

Environment and
Climate Change CanadaEnvironnement et
Changement climatique Canada

Assessing and Enhancing the Resilience of Great Lakes Coastal Wetlands 2017–2022

Climate plays an important role in the health, function and distribution of wetlands. Environment and Climate Change Canada's five year program will assess how climate change will impact wetlands and identify ways to enhance resilience.

Program Goals

- 1 Assess coastal wetland vulnerability to climate change
- 2 Identify approaches to increase resilience
- 3 Build consensus on priorities for action

Approach

EVALUATE

- Assess current conditions
- Evaluate historical responses
- Establish basis of comparison

UNDERSTAND

- Model climate projections
- Assess climate exposure
- Understand uncertainties

ASSESS

- Assess wetland sensitivity and adaptive capacity
- Compare baseline to projected changes
- Evaluate vulnerability

ADAPT

- Share results and consult
- Identify and prioritize adaptive measures
- Develop guidance and recommendations

CONSULTATION

Key Definitions

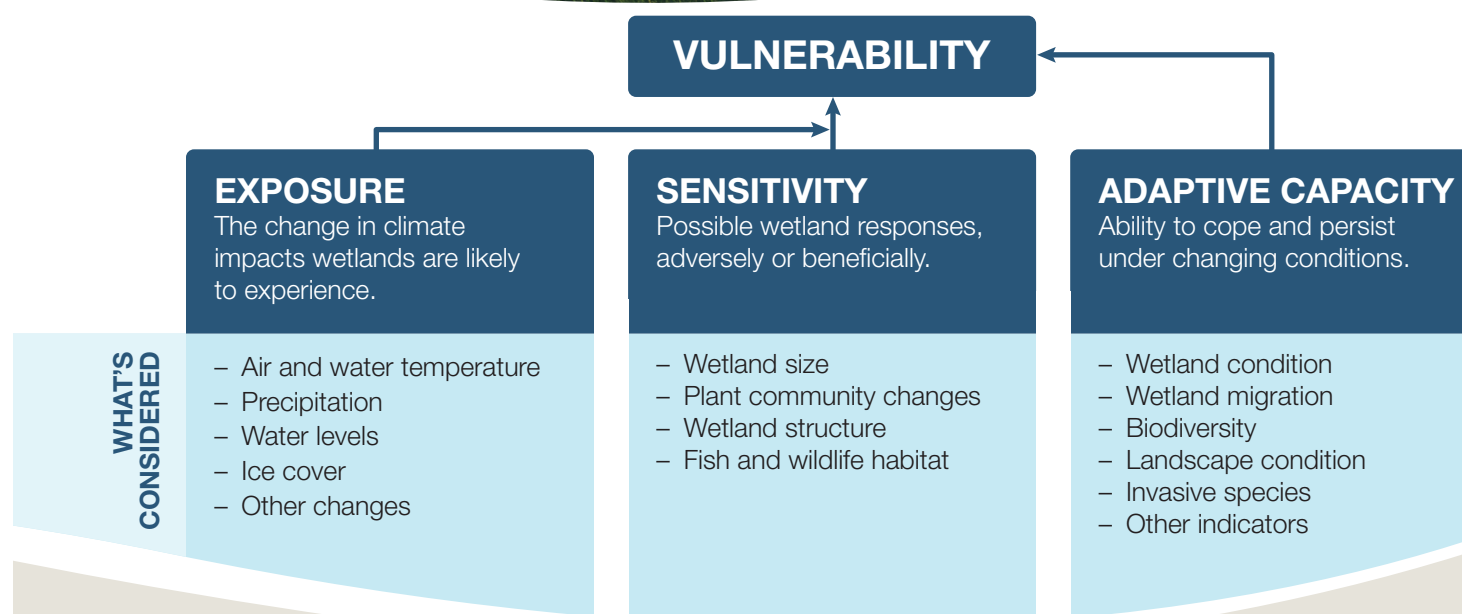
VULNERABILITY: the degree to which coastal wetlands are susceptible to, and unable to cope with, adverse impacts of climate change.

RESILIENCE: the ability of a system to absorb or recover from impacts while maintaining the same state or essential function.

Projected Climate Change Impacts by the 2080s

	Air temperature	↑	1.5-7°C
	Precipitation	↑	20%
	Storm events	↑	Intensity/Frequency
	Water temperature	↑	0.9-6.7°C
	Chemical Effects	↑	Nutrients/Toxicity
	Water Quantity	↓	Water Flows and Levels
	Ice cover	↓	Extent/Thickness
	Habitat and species	Expansion/ Contraction	Species and lake-dependent

How is Wetland Vulnerability Assessed?



Ecological and socio-economic benefits of coastal wetlands



Fish Habitat



Migratory Bird Habitat



Other Wildlife Habitat



Erosion Control



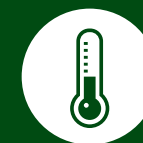
Flood Control



Cultural/Spiritual Benefit



Water Storage and Filtration



Climate Regulation



Recreation

Examples of Program Products

(to be developed with stakeholders and rights holders)

SCIENCE AND MODELLING

- Great Lakes climate and water level projections
- Identification of vulnerable wetlands
- Technical report and mapping

ENHANCING RESILIENCE

- Consensus-based priorities and approaches
- Guidance on adaptive measures
- Adaptation strategies (for select wetlands)

This program supports the Great Lakes Protection Initiative:
<https://www.canada.ca/en/environment-climate-change/services/great-lakes-protection.html>

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