

# DISPLAY CARDS



**A KIT FOR LEARNING ABOUT MARINE DEBRIS**

# INTRODUCTION

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Across the Great Lakes basin, many educators are interested in the topic of marine debris but lack the resources needed to explore this topic with their students.

Welcome to the **Trash Trunk: A Kit for Learning About Marine Debris!** This kit contains an [Educator's Guide](#) with lessons and activities, equipment and materials needed to perform the activities, and these display cards.



These display cards are recommended for specific Trash Trunk activities, but you can use them to support additional activities, introduce a concept or simply display them in your educational setting. They are durable and waterproof so feel free to use them outdoors.

Browse activity summaries in the Educator's Guide to determine which are best for your group and start learning about marine debris. Summaries include time estimates, recommended age ranges, activity descriptions, extensions and supplemental resources. For convenience, the Educator's Guide also reprints full activity descriptions.



Trash is found in all aquatic environments, ponds, lakes, rivers, streams and oceans. The Educator's Guide and these display cards use the term "marine debris" because the National Oceanographic and Atmospheric Administration (NOAA) includes the Great Lakes watershed in its definition of marine debris. "Marine debris is defined as any persistent solid material that is manufactured or processed and directly or indirectly, intentionally or unintentionally, disposed of or abandoned into the marine environment or the Great Lakes" (NOAA, Ocean Service, n.d.). Note that other educational resources may use the term "aquatic debris."



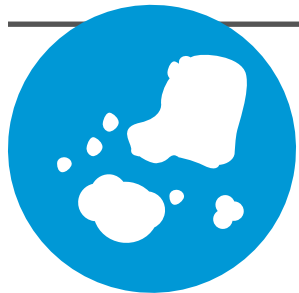
Finally, to help us evaluate how the Trash Trunk kit is being used and what resources would be helpful to include in future kits, please complete and return the survey at [bit.ly/CGLLresourceevaluation](https://bit.ly/CGLLresourceevaluation).

# TOP 10 GREAT LAKES BASIN LITTER ITEMS



1. PLASTIC PIECES **289,295**

2. CIGARETTES/CIGARETTE FILTERS **135,211**



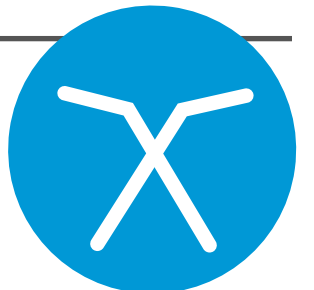
3. FOAM PIECES **114,240**

4. BOTTLE CAPS (PLASTIC) **61,510**



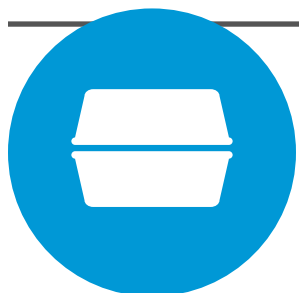
5. FOOD WRAPPERS (CANDY, CHIPS, ETC.) **48,185**

6. STRAWS/STIRRERS **45,691**



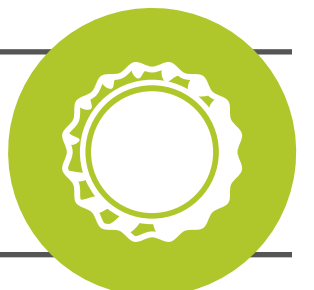
7. CIGAR TIPS **44,261**

8. GLASS PIECES **42,158**



9. OTHER PLASTIC/FOAM PACKAGING **19,692**

10. BOTTLE CAPS (METAL) **14,525**

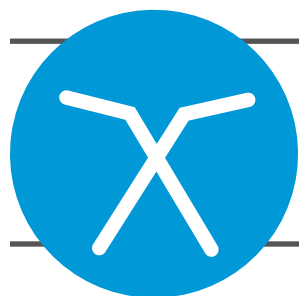


# TOP 10 ITEMS COLLECTED INTERNATIONALLY



1. CIGARETTES/CIGARETTE FILTERS **5,716,331**

2. FOOD WRAPPERS **3,728,712**



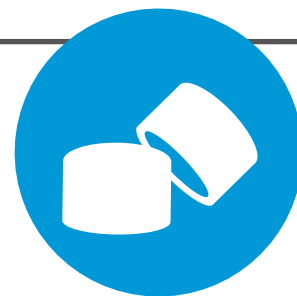
3. STRAWS/STIRRERS **3,667,871**

4. FORKS, KNIVES, SPOONS **1,968,065**



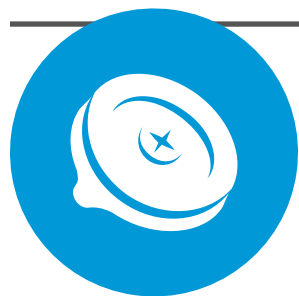
5. PLASTIC BEVERAGE BOTTLES **1,754,908**

6. PLASTIC BOTTLE CAPS **1,390,232**



7. PLASTIC GROCERY BAGS **964,541**

8. OTHER PLASTIC BAGS **938,929**



9. PLASTIC LIDS **728,892**

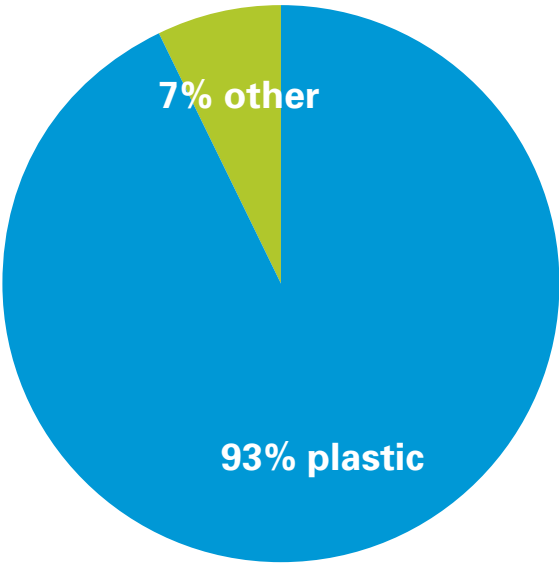
10. PLASTIC CUPS, PLATES **656,276**



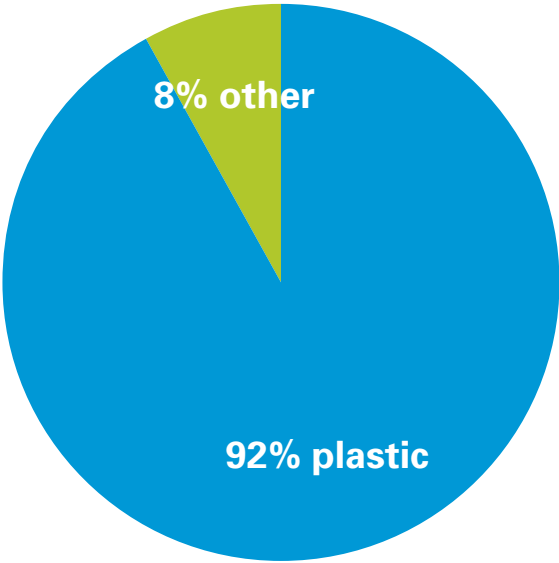
# LITTER COMPOSITION BY WATER BODY

## 2019 REGIONAL DATA

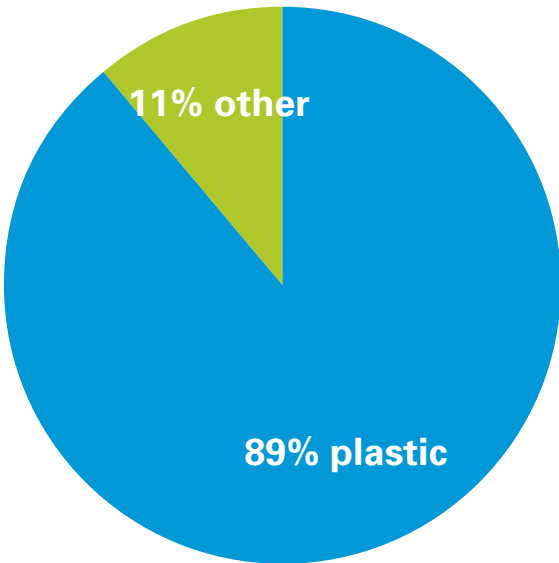
LAKE ERIE



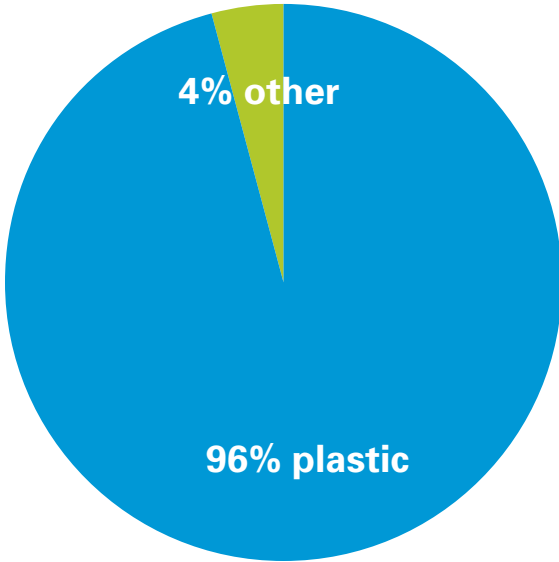
LAKE HURON



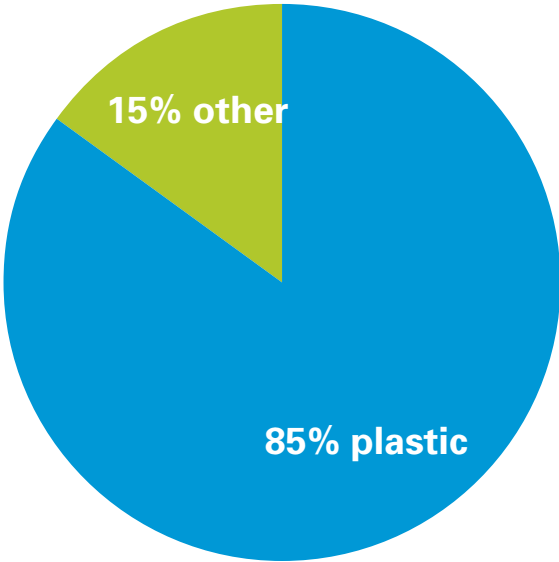
LAKE MICHIGAN



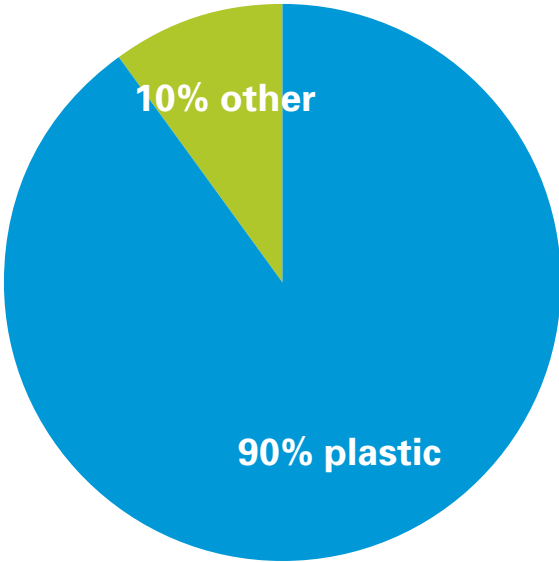
LAKE ONTARIO



LAKE SUPERIOR



GREAT LAKES BASIN

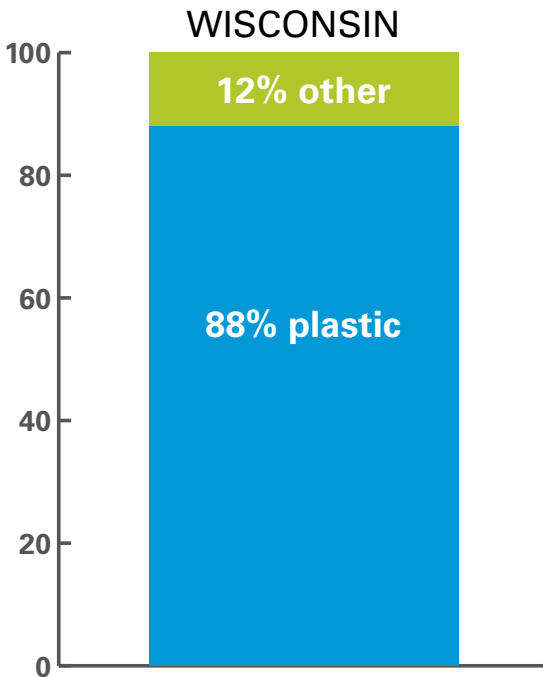
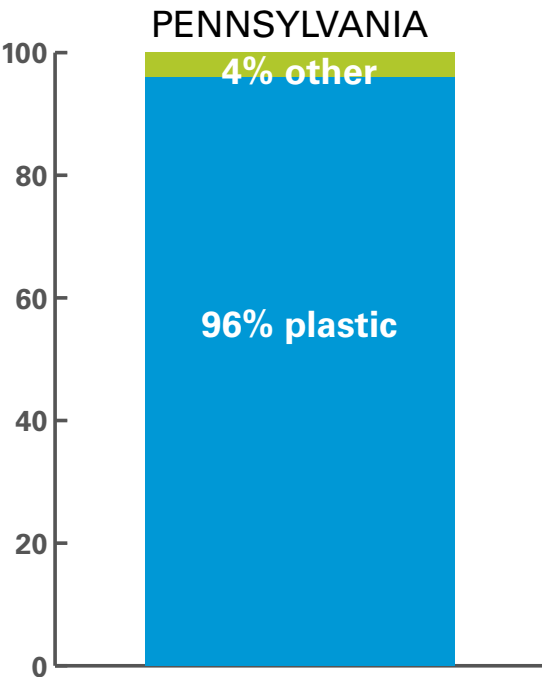
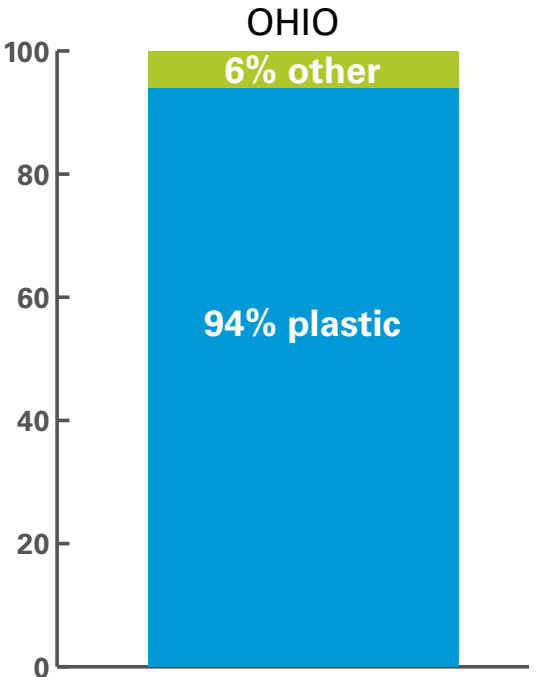
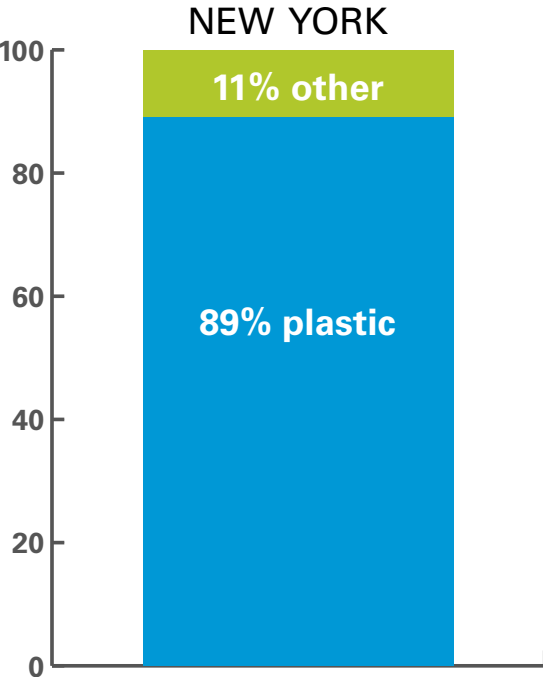
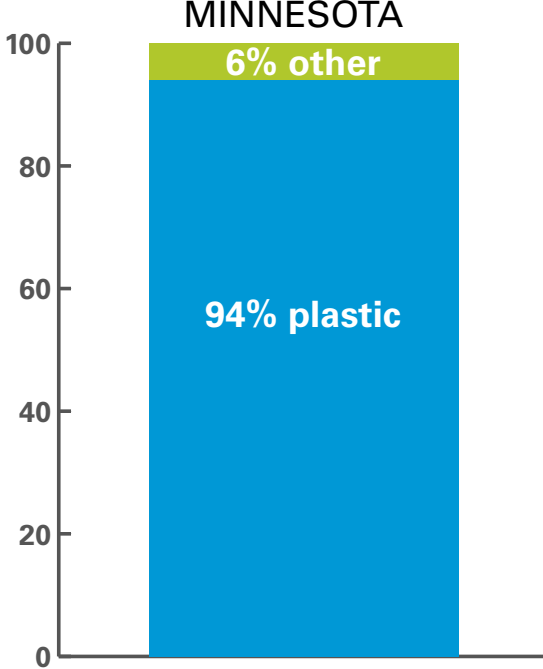
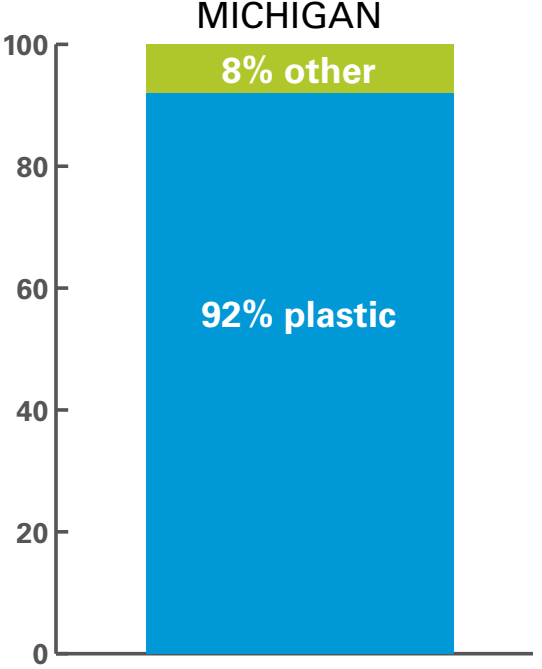
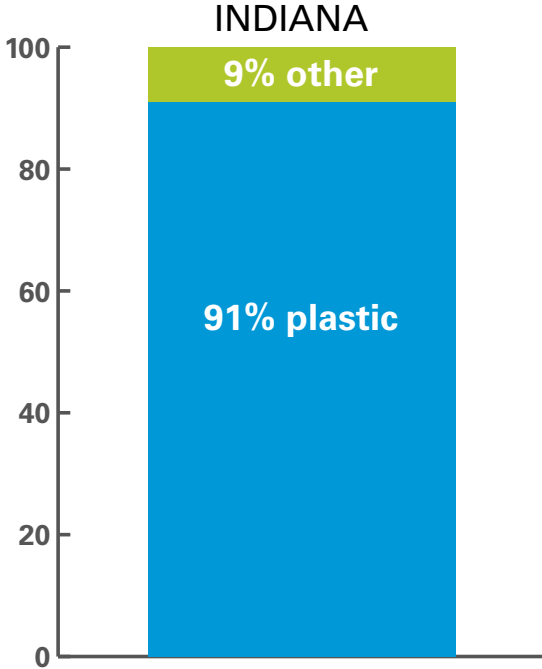
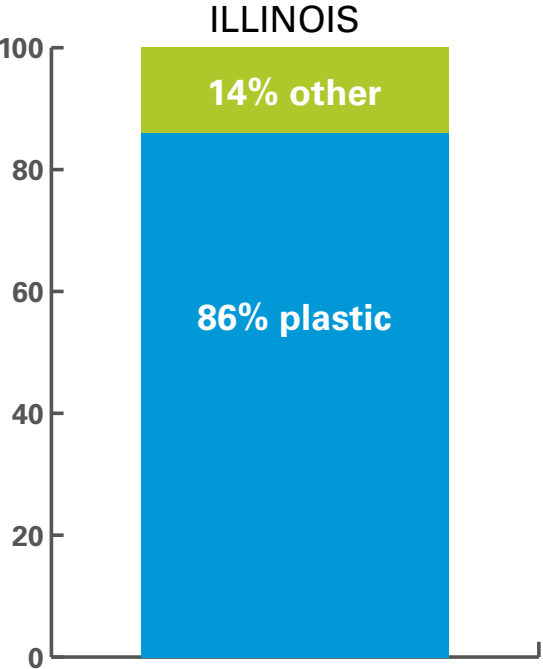


Data from Alliance for the Great Lakes Adopt-a-Beach™ Program, [greatlakesadopt.org](http://greatlakesadopt.org)  
Trash Trunk © 2020, [cgl.org](http://cgl.org)



# LITTER COMPOSITION BY STATE

## 2019 REGIONAL DATA




Data from Alliance for the Great Lakes Adopt-a-Beach™ Program, [greatlakesadopt.org](http://greatlakesadopt.org)  
Trash Trunk © 2020, [cgl.org](http://cgl.org)



# COMMON TYPES OF PLASTICS

Resin codes assist with recycling efforts. However, having a resin code does not mean an item is recyclable.

RESIN CODE	NAME	PRODUCT EXAMPLES
	<b>Polyethylene Terephthalate</b> (PETE, PET)	Plastic bottles, food jars, oven-safe and microwavable food trays, textiles (polyester), monofilament, carpet and films
	<b>High Density Polyethylene</b> (HDPE)	Bottles (beverage, detergent, shampoo), bags, cereal box liners, extruded pipe, and wire and cable coverings
	<b>Polyvinyl Chloride</b> (PVC)	Packaging (clamshells, shrink wrap), pipes, siding, window frames, fencing, flooring and medical products (blood bags, tubing)
	<b>Low Density Polyethylene</b> (LDPE)	Bags (produce, dry cleaning, newspaper and garbage bags), squeeze bottles, container lids, shrink wrap, toys, coatings for milk cartons and beverage cups, and wire and cable coverings
	<b>Polypropylene</b> (PP)	Yogurt and other food containers, medicine bottles, straws, bottle caps, fibers, appliances and carpeting
	<b>Extruded and Expanded Polystyrene</b> (PS)	CD cases, yogurt containers, cups, plates, bowls, cutlery, clamshells, electronic housings, building insulation, coat hangers, medical products, packing peanuts and other packaging foam, foam coolers and egg cartons
	<b>Other</b> , a resin different than the six listed above OR made from a combination of resins	Three- and five-gallon reusable water bottles, glasses (lenses), some citrus juice and ketchup bottles, oven-baking bags and custom packaging

# MICROPLASTIC IDENTIFICATION

Microparticles are very small — less than 5 millimeters in size, which is about the size of an eraser head on a pencil.

## FILMS

Pieces of plastic that are thin and flexible

Density: 0.94 g/cm<sup>3</sup>

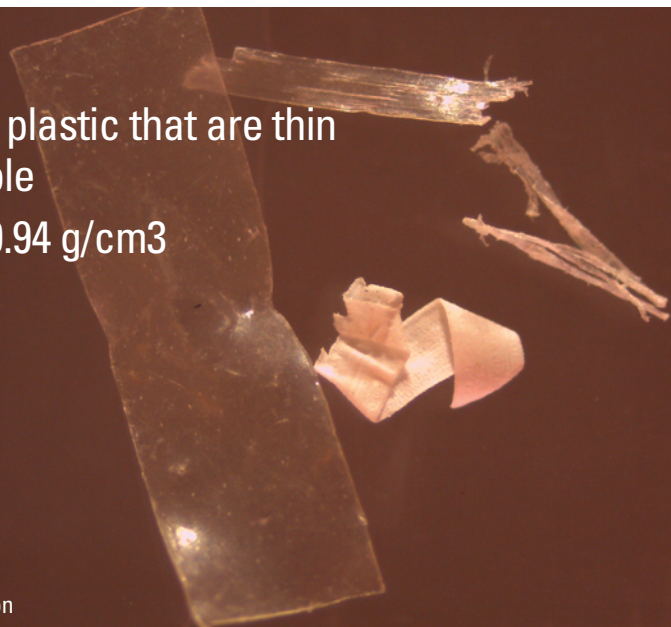


Photo: Sam Mason

## FRAGMENTS

Pieces of hard plastic

Density: 1.11 g/cm<sup>3</sup>

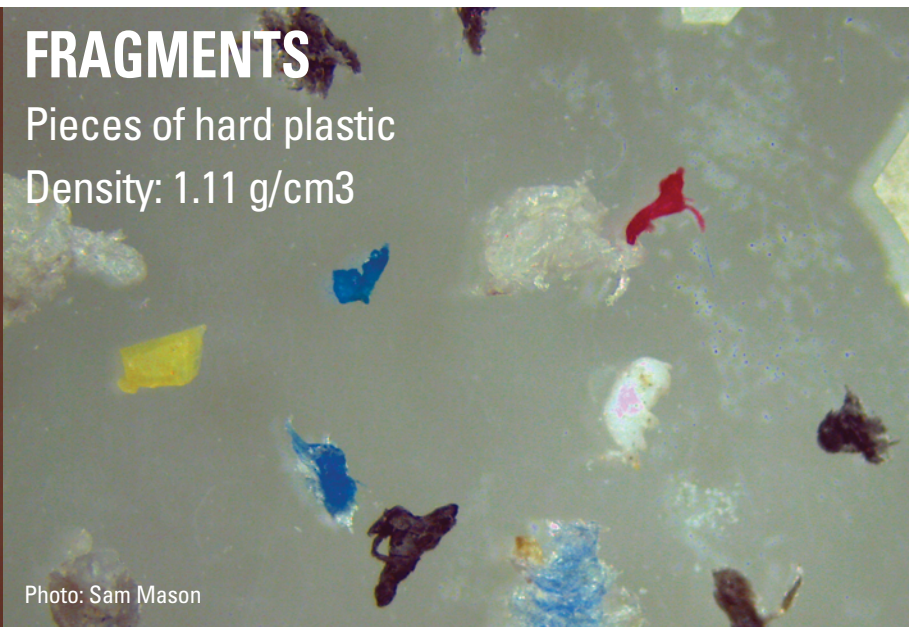


Photo: Sam Mason

## FOAMS

Material such as polystyrene

Density: 1.0 g/cm<sup>3</sup>

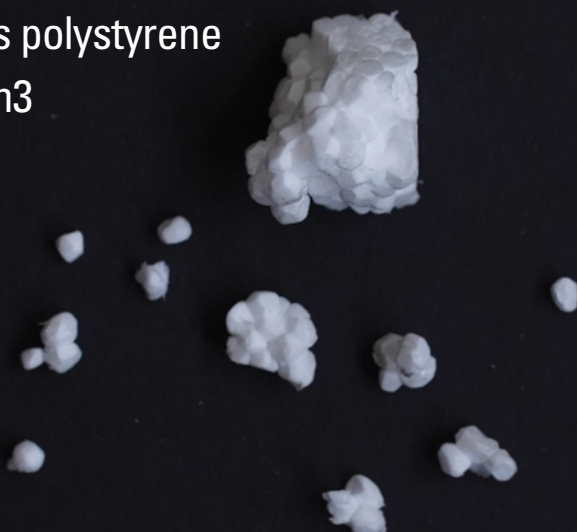


Photo: Bonnie Willison

## FIBERS

Fish line, rope or synthetic including cigarette parts (inset)

Density: 1.15 g/cm<sup>3</sup>



Photos: Sam Mason and Jill Barlotta

## NURDLES

Pellets used as raw material for almost everything plastic

Density: Depends on material



Photo: Jill Barlotta

## MICROBEADS

Personal care products, over-the-counter drugs and biomedical research

Density: Depends on material



Photo: Sam Mason



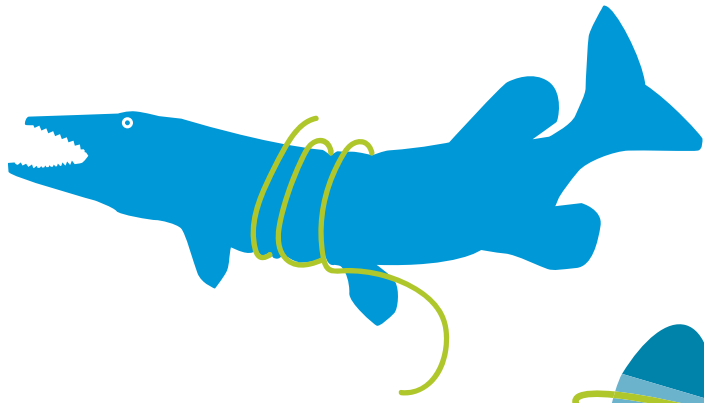
# IMPACTS OF MARINE DEBRIS

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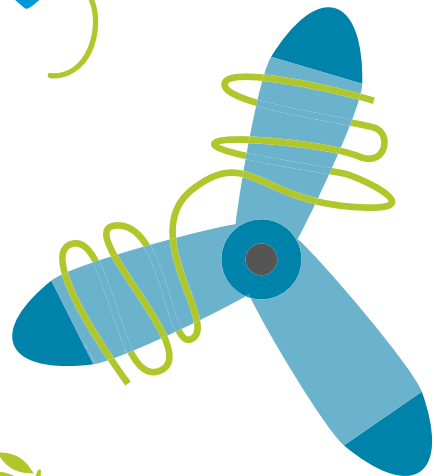
## INGESTION

Animals mistakenly eat plastic and other debris.



## ENTANGLEMENT AND GHOSTFISHING

Marine life gets caught and killed in ghost nets, trapped in derelict gear, and entangled in plastic bands and other marine debris.



## HAZARD TO NAVIGATION

Marine debris can be difficult to see in the lake if it's floating below the water's surface. Encounters with large items can result in costly vessel damage, either to its structure or through a tangled propeller or obstructed mechanical gears.



## HABITAT DAMAGE

Heavy marine debris crushes sensitive habitat, such as wild rice (manoomin) beds and wetlands.



## NON-NATIVE SPECIES

Marine debris and unclean boats both serve as mechanisms for transport of alien and invasive species from one region to another.



## ECONOMIC COST

Communities lose a lot of money cleaning up trash, as well as the economic benefit of beach tourism and recreation.

# 10 THINGS YOU CAN DO FOR TRASH-FREE LAKES



# THE 8 Rs

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1. **RETHINK YOUR CHOICES**

2. **REFUSE SINGLE USE ITEMS**



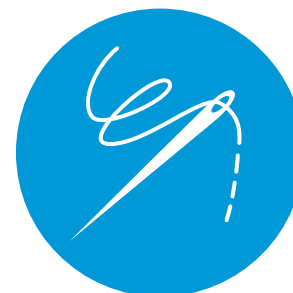
3. **REDUCE CONSUMPTION**

4. **REUSE EVERYTHING**



5. **REFURBISH OLD STUFF**

6. **REPAIR BEFORE YOU REPLACE**



7. **REPURPOSE AND BE CREATIVE**

8. **RECYCLE LAST OPTION**

