A storm-driven system
When it rains, it drains; and these storm events move pollutants through the watershed. When Mills 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:
- erieconserves.org
- coastal.ohiodnr.gov/oldwomancreek
- ian.umces.edu
- eriecohealthohio.org

Get involved
We could use your help to improve our watershed. If you are interested in adopting conservation practices or volunteering, contact:
- Breann Hohman, Watershed Coordinator
- Erie Conservation District
- 419-626-5211 or bhohman@eriecounty.oh.gov

Watershed at a glance
- 42.4-square-mile watershed flows from Bellevue to Sandusky
- Karst geological region, makes this watershed at higher risk for groundwater contamination
- There are several Ohio EPA permitted discharges such as industrial facilities and the Bellevue Water Pollution Control Plant

Key features
- Storm-driven system
- Urban centers
- Storm-driven systems
- Floodplain
- Industries
- Quaries
- Possible Karst area
- Golf courses
- Karst geological region, makes this watershed at higher risk for groundwater contamination
- There are several Ohio EPA permitted discharges such as industrial facilities and the Bellevue Water Pollution Control Plant

Indicators of health
- Soluble reactive phosphorus
- Nitrate
- Turbidity
- Bacteria
- Benthic community

Pollution Sources
- Urban stormwater and combined sewer overflows
- Wastewater treatment plants
- Broken and/or leaking septic systems
- Municipal wastewater treatment plant
- Row crop agriculture
- Animal agriculture
- Stormwater and combined sewer overflows
- Municipal wastewater treatment plant
- Broken and/or leaking septic systems
- Manure/sludge fertilizer application
- Urban stormwater and combined sewer overflows
- Wastewater treatment plants
- Broken and/or leaking septic systems
- Municipal wastewater treatment plant
- Row crop agriculture
- Animal agriculture
- Stormwater and combined sewer overflows
- Wastewater treatment plants
- Broken and/or leaking septic systems
- Municipal wastewater treatment plant
- Row crop agriculture
- Animal agriculture

Types of inputs
- Bacteria
- Nutrients
- Sediments
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 and identification is performed in the summer by staff, volunteers, and the assistance of a summer research intern. These indicators are combined to develop the overall score of individual sites and the overall watershed score.

Indicators of stream health
N  Nitrogen, monitored as nitrate, is found in fertilizer and untreated waste. In excess, this chemical can lead to algal blooms.
P  Phosphorus, monitored as soluble reactive phosphorus, is found in fertilizer and untreated waste. In excess, this chemical can lead to algal blooms.
T  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 macroinvertebrate habitats and fish eggs.
B  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.
V  Vital Sign Indicators are a collection of pH, temperature, dissolved oxygen, and ammonia. Like our blood pressure, these parameters can identify if a serious problem is present.

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

Weather during our sampling period
2018 Monthly rainfall totals compared to the 30 year average. (Collected 3 COCORAH stations in Mills Creek)

2018 Beach health and safety
In Mills Creek, indicator bacteria are measured by the Erie County Health Department at Lions Park (see map) three to four times weekly. In 2018, Lions Park received a 87% score, about a 10% decline from 2017. Although the score declined, nearly the entire swimming season presented low risk of illness from contact with water. Although this site is not directly located at the mouth of Mills Creek, the small stream does contribute to the overall condition of Sandusky Bay.

Opportunity to Change
We often don’t think about the stream water flowing through our communities. In fact, our interaction with water usually comes from our faucet. Clean, clear abundant water for drinking, scooping, washing, or watering. That water, we typically take for granted comes at a cost we don’t seem to be too concerned with. I’ll explain.

Whether you live in a city or in a township, your water most likely comes from Lake Erie. The same water source for 11 million others. When our streams run “dirty” loaded with sediment, nutrients, and bacteria, those pollutants eventually make it to our Lake which is the intake water at the water treatment plant.

Yes, we can reduce these pollutants, but the dirtier the water the more treatment that needs to be done to make our water safe for drinking. This costs money, sometimes a lot of money. For instance, algal blooms caused by excess nutrients increase the treatment cost of water over $1,000 a day and can last several weeks.

The upgrades to our plants and additional cost of treatment is something we all pay for. We can reduce these costs by preventing pollutants from entering our waters in the first place. Yes agriculture is a big target here, but this is a problem that needs everyone involved.

In the Mills Creek Watershed, the water flowing into Sandusky is heavily loaded with nutrients and sediment from agricultural, industrial areas, and untreated waste. Our data, reflects “dirty” water sampling, so to receive a “D” grade in our streams is not good, and it only gets worse when it rains. This stream has seen great improvement due to upgrades of the Bellevue Water Pollution Control Plan, but we need to step up our care for the land as well. Not sure how? Keep reading.

Be the Solution!
In 2010, after being assessed by the Ohio Environmental Protection Agency, Mills Creek was placed on the "303d list" for impaired waters of the United States of America. In order to get off this impairment list we need to greatly reduce sediment, nutrients and bacteria degrading our stream. These pollutants come from urban, agricultural, and industrial areas, so it will take all of us to improve Mills Creek!

WHAT YOU CAN DO
Plant vegetative buffers along a stream or ditch
Remember to inspect and pump out your septic system every 3–5 years
Stop filling floodplains and wetlands
Follow the “4Rs” of fertilizer use: Right source, Right amount, Right place, Right time
Don’t leave your field bare, plant cover crops!
Plant a rain garden or install a rain barrel at home
Stockpile and spread manure correctly
Pick up pet waste

“Unless someone like you cares a whole awful lot, nothing is going to get better. It’s not.”
- Dr. Seuss, The Lorax