

Water Quality

2024



Chappel Creek Report Card



Collecting Data

Monthly water samples were collected and analyzed by volunteers and staff from Old Woman Creek Reserve and Erie Conservation District from April through November. Annual aquatic macroinvertebrates sampling and identification is performed by staff and volunteers. These indicators are combined to develop the overall scores of individual sites and the overall watershed score. More information about our thresholds and monitoring plan can be viewed at erieconserves.org/watershed-program.

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 macroinvertebrate habitat and fish eggs.



Benthic macroinvertebrates are aquatic organisms with no backbone that are visible to the naked eye. Some are very sensitive to pollution, making them great indicators of water health.

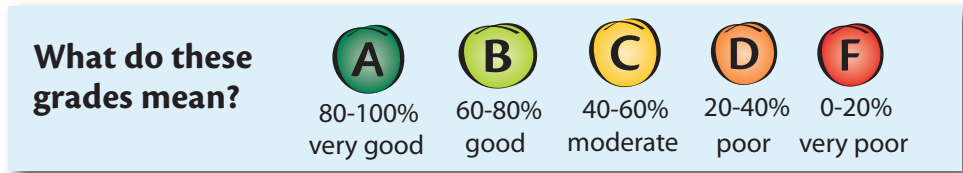


Vital Sign Indicators are a collective of *pH*, *temperature*, *dissolved oxygen*, and *ammonia observations*. Like our blood pressure, these parameters can identify if a serious problem is present and if one fails the whole indicator fails.

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.



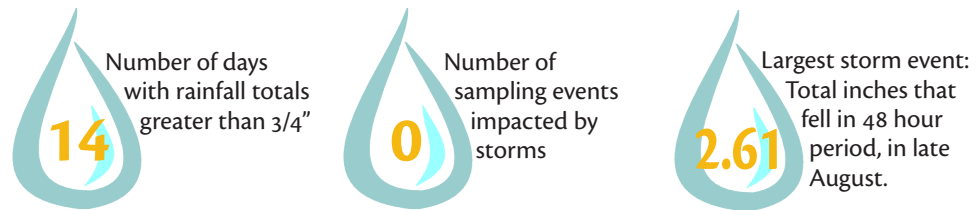
Previous Watershed Scores

We began sampling this watershed in 2022, however the scoring of this stream started in 2023.

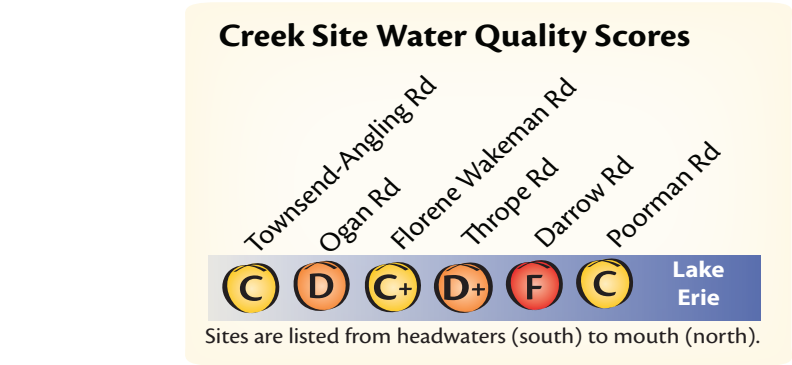
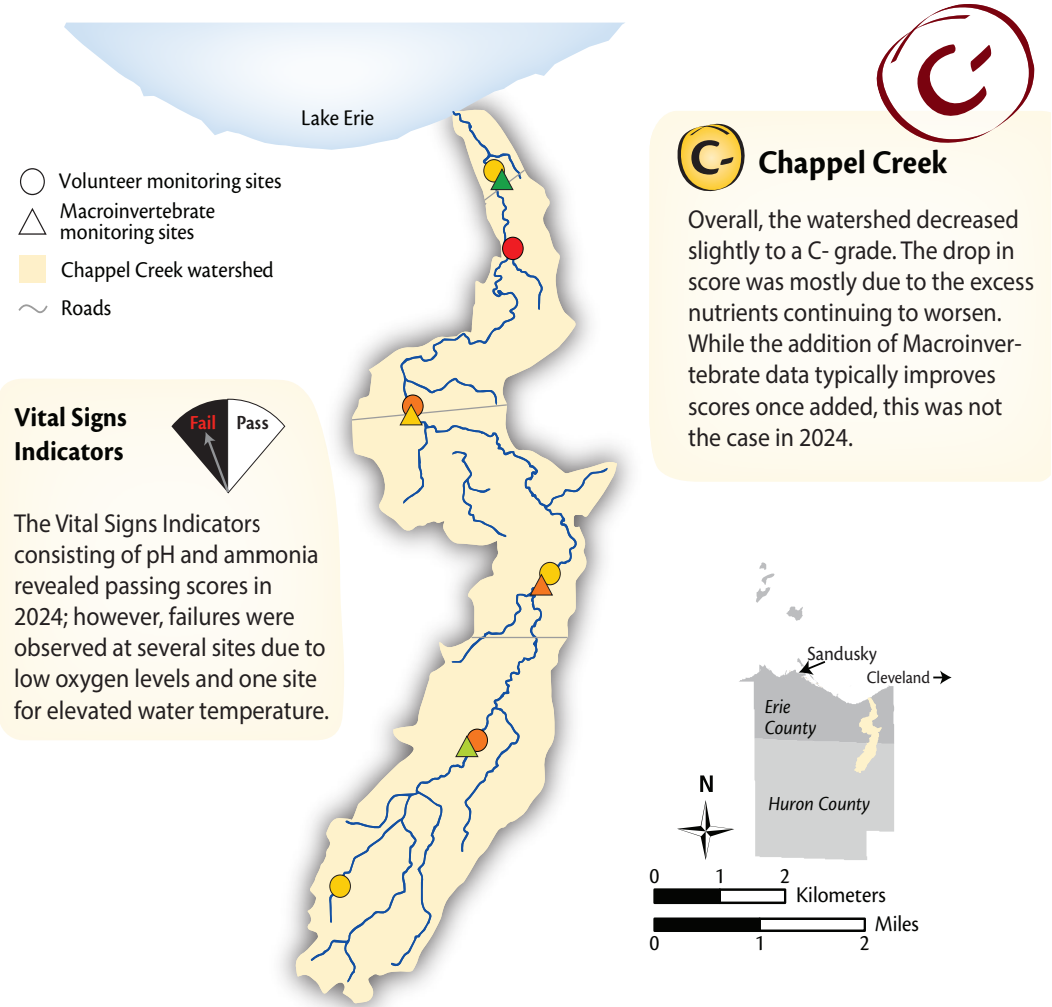
Indicator	2023
Nitrate	
SR Phosphorus	
Turbidity	
Benthic Macroinvertebrate	

Weather During our Sampling Period

Rainfall totals in the month of April nearly doubled the 30-year precipitation average, while the rest of our sampling period was at or below average. This lack of precipitation during most of the sampling year resulted in no storm samples and low flow observations in the Creek.

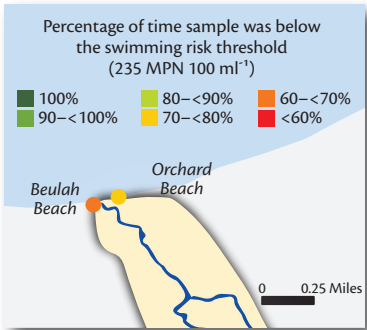


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2024 Beach Health and Safety

In Chappel Creek, indicator bacteria are measured by the Erie County Health Department at Beulah Beach and Orchard Beach. In 2024, Beulah Beach scored 60% while Orchard Beach scored 70%, meaning samples indicated a risk of illness from contact with water about 1/3 of the season.



Improve Water Quality on the Farm



H2Ohio was launched in 2019 by Governor DeWine as a statewide water quality initiative, which included helping our farmers be better stewards of the land through managing their nutrients and preventing erosion. In the Firelands area (Erie and Huron Counties), over 138,000 acres of farmland are currently enrolled in this program.

H2Ohio Sign-up for Crop Year 26-27 is Open Now!

Local farms in the Firelands area can sign-up to participate in H2Ohio for crop years 2026 and 2027. This program is open to new and previously enrolled farmers interested in improving water quality through nutrient management planning, sensible application of fertilizer and manure, and preventing nutrient and sediment loss with overwintering covers like forages, winter wheat, and cover crops. Farmers in Erie, Huron, Sandusky and Seneca counties should contact their local Soil and Water Conservation Districts to learn more about the program and get involved.

H2Ohio Agricultural Conservation Practices



Volunteer Nutrient Management Plans Nutrient management plans utilize the Tri-State Fertilizer Recommendation to determine appropriate fertilizer rates for crops, helping to reduce over applications that could lead to nutrient run-off.



Sub-Surface Phosphorus Application Applying fertilizer below the soil surface helps to keep the nutrients in the field during storm events.



Manure Utilization/Incorporation Properly applied manure at the right time, right place, and the right rate can prevent run-off into our streams.



Overwintering Cover Making sure our soil is covered by living plants all winter helps to soak up left over nutrients and prevent soil erosion.

Be the Solution!

In 2004, after being assessed by the Ohio Environmental Protection Agency, Old Woman Creek was placed on the "303d list" for impaired waters of the United States of America. Although there has been a significant effort to work with residents in the watershed to reduce the pollutants causing this stream to be impaired, we are far from where we need to be. Below are a few key ways you can help to improve our creek and Lake Erie.

Farmer



Follow the 4R's of fertilizer use:
Right source, Right amount, Right place, Right time.



Plant vegetative buffers
along streams and
ditches.



Don't leave your field
bare. Reduce tillage &
plant cover crops!

Homeowner & Community



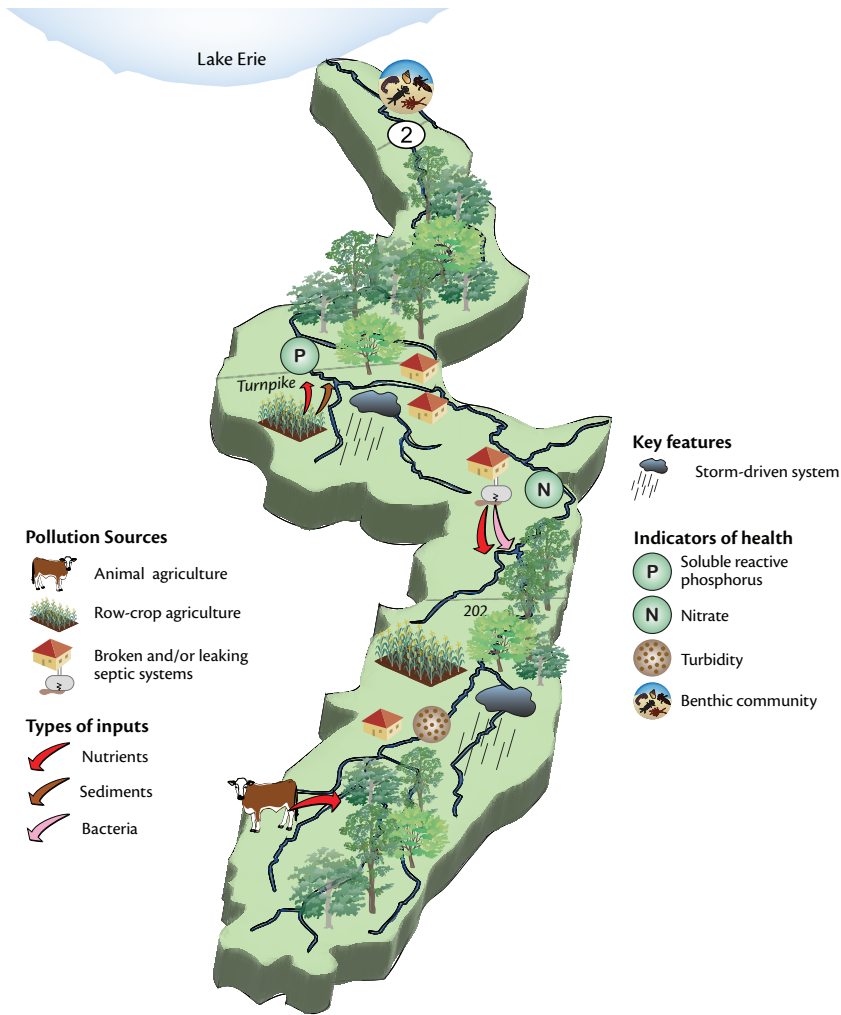
Inspect and pump out your
septic system every 3-5 years.



Plant a rain garden or install
a rain barrel at home.

Watershed at a Glance

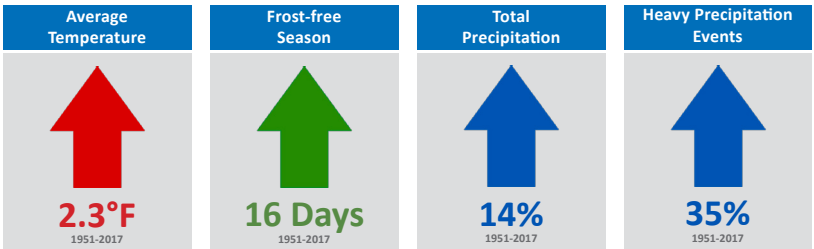
Chappel Creek is a 24 square mile watershed that begins in Huron County and empties into Lake Erie's Central Basin between the cities, Huron and Vermilion. The land use of this watershed consist of (58%) Agriculture, (9%) Urban, and (33%) Natural area.



A Storm-Driven System

When it rains, it drains, and storm events move pollutants through the watershed. When Chappel 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 being laden with 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.

Climate Trends in the Great Lakes



These trends are an analysis of weather observations provided by the National Oceanic and Atmospheric Administration's (NOAA) Regional Integrated Sciences and Assessment Team. While warmer temps & increased growing days benefit food production, increases in precipitation and intensity could drive more polluted run off resulting in more algal blooms.

For more information visit: glisa.umich.edu/gl-climate-factsheet-refs

Learn More & Get Involved

If you would like to explore our stream monitoring data, learn more about our coast and local watersheds, or have a passion for conservation visit the sites below by scanning the QR code.



**Firelands Coastal
Tributaries Watershed**



**Old Woman Creek
NERR**



**Erie Conservation
District**



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