

Water Quality

2025

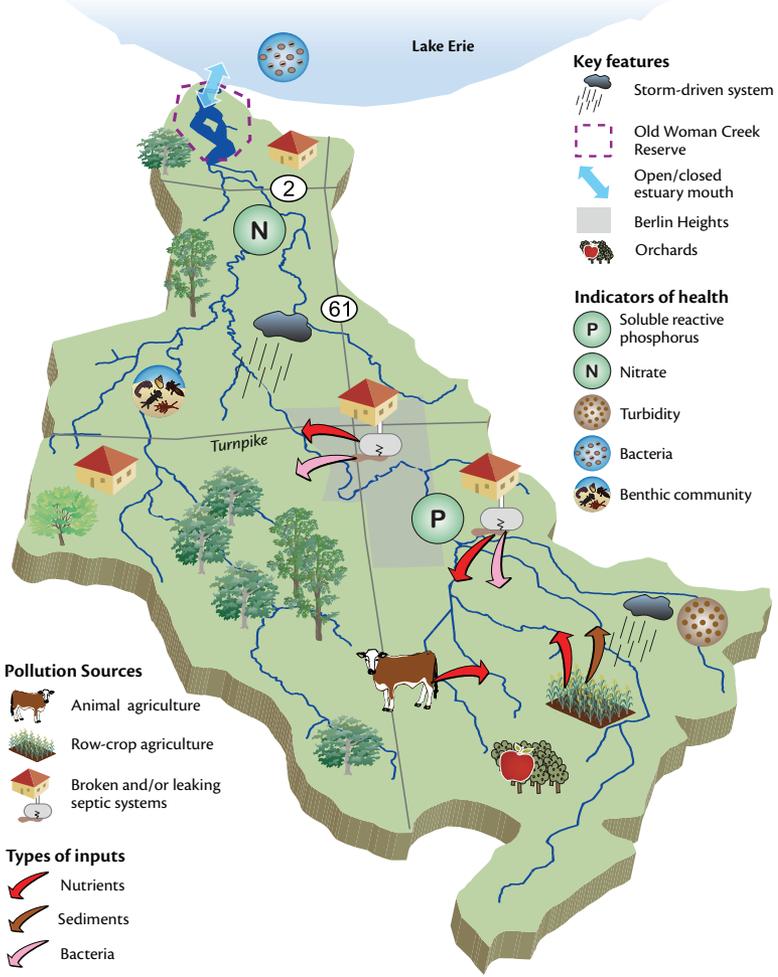


# Old Woman Creek Report Card



# Watershed at a Glance

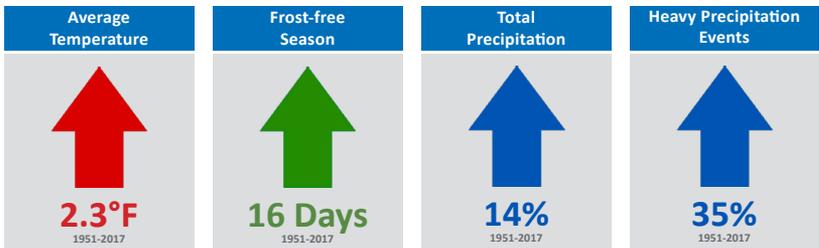
Old Woman Creek is a 27 square mile watershed, which has one of Ohio's last undeveloped freshwater estuaries (coastal wetland) at its mouth. The watershed is a mix of 3 landuses: Agriculture (66%), Urban (14%), and Natural (20%), that flows from Huron County north to Lake Erie.



## A Storm-Driven System

When it rains, it drains, and storm events move pollutants through the watershed. When Old Woman 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](http://glisa.umich.edu/gl-climate-factsheet-refs)

# 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. As well as, annual aquatic macroinvertebrate sampling and identification that 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](http://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.

### What do these grades mean?



80-100%  
very good



60-80%  
good



40-60%  
moderate



20-40%  
poor



0-20%  
very poor

## Previous Watershed Scores

In 2021, the nitrogen threshold was increased to be more consistent with aquatic response to nutrient concentration.

Indicator	2017	2018	2019	2020	2021	2022	2023	2024
Nitrate	C+	C+	D	A	D+	C-	C	C
SR Phosphorus	C	C	C-	C-	D	C-	C	C-
Turbidity	C-	C-	C-	C-	C	C	D+	D+
Benthic Macroinvertebrate	B-	C+	B-	B-	B-	B-	B	B

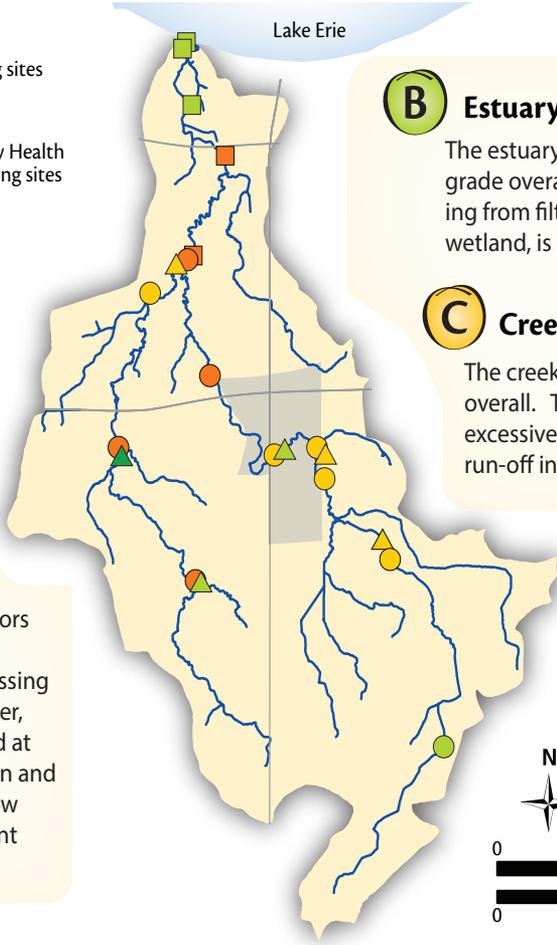
## Weather During our Sampling Period

Rainfall totals for April through July were well above normal, with July receiving twice the 30-year average (3.9 inches), while most fall months were below. The increased precipitation during the spring and summer led to two storm events being sampled.



# Old Woman Creek 2025 Report Card

- Volunteer monitoring sites
- △ Macroinvertebrate monitoring sites
- NERR and Erie County Health Department monitoring sites
- Old Woman Creek watershed
- Berlin Heights
- ~ Roads



**B-**

## B Estuary

The estuary again received a B grade overall. This score, benefiting from filtering effects of the wetland, is higher than the creek.

## C Creek

The creek again received a C grade overall. This lower score is due to excessive nutrients and sediment run-off in the watershed.

### Vital Signs Indicators



The Vital Signs Indicators consisting of pH and ammonia revealed passing scores in 2025; however, failures were observed at several sites for oxygen and temperature due to low flows and high ambient temperature.

### Creek Site Water Quality Scores

- Liles Rd (EB)
- Andress Rd (EB)
- Tennant Rd (WB)
- Bellamy Rd 1 (EB)
- Bellamy Rd 2 (EB)
- Hoffman Woods (WB)
- Chapin Rd (WB)
- Rt 61 (EB)
- Mason Rd (EB)
- Berlin Rd (EB)
- Darrow Rd (Mainstem)
- Railroad (estuary)
- Lower (estuary)
- Outlet (estuary)

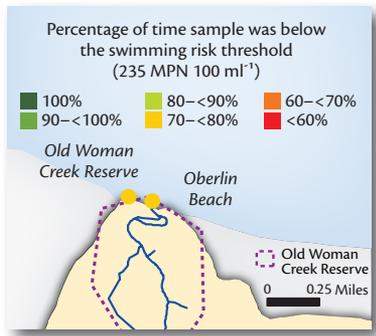


Sites are listed from headwaters (south) to mouth (north). EB - East Branch & WB - West Branch

### 2025 Beach Health and Safety

Two lake sites located on the public/private barrier beach (see map) of Old Woman Creek (OWC) are monitored by the Erie County Health Department. In 2025, OWC Reserve Beach scored a 74% and Oberlin Beach scored a 79%, meaning that nearly all samples indicated low 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.



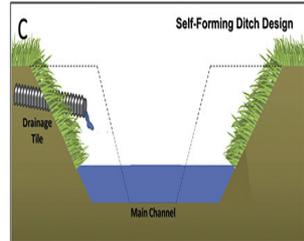
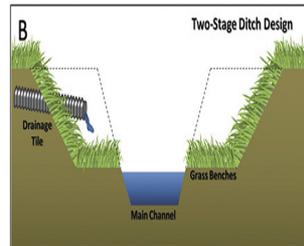
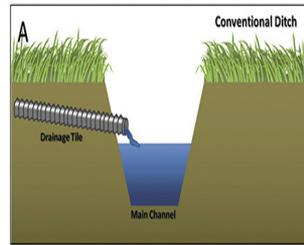
# Rethinking Drainage Ditches for Water Quality

Conservation ditches improve water quality by reshaping traditional drainage ditches (A). Using designs such as two-stage channels with internal benches (B) or widened natural channels (C), these projects increase water capacity while helping trap sediment and nutrients. Since 2010, three conservation ditch projects totaling more than 3,400 feet have been installed in the Old Woman Creek watershed.

A decade later, researchers from The Ohio State University evaluated one of the headwater projects and found it performed better than similar ditches across Ohio. Sediment samples collected from the ditch also revealed high levels of nutrients and organic matter that may have agricultural value.

In response, the Erie Conservation District and Old Woman Creek Reserve partnered with The Ohio State University to better understand how these ditches function over time and whether the captured soil and nutrients can benefit nearby row crop farms. Because some of the earliest ditch sections needed cleaning, the maintenance work provided an opportunity to study the system's long-term performance.

Beginning in 2024, researchers started monitoring stormwater quality upstream and downstream of the project. Soil samples were also collected from dredged material and from farm fields before and after the material was applied to the land. Monitoring will continue over the next several growing seasons to evaluate water quality improvements and crop response!



## 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.

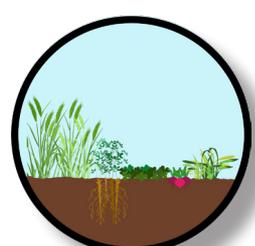
### Farmer



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.

# 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**



**Friends of Old  
Woman Creek**



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**Department of  
Natural Resources**



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Photo Credit: Michelle Bock