

CANADIAN BASELINE COASTAL HABITAT SURVEY

LAKE HURON

Anders Holder Environment and Climate Change Canada



Environment and Climate Change Canada's **50th anniversary 50th anniversaire** d'Environnement et Changement climatique Canada Meteorelagioni, Service of Canada's **150th exployersary**

Meteorological Service of Canada's 150th anniversary 150° anniversaire du Service météorologique du Canada



LAKE HURON IS VAST AND VARIED



NUMEROUS BENEFITS

- Spiritual connection
- Recreational benefits
- Cleaner water
- Protection from storms and floods
- Carbon capture to reduce the effects of climate change







HOME TO A DIVERSITY OF SPECIES



A CHANGING HABITAT

- Development / Shoreline Alteration
- Nutrients / P & NP Source Pollution
- Habitat loss / degradation
- Tributary dams and barriers
- Invasive species



WHY A BASELINE SURVEY?

COA / GLWQA: conduct a baseline survey of the existing habitat against which to establish a Great Lakes Basin Ecosystem target of net habitat gain and measure future progress

- Standardized tools and methodology to survey existing habitat and measure progress over time (net gain)
- Improved understanding through open access reporting / data catalogue
- Identify priority habitats for future conservation efforts

DEVELOPING A BASELINE SURVEY

- Coastal ecosystem from Sarnia to Sault Ste. Marie beginning at the shoreline to 2km inland.
- 17 discrete coastal units based on hydrological, ecological and geophysical properties.

Coastal Unit	
1. Sarnia to Grand Bend	10. Severn Sound North
2. Grand Bend to Kincardine	11. Severn Sound to Parry Sound
3. Kincardine to Howdenvale	12. Parry Sound to Key River
4. Howdenvale to Tobermory	13. Key River to Killarney
5. Tobermory to Lion's Head	14. Killarney to Blind River
6. Lion's Head to Kiowana Beach	15. Blind River to Sault Ste. Marie
7. Kiowana Beach to Wasaga Beach	16. Manitoulin North
8. Wasaga Beach to Thunder Beach	17. Manitoulin South
9. Thunder Beach to Waubaushene	



ASSESSMENT FRAMEWORK



Components	Measures
Extent	 Extent of wetland Extent of upland habitat Extent of tributaries Sinuosity of select tributaries Extent of inland lakes and ponds
Biodiversity	 Richness by wetland types Richness by natural upland habitats Richness of fish species Species of conservation concern Rare plant communities
Condition	 Phragmites abundance Anthropogenic land use Area of impervious land Riparian vegetation buffers Shore-perpendicular structures Shoreline hardening
Function	Tributary impedancesCoastal habitat connectivity
Protection	Protected lands
Restoration	Amount of restored habitat

DATA SOURCES

- Great Lakes Shoreline Ecosystem (GLSE) Project
- Produced detailed and integrated mapping (^{1/2}ha / 1:5,000)
- Hierarchical classification

Community Class

- Marsh
- **Community Series**
 - Emergent Marsh
- Ecosite (unique habitat)
 - Coastal Mineral Emergent
 Marsh



UTILITY OF THE INFORMATION

Improve decision-making and management

- Mapping and reporting
- Targeted funding
- Direct action for protected and restorable areas
- Tracking change over time

Research/Education

- Targeted research, monitoring
- Academic collaborations

Community

- Engage landowners
- Encourage stewardship
- Community-base science

Culture

- Appreciation for nature
- Inspiring conservation action

Lake Huron Survey Result Highlights:

- Wetland Extent
- Wetland Diversity
- Upland Extent
- Tributary Extent
- Anthropogenic Land
- Protected/Conserved Areas

WETLAND LOSS



WETLAND EXTENT

- 13% (52,445 ha) of the Lake Huron Survey.
 - 83% inland wetlands
 - 17% coastal wetlands (9,069 ha)
 - 70% Lacustrine; 22% Riverine, 8% Barrier-protected





WETLAND DIVERSITY

- The Lake Huron survey area contains 124 unique wetland habitats (ecosites) summarized within:
 - Marsh, Shrub Swamp, Swamp, Bog, and Fen





SHORELINE AND UPLAND EXTENT

Uplands %

23.11 - 30.00

30.01 - 45.00

45.01 - 60.00

60.01 - 75.00

75.01 - 90.00

- 61% (241,186 ha) of the Lake Huron survey
 - 62% Forests
 - 26% Rockland
 - 12% sandy beaches and shorelines, meadows, and shrublands



TRIBUTARY EXTENT

Coastal margin

• + 8,500 tributaries /over 5,700 km TL

Contributing watersheds

• + 91,600 tributaries / over 66,600 km TL



Greatest # and length:

- Eastern Georgian Bay
- North Channel
- St. Mary's River

Fewest # and length:

Tobermory to Lions
 Head unit



ANTHROPOGENIC LAND

- 21% (84,057 ha) of the Lake Huron survey
 - 61% Hardened surfaces
 - 39% Agricultural land
 - 0.2% Stormwater management





HABITAT COMPOSITION



PROTECTION

- 20% (110,924 ha) of the Lake Huron survey is designated as protected or conserved land
 - 60% of all protected lands are provincial parks
 - 23% are conservation reserves





REPORTING

Technical Reports:

- Lake Huron Technical Report currently under management review
- Lake Erie and Lake Ontario technical reports awaiting publication through ECCC communications



various internal and external data sources that are collected or produced by various government and non-government organizations and integrated into this dataset. The geographic scope of the survey focuses on the coastal margin (from the shoreline to approximately 2 kilometers inland) of the Canadian Great Lakes and connecting channels. The scope of the survey includes metrics for coastal wetland habitat, coastal terrestrial habitat, tributary habitat and habitat protection and restoration.



OPEN DATA

Available in the following formats:

- Shapefiles (geodatabase)
- KMZ for open access into Google Earth, etc.



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How do you utilize the Baseline Habitat Survey Results?

























Lake Superior 272,340 ha

Lake Superior Lac Superieu

Join us! Baseline Coastal Habitat Survey Webinar (April 2023).

- Learn about the baseline coastal habitat survey goals and expected outcomes.
- Share and discuss survey findings and foster dialogue on the use of the data.
- Learn how to access geospatial data and results.
- Explore priorities for habitat restoration and protection with climate change considerations.
- Engage and expand a network of Great Lakes conservation practitioners.



Thank you!

For more information:

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