DPSMA Fall Meeting
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Our lakes and enhanced wakes:
impacts and… a solution?

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Safe Quiet Lakes and Queen's University

1

Safe Quiet Lakes (SQL)

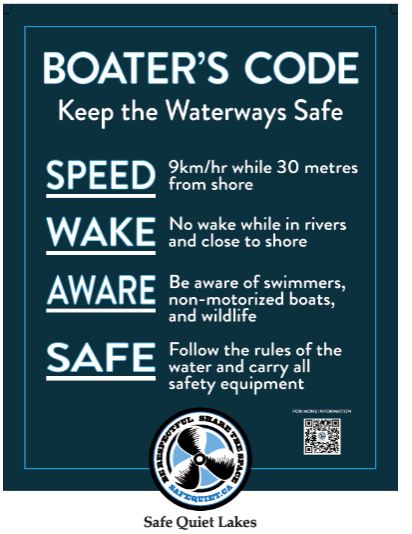
Our Mission

To be a leading voice in promoting safe, quiet waterways and respectful boating practices through education, advocacy and legislative change

Vision Statement:

The enjoyment of safe, quiet waterways will be ensured for all – boaters, non-boaters, wildlife, aquatic life, businesses and communities – for generations to come.

Positive, grassroots conversation + education = drivers of change



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2

SQL: Driven by Data

Your Lake, Your Views Surveys

- 2013, 2017, 2021, 2025 (>7k respondents)
- 2025 Survey – biggest yet!
- Independent in design and execution
- Powerful and credible data set
- Full results available online

Key Takeaways

- Lake experience is deteriorating: wakes/noise/speed
- More enjoyment of the lake on human powered vessels
- Respondents keen for further action to improve the lake experience: education, legislation and enforcement

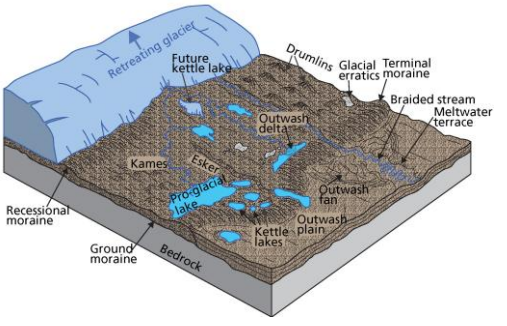
A Growing Concern

Enhanced wake boats

- specifically designed/modified with ballast and mechanical devices to create significantly (6-12x) more powerful wakes than traditional recreational boats (Macfarlane, 2024)
- Most significant human impact since lake formation 11,000 years ago!

A brief history of Ontario's Lakes

- Retreating ice sheet ~11,000 years ago
- Exposes geological and glacially-carved depressions that filled with water
- Ontario's lakes are born!
- These were devoid of nutrients, organic matter, and life.



5

Lake Succession

- Young lakes = low nutrients
  - deep, clear water, scant vegetation/algae, high O_2
- Over time, sediments build up, vegetation/animals die, nutrient levels, productivity go up
  - A positive feedback cycle.
- "Lake aging" higher nutrient levels and productivity
  - excessive plant/algal growth, reduced water clarity, low oxygen.

EUTROPHICATION

6

7

Human Impacts

- Septic tanks, fertilizer, vegetation removal, hardening of shorelines, erosion

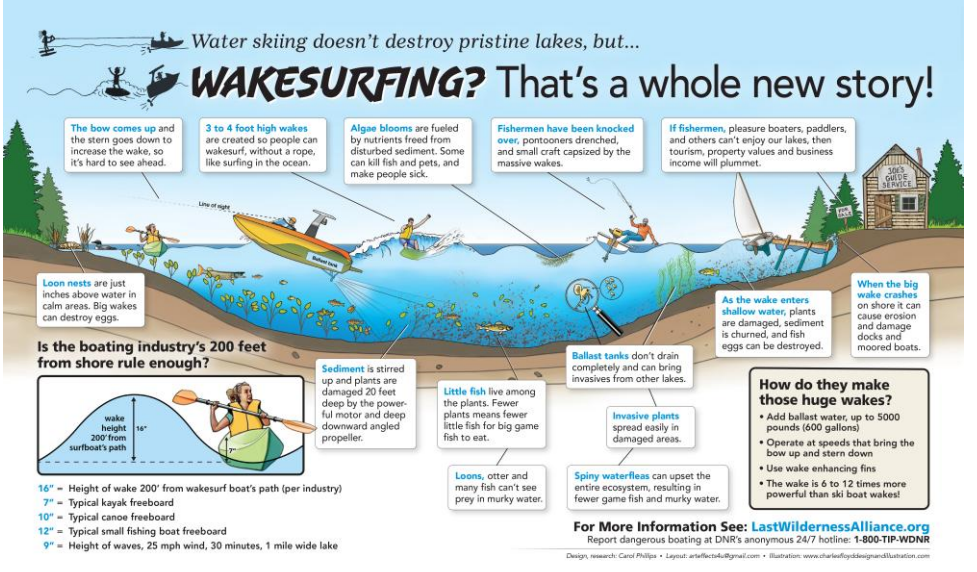
8

Cultural Eutrophication

- Increase nutrient flux
- Accelerating the natural process of lake aging (a.k.a. **cultural eutrophication**)

- "Lake health" = slowing eutrophication

- We mitigate for these impacts
  - Septic systems and inspections
  - Protecting water sheds
  - Shoreline protection by-laws
  - etc…



Solutions?

We must act. But how?

1. Outright ban? Not necessary.
1. Education? Necessary, but not the solution.
2. Implement **operational limitations**? Yes. Based on current understanding of societal and environmental impacts, together with education, to achieve **sustainable usage**

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Sustainable usage

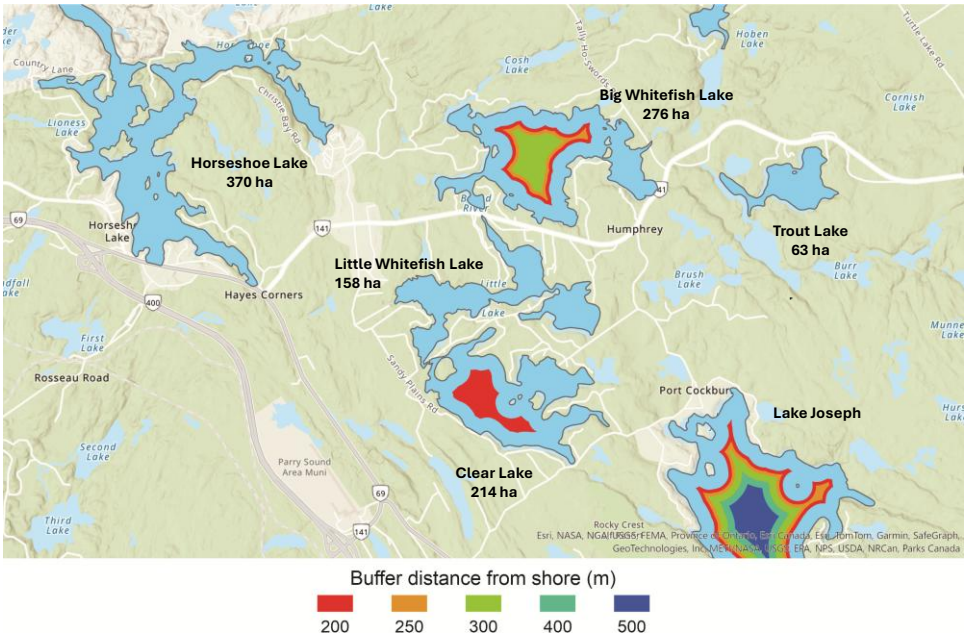
- Sustainable usage = using EWB but minimizing impacts
- Regulation must be **science-based**, with clear objectives to minimize cultural eutrophication and impacts on environment, safety, and property
- More research is needed to parameterize sustainable usage BUT we know **proximity to lake bottom and shoreline is paramount**.
- two key parameters for regulation are:
    - **Min. operational depth** – to protect lake bottom, habitats, and minimize nutrient resuspension.
    - **Min. distance from shore** – to give time for wave energy to dissipate before intersecting shorelines and infrastructure

Min. Operational Depth

- Effects on lake bottoms is fairly well-understood.
- **EW activities are incompatible with and unsustainable in shallow waters**
- Minimum depths of 6 m are required for safe operation
- **BUT** for fragile ecosystems for many of cottage country's lakes (especially spawning beds, fish nursery areas, etc.) **up to 9 m is justified**

Min. Distance from Shore

- Currently, recommended "safe" distances vary widely!
  - Boating industry-funded research recommends min operating distance of 200 ft (~60 m) from shore
  - Compare to the MINIMUM safe operating distance of >200 m reported in the scientific literature
- But "safe distances" are highly dependent on shoreline and bottom characteristics
- Cottage country lakes => thin soils, fragile vegetation, and critical role of natural shorelines for lake health = **500 m**.



15

Regulatory Framework in Canada

- Canadian Federal Government has sole jurisdiction over boating on all bodies of water
  - where “boating” includes every mode of transportation, commercial or recreational
- Federal jurisdiction covers:
  - all signage to control boating
  - regulation of equipment, licencing & speed limits
- Provinces, municipalities and other governmental bodies **cannot** act without Federal approval
- Enforcement is complex: delegated to the RCMP, Provincial Police, local authorities and others

Transport Canada
Canada

16

Current Regulations in Canada

No specific wake regulations such as "no wake zones", but some regulations have wake implications:

- Most provinces have 10 kph within 30 m of shore regulation (aka the 10/30 rule); 9/30 in Muskoka

- Criminal Code states that boaters cannot operate "in a manner unsafe to the public"
- Possible to launch a civil suit for losses like property damage

Until recently… that was it.

Vessel Operating Restriction Regulation (VORR)

Municipalities can apply to Federal Gov. for a VORR

Current VORR categories:

- No boats allowed
- No power-driven boats
- Engine size limits
- No towing sports
- No special events
- No wake surfing (VORR 7.1)

  - can apply to a lake in whole or in part

  - with restrictions like distance from shore, depth, time of day, etc….

~300 VORRs in Ontario (of 250,000 lakes!)

The VORR Process

- Municipality must be the applicant – **SQL can help**
- cost-benefit analysis must be undertaken, showing that all stakeholders were consulted and that most agree
- Grounds for a VORR are based on safety, environmental issues and public interest
- Application took 2+ years to approve but with new measures… 6 months (excluding legwork)

19

Safe Wakes Coalition

Current members: - Coalition of Haliburton Property Owners Association
- Georgian Bay Association
- Muskoka Lakes Association
- Safe Quiet Lakes.

20

Riesgraf, A., Marr, J., Herb, W., Lueker, M., Kozarek, J. (2025) *SAFL Project Report No. 611 - A Field Study of Recreational Powerboat Hydrodynamics and their Impacts on the Water Column and Lake bed*. St. Anthony Falls Laboratory, University of Minnesota.

21

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22

Partner with SQL!

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Other Enquiries:	outreach@safequiet.ca
To donate:	https://safequiet.ca/donate/
2025 Survey webinar:	Friday November 7, 2025