MINIMIZE YOUR IMPACT AND PROTECT YOUR SHORELINE

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The shorelines of Severn Sound, including the Honey Harbour area, are fragile ecosystems that can be affected by development. The level of impact that shoreline and upland development has will vary, and the cumulative or combined effect can have a major influence on water quality. These impacts can be difficult to measure since they are dispersed and often accumulate gradually. Impacts specifically from residential shoreline development can include:

- nutrient loading from septic systems, especially in areas with thin soils and in cases of poorly maintained systems or inundation by high water
- reduced soil permeability from hardened surfaces including building footprints, paved areas, and compacted soils causing excess stormwater runoff
- increased stormwater runoff, which can carry pollutants like fertilizers from manicured landscapes and lawns
- the spread of invasive species, both through intentional planting and unintentional pathways such as seeds hitchhiking on vehicles and boats
- the disruption and destruction of fish habitat through construction of docks and boathouses
- shoreline erosion and damage to shoreline plants from boat wakes

Fish, along with invertebrates, birds and mammals, rely on natural shorelines for food, shelter and reproduction.

The best thing landowners and lake users can do is to try and minimize impacts, while giving the lake ecosystem as much opportunity to thrive as possible. Lakes do not have endless capacity to deal with the stresses we put on them, and this capacity may be reduced as climate change continues to manifest in a variety of ways, such as rising water temperature, less ice cover, and more variable lake levels.

Extremes highs and lows – from an all-time low in 2012 to near record highs in 2019, fluctuating water levels have widespread impacts on shorelines and infrastructure.

Key Stewardship Actions – what YOU can do!

1. Talk to your neighbours. Focus on common values (the lake you both enjoy) and shared goals (wanting to protect it for future enjoyment). Talk about solutions, and share resources and information.
2. Maintain your septic system with regular pump-outs and inspections (approximately every 3-5 years, depending on use), and reduce septic output by using efficient water fixtures and minimizing water use. Don't forget – water may be plentiful at the cottage, but the lake's ability to handle the resulting wastewater has its limits. Use phosphate-free detergents, personal care and household cleaning products. Don't put anything down the drain that may harm the bacteria that keeps your septic system working properly.
3. Eliminate use of fertilizers, particularly those containing phosphorus, and especially within 100 m of the shoreline. Get creative in reducing the amount of lawn on your property. Mosses make a great ground cover in shady areas. The less lawn you have, the less there is to mow, and the more time you have to enjoy the lake!
4. Maintain a natural shoreline (minimal or no lawn, wide buffer of native shoreline plants). Look around at nearby natural areas and try to mimic them as much as possible. Well placed trees and shrubs go a long way in stabilizing shallow soils, and if purposefully trimmed, will not obstruct views of the lake.
5. Reduce runoff and soil erosion by planting or maintaining vegetation in vulnerable areas such as adjacent to cleared pathways and on steep hills.

Minimize the amount of impervious surfaces such as paved driveways and walkways on your property.

6. Encourage native rooted aquatic plant growth along the shoreline to help with phosphorus settling and uptake. Aquatic plant communities also provide nursery habitat for fish.
7. Do not restrict natural water circulation around docks etc. Use pipe or floating docks, which also have the advantage of being more easily adaptable to fluctuating water levels.

Natural shorelines provide critical habitat, filter runoff, and buffer the effects of water level fluctuations.

Resources for Landowners

There are many great online resources, ranging from factsheets to detailed workbooks that shoreline owners can refer to.

- *Shoreline Guides*
  www.severnsound.ca/programs-projects/public-involvement-stewardship/natural-shorelines
  www.gbbr.ca/conservation-guides/
  www.lakehuron.ca/stewardship-plans-and-guides
  https://foca.on.ca/shoreline-owners-guide-to-healthy-waterfronts/
  https://watersheds.ca/our-work/resources/publications/
- *Using and Sourcing Native Plants*
  www.ontarioinvasiveplants.ca/resources/grow-me-instead/
  www.thelandbetween.ca/shoreline-plant-guides/
  http://loveyourlake.ca/natural-shoreline/
  http://nanps.org/commercial-growers/
  www.haliburtonmastergardener.ca/native-plants/native-plants-for-shorelines
- *Septic Maintenance Tips*
  https://foca.on.ca/septic-systems/

Contrasting shorelines – examples of properties where lawns are maintained right to the water's edge, with little to no vegetation buffer, compared to properties with more intact upland forests and shorelines (Aerial imagery source – Ministry of Natural Resources and Forestry, 2018).

Water Quality Conditions in 2019

As an update to last year's Hoots article on water quality, here is a summary of 2019 results from SSEA's biweekly Open Water Quality Monitoring Program. 2019 results are compared to long term average conditions for each location (Table 2), and to water quality targets set out in the Severn Sound Remedial Action Plan (RAP). RAP targets are as follows:

- Total Phosphorus: <15 µg/L
- Water Clarity (as measured by Secchi depth): >3 m
- Chlorophyll *a*: <5 µg/L
- Seasonal Minimum Bottom Dissolved Oxygen: >5 mg/L

2019 results show that **total phosphorus** was below the RAP target of 15 µg/L or less at all locations except South Bay, and was better than the long term average at all locations. **Total nitrogen** in 2019 was lower than the long term average at all locations. While there is no RAP target for total nitrogen, values are on the low end of the range considered typical of moderately enriched waters (300-600 µg/L). While the RAP target for **water clarity** (3 m or greater) was met at the open water station, it was not met at any of the Honey Harbour locations, and clarity was worse in 2019 compared with the long term average at all locations. **Chlorophyll *a*** up to July 2019 was better than the long term average in North Bay and the open water, and worse in South Bay and Honey Harbour. Values at all locations met the RAP target of 5 µg/L or less. These results may change when the remaining 2019 data becomes available. The seasonal minimum **dissolved oxygen** concentration was better than the long term average at all locations except North Bay. Only the Honey Harbour station met the RAP target for oxygen of 5 mg/L or more.

Table 2. Long term average values, plus or minus the standard error, and 2019 averages for nutrient enrichment indicators. Long term average values include data going back to 1981 for North and South Bays, 1993 for Honey Harbour and 2003 for Severn Sound open waters. Note that long term and current year algae count averages go up to 2018 since 2019 data is not yet available. Similarly, the 2019 average for chlorophyll *a* includes data up to end of July.

Location		Tot. Phosphorus (ug/L)	Tot. Nitrogen (ug/L)	Water Clarity (m)	Algae Counts* (mm^3/m^3)	Chlorophyll *a* † (ug/L)	Min. Bottom DO (mg/L)
North Bay	LT Average	13.3	350	3.1	1448	3.2	0.35
	+/-	0.3	8	0.1	151	0.2	0.09
	2019 avg	**12.9**	**318**	**2.6**	**1219**	**2.1**	**0.27**
South Bay	LT Average	15.6	375	3.0	1109	3.6	0.21
	+/-	0.6	8	0.2	195	0.3	0.03
	2019 avg	**14.9**	**344**	**2.4**	**1737**	**3.9**	**0.31**
Honey Harbour	LT Average	9.9	337	2.7	867	2.2	6.37
	+/-	0.2	8	0.1	95	0.3	0.33
	2019 avg	**9.2**	**314**	**2.5**	**1309**	**2.9**	**7.13**
Open Waters	LT Average	10.2	375	3.5	604	1.7	4.21
	+/-	0.2	9	0.1	63	0.2	0.36
	2019 avg	**9.1**	**350**	**3.2**	**1317**	**1.1**	**4.33**

*Long term and current algae count averages include data up to 2018

† 2019 chlorophyll *a* average includes data up to end of July

Better than long term avg

Worse than long term avg

Worsening water clarity, increasing phosphorus in South Bay, and increasing algae counts is cause for continued vigilance, and serves as a motivation to implement shoreline stewardship actions that will help to improve water quality. It is with financial support from the Township of Georgian Bay that SSEA is able to continue to monitor the Honey Harbour area of Severn Sound. With your help, cumulative impacts can be addressed, but without regular environmental monitoring it is difficult to measure success.

For more information on the SSEA, visit our website, www.severnsound.ca. To report a suspected algae bloom, call the Ministry of Environment, Conservation and Parks Spills Action Centre at 1-866-MOE-TIPS (663-8477) and our Port McNicoll office at (705) 534-7283. Support from our municipal members, especially Township of Georgian Bay, as well as the Ministry of Environment, Conservation and Parks is gratefully acknowledged.