

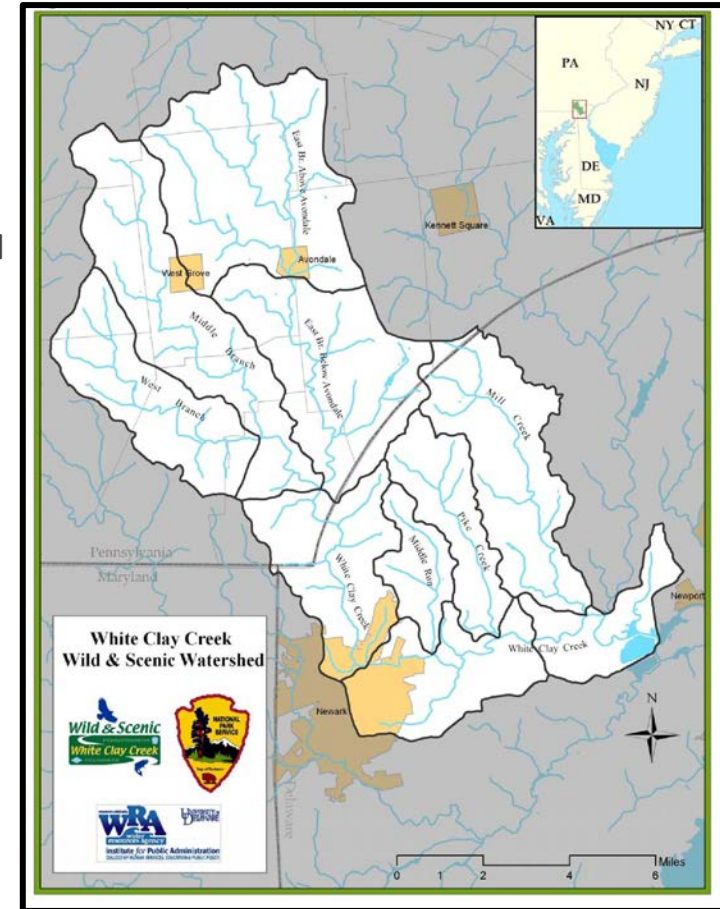
# Protect the East Branch Waterway (PEBW)

Ilana Shmukler and Grace Harr



# Background

- The White Clay Creek Watershed is 107 square miles
- The watershed is home to over 24 species of fish and is stocked with fish for fishing season
- East Branch of the creek is in Chester County, Pennsylvania and has a drainage area of 11.3 square miles

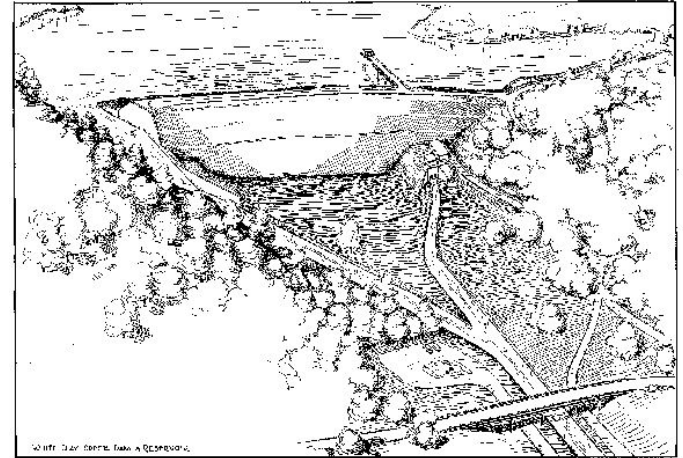




# History

- 1683- land sold to William Penn by Lenape Chief Kekelappen
- 1880- mushroom spores brought back to US start the mushroom business in PA
- 1950's- White Clay Creek reservoir proposed, formed by dam
- 1967- DuPont buys land that would be flooded out by dam
- 1970's- mounting opposition leads to the abandonment of the reservoir idea
- 1984- DuPont donates land to PA and DE

**SAVE WHITE CLAY CREEK  
DON'T DAM IT!**





# Policy

- Looking at an area that is less than 50 square miles helps provide a more meaningful watershed plan
- In 1991, the White Clay Creek Study Act amended the Wild and Scenic Rivers Act to consider the White Clay Creek for protection under the Wild and Scenic Rivers System
  - This act ensures that the creek is protected and that no plan can be put in place that would have adverse effects on the creek
- Chester County Water Resources Authority manages stormwater and flooding of the East Branch of White Clay Creek

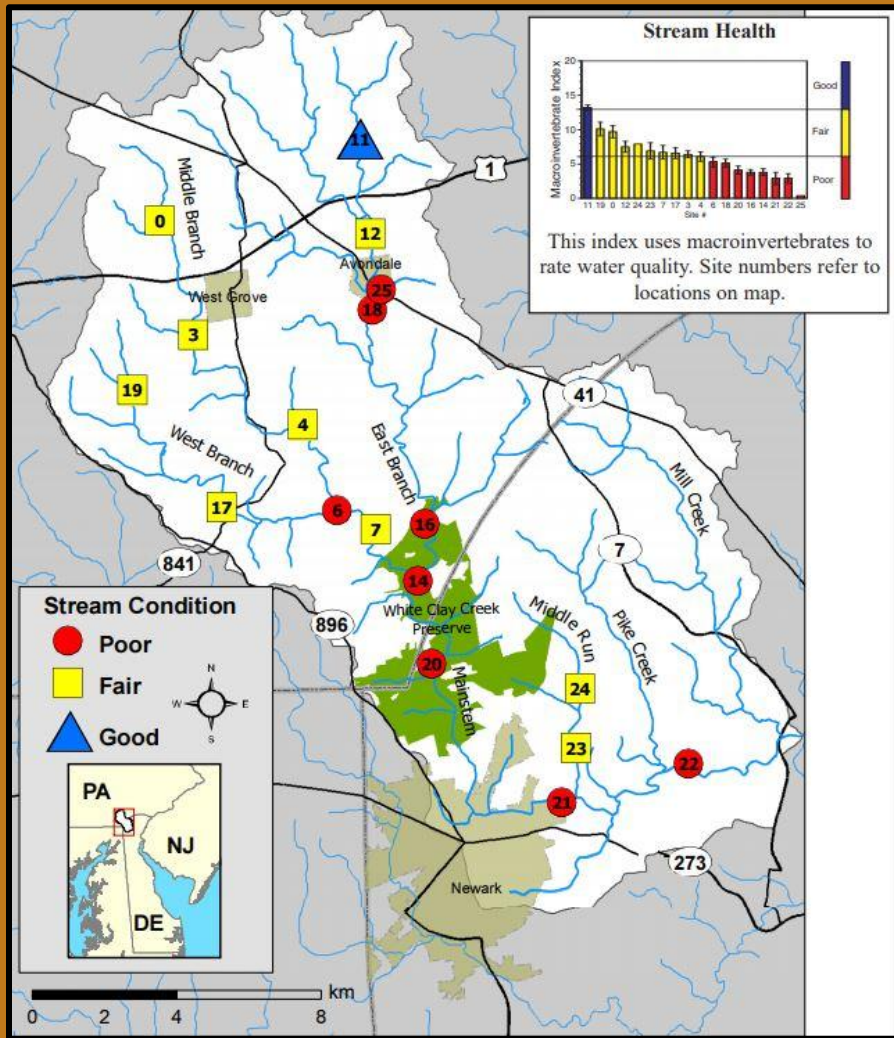


**WHITE CLAY CREEK**  
**National Wild & Scenic River**

*Ours to Enjoy. Ours to Protect.*



**Our mission is to promote adequate water quality in the East Branch of the White Clay Creek Watershed to support the projected 30% increase in population of Chester County, PA, as well as the fishing industry by 2040.**



Map shows ratings of the stream conditions in the White Clay Creek

# Problems

Although the East Branch of the White Clay Creek Watershed faces various problems, two of the main problems that the watershed faces include high levels of nutrients and turbidity as well as high levels of contaminants and conductivity due to impervious surfaces. These issues are the most prevalent due to the area and conditions that surround this part of the watershed. The reason that we choose to focus on two main problems is that there are many causes that can be tackled in order to fix these issues.

# Problems

## P1: Nutrients and Turbidity

- Mushroom and other agricultural farms
- Lots of fertilizer/ spent compost runoff into the waterways
- Causes algae growth which disrupts the current ecosystem

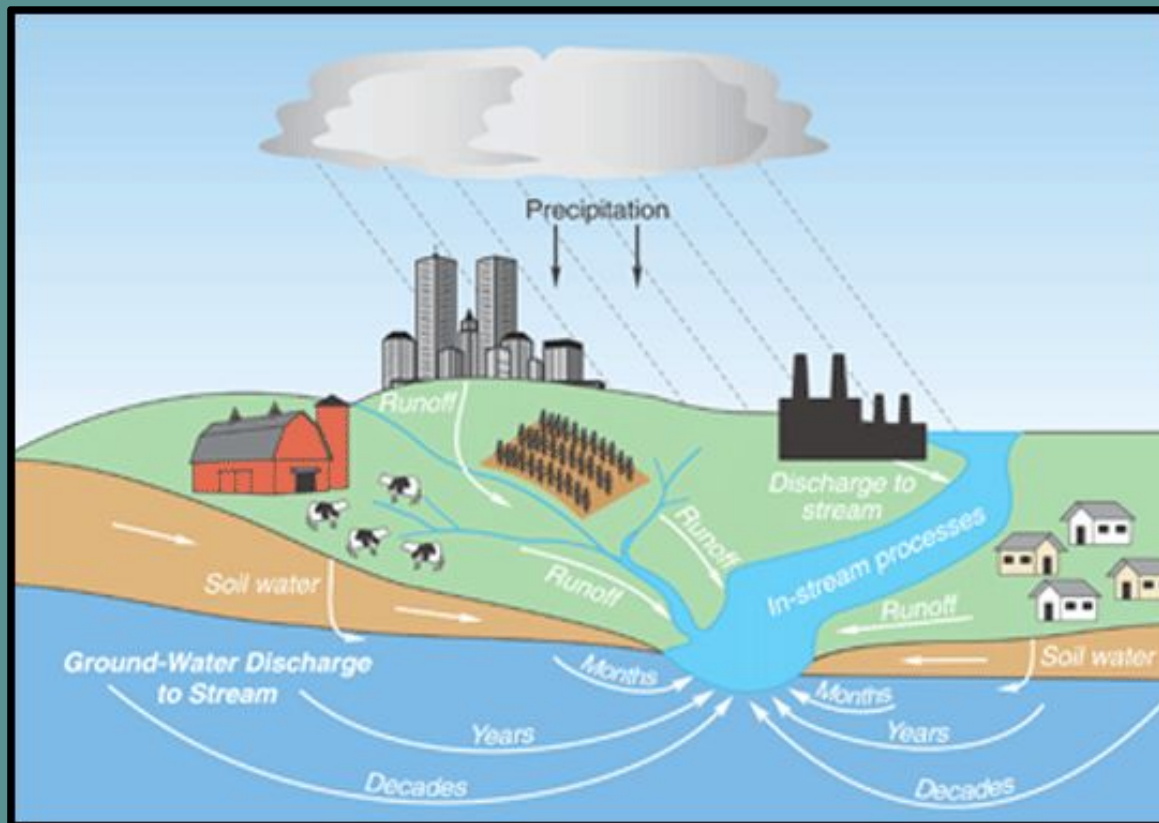


## P2: Negative Effects Due to Increase in Impervious Surface

- An increase in the population to the area mean more development to the area and more impervious surfaces
- Impervious surfaces lead to runoff
- Contaminants such as salt, fecal matter, total suspended solids (tss), and much more get into the waterways









# Goals

## G1: Nutrients and Turbidity

- Regulate the amount of fertilizer that is used on the farms
- Add buffers between the farmland and the waterways so runoff does not enter the streams
- This will also help keep farm animals and their waste out of the watershed

## P2: Negative Effects Due to Increase in Impervious Surface

- Limit the amount of construction and impervious surfaces near waterways
- Look into permeable forms of building



# Conclusion and Recommendations

- Due to an increasing population around the East Branch, extra measures are needed to ensure the waterway stays protected
- A main issue is runoff
- Limiting the amount of fertilizers used on farms will help decrease the amount of nitrogen and phosphorus that ends up in the waterways
- Regulating building around the waterways will help keep the amount of impervious surfaces low
- To keep a measure of what is considered “adequate” water quality:
  - Keep track of nitrate levels in water
  - Set regulation for impervious surfaces around watershed
  - Keep track of water conductivity, total suspended solids, and harmful bacteria
  - Outreach efforts to educate on use of spent mushroom compost, and to inform homeowners of ways to manage runoff
  - Mandate post construction stormwater controls for new developments

# Questions?

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# Sources

“Crafting Better Urban Watershed Protection Plans.” *Watershed Protection Techniques*, Article 29, 2(2): 329-337.

“East Branch White Clay Creek Watershed TMDL.” *Pennsylvania Department of Environmental Protection*, 27 Feb 2007

Evers, Katherine. “How White Clay Creek Got Its Name: Newark China Clay Company.” *Destateparks*, White Clay Creek State Park, 8 June 2020, [destateparks.blog/2020/06/08/newark-china-clay-company-at-white-clay-creek-state-park/#:~:text=Kaolin%20clay%20is%20produced%20by,White%20Clay%20Creek%20State%20Park](https://destateparks.blog/2020/06/08/newark-china-clay-company-at-white-clay-creek-state-park/#:~:text=Kaolin%20clay%20is%20produced%20by,White%20Clay%20Creek%20State%20Park).

Laufer, Max. “The Mushroom Farming Industry: Transforming Environmental Risks into Positive Environmental and Economic Outcomes.” *IGEL @ Wharton*, 5 Sept. 2017, [whartonigel.wordpress.com/2017/09/05/the-mushroom-farming-industry-transforming-environmental-risks-into-positive-environmental-and-economic-outcomes/](https://whartonigel.wordpress.com/2017/09/05/the-mushroom-farming-industry-transforming-environmental-risks-into-positive-environmental-and-economic-outcomes/).

Morris, Roger. “The One Tiny Region That Produces Nearly Half of U.S. Mushrooms.” *Modern Farmer*, 16 May 2014, [modernfarmer.com/2014/05/welcome-mushroom-country-population-nearly-half-u-s-mushrooms/](https://modernfarmer.com/2014/05/welcome-mushroom-country-population-nearly-half-u-s-mushrooms/).

“Stream Watch.” *White Clay Creek National Wild and Scenic River*, [whiteclay.org/streamwatch](http://whiteclay.org/streamwatch).

“The White Clay Creek and its Tributaries Watershed Management Plan.” *White Clay Creek Wild & Scenic River*, The Ratsep Group, Inc., May 1998, [whiteclay.org/resources/watershed-management-plan](http://whiteclay.org/resources/watershed-management-plan).

“White Clay Creek.” *Delaware Watersheds*, [www.delawarewatersheds.org/piedmont/white-clay-creek/](http://www.delawarewatersheds.org/piedmont/white-clay-creek/).