

# Low Water Response Audit

Board of Directors

May 29, 2026

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**Lake Simcoe Region**  
conservation authority



# Flood and Low Water Program Review

- Audit of both programs conducted in 2025.
- Results to be presented in a series:
  1. Low Water Program Overview
  2. Flood Program Overview and Floodplain Mapping
  3. The Evolution of the Flood Program- Tools and Technologies
  4. Flood Forecasting, Warning and communication



East Holland River High (↑) and Low (↓) Water Conditions



# Lake Simcoe Watershed Low Water Program

Drought is a "creeping phenomenon" — difficult to define and measure, slow to develop, continuous, cumulative, and long lasting. There is no universally applicable tool for measuring drought; as impacts are non-structural, spread over large areas, and best described by multiple indices.

*Canadian Drought Monitor*



# 2025 Lake Simcoe Low Water Program Audit

- Objectives of the Low Water Program Audit:
  - Review goals and objectives of the Low Water Program
  - Review roles and responsibilities of program members
  - Examine the prevalence of low water conditions in watershed
  - Work with Water Response Team (WRT) to shape future direction and needs of Low Water Program



Whites Creek, Summer 2025

# Ontario Low Water Program

- Provincial program initiated in 1999 across Southern Ontario
- Program intended to give early warning to supply challenges
- Program leverages provincial and local resources to prepare, coordinate and support response at local level.
- OLWR defines low water / drought conditions as weather and flow conditions characterized by one or more of the following:
  - Below normal precipitation for extended period (3 months minimum to 18 months)
  - Streamflow at the minimum required to sustain aquatic life, decreased water levels in wells / dry wells



# Low Water Indicators and Conditions



## Low Water Status

	Indicators			Declaration of Low Water Level
	Precipitation, % of the average precipitation over the last 3 months	Flow, % of the minimum summer month flow		
		Spring	Summer	
<b>Level 1</b> – early warning of potential water supply problems. Water use reduction of 10%	<80%	<100%	<70%	LSRCA
<b>Level 2</b> - Indicates a potentially serious problem – conservation of water is extended to voluntary restrictions on non-essential use of 20%	<60%	<70%	<50%	WRT
<b>Level 3</b> – May indicate a failure of the water supply to meet demand – <i>water users are strongly encouraged to reduce withdrawals wherever possible</i>	<40%	<50	<30	WRT

# Lake Simcoe Low Water Response Team

- Comprised of local water use agencies and sectors (LSRCA, Municipalities, First Nations, TSW, Province)
- Coordinate local response to low water conditions
- Share drought information and encourage voluntary water conservation practices
- Responsible for declaration of Low Water Conditions
- Level 3 does not imply mandatory requirement to restrict or regulate water use
- Level 3 does not necessarily equal declaration of emergency



# Low Water Response Team - Roles and Responsibilities

## **Municipalities**

- Manage supply systems and conservation measures
- Use and enforcement of by-laws as principal means of water conservation / restrictions
- In the event of a severe drought, declaration of state of emergency

## **Conservation Authority**

- Administer the team in the Lake Simcoe Watershed
- Monitor and report on low water indicators
- Declaration of Level 1 conditions



# Low Water Response Team - Roles and Responsibilities

## Provincial Ministries

**MNR** Parent ministry of the Low Water Program and operation of the Surface water monitoring center

**MECP** Issue, manage and enforce conditions (if necessary) on water taking permits

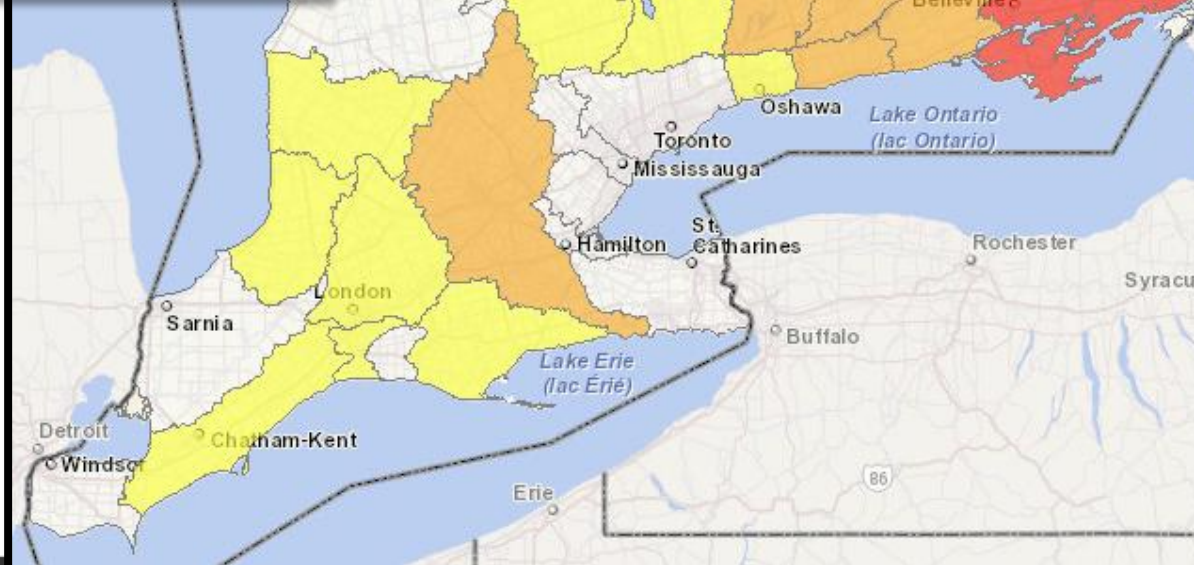
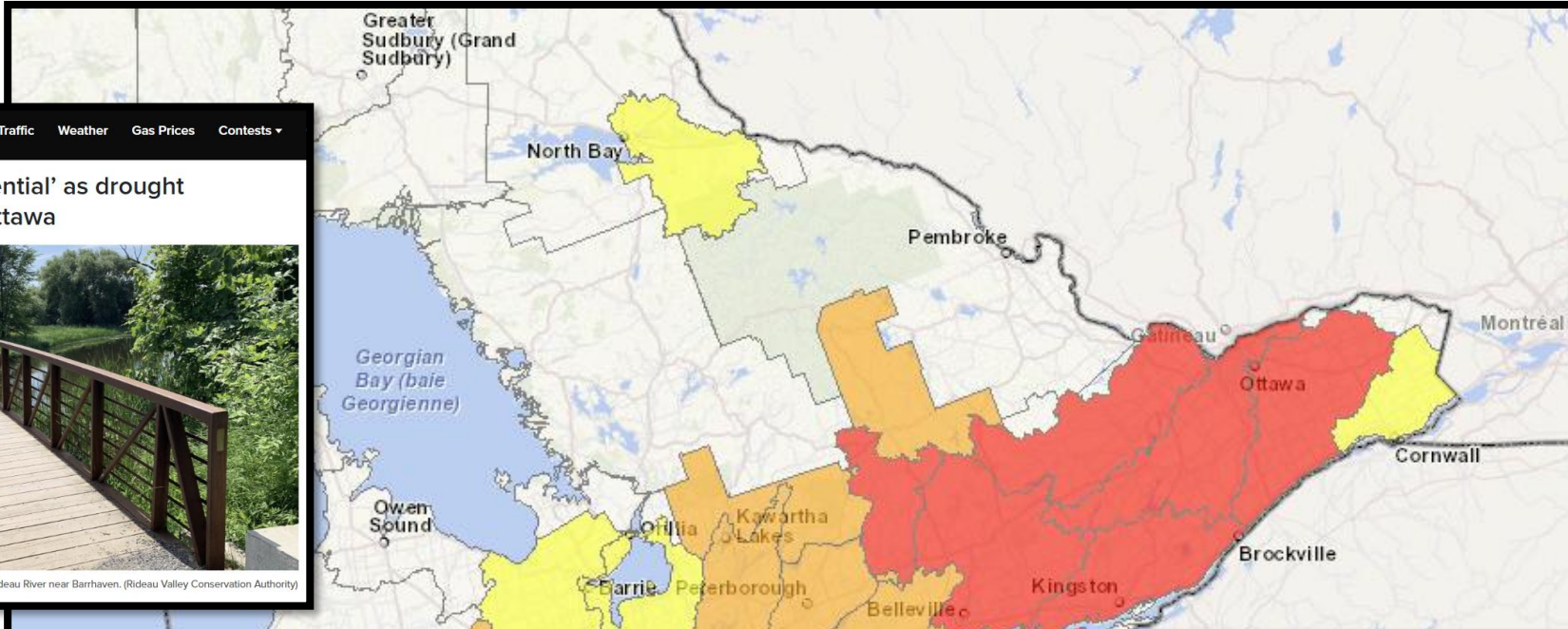
## Trent- Severn Waterway

## Chippewas of Georgina Island First Nation



Talbot River, Summer 2025

# Southern Ontario Low Water Status September 2025



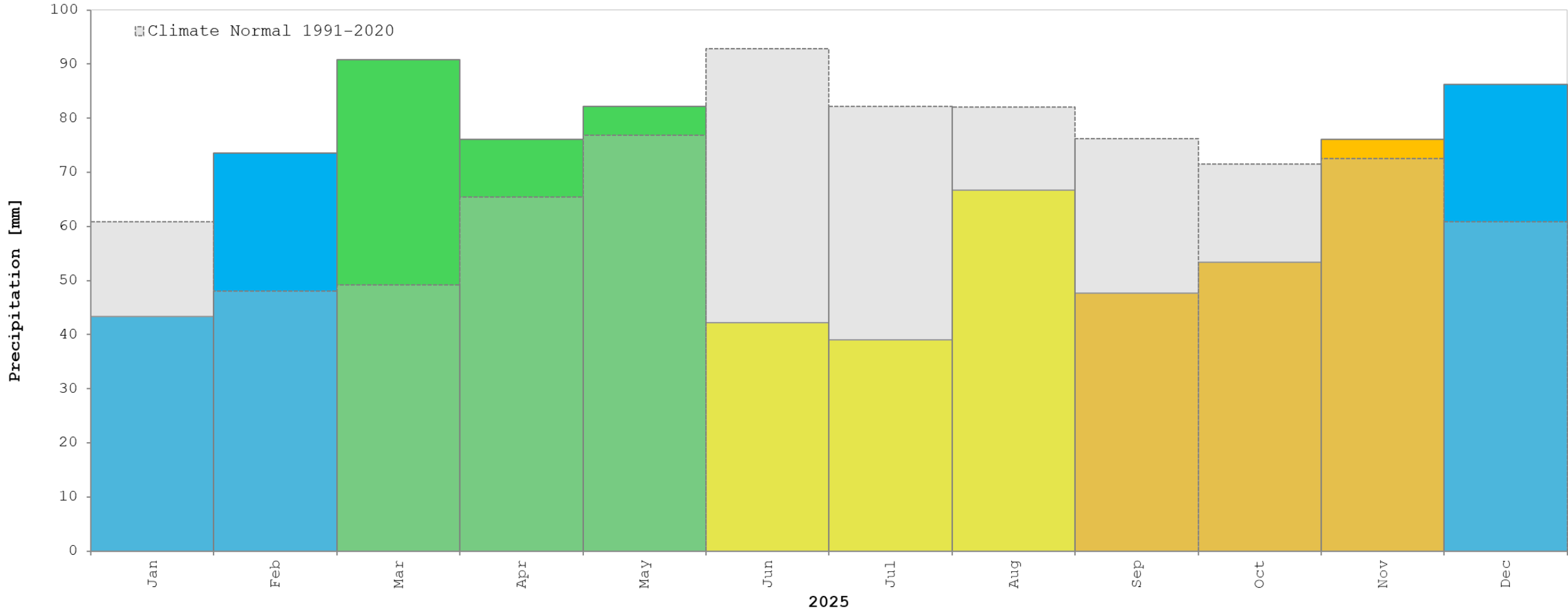
**CityNews** Everywhere News Watch Listen Traffic Weather Gas Prices Contests

Water conservation 'essential' as drought conditions continue in Ottawa

The Chapman Mills Conservation Area is located along the Rideau River near Barrhaven. (Rideau Valley Conservation Authority)



# 2025 Average Monthly Precipitation Vs. Climate Normal



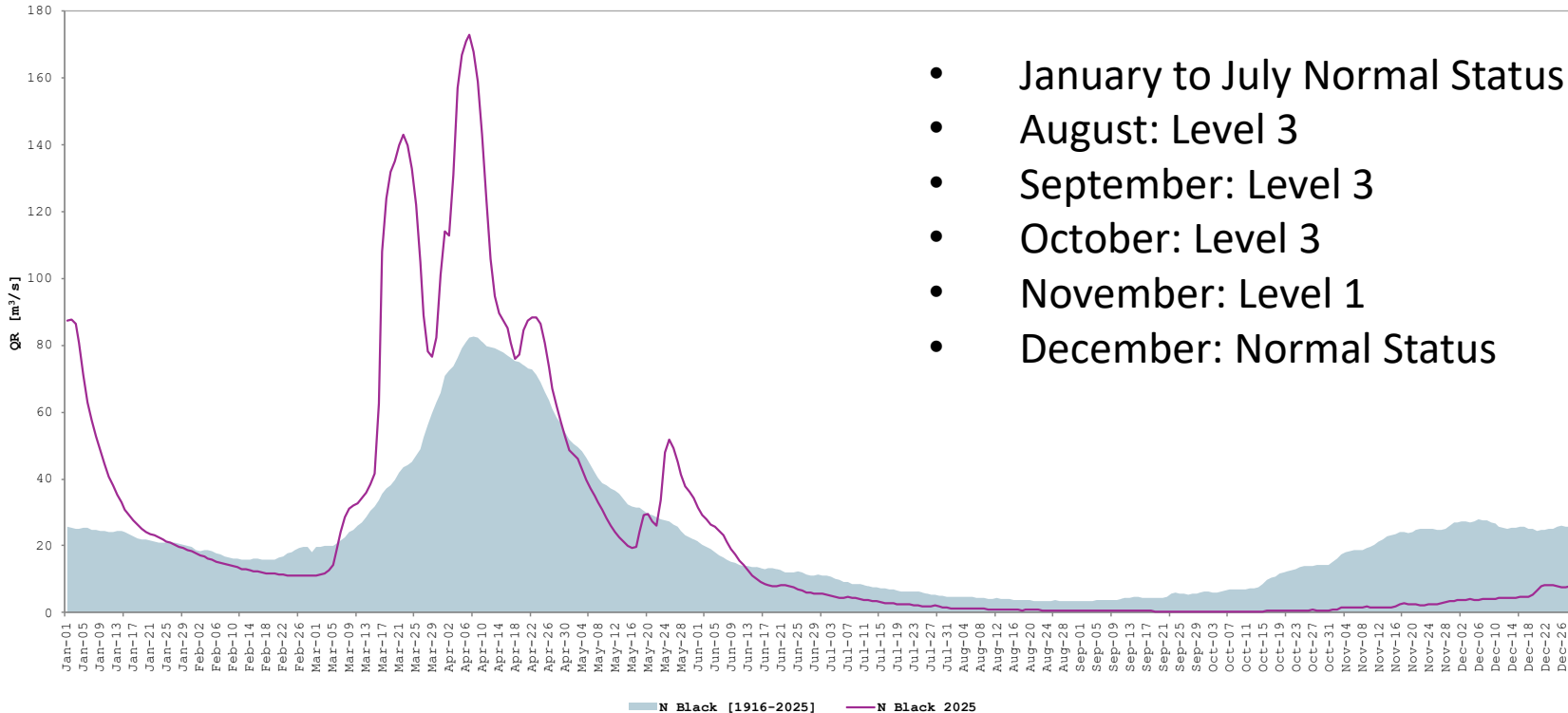
Average Monthly Precipitation (Barrie-Oro, Uxbridge West, Georgina Is, Innisfil Res, Keswick WTP, Newmarket Office, Orillia WWTF, Scanlon2, Lagoon City WWTF, N Schomberg) for Lake Simcoe and Average Climate Normal 1991-2020 for Egbert CS and King City North.



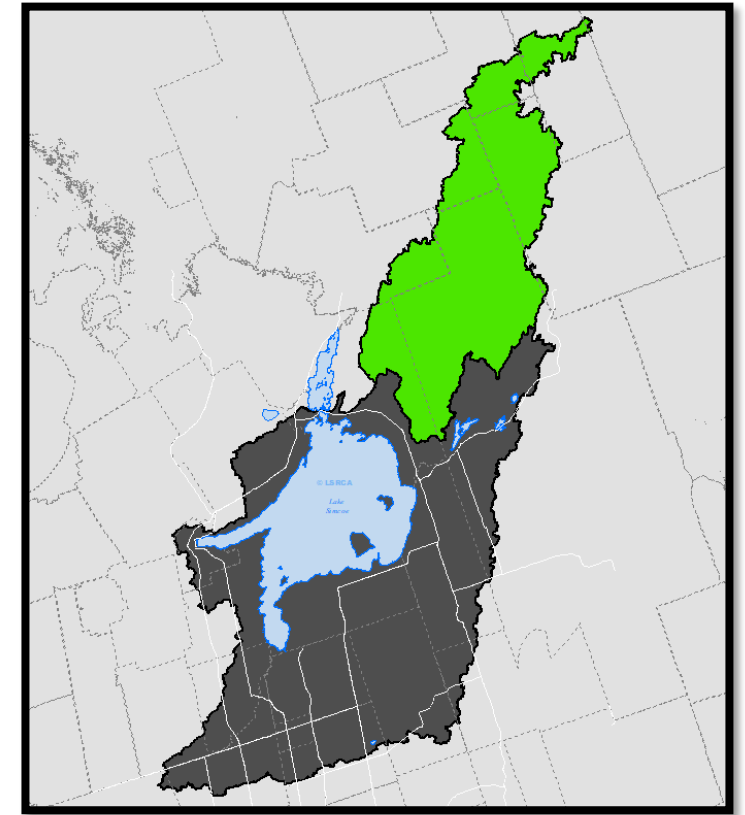
# Black River near Washago

- Over 100 yr continuous period of record!!!
- Second time in period of record that North Black was in Level 3 for 3 consecutive months since 1915!
- First instance was 1964 (August through October).

N Black River Average Discharge [1916-2025]



- January to July Normal Status
- August: Level 3
- September: Level 3
- October: Level 3
- November: Level 1
- December: Normal Status

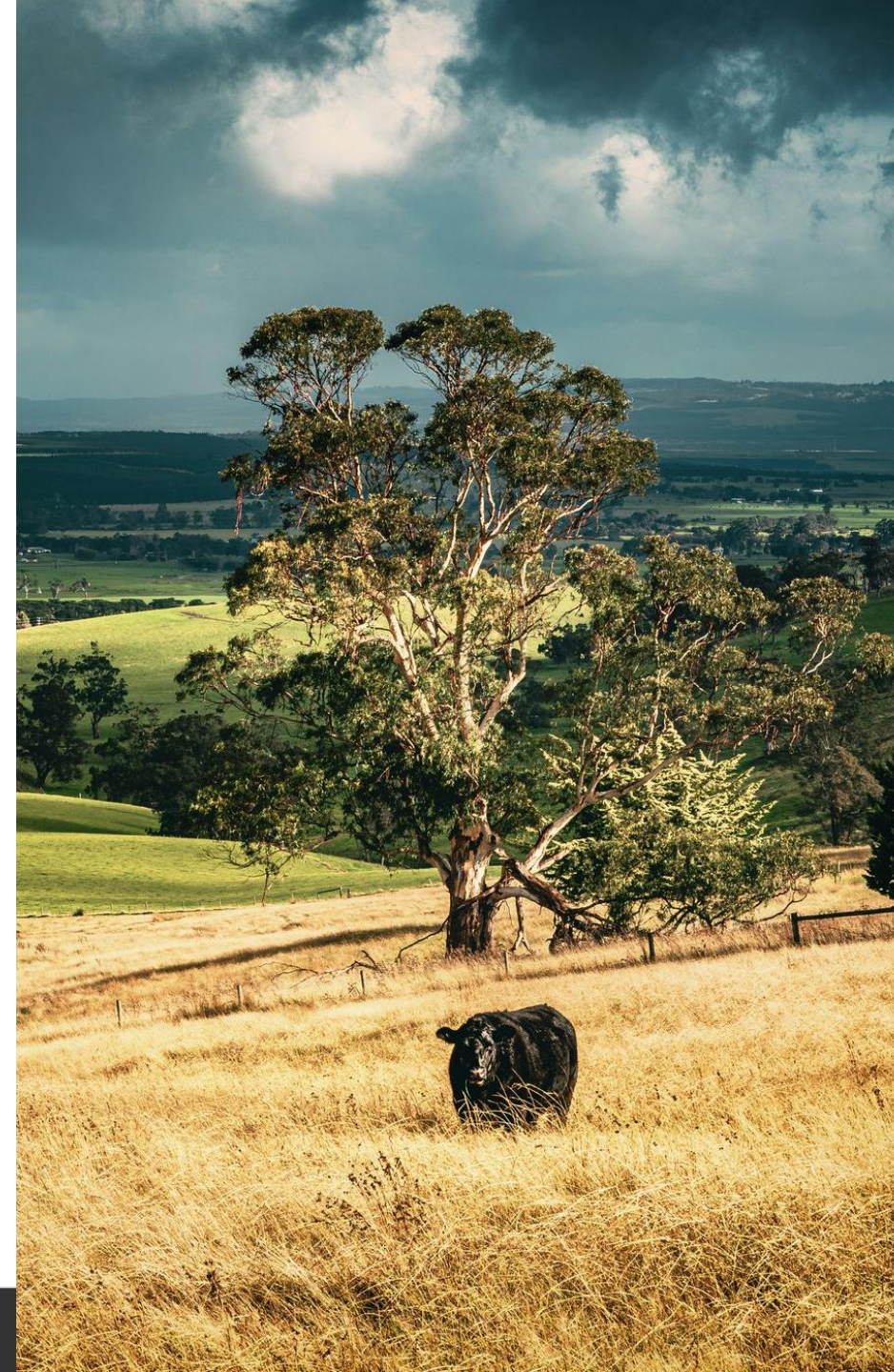


# Low Water Indicator Sensitivity Analysis

	Low Water Declaration	Precipitation Indicator (1 Station)	Streamflow Indicator (8 Stations)
	2007-2025	1989 - 2025	1915*-2025
Level 1	7%	22%	10.6%
Level 2	1.5%	4%	5.2%
Level 3	0%	0%	1.8%

## Key Findings

- Level 3 condition has never been declared for Watershed
- Low water conditions most common in August and September
- Two streams account for 62% of Level 3 conditions
- Findings suggest Lake Simcoe Watershed is fairly insulated from low water conditions.



# Low Water Audit Recommendations

1. The Water Response Team will continue to lead low water program
2. Identify areas and ecosystem components sensitive to drought
3. Review municipal water conservation related by-laws.
4. Assess groundwater resources vulnerable to drought, evaluate available support.
5. Evaluate impact of 2025 low water on northeastern municipal wells.



Beaver River, Summer 2025

# Summer 2025 Low Water Conditions



Whites Creek



Tannery Creek



Maskinonge River