

Benefits of SWMRS

- 1. Provides one-window data repository for bacteriological & beach posting information**
- 2. Reporting mechanism**
- 3. Potential to allow Health Units access to weather data for improved analysis and predictability**
- 4. Facilitate with the adoption of a standard monitoring and reporting system**

Great Lakes Indicators

The Highlights 2009 Report assessed and reported out on 63 Great Lakes indicators for the following nine categories:

Human Health Climate
Change Biotic
Communities Invasive
Species

Land Use & Land Cover

Toxic Substances, Nutrients, Bacterial Contamination
Coastal Zones
Aquatic Habitats
Resource Utilization

Watersheds: Effects on the Great Lakes

Excessive nutrients - Causing

Cladophora and plankton blooms and low oxygen levels in the central basin. **High levels of Suspended Solids** Episodic - lethal conditions for aquatic life, reduced habitat quality, prevents macrophyte growth.

Creates conditions suitable for **invasive species**

Temperature and Oxygen levels occasionally lethal.

Dams preventing fish access, fragmenting river preventing movement of bedload.

Wetland loss & degradation

Channel alterations **reduce habitat complexity.**

Potential Sources of **Toxic Substances** and **Bacterial Contamination**



Watershed - Lake Connections

Lake Huron Southeast Shore Working Group

Initiated in 2002 to respond to beach issues. Composed of federal and provincial agencies, First Nations, conservation authorities, municipal planning and health units and local community groups. Addressing nearshore waters and watersheds between Sarnia and Sauble Beach.

Part of the Lake Huron Binational Partnership. Priority focus area under COA and the Provincial Great Lakes Strategy.

Purpose: To help coordinate and facilitate:
Research and Monitoring the quality of water in the nearshore and watersheds

Studying the physical processes and land-uses that affect it

Cooperating and sharing information amongst partners to find ways to improve water quality



Beach Impairments

Studies along the Southeast Shore include: *detailed evaluation of tributaries and nearshore, integrated sampling, physical studies, modelling, source tracking, hydrogeological studies, sampling of beach sand, pore water, movement of groundwater, septic influences, economic study...*

What we know

Lake Huron and the nearshore are highly oligotrophic except in localized areas

Episodes of poor water quality in tributaries, drains and nearshore areas

Beach postings have been an issue for 30+ years. It is a multiple-source issue, land use is a contributing factor (intensive agriculture and cottage development). Highest levels of e.coli are in beach sand with few pathogenic components

Algae occurrences are spatially and temporally transient

What we don't know

Which inland sources are affecting water quality at beaches

Who (or what) is responsible for what portion of the problem

What can and should be managed and how can we achieve our objectives



Beach postings

“If you swam yesterday, you’re OK. The water was fine!”

Today might be okay too, but we won’t know because we won’t be sampling again until next monday

- Preliminary predictive modelling studies show a 50% success rate in the current beach sampling-posting process.
- Economic study:
 - 550 surveys completed 2009
 - 90% do not check first but 26% would leave if they found the beach posted
 - An average of \$65 per person/beach day was spent locally (within 50 km)

safe day at
THE BEACH
Huron County Beach Water Quality

Don't swim in the water if you can't see your feet at waist depth of an adult.
The water is safe to swim most of the time. However, caution must always be taken when swimming in any natural water source. Weather conditions are the leading factor that can adversely affect water quality.

Testing
Cloudy water can occur after heavy rainfall and/or due to high wave action. Several years of Huron County Health Unit public beach water sampling have shown that there are elevated levels of E. coli counts when the water is cloudy. The E. coli test is only an indicator that there is fecal contamination present from either animal or human or both. There could also be harmful bacteria, parasites and/or viruses present in the water.

Symptoms
Swimmers are at risk of developing a variety of irritations and infections when swimming in cloudy water. The most common symptoms are minor skin, eye, ear, nose and throat irritations and stomach disorders.

Fun in The Sun

- Practice sun safety.
- Keep well hydrated by drinking plenty of water.
- Do not dive into unknown waters.
- Beware of undertows.
- Always supervise children in the water.

For up-to-date information contact:
Beach Water Hotline
(519) 482-5119 Ext. 2501 Toll free 1-877-837-6143 Ext. 2801
Huron County Health Unit
(519) 482-3416 Toll free 1-877-837-6143
Website: www.huroncounty.ca

Great Lakes Climate Change and Policy Workshop 2009 findings

1. “Mainstream” climate change risk, sustainable approach to shoreline development
2. Integrated climate change impact assessment
3. Binational vision and implementation through Lakewide Management Plans
4. Collaboration for integrated shoreline management plans
5. Innovative and holistic approaches for hazard zone planning
6. Update the Provincial Policy Statement
7. Update the Littoral Cell Definition
8. Update MNR report and guide for flood levels/shorelines including climate change guidance
9. Need high-res shoreline data and ongoing monitoring
10. Capacity building and continuous education
11. Shoreline Stewardship Program



Coastal Zone Management under a Changing Climate in the Great Lakes 2006

Increasing air temperature, hot days and heat waves; decrease in extreme cold days

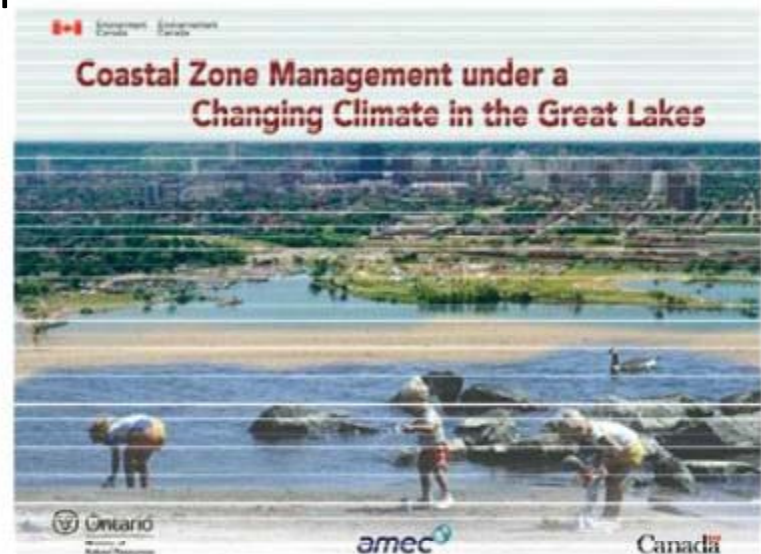
Increasing precipitation, heavy rainfall events, drought

Increasing winds, extreme weather events, winter storms

Increased water temperature

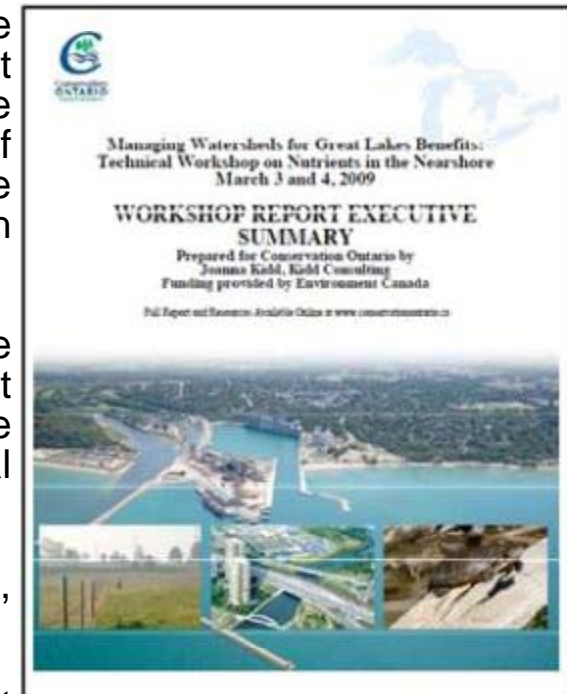
Water level decline

Adaptation: scientific, technical, institutional, behavioural, political, financial, regulatory and/or individual adaptation actions.



Managing Watersheds for Great Lakes Benefits: Technical Workshop on Nutrients in the Nearshore 2009

- The nearshore is a vital resource that contributes to the social, economic and environmental health of the Great Lakes Basin one of the greatest primary productivity one of one of greatest primary productivity, a location of diverse habitats for fish and wildlife, and the place where humans interact most closely with the lake, through fishing, swimming, boating and other activities
- Current threats are population growth, changing land use practices, invasive species, and climate change without action, eutrophication and the growth of nuisance algae will increase, and will affect fisheries, recreational resources, waterfronts and drinking water
- Key actions for each Lake categorized under Planning, Remedial/Restoration, and Science/Research/monitoring
- Implementation of a Great Lakes Nutrient Strategy that promotes collaboration and integration, is science- based and adaptive, and encourages stewardship actions in the watersheds.

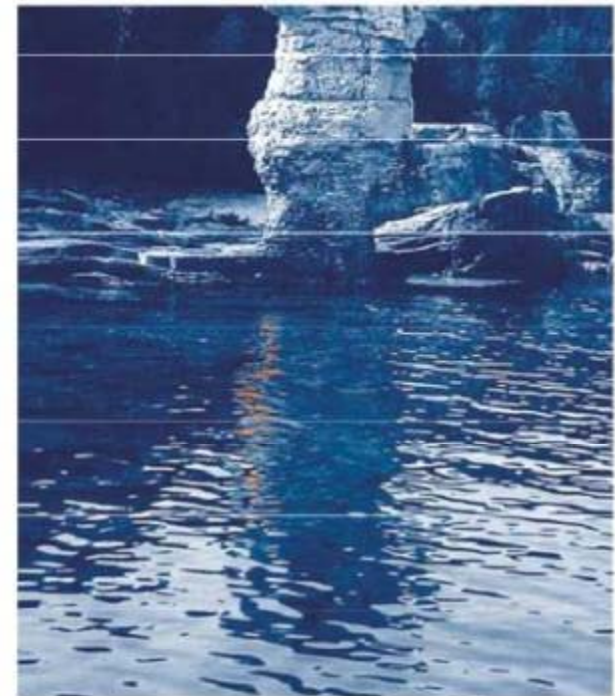


IJC 2009 Nearshore Report Recommendations

Explicitly recognize the nearshore
Specify adaptive management Specific
goals and objectives Binational
condition assessment as component of
Lakewide Management Plans
engage institutions and agencies at all
orders of government, including
facilitating the development of shared
priorities and coordinating programs,
research, monitoring and management
initiatives.



Great Lakes Water Quality
AGREEMENT
PRIORITIES 2007-09 SERIES
Work Group Report
on Nearshore Framework



Opportunities

GLWQA Negotiation

Public webinars May-June 2010

www.binational.net

Continuing Coastal collaborations

COA Negotiation 2011-

