

LANCASTER COUNTY WATERSHED BASICS

What is a Watershed?

A watershed is the area of land that drains to a specific body of water: a stream, pond, lake, wetland, river or ocean. A watershed area can be as large as portions of several states or as small as a backyard. Everyone lives in a watershed!

Watersheds are broken down even further into *Watershed Management Units*. The largest Watershed Management Unit is a **Basin**. A basin drains to a major receiving water body (large river, estuary, or lake). The drainage areas of basins typically exceed several thousand square miles and usually include major portions of a single state or a group of states. Within each basin are **Sub-basins**. Sub-basins extend over several hundred square miles and are composed of what we call **Watersheds**.



Watersheds of Pennsylvania



Topographic rendering of Chesapeake Bay

Watersheds are broken down further into smaller geographic units called **Sub-watersheds**. Sub-watersheds typically have a drainage area of 2-15 square miles. Sub-watersheds usually drain to second or third order streams (small streams) which are usually a little larger than headwater streams. Finally, within sub-watersheds are **Catchments**, which are the smallest units in a watershed. Catchments are defined as the area that drains an individual development site to its first intersection with a stream.

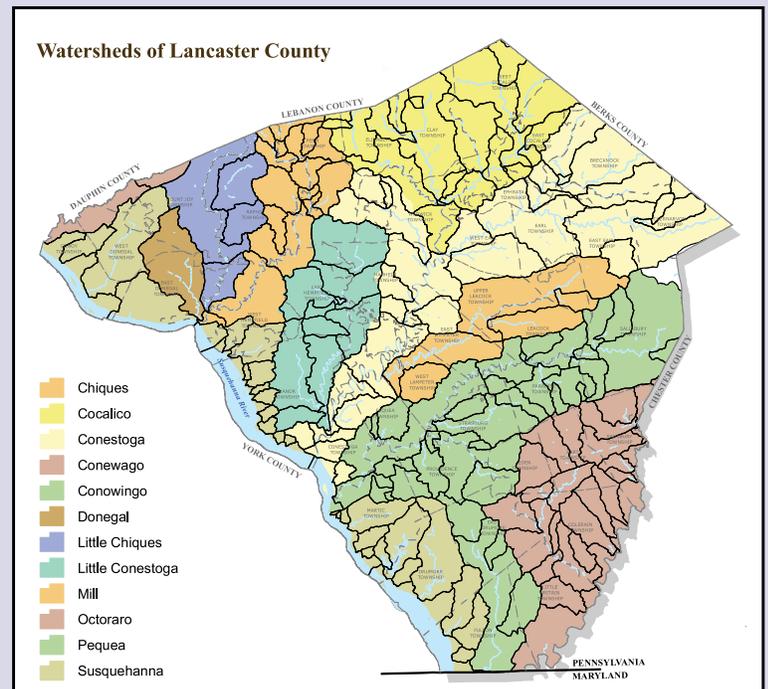
Do you know what watershed you live in, or your “watershed address?” Just like your home address is broken down from country to state to city to street, your watershed address can be found the same way (Ocean, Estuary, River basin, Sub-basin, Watershed, Sub-watershed, and Catchment area). Why is this information important? Whatever we do in Lancaster County will eventually affect the water quality of our friends and neighbors downstream. Remember **WE ALL LIVE DOWNSTREAM!!**

What are the Watersheds of Lancaster County?

The Basin in which most of Lancaster County empties into is the Chesapeake Bay Drainage Basin. One of the many sub-basins for the Chesapeake Bay is the Susquehanna River Sub-basin which Lancaster County is a part of. Continuing “upstream” within Lancaster County are 4 Watersheds; **Chiques**, **Conestoga**, **Pequea**, and the **Octoraro**. Finally, there are 9 Sub-Watersheds within the county. (see map) It should be noted that several small streams along the Susquehanna River drain into the river so this is considered one of the county’s sub-watersheds.

Also, there is a small area in Eastern Lancaster County that actually drains to the Delaware Bay Basin, the Delaware River Sub-basin, Brandywine Watershed, and the West Branch Brandywine Sub-Watershed.

Watersheds & Sub-Watersheds of Lancaster County



What is the Water Quality of Lancaster County Streams?

Lancaster County has nearly 1,500 miles of streams traversing our vast topography. The majority of our streams flow from Northeast to Southwest through the county and enter into the Susquehanna River. Along the way our streams are bombarded with numerous pollution sources which can affect the overall water quality of the stream. Sometimes the streams can handle these sources of pollution but occasionally they cannot. Pennsylvania is required to report those streams in the state which are impaired or degraded and require attention to fix. In Lancaster County, over half are listed on Pennsylvania's polluted list. This simply means that the stream is impacted by some sort of pollution issue and requires attention to fix the problem.



Example of an impaired Lancaster County stream



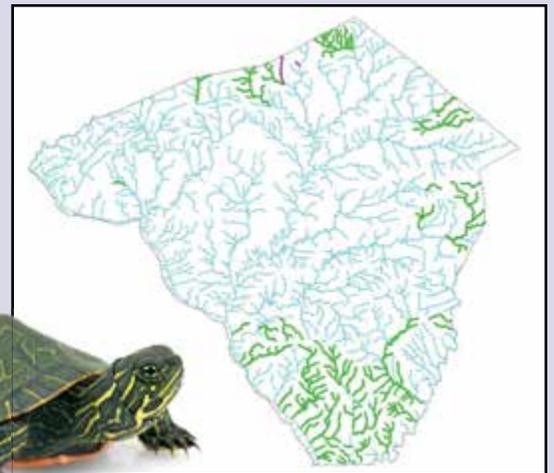
Polluted stormwater discharge



Did You Know...

The Susquehanna River supplies roughly 50% of the freshwater to the upper portion of the Chesapeake Bay.

On the brighter side of watershed health, Pennsylvania also lists those streams which have very good water quality and should be protected for future generations. In Lancaster County, we have nearly 300 miles (20%) of streams that are either classified in the upper echelon as far as water quality is concerned. These streams are called either High Quality or Exceptional Value, (see map). The rest of the county's approximately 500 miles of streams are either "not polluted" or "not excellent" in regards to water quality.



Exceptional Value or High Quality streams in Lancaster County

Fishing Creek an exceptional value Lancaster County stream

What can you do to protect Lancaster County's Watersheds?

There are many ways residents of Lancaster County can protect the water quality of our streams, rivers, lakes, ponds, and wetlands. The simplest thing we all can do is let Mother Nature take care of herself. Altering a flowing stream by straitening it or constricting its flow only creates water quality and flooding problems downstream. In addition, mowing the vegetation next to a stream increases stormwater flows and reduces the ability to filter pollutants before they enter a water body.



A stream straightened by man

Did You Know...

Pennsylvania has over 84,000 miles of streams and rivers.



Mowing vegetation adjacent to a stream decreases water quality

A better option instead of mowing next to the stream is to plant native vegetation that will increase water quality, provide food and cover for wildlife, protect stream banks, slow stormwater runoff, and trap and filter excess nutrients and sediments.



Studies have shown the best way to protect and enhance a stream ecosystem for water quality and wildlife is to plant native trees and shrubs. This vegetation creates what's called a Riparian Buffer. A **Riparian Buffer** is an area of vegetation maintained along the shore of a water body. These forested buffers more than any other vegetative buffer provide a full complement of water quality and ecological benefits. In a best case scenario buffers have been shown to remove nearly 97% of sediments, 80% of nitrogen, and 77% of phosphorous from entering the stream. Add in wildlife benefits and one can see the true value of a riparian buffer.

Did You Know...

80% of the earth's water is surface water. The other 20% is either groundwater or atmospheric water vapor.



Top Left: A mature riparian buffer improving water quality

Bottom Left: Trout fry need clean, cool water which riparian buffers provide

More Resources

THE CHESAPEAKE BAY IN LANCASTER COUNTY

Why is the Chesapeake Bay Watershed Special?
The Chesapeake Bay is a natural treasure. It is the largest estuary in the world and the largest body of water in the United States. It is home to a variety of plants and animals, including the world's largest blue crab and the world's largest oyster. The Bay is also a major source of drinking water for millions of people in the United States.

How is Lancaster County, why should I care about the Bay?
Lancaster County is part of the Chesapeake Bay watershed. This means that the water that flows from the Susquehanna River into the Bay eventually flows through Lancaster County. This is why it is important for us to take care of the water in our watershed.

THE CHESAPEAKE BAY IN LANCASTER COUNTY

STORMWATER AND FLOODPLAINS

What is Stormwater?
Stormwater is the water that runs off the ground during a rainstorm. It can be harmful to the environment if it is not managed properly.

How can we manage stormwater?
There are many ways to manage stormwater, including:

- Planting trees and shrubs to absorb water.
- Using permeable pavement.
- Installing rain barrels.
- Creating rain gardens.

STORMWATER AND FLOODPLAINS

WATER CONSERVATION IDEAS THAT PROTECT OUR WATERSHEDS

Why is Water Conservation Important for our Watersheds?
Water is a precious resource, and we need to conserve it. Conserving water helps protect our watersheds and the environment.

How can I reduce my water usage in...

- The Bathroom:**
 - Check for leaks by adding food coloring to the tank.
 - Use a low-flow toilet.
 - Use a low-flow showerhead.
- The Laundry:**
 - Use a front-loading washing machine.
 - Use cold water for laundry.
 - Don't overfill the machine.

WATER CONSERVATION IDEAS THAT PROTECT OUR WATERSHEDS

The Homeowner's Guide to Stormwater

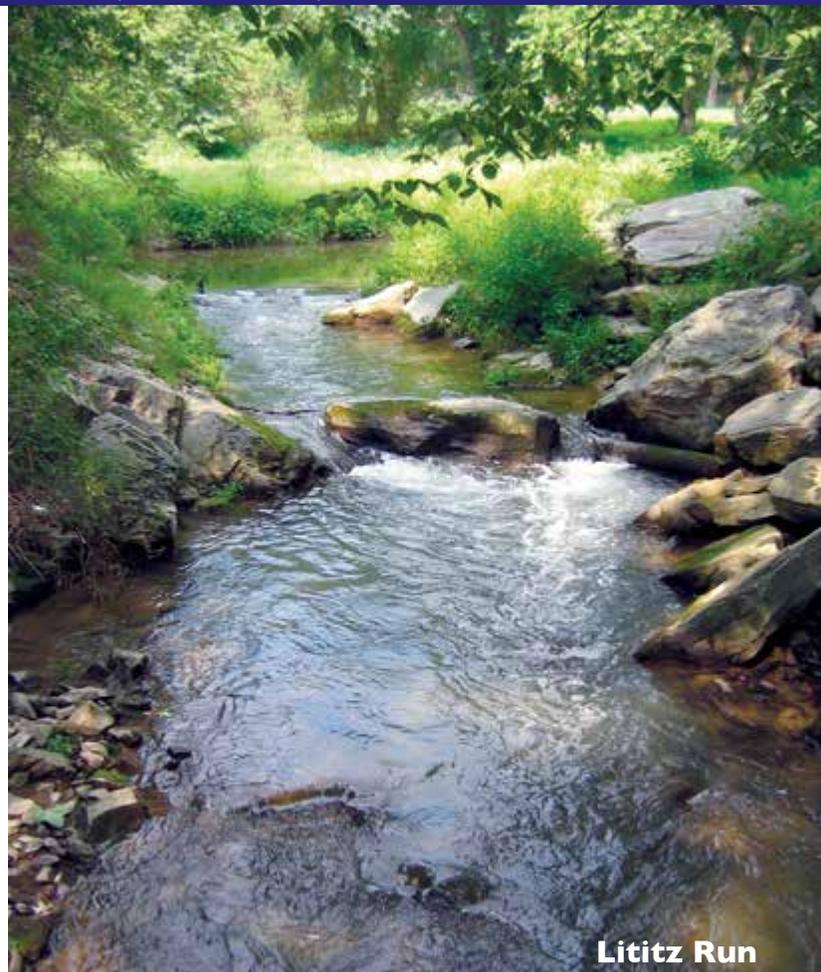
How to develop and implement a stormwater management plan for your property

THE HOMEOWNER'S GUIDE TO STORMWATER

Please contact the Lancaster County Conservation District if you would like any of the above resources.

Did You Know...

- The Susquehanna River was named for the Susquehannock Indians whose name means, "People of the Muddy River."
- In Pennsylvania, 41% of the population gets its water from ground water sources.
- A watershed is the area of land that drains to a specific body of water, whether a stream, pond, lake, river, or ocean.
- Every farm is required to have a conservation plan in place to help protect our waterways.
- The state fish, a brook trout, is an indicator of very good water quality because they are most often found in exceptional value streams.
- Lancaster County streams can be impaired by agriculture, industry, and private landowners. Water quality is everyone's responsibility.



Lititz Run

For more information check out www.lancasterwatersheds.org



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LANCASTER COUNTY
CONSERVATION DISTRICT

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