INTERACTIVE MAP AT BERKSNATURE.ORG INSIDE BERKS COUNTY'S WATERSHEDS BERKS COUNTY Berks This map of Berks County displays **Maiden Creek Watershed Tulpehocken Creek Watershed Nature** all of our watersheds. Every creek, **Active groups** Did you Know? Did you Know? The Tulpehocken Chapter of Trout Unlimited is quite active with • 54% of the land in the Tulpehocken Watershed is used for • If you live in the Maiden Creek Watershed, you are surroundexcept those in brown are part of water monitoring, restoration and fishing in the Tulpehocken. ed by 338 miles of streams. 100 of these miles are considered Get involved! the Schuylkill River Watershed. impaired. Learn what you can do to improve the streams today! (737)• Blue Marsh Lake (on the Tulpehocken Creek) was built in 1979 LITTLE **MAIDEN** Municipal Environmental Advisory Councils (EACs): 90% of Berks County drains to the to control flooding, and offers recreational opportunities on 5000 Lake Ontelaunee (on the Maiden Creek) supplies the Read-**SCHUYLKILL** EACs are a great way to make a difference in the Tulpehocken **CREEK** ing Area Water Authority with 13 million gallons of acres of land owned by the US Army Corps of Engineers. **RIVER** community. Contact Robesonia Borough or Upper Bern Township. Schuylkill River Watershed. water daily to supply over 125,000 people in Greater • The lower section of the Tulpehocken Creek (below Blue Marsh Reading with drinking water. Lake) is ideal habitat for rainbow and brown trout. This area is The Western Berks Water Authority, PA American Water and the 1024 extremely popular for fly fishing! • Farming is a significant activity Lenhartsville Womelsdorf Robesonia Joint Water Authority are major water throughout the watershed and makes suppliers in the watershed. up 47% of the total land use. • The Tulpehocken Creek watershed is the largest in Berks County, Edenburg SACONY consisting of 451 stream miles. 36% of these stream miles are on Please note there are many other water suppliers, public and the state's "Impaired Streams Listing". This means they need im-Hamburg MILL CREEK provement to be considered healthy. private, that are in every watershed. If you pay a water bill, 222 **CREEK PIGEON** we'll help you learn where your water comes from. Visit (143) **CREEK** berksnature.org/insideourwatersheds for a complete list. • Municipalities in all or part of the watershed: There are 30 Kutztown municipalities in the watershed; 22 in Berks County, 7 in Lebanon Virginville County, and 1 in Lancaster County. Visit berksnature.org/ insideourwatersheds for a complete list. Mertztown Topton (662) • Berks County School Districts within the watershed: (419) Conrad Weiser, Tulpehocken, Hamburg and LITTLE S 4026 Wilson LEHIGH CREEK (645) Camp-S • Major tributaries (streams) (1010) RIVER WATERSHED) (1010) Bowers SWATARA CREEK that flow into the Tulpehocken **IRISH** and/or Blue Marsh Lake: Northkill **BAY WATERSHED)** (183) **CREEK** Dryville Creek, Cacoosing Creek, Plum Creek, Dauberville Spring Creek, Licking Creek and Mill **Fleetwood** Frystown Rehrersburg Blandon Schaefferstown **Explore the Watershed!** Leespo Jerusalem Grings Mill Recreation Area is a popular park and trail 2026 645 system along the Tulpehocken Creek; managed by the Berks (1032) (501) County Parks Department. 5,000+ acres surround Blue Marsh (73)Lake with many trails and are open to the public by the US Army (4010) Mount Corps of Engineers and the PA Game Commission LAUREL RUN **CREEK** South (183)**Schuylkill River Tributaries Temple** (12) (419) Laureldale Stouchsburg creek enters the Schuylkill Bechtelsville • A tributary is a stream that flows to a larger stream or other River by River Road. Park **3033**TULPEHOCKEN MANATAWNY body of water. In Berks County, the Schuylkill River has 17 major **ANTIETAM Antietam Creek**: Includes portions tributaries that are recognized on this map. CREEK **CREEK CREEK** of Alsace, Lower Alsace & Exeter Town-**CREEK** • The Schuylkill River is the largest tributary of the Delaware ships and the Borough of St. Lawrence. The Ridge Colony Park Stony Creek Mills River, and enters the Delaware River just northeast of the Philacreek enters the Schuylkill River just east of Gibraltar Robesonia Reading delphia International Airport. Antietam Lake is a popular destination in this watershed! MONOCACY • The Schuylkill River travels approximately 130 miles from Whitfield / Wyomissing Monocacy Creek: Includes portions of Alsace, Oley, Exeter, Jacksonwald CREEK Wernersville its headwaters in Tuscarora Springs in Schuylkill County to its Springmont West and Amity Townships. Monocacy Hill and The Daniel Boone St. Lawrence West Lawn mouth at the Delaware River in Philadelphia. During its journey Homestead are two popular destinations in this watershed. Get Sinking Penn it travels through the center of Berks County touching 18 different Wyomissing Lincoln Wyomissing Creek: Includes portions of Brecknock, Spring & Shillington Kenhorst • The Perkiomen Creek (portion in eastern Berks County) is the Cumru Townships and the Boroughs of Mohnton, Shillington, largest tributary of the Schuylkill River representing 306 square Wyomissing and West Reading and the City of Reading. The (724) miles of the entire watershed. Lorane watershed contains numerous municipal parks and playgrounds Pennwyn ANGELICA as well as the Reading Public Museum grounds. • As rain or melting snow drains off of the land to a creek it can Mohnton Amity Gardens Baumstown 222 CREEKFlying pick up pollutants such as pesticides, fertilizers, loose soil, road Angelica Creek: Begins in Cumru Township and includes the Gibraltar WYOMISSING salt and dog waste. This is called Stormwater Runoff Pollution, COCALICO 568 Boroughs of Kenhorst and Shillington, and the City of Reading. (724) and is a major stressor in the Schuylkill River Watershed. Plenty to explore here including Nolde Forest State Park, Angelica **CREEK** CREEK Douglassville Birdsboro Creek Park and The Nature Place. (DRAINS TO CHESAP AKE Gouglersville BAY WATERSHED) **Explore the Watershed!** Allegheny Creek: Includes portions of Cumru, Brecknock, and In addition to the large watersheds described around this map Robeson Townships. The Horseshoe Trail and Green Hills Pre-(625) **SIXPENNY** (Tulpehocken, Maiden & Manatawny), the following streams/wa-(345) (568) serve are popular in this region. tersheds flow directly to the Schuylkill River and represent 40% of Alleghenyville **CREEK** (82) the entire Schuylkill River Watershed: Hay Creek: Includes portions of Brecknock, Caenarvon, Robe-ALLEGHENY son and Union Townships, and the Boroughs of Birdsboro and Mill Creek: Includes portions of Upper Bern and Tilden Town-CREEK 176 It is a goal of many partners **SCHUYLKILI** New Morgan. Joanna Furnace and the Birdsboro Reservoir are ships, and enters the Schuylkill River in the southeast corner of HAY two destinations in the watershed. The stream is known for its **RIVER** Tilden Township. in the Schuylkill River Water-**CREEK** Exceptional Value/pristine status, and the Hay Creek Watershed FRENCH **CONESTOGA** Pigeon Creek: Includes portions of Windsor and Perry Town-Association helps to protect it. Get involved! shed to reduce the environmental CREEK ships and the Borough of Shoemakersville. The creek enters the RIVER Sixpenny Creek: Originates in French Creek State Park and trav-(DRAINS TO CHESAPEAKE Schuylkill River in Shoemakersville, near the borough hall. 10 els through Union Township. Sixpenny enters the Schuylkill River stressors associated with intensive ag-**BAY WATERSHED**) Irish Creek: Includes portions of Penn, Centre & Upper Bern just east of Birdsboro. **New Morgan** Townships and the Borough of Centerport. Agriculture is the ricultural practices through better land French Creek: Begins in French Creek State Park and travels into primary land use (70%) in this watershed. The creek enters the Chester County on its journey to the Schuylkill River. Schuylkill River just north of Leesport. and water use and protection. We want 76 **Perkiomen and Swamp Creeks**: Are part of the larger Perkiomen Laurel Run Creek: Begins in Ruscombmanor and Alsace Townour projects to result in cleaner water Creek Watershed and travel into Montgomery County on their ships, and then travels through the heart of Muhlenberg Townway to the Schuylkill River. The Perkiomen Watershed Consership where stormwater issues are present. Laurel Run Park is a and healthier waterways. vancy is active in protecting this resource! popular facility in Muhlenberg Township near where the

• Municipalities in all or part of the watershed: There are 21 municipalities in the watershed; 16 in Berks County, 3 in Lehigh County, and 2 in Schuylkill County. Visit berksnature.org/insideourwatersheds for a complete list.

• Berks County School Districts within the watershed: Kutztown, Hamburg, Fleetwood, Schuylkill Valley, and Oley

• Major tributaries (streams) that flow into the Maiden Creek and/or Ontelaunee Lake: Sacony Creek, Willow Creek, Peters Creek, and Moselem Creek

Explore the Watershed!

Hereford

1022

PERKIOMEN

CREEK_s

Bally

(100)

Lake Ontelaunee is an Audubon Important Bird Area (IBA) and includes 2,000 acres of open space for recreational opportunities around the lake.

Active groups

The Maiden Creek Watershed Association and the Kutztown University Environmental Action Club help monitor the watershed. Get involved!

Municipal Environmental Advisory

Councils (EACs): EACs are a great way to make a difference in the Maiden Creek community. Contact Kutztown Borough EAC to learn more.

Water Supplies

Reading Area Water Authority, Hamburg Municipal Authority and Kutztown Borough Water Department are major suppliers in the Watershed. There are more! Where does your water come from?

Manatawny Watershed

Did you Know?

SWAMP

• The headwaters of the Manatawny Creek Watershed contain six pristine creeks that begin in a forested area known as The Oley Hills. These are some of the healthiest creeks in Pennsylvania!

• The pristine creeks mentioned above are designated as Exceptional Value (EV) by the state. The EVcreeks that drain into the Manatawny Creek include Oysterville, Pine, and Bieber. They remain in pristine condition due to the fact that they are primarily in undisturbed forest, and it is a goal to protect

- 31% of the Manatawny Creek Watershed is used for agriculture, and 49% is forested.
- The Manatawny Creek Watershed contains 146 stream miles, and 30% of these stream miles are Exceptional Value or High Quality designated
- Near Pottstown, an orphaned dam was removed in the year 2000 that contributed to poor water quality issues in the Manatawny Creek. The stream was stabilized and riparian buffers were planted. As a result, 22.3 miles of stream in the Manatawny Creek Watershed were determined to be restored!
- Municipalities in all or part of the watershed: There are 14 municipalities in the watershed; 11 in Berks County, and 3 in Montgomery County. Visit berksnature.org/insideourwatersheds for a complete list.
- Berks County School Districts within the watershed: Oley Valley, Boyertown Area, Brandywine Heights Area, and Daniel Boone Area.

Explore the Watershed!

• There are several large parks right along the Manatawny Creek in Pottstown, PA near where the creek meets up with the Schuylkill River!

Active groups: The Pine Creek Watershed Association, Oley Hills Alive, and the Pike Oley District Preservation Coalition are quite active with preserving the pristine regions of the Manatawny Creek Watershed. Get involved!

Municipal Environmental Advisory Councils (EACs): EACs are a great way to make a difference in the Manatawny Creek community. Contact Amity, Pike, or District

Water Supplies: The Oley Township Municipal Authority and the Boyertown Water Authority are major water suppliers in the watershed. Where does your water come from?

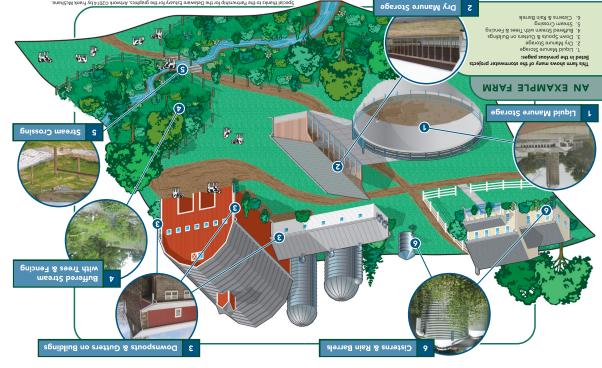
for you to know if you live in a MS4 community and what you can sideourwatersheds. While it sounds quite confusing, it is important links about stormwater can be found at www.berksnature.org/inpublic water and sewer issues in our county. More information and Water & Sewer Association is a unique partnership to address our requirements on a regional level. In addition, the Berks County prised of these MS4 communities) was formed to address the permit MS4 communities. A Berks County MS4 Steering Committee (communicipal separate storm sewer system (MS4). We refer to them as nations System (NPDES) permit to discharge stormwater from their County are required to have a National Pollutant Discharge Elimi-

issues related to stormwater. About 40 municipalities in Berks Berks County is leading several initiatives to deal with the complex

but also stream/river damage and dangerous flooding. of Reading where excess stormwater can not only lead to pollution, nificant concern in urbanized areas such as boroughs and the City major stressor in the Schuylkill River Watershed. It becomes a sigand dog waste. This is called Stormwater Runoff Pollution, and is a up pollutants such as pesticides, fertilizers, loose soil, road salt, As rain or melting snow drains off of the land to a creek it can pick

Stormwater

habitat. Protect wetlands pollination, and wildlife tection, water treatment, services such as flood proalso provide important in times of heavy rain. The Wetlands act as sponges Did you know?



happy farmers, and improved land and water resources! This graphic describes the types of BMP projects that can occur on farms. we implement BMPs on many farms to help improve the environmental stressors associated with agricultural practices. Our goal is These land management techniques are called Best Management Practices (BMPs). Since much of Berks County's land use is agriculture,

er meadows, permanently protecting land from development, and more! driveway, what types of trees to plant, how you fill your land, how to fertilize, how to create a schoolyard or backyard habitat, wildflowsheds healthy. There are local experts that can help guide you to make decisions like: what you mow, how you manage your gravel ment decision that they make. There are many inexpensive options to consider in managing your land in a way that keeps our water-Individual landowners, busineseses, municipalities, and school campuses impact the watershed (good and bad) with every land manage-

Your Land – Do Your Part!

What is a Watershed?

The land that water flows across, or under, on its way to a stream, river or lake. Within each watershed, all water runs to the lowest point - a stream, river or lake. On its way, water travels over several types of surfaces such as farm fields, forests, suburban lawns and city streets, or it seeps into the soil and travels as groundwater through aquifers.

Stressors. Impaired Waters. What does that mean?

By definition, a stressor is a chemical or biological agent, environmental condition, external stimulus or an event that causes stress to an organism.

The Pennsylvania Department of Environmental Protection (PADEP) evaluates the status of surface waters within the State on a regular basis, and determines whether the properties of each specific section of water meets its designated use. These uses vary within the character of the surface water and surrounding watershed, and include such general uses as aquatic life, recreation, fish consumption, and potable water supply. Surface waters that do not meet the properties of their classification are identified as 'impaired". Nearly 26% of our streams in Berks County are impaired.

Many stressors impair our local waterways, among the most significant are impervious surfaces, stormwater, and agriculture. Agricultural effects on surface waters are the principal reason for classification of Berks County waters as impaired, and is the predominant land cover in our major watersheds. These impairments also have an effect on the downstream reservoirs like Lake Ontelaunee and Blue Marsh Lake. For context, it is important to note that a large fraction of Berks County is used for agriculture, and that many miles of streams traverse agricultural areas. Agricultural impacts on surface waters can be reduced by using land management techniques called Best Management Practices (BMPs). Likewise, there are BMPs that homeowners, institutions, and municipalities can install that reduce the effects of stormwater runoff.



How can YOU help conserve water and keep our water clean?

Plant trees! 42% of Berks County has tree cover, but more is needed. Among their many benefits, trees help protect the health of our watersheds and provide cooler conditions for our native fish.

Take your unused pharmaceuticals to a collection program. Don't flush them down the toilet or pour them down the drain. They will enter the water supply. Over 2,300 pounds of medication is collected annually in Berks County!

Never dump anything into storm drain inlets. Everything that enters the storm drain inlets ends up in the water. Don't dump oil, trash, leaves, pet waste or any other material into the inlets.

Pick up pet waste. Stormwater will carry pet waste left on the ground into the storm drains, contributing to harmful bacteria, parasites and viruses in our water.

Practice environmentally friendly lawn and garden care. Use only organic fertilizers and use them sparingly. Avoid pesticides. These chemicals will be swept into local waterways by stormwater runoff and harm aquatic life.

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To reduce runoff, direct downspouts over porous, not paved, surfaces. Or use a rain barrel to collect rainwater for later use on your lawn or garden.

Protect riparian buffers (streambank **plantings).** Don't mow to the edge of streambanks. Allow native vegetation to grow freely in at least a 10-foot strip along the bank to reduce erosion and to help filter out pollut-

Visit berksnature.org/insideourwatersheds for active links with contact information. These groups are always looking for new faces and volunteers. Make a difference! Attend their next meeting to learn more.

insideourwatersheds to see the list of these I7 municipalities. Are you included? communities. Any municipality in Pennsylvania may create an EAC by ordinance. Berks County has 17 EACs - go to berksnature.org/ nicipal governments a pool of hometown talent to draw upon when they make decisions affecting the environmental resources in their the environment. EACs act as advisors to the governing boards that appoint them and to the local planning commissions, giving mu-What is an EAC? Environmental Advisory Councils (EACs) are officially created arms of Pennsylvania's municipalities that focus on

> Tulpehocken Chapter, Trout Unlimited Angelica Creek Watershed Association Maiden Creek Watershed Association Hay Creek Watershed Association rently, Berks County is home to the following active watershed-based groups:

Watershed associations often promote awareness of their local resources through community education, action, and monitoring. Curinclude individual citizens, farmers, students, non-profit conservation organizations, and local and state government representatives. A watershed association is simply a group of people interested in protecting their local water resources. Watershed associations can What is a Watershed Association?

Get involved locally!

go to berksnature.org/insideourwatersheds and click on the Delware River Watershed Initiative link. joined together to accelerate conservation in eight Delaware River sub-watershed clusters. For more information on this impressive effort In an unprecedented collaboration to protect and restore water quality, more than 50 leading nonprofits (including Berks Nature) have

Delaware River Watershed Initiative

along the southwestern border of Berks County, there is a chance you are part of the Chesapeake Bay Watershed. Please note: While many people are familiar with the Chesapeake Bay Watershed, only 10% of Berks County drains to the bay. If you live

all part of the same landscape and watershed.

Watershed, which is part of the larger Delaware River Basin. It is all connected, the water, plants, soil, animals, people and buildings are You might think, Delaware River - why does that matter to me in Berks County, PA? Remember, we are part of the Schuylkill River these stressors in the Schuylkill River Watershed. One of these partnership projects is called the Delaware River Watershed Initiative. tural run-off, polluted stormwater, and aquifer depletion. Currently there is a collection of partners that are working hard to improve There are four key stressors that have a significant impact on the health of our local watersheds: Loss of forested headwaters, agricul-

tant role in protecting it.

It is important to remember that even if you don't have a creek on your property, you are still part of the watershed and play an impor-

million people that rely on drinking water supplies in the Delaware River Basin, including 200,000+ of us right here in Berks County! live or work in Berks County you likely have a direct effect on the health of this large watershed. What we do on our land matters to 15 90% of Berks County drains to the Schuylkill River Watershed which is part of the larger Delaware River Basin. This means that if you

Berks County's watersheds are receiving well-deserved attention. Many people care!

System and Muhlenberg Township Authority. American-Glen Alsace, North Heidelberg Water Authority, PA American-Penn District, PA Water Authority, Oley Township Municipal Boyertown Water Authority, Western Berks Joint Authority, Bernville Borough Authority nicipal Water Authority, Womelsdorf-Robesonia Reading Area Water Authority, Birdsboro Mu-Municipal Authority, Maxatawny Township tion plans: Kutztown Borough, Lyons Borough systems have completed source water protec-As of October 2015 the following public water a protection plan to protect your water supply? If you pay a bill, has your supplier completed If you have a well, have you tested it recently? it begin, and what is its journey into your home? what do you really know about it? Where does tantly, take a drink. It is always there for us, but the dishes, water the plants, and most imporshower, brush our teeth, cook our meals, wash for granted as part of our daily routine when we are all guilty of taking this important resource from, and what is being done to protect it. We for you to learn exactly where your water comes water suppliers. In any case, it is good practice private well, or from one of 63 different public In Berks County you get your water from a

YOUR water comes from?



Overall, what effects do our actions have on our watersheds? How can we (a nity's water quality.

Water matters to all of us.

streams, drinking water supplies, and what we can do to improve our commudesigned to help our local community learn more about our local watersheds, Berks Nature's Inside our Watersheds program, and this informative map, are

the health of our watersheds, and ultimately our drinking water supplies?

community, an individual, a municipality, a student, a business-owner) improve

Learn more today about this important, local resource.

Explore your watershed today!

www.berksnature.org/insideourwatersheds

An interactive map is available at

have as a community to create positive changes to the land surrounding our loto improve the quality of our water, we must delve into the responsibilities we sheds? Over 25% of Berks County's streams are considered impaired. In order surface waters? What are our streams telling us about the health of our waterof pesticides and fertilizers. Do you ever stop and notice the conditions in our ing runoff from agriculture, stormwater, removal of vegetation, and misuse Various factors lead to the destruction of our community's waterways, includ-

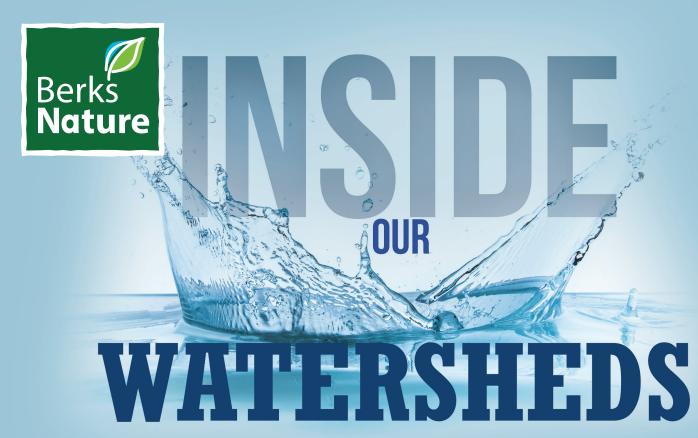
resources in the watershed; as well as providing water education to thousands of ners and funders, are investing resources in protecting and improving natural ultimately the Delaware River Basin. Berks Nature, along with numerous part-Berks County plays an important role in the health of the Schuylkill River and

Inside our Watersheds



Berks Nature's Inside our Watersheds Program is supported in part by the William Penn Foundation. The William Penn Foundation, founded in 1945 by Otto and Phoebe Haas, is dedicated to improving the quality of life in the Greater Philadelphia region through efforts that increase educational opportunities for children from low-income families, ensure a sustainable environment, foster creativity that enhances civic life, and advance philanthropy in the Philadelphia region. With assets of over \$2 billion, the Foundation distributes approximately \$80 million in grants annually. Learn more about the Foundation at www.williampennfoundation.org The opinions expressed in this publication are those of Berks Nature and do not necessarily reflect the views of the William Penn Foundation.

Additional copies of this publication (for direct outreach to eastern Berks County) were supported in part by: Boyertown Area Charitable Program of the Berks County Community Foundation. Learn more at www.bccf.org.





A look into Berks County's Watersheds Where your water comes from and How YOU can protect it!