

Microplastics in Georgian Bay



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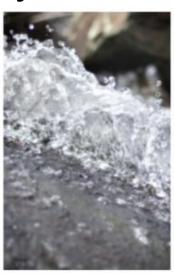




Georgian Bay Forever

Our mission is to protect, enhance and restore the aquatic ecosystem of Georgian Bay by funding accredited research on water levels, water quality and ecosystems







Water Levels

Water Quality

Ecosystems



Microplastics (<5mm)

KNOW YOUR MICROPLASTICS

MICROPLASTICS ARE PIECES OF PLASTIC 5 MILLIMETRES OR SMALLER.



COMMON MICROPLASTICS:



Small pieces of a larger plastic object.



The most common type of microplastic. Plastic strands from clothing.



Pieces of food containers and coffee cups.



Plastic pellets usually used in manufacturing.



MICROBEADS

Beads used in soaps and cosmetics. Now labelled "toxic" in Canada, soon to be banned in personal care products. Look for "poly" on the label.

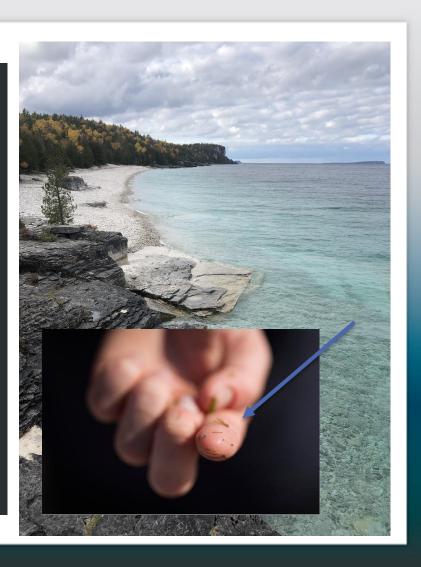




MACROPLASTICS ARE ANY PLASTICS LARGER THAN 5 MILLIMETRES.

Examples: plastics bags, bottle lids, bottles, food wrappers, etc.

Lakehuron.ca







The Plastic Crisis

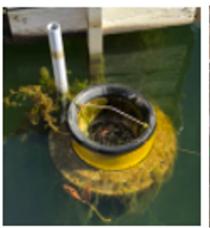


"Throwaway Living" Life Magazine, 1955



Microfibre Filter Seabins Gutter Bins Trash Traps











Goals of Divert & Capture

1. Engage the community with hands-on shoreline cleanups





2. Provide the public with information on microplastics and practical tips to reduce plastic use

3. Physically divert microplastics from entering our water at the source



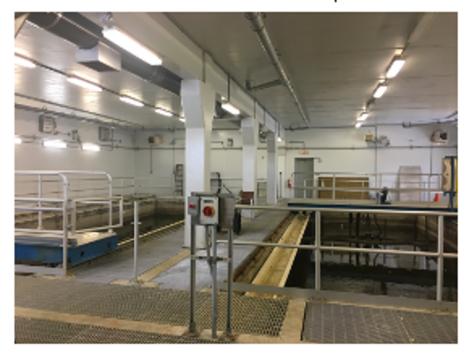


Testing Microfibre Filters in a Community

100 Filters installed



1050 households connected to municipal WWTP



Roughly 10% of all houses connected to municipal WWTP





in Marine Science Marine Pollution

ORIGINAL RESEARCH article

Washing machine filters reduce microfiber emissions: evidence from a community-scale pilot in Parry Sound, Ontario

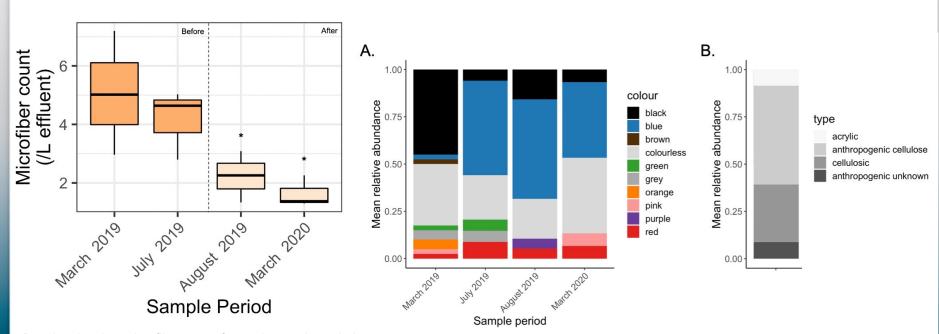
Lisa M. Erdle^{1, 2*}, Dorsa Nouri Parto¹, David Sweetnam³ and Chelsea M. Rochman¹

GBF STUDY PUBLISHED





Results



Boxplot showing microfiber count for each sample period before the filter installation (March 2019 and July 2019) and after filter installation (August 2019 and March 2020). Results presented here are after blank subtractions. A 2-factor ANOVA showed a significant difference before and after filter installation (*p < 0.01), and no significant difference amongst seasons (p = 0.8) or the filter-season interaction (p = 0.4). The middle black bar represents the median, and each box represents the first to third quantile of the data. The whiskers represent the minimum and the maximum number of fibers/L of the sample. (Erdle, 2021)

Patterns of microfiber color and type in WWTP samples (n = 3) across 4 sample periods. Results presented here are (A) the relative abundance of each color after blank subtractions in each sample period and (B) microfiber type as determined by chemical identification using Raman spectroscop (Erdle, 2021).



Support Bill 279

"The Bill amends the *Environmental Protection Act* to prohibit the sale or offering for sale of washing machines that are not equipped with a specified microplastics filter and to provide for corresponding penalties in case of non-compliance with the requirement."

Current status: First Reading, carried

To support the bill you can:

 Write/email your local Ontario Member of Provincial Parliament (MPP) wherever you are a constituent in Ontario (could be in 2 places).



Jar filled with micofibres from a wash cycle

Go to our website https://georgianbayforever.org/2021/05/05/bill-279/ to learn more, and visit



Shoreline Cleanups



Summer 2021

27 shoreline cleanups hosted by GBF and community members

Top Identified Litter Types

- 176 total volunteers
- 36660 meters of shoreline
- Collecting 1013.99 pounds

GEORGIAN BAY Shoreline Cleanup Information Sheet

SITE INFORMATION

Name(1 or 2):	Location (Georgian Bay Community e.g Sans Souci)			
Date	Location (optional) GPS coordinates			
Distance Cleaned m)est.	Total Weight Collected. Estimate if no scale in pounds.			
f you collected more han one garbage	If you collected more			

TRASH TALL

TRASH TALLY				
COMMON ITEMS	TOTAL#	FISHING GEAR		
Pop Cans		Fishing Lures		
Bottle Caps		Fishing Net		
Cigarette Butts		Rope (1 meter=1 piece)		
Coffee Cups/lids		PERSONAL HYGIEN		
Food/Candy Wrappers		Condoms, diapers, tampons		
Glass Bottles		TINY TRASH (>2.5CN		
Paper items		Plastic Pieces		
Plastic Bags		FOAM		
Plastic Bottles (water bottles)		Large Pieces Blue (bigger than finger)		
Six Pack Holders		Large Pieces other colour(s), i indicate colour		
Utensils		Medium and small pieces piec (smaller than your finger)		
Straws		Medium and small pieces piec colours (smaller than your fin		
Balloons		Styrofoam Packaging/Contain bait containers)		
Other (insert)				
Other (insert)		Please send us other observat		

	Top Identified Litter Types		Pieces	% of total	contains plastic
1	Cigarette Butts		2367	27%	YES
2	Foam Pieces (large and small)		1860	21%	YES
3	Plastic Pieces (unidientified source)		1156	13%	YES
4	Bottle Caps		483	6%	YES
5	Paper		452	5%	
6	Food wrappers		443	5%	YES
7	Film		366	4%	YES
8	Glass pieces		250	3%	
9	Fragments (unidentifiable)	Г	156	2%	PROBABLY
10	Beverage cans	Г	145	2%	
11	Coffee cups/lids		125	1%	YES
12	Plastic bags		127	1%	YES
13	Straws		122	1%	YES
14	Plastic bottles		115	1%	YES
15	Utensils Plastic single use)		97	1%	YES
	Other pieces of litter		517	6%	SOME
	Total pieces of litter sorted to Mid-Aug		8781	100%	

Plastic or

Send completed tally sheet to brooke.harrison@gbf.org or call (905) 880-4945 x 6



Bill 228 2020

An Act to prohibit unencapsulated expanded or extruded polystyrene in floating docks, floating platforms and buoys

Her Majesty, by and with the advice and consent of the Legislative Assembly of the Province of Ontario, enacts as follows:

Sale of foam docks etc.

1 A person who sells or offers to sell a floating dock, floating platform or buoy shall ensure that any expanded or extruded polystyrene in the dock, platform or buoy is fully encapsulated.

Construction of foam docks etc.

2 A person who constructs a floating dock, floating platform or buoy shall ensure that any expanded or extruded polystyrene in the dock, platform or buoy is fully encapsulated.



Diversion 2.0

- Trial debris capturing technologies
- Collect data on the amount of pollution and the types of pollution diverted

• Educate the public on the negative effects of plastic pollution and ways we can





Seabin Preliminary Waste Characterization Results

- 20 Waste Characterizations
- 86 pieces of large debris
 - Cigarette butts, film and foam
- 335 pieces of small debris
 - Film, foam and hard fragments

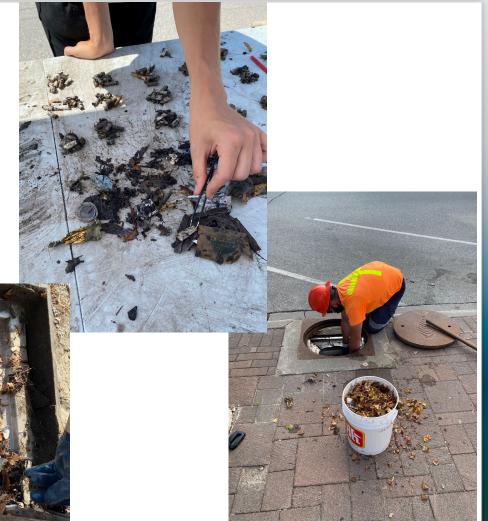


GEORGIAN BAY
FOREVER

Gutter Bin Preliminary Waste Characterization Results

- 15 Waste Characterizations
- 1354 pieces of large debris
 - Cigarette butts, film, and paper/receipts
- 635 pieces of small debris

Foam, film and cigarette butts





How you can help Summer 2022

- Waste Characterizations
- Host a Shoreline Cleanup
- In Collingwood? Sign up for a filter!
- Follow along on social media and our newsletter to stay up to date

Join Plastic Free Georgian Bay











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Thank you to our funders

This project was undertaken with the financial support of: Ce projet a été réalisé avec l'appui financier de :



Environment and Climate Change Canada

Environnement et Changement climatique Canada





Foundation







Great Lakes Local Action Fund The LeVan Family Charles H. Ivey Foundation

And out many dedicated and passionate friends and donors.

GBF continues to fundraise for this program. Go to www.gbf.org to contact us or call 905-880-4945 ext 3

We also want to thank these valuable partners:

The Town of Collingwood, The Nottawasaga Valley Conservation Authority, Blue Mountain Watershed Trust, University of Toronto Trash Team, The Rochman Lab at University of Toronto