

Huron County Integrated Assessment of Extreme Water Levels

George Arhonditsis - University of Toronto at Scarborough
Lynne Peterson, Meghan Allerton, Kate Proctor - Consultants
Agnes Richards - Environment Canada
Wayne Caldwell - University of Guelph
Jocelynn Hudgins - Elmira College

For a decade, ending only recently, Huron County experienced the full gamut of issues related to low water levels along its 62 miles of shoreline, with the Huron coast registering the lowest water levels in recorded history in January, 2013. In the last two years, water levels have rebounded with near record precipitation. This has improved the significant challenges low water levels posed for commercial shipping, recreational boating, ecosystem health and water quality, but high water levels have resulted in tourist complaints that beaches have shrunk; and bluff erosion is threatening some 550 cottages and other waterfront structures.

This application proposes that an interdisciplinary research team work with the Huron County Water Protection Steering Committee to review issues arising from both low and high water level extremes on Lake Huron. The Committee would review regulatory and non-regulatory adaptive actions and policy options that could be adopted by local governments and conservation authorities, non-profit organizations, businesses, residents and cottagers. The focus will be on identifying practical, local actions and strategies for anticipating and preparing for extreme lake level fluctuations.

The Water Protection Steering Committee is an interdisciplinary committee established by the County of Huron in 2004, with representatives from environmental, social, political and economic interests. The current chair is Central Huron Mayor Jim Ginn. County staff have indicated that the Committee's mandate fits well with an Integrated Assessment of extreme lake levels. Other partners include The Rural Ontario Institute, which has expressed an interest in partnering on performance assessment, and the Lake Huron Centre for Coastal Conservation, with a wealth of data/research and experience with local stewardship.

Phase I: With the Water Protection Steering Committee's input and direction, over the winter of 2015/16, the research team will produce a report outlining status, trends, causes and consequences of changing water levels in Huron County communities from economic, environmental and social perspectives. The report will include summaries of Ontario's legislative and policy environment, municipal planning and financing tools, potential interdisciplinary partnerships and opportunities. A variety of local policy and management actions and strategies that could be utilized in local situations will be identified. Scientific information will be summarized in non-technical language, in the context of local circumstances and impacts. Case studies from other jurisdictions will be included.

Phase II: Public consultation will use the Phase I report as a discussion tool. In this phase, there would be analysis of **implementation issues and options** for the policies and adaptation strategies identified in Phase I, including sources of funding, timing, and responsibilities (who does what). Where possible, champions and decision makers will be identified for each action, and future steps indicated. A final report will summarize the Phase II results.

Phase III: The project's principal investigator and co-investigators from the University of Toronto and the University of Guelph will collaborate with the other teams and Graham Institute staff from November 2016 to April 2017 to develop a final comprehensive Integrated Assessment report of selected options for peer and public review.