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Shoreline Buffer Workshop

June 14, 2022

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Summary

- Buffer vs Setback
- Photos of best and not so best
- Benefits of buffers
- Size of buffers
- Challenges moving forward

BUFFER vs SETBACK

- A buffer is a naturally vegetated portion of land between the high water mark and the developed portion of waterfront lot.
- Area of limited removal of vegetation for water views, access paths.
- Non-disturbance of soils.
- No hardening of surfaces.
- Setback is a regulated minimum horizontal distance from highwater mark to a structure (30 metres).
- A buffer may be included in a setback.

Best Practices

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WHAT DOES A BUFFER NOT LOOK LIKE…?

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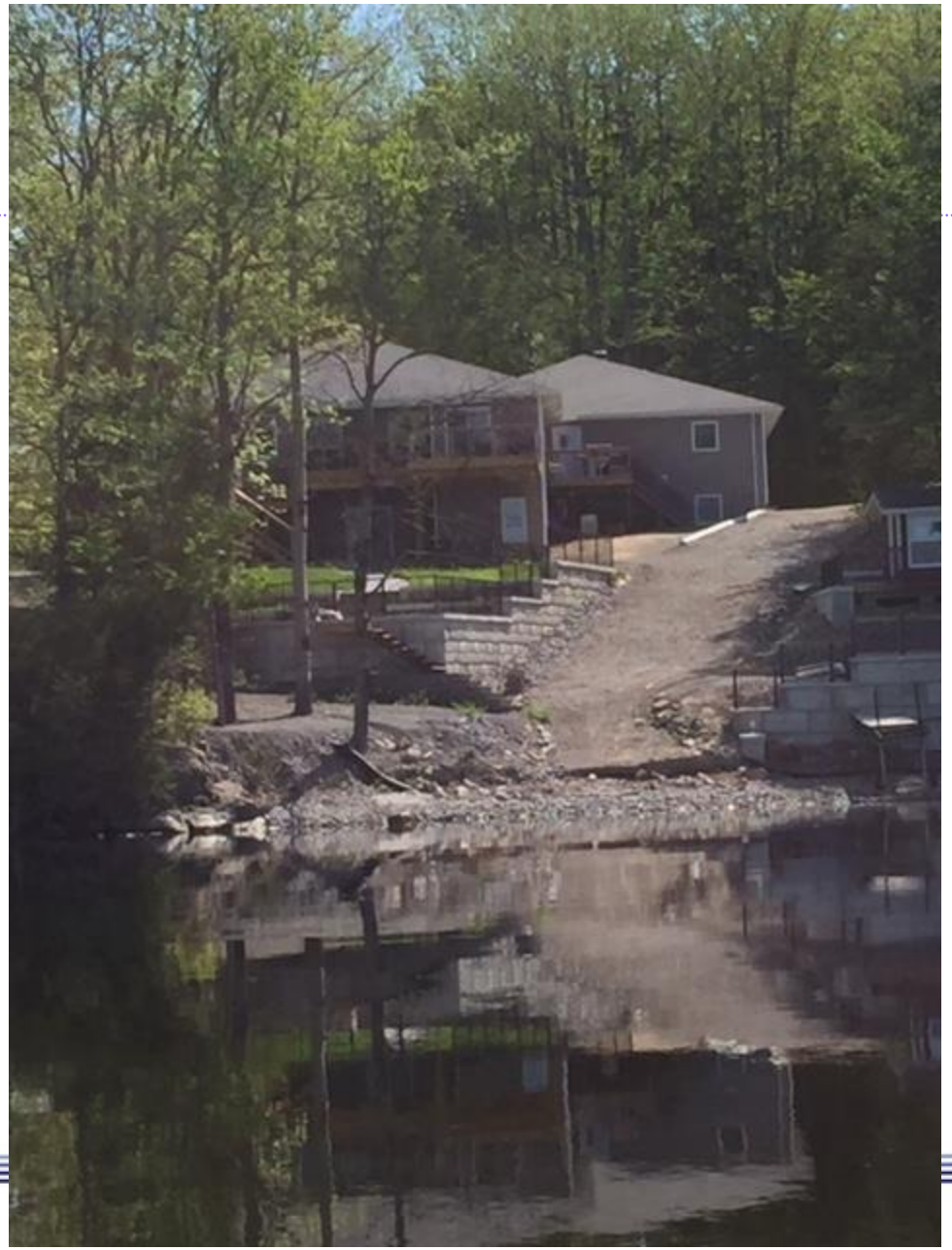

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AND A FEW MORE…

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What does the science say about buffers?

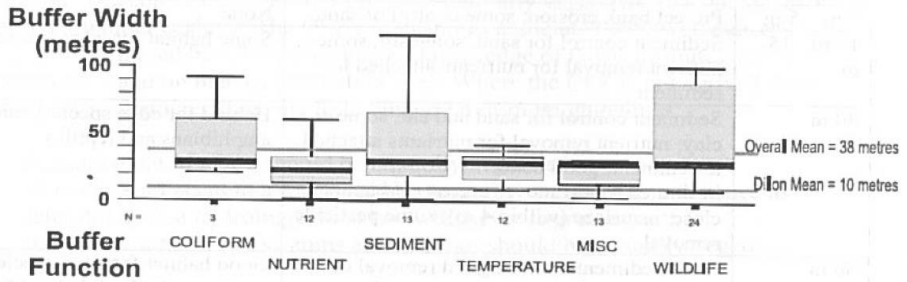
- Filter sediment and other pollutants (pathogens, metals, pesticides)
- Absorb nutrients from runoff and septics
- Protect shoreline from erosion
- Effective flood control
- Provides canopy and shade, temperature regulation
- Food and habitat for wildlife
- Protect property values

What does the science say about the size of the buffer?

- Large body of scientific literature on the topic.
- Mostly focused on buffers along watercourses and wetlands in agricultural and forestry settings.
- Less on the lakeshore context, but study findings are still relevant.

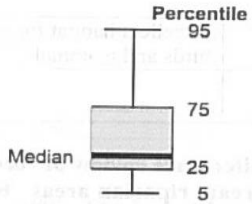
Recommended Buffer Widths for riparian and wetland habitats by function from 48 investigators

- after Johnson & Ryba, 1992



	Mean	Median (50%)	n	N	% > 30 m
Coliform	48	30	2	3	67
Nutrient	26	24	6	12	50
Sediment	47	30	9	13	69
Temperature	29	30	7	12	58
Wildlife	55	31	18	24	75
Miscellaneous	25	30	7	13	54

n = number of investigators recommending 30 m or greater
N = number of investigators



Whisker Box Plot
upper limit = 75th percentile
crossbar within box = 50th percentile (median)
lower limit = 25th percentile

top whisker = maximum, excluding outliers
bottom whisker = minimum, excluding outliers

Median
point below and above which 50% of the values fall

Johnson, Alan W. & Diane M. Ryba (1992). A Literature Review of Recommended Buffer Widths to Maintain Various Functions of Stream Riparian Areas. King County Surface Water Management Division, Washington, USA (MS 29 pp)

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Risk-based guidelines for buffer size (Beacon 2012)

Natural Heritage Feature Category	Buffer Function Category	< 5 m	5 – 10 m	11 – 20 m	21 – 30 m	31 – 40 m	41 – 50 m	51 – 60 m	61 – 70 m	71 – 80 m	81 – 90 m	91 – 100 m	101 – 110 m	111 – 120 m	> 120 m
WATERCOURSES and WATER BODIES															
	A. Water Quantity	data indicate that this is not mitigated by site specific buffer													
	B. Water Quality														
	C. Screening of Human Disturbance / Changes in Land Use														
	D. Hazard Mitigation Zone	should be based on consideration of hazards, but may overlap with buffers													
	E. Core Habitat Protection														
WETLANDS															
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Key: Risk of Not Achieving the Desired Buffer Function

HIGH

MODERATE

LOW

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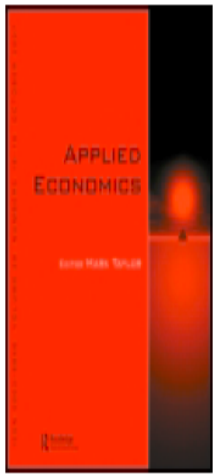
General Consensus

- 5 to 10 m buffer is insufficient
- 15 m – may be sufficient to maintain physical and chemical but not biological functions of aquatic community.
- 30 m – minimum recommended to maintain all 3 functions
- 30 m – consistent with provincial guidance (PPS, Natural Heritage Reference Manual, LakeCap)
- >30 m – wetlands, hazard lands, core habitat zones, SAR

Economics



Applied Economics

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Water quality and cottage prices in Ontario

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- Water clarity has a significant effect on lakefront property values.
- Buyers willing to pay more for cleaner lakes.
- Direct economic incentive to protect shoreline buffers.

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What are our challenges moving forward?

- Effective planning tools to manage and protect buffers
- Enforcement
- Rehabilitation
- Development on small undersized lots