A storm-driven system

When it rains, it drains; and these storm events move pollutants through the watershed. When Pipe Creek’s flow is low to normal, we often find little nutrient and sediment pollution. However, during and after a storm, the creek will turn light brown from sediment and often carries excess nutrients that contribute to algal blooms in Lake Erie. Storms are more intense and frequent in the spring and fall, leading to higher pollutant concentrations than in the summer.

Learn more

If you would like to learn more about the development of this report card or watersheds in the Firelands area, visit the following websites:
eneconserves.org
government.wildlife.ohio.gov/bobcatwomancreek
ian.umces.edu
enecohealthohio.org

Get involved

We could use your help to improve our watershed. If you are interested in being a volunteer, contact Breann Hohman, watershed coordinator for the Erie Conservation District at 419-626-5211 or bhohman@eriecounty.oh.gov

Watershed at a glance

- 48.5-square-mile watershed made up of three main streams: Pipe Creek, Hemminger Ditch, and Plum Brook
- Karst geological region, makes this watershed at higher risk for groundwater contamination
- Shoreline is a mix of coastal marsh and heavily altered land use for shipping, boating, and erosion control

Types of inputs

- Bacteria
- Nutrients
- Sediments

Indicators of health

- Soluble reactive phosphorous
- Nitrate
- Turbidity
- Bacteria
- Benthic community

Pollution Sources

- Animal agriculture
- Row crop agriculture
- Urban stormwater and combined sewer overflows
- Lawn fertilizer runoff
- Construction and development
Collecting Data
Monthly water samples are analyzed by volunteer stream monitors and Old Woman Creek Reserve Staff from April through November. Annual benthic macroinvertebrate (aquatic worms and insect larvae) sampling is performed in the summer by staff, volunteers, and a summer research intern. These indicators are combined to develop the overall scores of individual sites and the overall watershed score.

Indicators of stream health
- Nitrogen, monitored as nitrate, is found in fertilizer and untreated waste. In excess this chemical can lead to algal blooms.
- Phosphorus, monitored as soluble reactive phosphorus, is found in fertilizer and untreated waste. In excess this chemical can lead to algal blooms.
- Turbidity is a measure of cloudiness of the water typically caused by sediment-laden runoff. Excessive sediment in the water can clog fish gills, and cover benthic macroinvertebrates habitat and fish eggs.
- Benthic macroinvertebrates are aquatic organisms with no backbone and are visible to the naked eye. Some are very intolerant to pollution, therefore make great indicators of water health.

Vital Signs Indicators are a collection of pH, temperature, dissolved oxygen, and ammonia. Like our blood pressure, these parameters can identify if a serious health problem is present.

Indicator of human safety
Bacteria, measured as E. coli, are microorganisms commonly found in untreated waste. Many bacteria are harmful to human health and can restrict our drinking and recreational water uses.

Weather during our sampling period
Daily rainfall data collected in 2015 from 3 COCORAH stations in Pipe Creek.

2015 Beach health and safety
Two lake sites located on the public/private barrier beach (see map) of Pipe Creek are monitored by the Erie County Health Department. In 2015, Battery Park scored 94% and the Pipe Creek Canoe Launch scored 83% meaning most of swimming season presented less risk of illness from contact with water. Note that the bacteria scoring scale is more stringent than water quality indicators because of the high variability and importance to human health and safety.

Percentage of time sample was below the swimming risk threshold (215 MPN 100 ml): 100% = 0%, 90-100% = 10%, 60-90% = 20%, 30-59% = 30%, <30% = 40%

Pipe Creek received an overall C grade, which almost no overall change from 2014.

Pipe Creek 2015 Report Card

Working together for clean water
In 2015, the City of Sandusky undertook a large project to disconnect the sewer system on the east end. Combined sewer overflow systems (CSOs) are a type of gray infrastructure that uses one pipe for both sewage and storm water. When there is no, or little rain all the flow is directed to the waste water treatment system. When there is a significant rain, however, the system over flows, discharging untreated sewage with storm water into our waterways.

The City's project is an example of how urban communities are upgrading their infrastructure to reduce negative impacts on Lake Erie.

You can help!
WHAT YOU CAN DO
WHAT CAN BE REDUCED
Leaving a natural area along a stream or ditch
N P
Remember to inspect and pump out your septic system every 3–5 years
N P
Help your community develop a plan that supports low impact development
N P
Follow the 4Rs of fertilizer use: Right source, Right amount, Right place, Right time
N P
Plant cover crops
N P
Plant a rain garden or install a rain barrel
N P
Install a drainage management system
N P
Properly manage livestock & pet waste
N P