

How can we improve water quality and reduce algal blooms in Canada's lakes?

As populations increase and farming practices intensify, excess nutrients are making their way into rivers and lakes. Large algal blooms are becoming increasingly common. How will Canadian lakes respond to increased urbanization and a changing climate? How can we balance our desire for better water quality with the needs of a growing population?

Lake Futures is partnering with stakeholders to devise strategies to improve lake water quality across Canada.

LAKE-WATERSHED MODELS

**How can we manage lake basins to improve water quality?
Can we better predict the occurrence of Harmful Algal
Blooms (HABs) and other nuisance algae?**

DEVELOPING MODELS WILL HELP US:

- › identify targeted watershed best management practices (BMPs) that can achieve nutrient load reductions
- › quantify time lags between implementation of BMPs and water quality improvement as a function of climate, soil type, topography and management
- › better understand the effects of climate change, watershed nutrient inputs, and internal loading from lake sediments on the occurrence of algal blooms



BIOMONITORING FRAMEWORK

**What is the relationship between water quality and
the ecological integrity of lakes and their watersheds?
Can we develop a robust biomonitoring framework?**

DEVELOPING A BIOMONITORING FRAMEWORK WILL:

- › help us identify the biotic indicators that are most critical for ecosystem health
- › help us identify the water quality parameters that have the strongest impact on these indicators
- › enable efficient cumulative effects assessment and adaptive management across watersheds

DECISION SUPPORT TOOLS

**Can we develop effective decision support tools to help
improve water quality? What are the most cost-effective ways
to meet the goal of 40% reduction in phosphorus loading?**

DEVELOPING DECISION SUPPORT TOOLS WILL:

- › help stakeholders prioritize where to take action and what measures should be implemented
- › help policymakers develop effective economic incentives and other policy measures to improve water quality

