

Water Quality in the Lower Cataraqui Region Workshop – Summary

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Introduction

On April 1st 2019, researchers from the University of Ottawa and Queen's University's Beaty Water Research Center attended a science meeting led by the Lower Cataraqui Working Group, a group of residents from Cranberry Lake, Dog Lake and Colonel By Lake concerned with water quality in their area of the Rideau Canal system. To find ways to improve water quality and develop related programs and strategies, it is important to understand the issue and the perspectives of those impacting water quality. For this reason, social scientists that were at the science meeting met on June 18th with residents, scientists, the Cataraqui Region Conservation Authority (CRCA), farmers, and municipal and provincial representatives for a workshop on the issues related to water quality in the Lower Cataraqui region.

The workshop used the “Collaborative Conceptual Mapping” (CCM)¹ method to address the question: what can be done to improve and maintain the water quality in the lakes of the Lower Cataraqui region of the Rideau Canal? CCM is a technique used to help diverse groups answer complex questions. It involves group brainstorming and discussion guided by a facilitator. During the workshop participants were asked to reflect on their insights about the role of biophysical factors (such as invasive species, water flow and infrastructure), economic factors (such as shoreline development), political factors (such as laws and policies), and social/cultural factors (such as values and knowledge) in enhancing or diminishing water quality. Through these reflections participants worked together to create a timeline diagram outlining how these factors came to be (Figure 1, page 2). Using systems thinking they created maps to show the relationships among factors that influence water quality in the Lower Cataraqui region of the Canal.

We will continue the dialogue with the Lower Cataraqui Working Group and the CRCA. This document provides a brief summary of the findings from the June 18th workshop. Comments from participants are welcome and can be sent to kotechaj@queensu.ca , imist092@uottawa.ca and cbeau143@uottawa.ca

¹Newell, Barry & Proust, Katrina. 2012. “Introduction to Collaborative Conceptual Modelling.” Working Paper, ANU Open Access Research.
<https://digitalcollections.anu.edu.au/handle/1885/9386>

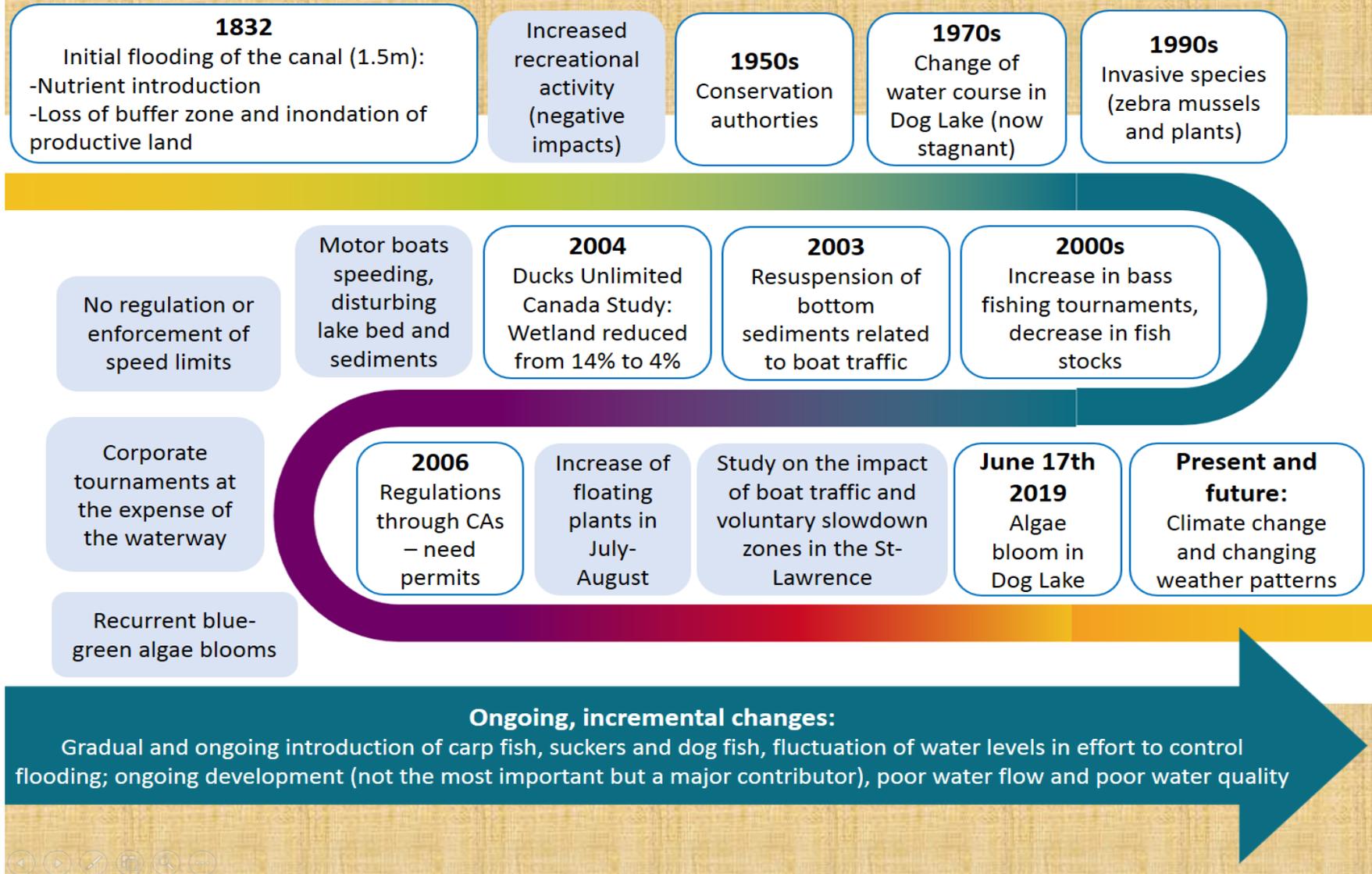
Top 5 Challenges Identified in the Workshop

| Counts | Challenges |
|--------|---|
| 13 | Incoming nutrients (loading, internal nutrients, septic systems, fertilizers, agricultural runoff) and chemicals (mercury, pesticides, garbage) and its impact on pH levels |
| 9 | Development (canal construction affecting wetlands, cottage development, altering watershed drainage, buffer zones, human impact) |
| 8 | Water flow (upstream sources, fluctuating levels, flushing, shallow bodies, flooding) |
| 5 | Education (education, stakeholder awareness, increased popularity and interest, engaging programs) |
| 5 | Governance (grassroots initiatives trying to improve water quality, political will at all levels of government, lack of response to reduce plastics and other contaminants, poor restriction of shoreline development by municipalities, water level regulations) |
| 5 | Ecology (biodiversity, invasive species, remediation and moving towards a 'normal' ecology) |
| 4 | Climate change (extreme weather and weather swings, changes in atmospheres and plant growth, hot summers) |
| 4 | Tourism and recreation (Boating activity and traffic, speeding, sport fishing, overindulgence in tourism) |

Collective timeline of events

Disclaimer: These timelines are built from the workshop activities, dates may not be exact and not all key events for the RC may be present. Feel free to send us additional details or events as we will continue to build timelines in our next workshops!

COLLECTIVE TIMELINE OF THE LOWER CATARAQUI WATER QUALITY WORKSHOP



Identified Leverage Points

- Take a watershed approach and engage smaller communities
- Gain a better understanding of the problem through research and knowledge to identify solutions
 - Specifically concerning blue-green algae and their earlier blooms
 - Understand and quantify nutrient sources and flushing (related to boat activity, voluntary exclusion zones and advisory maps)
 - Investigate the effects of stronger winds and climate change on the lakes
 - Better understand the differences in water quality between the lakes
- Set reasonable targets to favor reasonable and feasible expectations
- Push back cottages and septic systems
- Identify and target hotspots for buffer zone creation, revegetation of the shoreline
- Develop a compelling story to better communicate with the public and gain support for further action
- Experiential education conducted on the waterway with small groups
- Encourage volunteering
- Education and Program development for farmers (Environmental Farm Plan, seed adaptation to climate change, tile drainage) and residents (Conservation Authority Guide and Lake Links protection workbook)
- Foster adaptive management practices
- Municipal support to preserve the shoreline through creating effective bylaws (restructure granting of severances, require natural features in developments and water drainage diversion)

Summary

Participants in the July 18th workshop focused on human activities which may have negative impacts on water quality. These conversations included identifying potential sources of nutrient loading, agricultural runoff, septic systems and other chemical inputs from pesticides and garbage. The original flooding of the Cataraqui region associated to the construction of the Rideau Canal as well as ongoing development were also seen by participants as human activities that have negative impact of water quality in the Lower Cataraqui region. Participants mentioned historical and ongoing changes in water flows that have also led Dog Lake to become stagnant, leading to water quality issues. Boating was also perceived to have decreased water quality by disturbing the bottom sediments of shallow lakes and spreading invasive species. Finding ways to improve awareness and governance through education and more research was the focus of the conversation during the workshop. Researchers at the Beaty Water Research Center plan to apply for a grant to pursue a nutrient budget study of the concerned lakes to support reduction of algae blooms. Participants emphasized the importance of educating local residents, farmers and municipalities through volunteering, programming and compelling story-telling. A need for municipal support in the form of effective bylaws was also identified by the group.