

# WATERSHED MONITORING: HIGHLIGHTS & INSIGHTS

## PROGRAM GOALS

Establish baseline conditions by understanding natural variability and ecological thresholds in the Niagara Peninsula watershed.

Assess temporal and spatial conditions of aquatic and terrestrial resources against established baselines.


Identify potential stressors and emerging threats for management through other programs.

**INTERESTING FACT:** Monitoring of aquatic bugs that live in the sediment as well as fisheries provide additional information about the biological condition waterbodies.

### Surface Water

Surface water chemistry monitored monthly at 84 stations during the ice-free season. Using indicators like chloride, nitrate, phosphorus, suspended solids, metals, and E. coli, staff calculate the Canadian Water Quality Index to provide a standardized rating. This monitoring helps assess watershed health, identify pollution sources, and guide effective management and restoration.

- Most sites show poor water quality due to levels of phosphorus, E. coli, and chlorides.
- The best water quality is found in the Upper Twelve Mile Creek, one site in the Upper Welland River, and areas influenced by the Great Lakes.
- Areas with natural cover (e.g., forests, wetlands, riparian zones) generally have better water quality than those without.

 **771**  
Surface Water Samples Collected in 2024

 **29**  
Benthic Macro-Invertebrate Samples

### Groundwater

Groundwater quality data is collected from 46 monitoring wells (15 from the Provincial Groundwater Monitoring Network and 31 operated by NPCA). This monitoring assesses conditions in bedrock and overburden aquifers, helping evaluate aquifer health, detect contaminants, and ensure safe groundwater for communities.

- Most groundwater monitoring stations meet Ontario Drinking Water Standards.
- Any exceedances are generally due to natural conditions (e.g., bedrock).
- One groundwater monitoring station in Pelham exceeds nitrate levels, likely due to human sources (e.g. fertilizer application).

 **52**  
Groundwater Samples Collected in 2024

 **2**  
Landowner Groundwater Wells Decommissioned

### Terrestrial

NPCA's terrestrial monitoring program assesses ecological integrity through standardized forest plots, tracking forest health to support long-term conservation planning.


- Terrestrial monitoring is an enhanced program area with data collection initiated in 2025.
- Monitoring network established across the watershed, starting with 30 deciduous forest plots in conservation areas.
- Data will inform long-term watershed management.

 **30**  
Terrestrial Monitoring Forest Plots

### Hydrometric

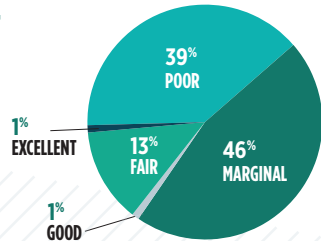
NPCA's hydrometric monitoring collects continuous water level and climate data to support flood forecasting and public safety across the watershed.

- Informs flood forecasting and warning across the watershed.
- Real-time and historical streamflow and water level data are available through NPCA's online Flooding and Stream Flow Monitoring portal.

 **11**  
Flood Bulletins Issued

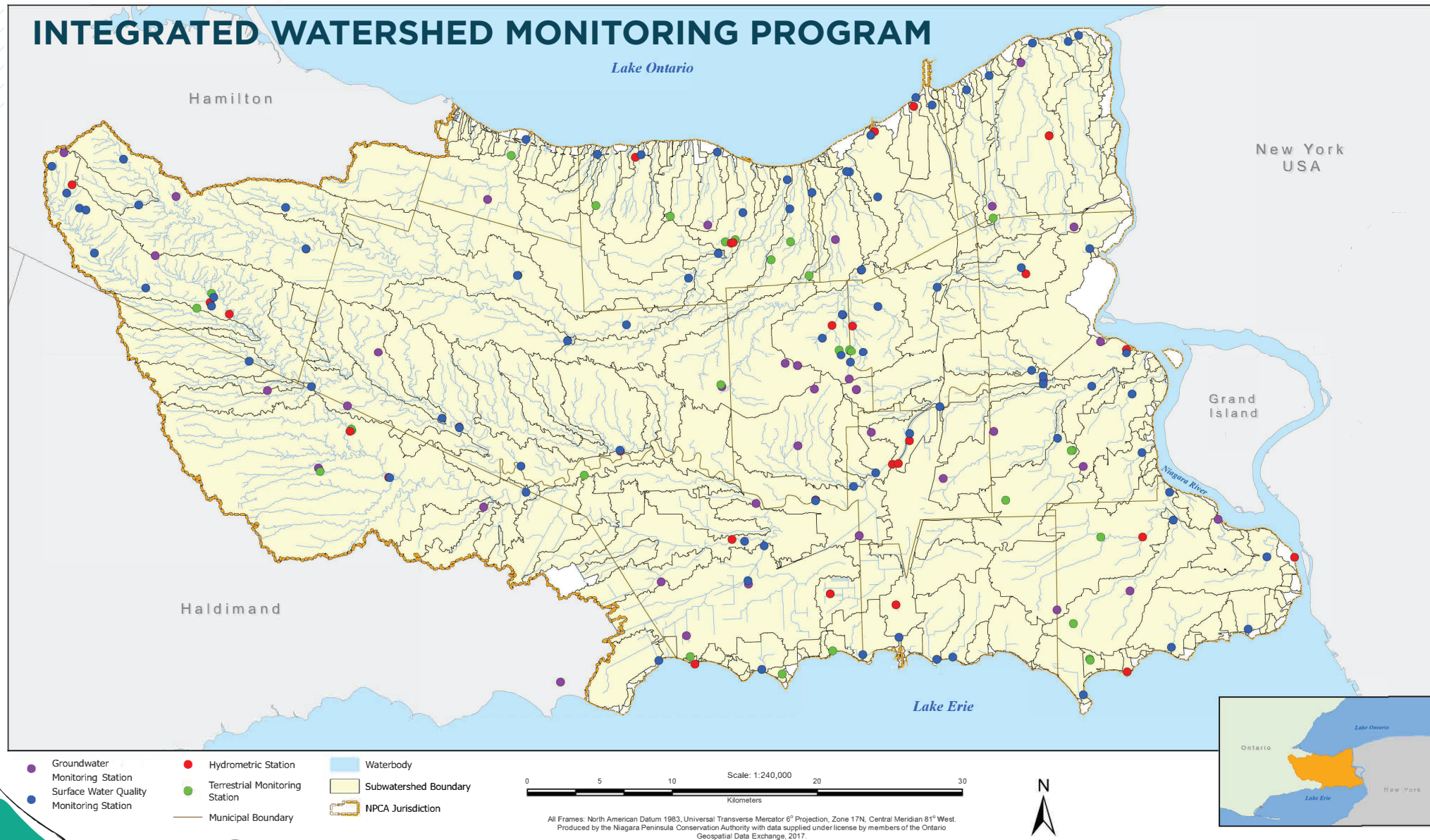
### The State of Our Streams 2024:

Station Ratings by Percentage



*nature for all*

# INTEGRATED WATERSHED MONITORING PROGRAM



## WHAT CAN YOU DO?

- Plant native vegetation
- Limit pesticide & fertilizer use
- Don't oversalt your driveway – a little goes a long way
- Pick up pet waste and dispose in the trash
- Regularly maintain your septic system
- Install rain barrels or rain gardens to conserve water
- Don't litter and properly dispose of household chemicals
- Volunteer with conservation activities

## Report a problem

**REPORTING POLLUTION:** Contact MECP Spills Action Centre at 1-800-268-6060 or online here: [report-pollution.ene.gov.on.ca](https://report-pollution.ene.gov.on.ca)

**FOR FISH DIE-OFF:** Contact Ministry of Natural Resources (MNR) Fish Die-Off Hotline at 1-800-387-7011

## Learn More

Full Technical Report – available on NPCA website  
Data Requests – [watershedmonitoring@npca.ca](mailto:watershedmonitoring@npca.ca) or scan below

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