headwaters begin in and near the Michaux State Forest. Tributaries that flow into Marsh Creek include Willoughby Run, Little Marsh Creek, Mummasburg Run, Muskrat Run, Plum Run, Green Run and Poplar Spring Creek. The Marsh Creek and its tributaries flow through a variety of landscapes: orchards, farmland, villages, the Gettysburg National Military Park, commercial and industrial centers, and woodlands. Marsh Creek serves as the western boundary of Cumberland Township and separates it from both Freedom and Highland townships. The watershed includes portions of Franklin, Highland, Cumberland, Freedom, Hamiltonban and Butler townships, and a very small portion of Gettysburg Borough. Commu-

nities such as Orrtanna, Cashtown, McKnightstown, Knoxlynand Greenmount are also located within the watershed.

While the health and function of the Chesapeake Bay may not be of obvious concern to Marsh Creek Watershed municipal governments and citizens because it is so geographically far away and comprises a very different ecosystem, the function and health of the Bay ecosystem is a direct reflection of the health and function of each of its tributary watersheds, including the Marsh Creek Watershed.

Watershed Natural History

Marsh Creek starts as headwaters near the South Mountain and the Michaux State Forest in the far western part of Adams County. This region is part of the Blue Ridge physiographic province and contains older and harder rocks than the surrounding areas. Because the surface consists mainly of rocks resistant to weathering and erosion, the ridge commonly rises above the adjacent areas of the more rocky piedmont. The elevation of the divide at the headwaters is at 1906 feet. In the rolling hills of the Piedmont region, Marsh Creek and its tributaries wind their way down through the orchard country to the red shale region outside of Gettysburg. At the confluence located near Harney, Md. Marsh and Rock creeks join to form the Monocacy River. The mouth of the Marsh Creek is at an elevation of 361 feet. Marsh Creek is 27.8 miles long from its headwaters to the mouth.



A monument overlooking a farm field.

Watershed Human History



A stone wall bordering a farm field shows its age.

The Manor of Maske was one of the largest manors in Pennsylvania. In 1734, the Penns authorized a Lancaster County surveyor and public official to issue what were called licenses to persons wishing to take up land west of the Susquehanna River. Two licenses were issued on April 8, 1735, for a total of 600 acres of land among the branches of Marsh Creek. The land that now comprises the center of Adams County was purchased from the Iroquois Indians by the family of William Penn in 1736. The Indian claims were settled, the temporary boundary line between Pennsylvania and Maryland was settled, and the settlers were being attracted to the area by means of regular warrants and surveys. The residents of the Marsh Creek Settlement (synonymous with the Manor of Maske) were all, or virtually all Scotch-Irish. These Scots had lived in Ireland for a century or more. They were convinced that the British government had mistreated them. Many were embittered and had begun coming to Pennsylvania and Delaware in the second decade of the eighteenth century. They provided the largest number of pioneer settlers in what are now Cumberland and Franklin Counties, Pennsylvania. In the 1740s, there were many more Scotch-Irish in what is now Adams County, than any other ethnic group.

The pioneers in the Marsh Creek Settlement came in to the area in response to what they said was a governor's proclamation, calling for the settlements of unimproved lands west of the Susquehanna River. The Marsh Creek settlers became an integral and valued part of the society of York County, which was created in 1749. The Manor of Maske and the Marsh Creek Settlement were surveyed January 17, to January 30, 1766. One early settler, Samuel Gettys, established a tavern in 1761. By 1786 his son James had laid out a town of 210 lots with a central town square on the land surrounding the tavern. This town would become known as Gettysburg.

With the first Pennsylvania Frame of Government in 1776 and the Constitution of the United States in 1787, the growing population of the area decided they wanted to separate from York County. A new county was approved by the state legislature in 1800 and was named after the President at that time, John Adams. Gettysburg was chosen as the county seat.

Even before 1797, major changes had begun to occur in the ethnic composition of the manor, as descendants of many of the Scotch-Irish families, which had first settled there, sold their properties to German farmers and moved away.

By 1860 the town of Gettysburg had grown to 2,400 inhabitants with ten roads leading into the town, helping to create a few small but thriving industries. These roads and businesses would lead two armies into the county in 1863. At the time of the Battle of Gettysburg, there

were about 450 buildings housing carriage manufacturing, shoemakers and tanneries as well as the usual merchants, banks and taverns of a county seat.

One Adams County resident made these extravagant claims in the late 19th century: "...it is not hazarding much in saying that, for domestic purposes, Adams County is the best watered spot on the globe. Certainly there can be none superior to it. Springs bubble up their sparkling waters everywhere; the silvery, cool, sweet mountain streams ripple; the clear valley brooks winding their way in the deep shade and bright sunshine are upon every side, all of clear, pure granite water..." To obtain water for domestic purposes, residents were dependent primarily upon wells and cisterns during the 19th century. As towns increased in population, the "clear, pure" water often became something less. Refuse water ran into the streets. So much so, that "the stench, especially in warm weather, is not only disagreeable, but dangerous to public health."

In 1832, largely through the efforts of Thaddeus Stevens, a water company was incorporated in Gettysburg, bringing water from a spring on the south edge of the borough (Marsh Creek). Improvements were made in the town's "waterworks," and a new company was formed. In 1847, the water company had 26 customers, including individuals, several taverns, a hat maker shop and the borough's hydrants.

Throughout the 19th century and into the 20th century, the county's newspaper reported frequently the "invasions" of typhoid fever, a disease frequently traced to impure water. The need to supply safe water for town citizens became increasingly apparent. Fearful of an outbreak of a typhoid fever epidemic in the summer of 1920, the county medical authorities prohibited persons from swimming in Marsh Creek above the Gettysburg Water Company pumping station as a preventive measure. Concern was heightened as a camp had been established along Marsh Creek by the construction company building the Lincoln Highway west of Gettysburg. "How would the people of the town like to drink water after several scores of men washed in it every night? ... We cannot afford to undergo the risk of a typhoid fever epidemic..." A watchman was stationed at the "Old Swimming Hole" to keep out the bathers, both the workers and the locals.

The town of Gettysburg and surrounding communities continue to depend on Marsh Creek for its water supply. The Gettysburg Municipal Authority (GMA) is responsible for providing water and wastewater services to the Borough of Gettysburg and portions of Cumberland and Straban Townships. GMA maintains its drinking water treatment facility along the Marsh Creek, just upstream of the old "waterworks."

Adams County Bicentennial Committee

<http://www.gettysburg.com/adams200/tidbits/tabofcon.htm>

Adams County Historical Society

<http://www.achs-pa.org/>

Threats and Problems: Watershed Health

A growing population within the Marsh Creek region has brought about an increase in water quality problems in the watershed. The major source of water quality impairment is from non-point source pollution sources. Problems within the watershed include, excessive stormwater discharge, a lack of riparian buffers, turbid waters, silted streambeds, and significant bank erosion. In areas that benefit from thick riparian buffers, ecological diversity is rich; however, many areas bordering agricultural or residential areas do not have the proper stream buffer needed to protect this diversity. Many of the tributaries have additional problems that affect in-stream life, such as water that is too warm, has high nutrient concentrations, has harmful algae blooms, lacks sufficient base flow in late summer, and contains thick layers of silt that buries streambeds. Some stream reaches may not support any animal life.

A group of individuals concerned about the health of the Rock Creek, Marsh Creek's sister watershed, identified many potential issues facing its watershed. Although they were referring to the Rock Creek Watershed, the same items are impacting the Marsh Creek Watershed. These issues include:

Water quality and quantity:

- Large withdrawals of water from the watershed by Reliant Energy
- Improper herbicide application
- Old farm and household dumps
- Non-migratory geese population
- Groundwater pumping by Valley Quarry
- Presence of unmitigated Superfund sites
- Former Krouse dump

Surface water impacts:

- Erosion and sedimentation best management practices not being implemented
- Streambed sedimentation
- Nutrient runoff
- Livestock in creeks and livestock-caused streambank erosion
- Cloudy, turbid stream water
- Fill in floodplains
- Fill in drainage paths
- Loss of riparian buffer
- Poor stormwater management
- Contour farming not being practiced in large fields



A cattle crossing like this one helps stop erosion by preventing cows from trampling streambanks.

Groundwater recharge impacts:

- Dry wells and loss of groundwater recharge
- High nitrates in groundwater
- Loss of hedgerows
- Road embankments stripped of vegetation through cutting and overly aggressive roadside mowing

What You Can Do For the Watershed

Protecting and Restoring the Health of the Marsh Creek Watershed:

The Watershed Alliance of Adams County (WAAC) is an organization of citizens of the watersheds of Adams County. These landowners, teachers, farmers, sportsmen, business people and others are volunteers who work together in the community to document changes over time in the water quality of their local streams including Marsh Creek and Rock Creek.



Studying the aquatic insects found in Marsh Creek helps us determine how healthy the stream is.

All volunteers undergo special training in chemical and biological sampling. WAAC is committed to good science and sharing the results of its work with anyone interested in the quality of their local streams. Through educational programs, WAAC volunteers work to foster appreciation of the value of these streams. WAAC hopes that its work will ensure the preservation of the waters of Adams County for generations to come.

How You Can Help Protect the Watershed:

- Make your voice heard. Support local land use plans that allow for compatible growth and that protect ground water and wetlands.
- Reduce the use of fertilizer and pesticides on your lawn.
- Use Best Management Practices (BMPs) on agricultural and timber land.
- Plant trees and shrubs along stream banks to reduce erosion and absorb nutrients and sediment runoff.
- Make sure your home septic system is routinely cleaned.
- Recycle paper, newspaper, glass, tin aluminum, cardboard, plastics, used motor oil and safely dispose of toxic materials.
- Install effective anti-siltation devices to keep exposed soil from washing into streams during construction.

Protect and Restore: Contact Information

Watershed Alliance of Adams County

670 Old Harrisburg Road, Suite 201
Gettysburg, PA 17325
email: amclain@adamscounty.us
website: <http://www.adamswatersheds.org/>

Adams County Conservation District

670 Old Harrisburg Road, Suite 201
Gettysburg, PA 17325
email: amclain@adamscounty.us

The Interstate Commission on the Potomac River Basin

51 Monroe Street, Suite PE-8
Rockville, MD 20850
Phone: 301-984-8110
Fax: 301-984-5841
email: alew@icprb.org
website: <http://www.potomacriver.org>

Gettysburg National Military Park

97 Taneytown Road
Gettysburg, PA 17325
Phone: (717) 334-1124
Fax: (717) 334-1891
website: <http://www.nps.gov/gett/index.htm>

Michaux State Forest

Bureau of Forestry
Forest District #1
10099 Lincoln Way East
Fayetteville, PA 17222
Phone: (717) 352-2211
email: <http://www.dcnr.state.pa.us/forestry/email.aspx>
website: <http://www.dcnr.state.pa.us/forestry/stateforests/michaux/index.htm>