

THE CHESAPEAKE BAY IN LANCASTER COUNTY

Why is the Chesapeake Bay Watershed Special?

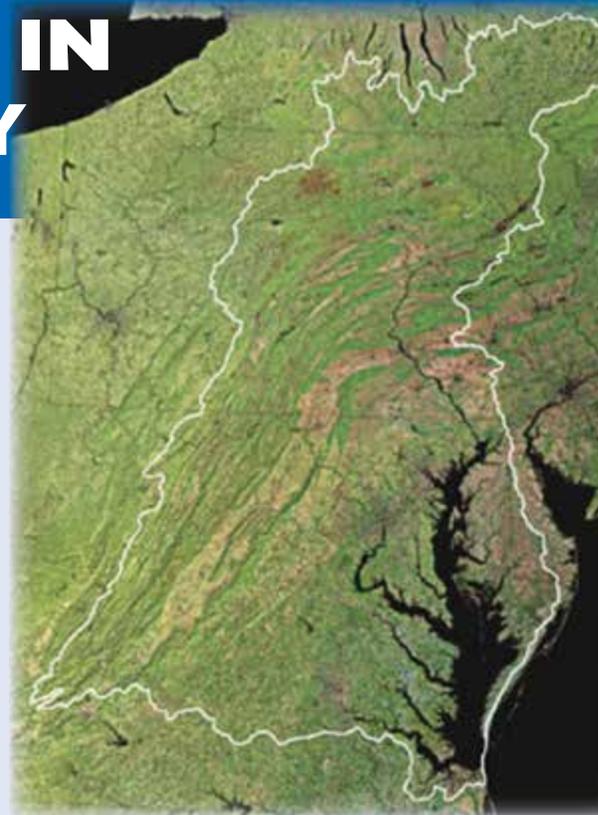
The Chesapeake Bay was formed about 12,000 years ago as glaciers melted and flooded the vast Susquehanna River Valley. At approximately 200 miles long, and an average depth of 21 ft (175 ft at its deepest part) the Chesapeake Bay is North America's largest estuary and the world's third largest. The Bay's drainage area (64,000 square miles) encompasses parts of six states; Delaware, Maryland, New York, Pennsylvania, Virginia, and West Virginia as well as Washington D.C. There are more than 100,000 streams, creeks, and rivers in the watershed, including 150 major rivers. With 17 million residents (and growing) living in the Chesapeake Bay watershed, one can reach a Bay tributary in less than 15 minutes.



Chesapeake Bay blue crabs are a valuable commodity

The word "Chesapeake" derives from the Native American culture and loosely translates into "great shellfish bay." This makes sense since the Bay provides more blue crabs than anywhere in the world. In fact, more than 500 million pounds of seafood is harvested from the Bay every year. The Bay also supports 3,600 species of plant and animal life, including more than 348 fish species, 173 species of shellfish, and 2,700 plant species. The Chesapeake Bay is home to 29 species of waterfowl and is a resting area for birds along the Atlantic Migratory Bird Flyway. Every year, one million waterfowl winter in the Bay's basin.

Overview of the Chesapeake Bay Watershed



I live in Lancaster County, why should I care about the Bay?

Since colonial times, the Bay has lost half of its forested shorelines, over half of its wetlands, nearly 90 percent of its underwater grasses, and more than 98 percent of its oysters. During the 350 years between 1600 and 1950, approximately 1.7 million acres of the Bay watershed were developed. During the 30 years between 1950 and 1980, the Bay watershed lost an additional 2.7 million acres to development. All of this development threatens the water quality of the Bay.

The leading threat to the health of the Chesapeake Bay is excess nitrogen and phosphorous pollution that destroys habitat and can cause fish kills. Top sources of these pollutants include agriculture, sewage treatment plants, runoff from urban and suburban areas, and air pollution from automobiles, factories, and power plants. Other threats to the Bay's health include sedimentation from streambank erosion, stormwater, and habitat loss. So in the big picture we are all responsible for the health of the Chesapeake Bay. Whatever we do in our little portion of the Bay watershed will affect the overall water quality of our natural treasure. Remember **WE ALL LIVE DOWNSTREAM** so what we do "up" here will affect our neighbors downstream in the Chesapeake Bay.



Chesapeake Bay Threats: Sediment and Nutrient Pollution



Chesapeake Bay Threats: Streambank Erosion



Chesapeake Bay Threats: Suburban Sprawl



Chesapeake Bay Threats: Stormwater Pollution



Examples of yards with native plantings and low or no grass turf for optimal water recharge

What can I do in Lancaster County to Protect the Bay?

Native Plants

Instead of turf grass try planting more native grasses, ground covers, shrubs, and trees. Native species are more tolerant of our local growing conditions. In addition these native varieties usually require less water and handle drought conditions better than non-native species. Native plant species will not only enhance your property value but will also reduce surface runoff from your property. In the process, these native trees and shrubs will filter pollutants before they enter groundwater reserves. This will reduce the amount of nutrients reaching the Chesapeake Bay and reduce the nutrients entering our local streams and creeks.

Streambank Fencing

If you own or operate a farm, strongly consider the benefits of fencing livestock out of the stream. Fenced streams provide streambank stabilization, improved wildlife value, aesthetic appreciation, increased property values, and overall better water quality. In addition, streambank fencing provides healthier livestock, fewer veterinarian visits, and higher commodity prices because of a healthier herd. If a native riparian buffer is planted inside the fencing this adds to the overall water quality benefits for the stream and the Bay.



Streambank fencing benefits can be seen in these before and after pictures

Did You Know...

Chesapeake Bay holds more than 18 trillion gallons of water.



Riparian Buffers

A "buffer" by definition is a person or thing that shields and protects against annoyance, harm, hostile, forces, etc. Connect this term with riparian, which means relating to or living or located on the bank of a natural watercourse (as a river), and you get the true meaning of riparian buffers; native trees and shrubs planted along a water body in order to protect that watercourse. Riparian buffer protection and benefits come in many ways; food and cover for wildlife, streambank and in-stream structure, slowing stormwater runoff, groundwater recharge, shade and temperature control for a stream, trapping and filtering runoff, and taking up excess nutrients. Studies have shown that a stream with a mature riparian buffer has a 10 degree temperature difference from an unshaded stream. This is important because cooler water holds more oxygen than warmer water which helps aquatic life in the stream. All of these factors show the importance of riparian buffers not only for water quality but for the entire stream ecosystem.

Mowing next to a stream provides no water quality benefits only additional work and money while riparian buffers create less maintenance but provide so much more water quality benefits

What can I do in Lancaster County to Protect the Bay?

Agricultural Best Management Practices

Once again if you own or operate a farm in Lancaster County, the soil you farm and the nutrients you put on the ground are very important to you; protecting your investment is critical to your livelihood. One way to protect your soil is by implementing agricultural best management practices (BMP's) on your farm. These BMP's make sure the soil and nutrients stay on the field to benefit your operation. Loss of soil and nutrients is a financial loss to your pocket; it is in your best interest to protect your natural resources. In the process of implementing these BMP's you are also helping the Chesapeake Bay by improving water quality in your local watershed. Some common agricultural BMP's implemented in Lancaster County include; contour farming, manure management systems, barnyard controls, no-till farming, waterways, diversions, terraces, watering systems, cover crops, and streambank fencing.

Examples of agricultural BMP's to improve water quality; contour farming and a manure management system



Did You Know...

The Chesapeake Bay has over 11,600 miles of shoreline.
(the same distance from New York to Los Angeles
and back to New York)

Stormwater Controls at Home

There are numerous things homeowners can do to control or lessen their stormwater footprint on the Bay. Impervious surfaces, or surfaces that don't allow water to soak or infiltrate into the ground, are all around our homes and businesses. There are simple stormwater Best Management Practices that homeowners can do to lessen their impact on local water quality and ultimately the Chesapeake Bay as well. Consider things like; disconnecting downspouts so they do not run onto paved areas or storm drains and instead direct them into grassed or vegetated areas. Consider installing a small rain garden (small depressed area that is planted with native trees and shrubs to soak up stormwater) at these downspouts or areas where water is flowing to capture and infiltrate stormwater. Look into a rain barrel for your downspouts to harvest the stormwater so you capture and use the water at a later use in your garden, yard, or other use like cleaning lawn furniture or your vehicle. Or if you are considering redoing that driveway or patio look into permeable blocks or permeable materials that allow stormwater to infiltrate through them into the groundwater and not runoff to our local streams and creeks.



Search for ways to reduce your property's stormwater footprint; adding native plantings, a rain garden or permeable pavers.

Did You Know...

90% of the Bay's freshwater comes from 10 major river systems,
and 50% of it comes from the Susquehanna River.
(19 million gallons of water per minute)



More Resources

LANCASTER COUNTY WATERSHED BASICS

What is a Watershed?
A watershed is the land that drains to a specific body of water: streams, ponds, lakes, wetlands, rivers or oceans. A watershed area can be as large as a portion 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 exists to manage existing water bodies, they are rivers or lakes. The drainage areas of basins typically extend several thousand square miles and usually include some portions of a single state or several states. Within each basin are sub-basins. Sub-basins extend over several hundred square miles and encompass all other sub-watersheds.

Watersheds are broken down further into smaller geographic units called sub-watersheds. Sub-watersheds typically have a drainage area of 2-3 square miles. Sub-watersheds usually drain to a section of third order stream (small stream) which are usually 1-100 feet in diameter streams. Finally, within sub-watersheds are Catchment Areas. Catchment areas are the smallest units in a watershed. Catchment areas are individual developments or are in the home transaction with a stream.

It is your home watershed that you are a "watershed citizen." Just like your home address, a Watershed Area cannot transfer to city or county, your watershed address is fixed for your life. (Home Address: Westtown, Sub-town: Watershed, Sub-watershed, and Catchment area) Why is this information important? Whenever the Lancaster County will eventually affect the water quality of our streams and neighbor development. Remember WE ALL LIVE DOWNSTREAM!

Map showing boundaries of Lancaster County

Map showing boundaries of Watershed Management Units

Map showing boundaries of Catchment Areas

Map showing boundaries of Sub-watersheds

LANCASTER COUNTY WATERSHED BASICS

STORMWATER AND FLOODPLAINS

What is Stormwater?
Stormwater is defined as the flow of water that results from precipitation and which occurs immediately following rainfall or a snow melt event. When a rainfall event occurs, excess drainage on impervious surfaces (e.g., roofs, sidewalks, parking lots, streets, etc.) flows into the gut, some is taken up by plants for added growth, and some is absorbed into the atmosphere. The remainder is the flow of precipitation that runs off land surfaces and seeps into (ground) streams.

Stormwater is typically generated by precipitation that runs off paved land areas, like buildings, parking lots, sidewalks, streets and other hard surfaces. These hard surfaces are called "impervious surfaces" and they do not allow rainfall to infiltrate into the soil like natural vegetation, so more of the rainfall becomes stormwater runoff.

Stormwater runoff may be treated through natural or man-made drainage ways or a sewerage system. In some cases stormwater runoff leaves a site and then spreads over a large, flat, open area, a "storm flat." It may also be captured through ditches, swales, and natural drainage basins. It may be developed and utilized areas, stormwater is captured through a system of catch basins, drainage basins, or storm drains.

When larger stormwater runoff collects over areas in the center of a building, sidewalk, parking lot, construction site, business site, or other paved area, it can cause damage to the building, sidewalk, parking lot, etc. As this stormwater runoff collects and spreads over a large, flat, open area, it can cause damage to the building, sidewalk, parking lot, etc. As this stormwater runoff collects and spreads over a large, flat, open area, it can cause damage to the building, sidewalk, parking lot, etc.

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STORMWATER AND FLOODPLAINS

WATER CONSERVATION IDEAS THAT PROTECT OUR WATERSHEDS

Why is Water Conservation Important for our Watersheds?
Think about the average family that uses approximately 400 gallons of water per day. Everyone in the other hand, our watersheds have water that flows through them. This is what? Everyone has water that runs in a precise manner that needs to be conserved.

The preservation and protection of our water resources and the reduction and use of water is termed water conservation. Conserving water and saving through the use of water resources by using fixtures to control bathroom and improving our methods use of water. We have the choice to be the water conservator to live our lives, and how we use by saving it. We must realize that the water resources are not inexhaustible, it is important to use water wisely and take care to ensure that we have adequate supply of clean water for generations to come.

In 1952, each of the 10 million people living in Pennsylvania used about 100 gallons of water per day. Today, each person uses about 100 gallons of water per day. This means that water consumption has increased to an average of 82 gallons per day. That is about 100% increase in water use in the last 50 years. Water-saving technologies are now being used to conserve water.

Water conservation is an essential. This is an essential step due to precipitation, population growth, economic development and technology. We have water resources that must be shared, conserved for the use in an ever increasing management problem. A cost-effective way to conserve our water resources is through water conservation management and conservation.

There are a number of ways to save water but they all start with YOU!

How can I Reduce my water usage in...?

The Bathroom:

- Check for leaks by adding food coloring to the tank. If the color is leaking, color will appear in the bowl within 30 minutes. Patching a leaking toilet can reduce water use up to 12%.
- Install low-flow showerheads. Showerheads of 2.5 gpm or less are the most water efficient.
- Use one less gallon of water a day by turning off the tap while brushing your teeth, washing your face, or shaving.
- If your shower can fill a one-gallon bucket in less than 20 seconds, replace it with an ultra-low-flow shower water efficient showerhead which could save up to 20% gallons per month.
- Use your shower in 5-10 minutes. Turn your water off every 30 seconds.
- Use the minimum amount of water needed for a bath by closing the drain first and filling the tub only 1/2 full. The smallest tub of all sizes can be turned off by pulling the stopper.

The Laundry:

- The amount of water your washing machine uses is directly related to the load size. You could save 1,200 gallons a month. Remember full loads are most efficient.
- Look for water saving washing machines. Front-load washing machines use less water than top-loading machines.

WATER CONSERVATION IDEAS THAT PROTECT OUR WATERSHEDS

BACKYARD CONSERVATION

What I can do to protect water quality.

Photo of a child playing with a dog in a yard.

BACKYARD CONSERVATION

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

Did You Know...

- Fertilizer and pesticides from Lancaster County end up in the Chesapeake Bay.
- The Conewago, Conewingo and Mill Creek watersheds in Lancaster are priority watersheds in state efforts to clean up the Chesapeake Bay.
- The goal of the Clean Water Act is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters.
- Nearly 60% of a person's household water footprint can go toward lawn and garden maintenance.
- Healthy root systems of grass and plants slow down & filter storm water to minimize erosion & catch pollutants, keeping your yard & chemicals out of your waterways.
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Hammer Creek

For more information check out www.lancasterwatersheds.org



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LANCASTER COUNTY CONSERVATION DISTRICT

Lancaster County Conservation District
1383 Arcadia Rd., Room 200, Lancaster, PA 17601
Phone: 717-299-5361 • Fax: 717-299-9459
www.lancasterconservation.org