



# Microplastics in Waterways and the Impact of Plastic Litter

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Image: Reinhard Dirscherl/Waterframe/Getty Images



Image: Reuters/R. Ramoco

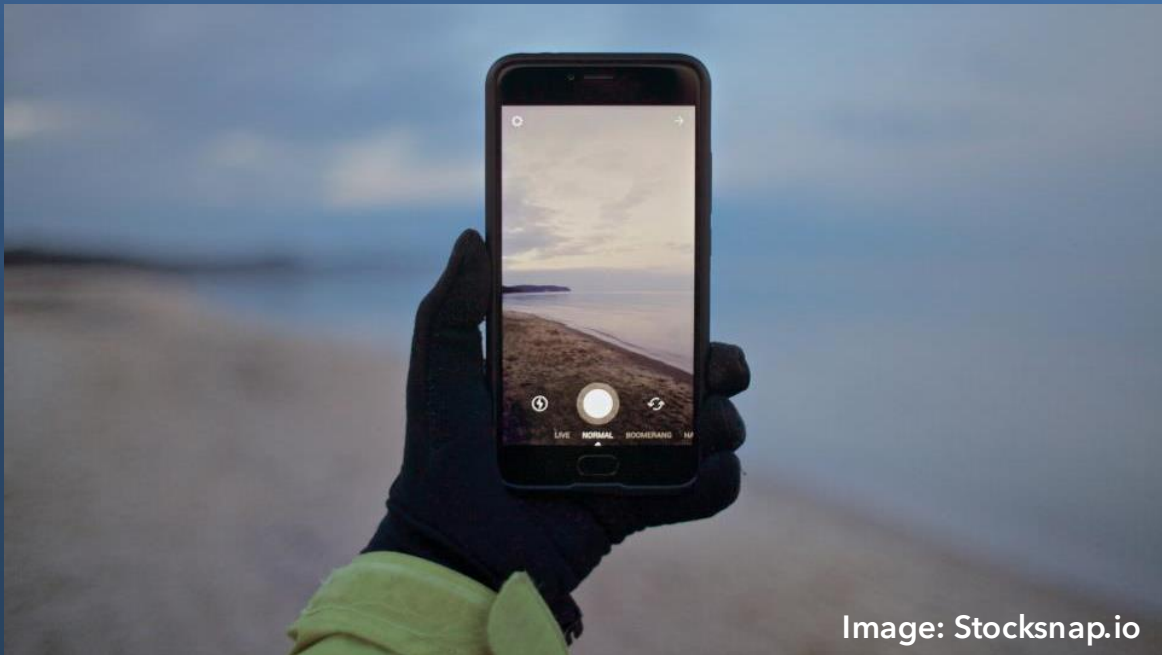


Image: Stocksnap.io



Image: Unsplash.com



Image: Unsplash.com





Image: Myrtle Beach TheDigital



Image: Circle K



Image: Rural Sprout

# PLASTIC RESIN IDENTIFICATION CODES



PETE



Polyethylene  
Terephthalate



HDPE



High Density  
Polyethylene



PVC



Polyvinyl  
Chloride



LDPE



Low Density  
Polyethylene



PP



Polypropylene



PS



Polystyrene



OTHER

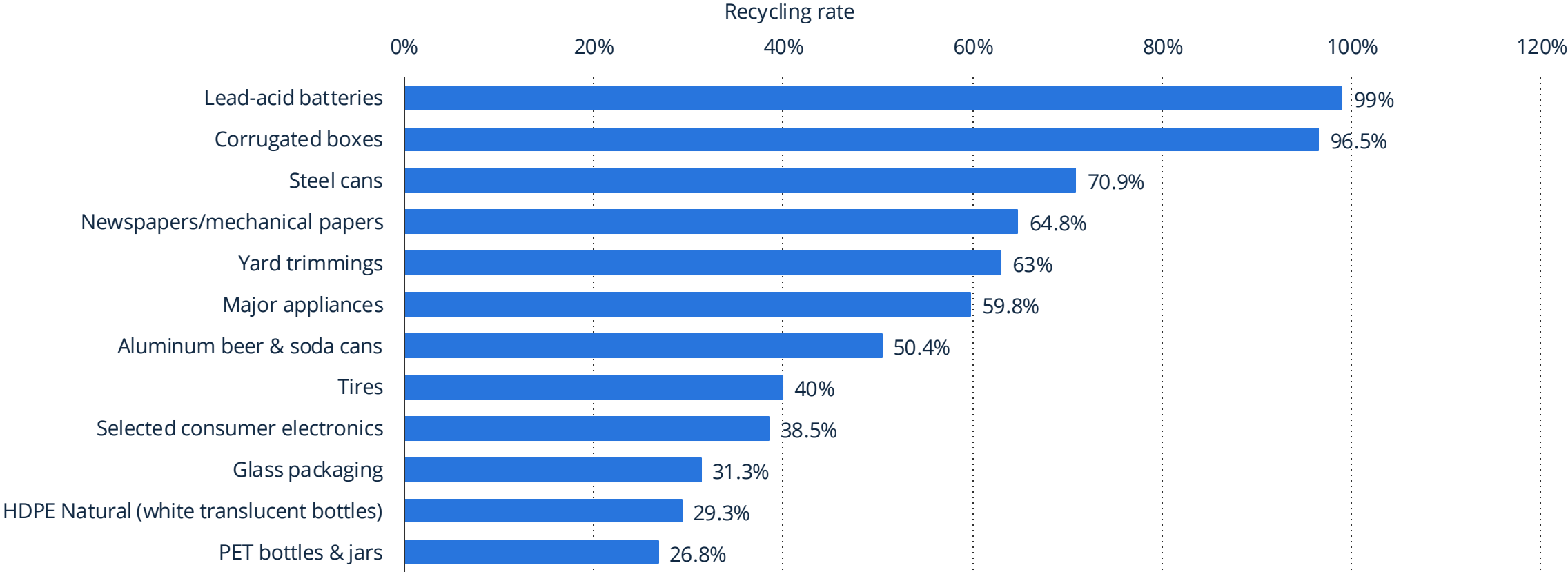


Other



# Recycling and composting rate as a percent of generation of selected products in the United States in 2018

Recycling rates in the U.S. by select product 2018



# Global Plastic Waste Generation



Image: Ars Electronica



Image: Getty Images.









NEWS

# 46 tons of Mardi Gras beads found in clogged sewers

By Ruth Brown

January 26, 2018 | 5:38pm | Updated



Getty Images

In New Orleans, the good times are rolling all the way down the drain.


# Plastic is Everywhere





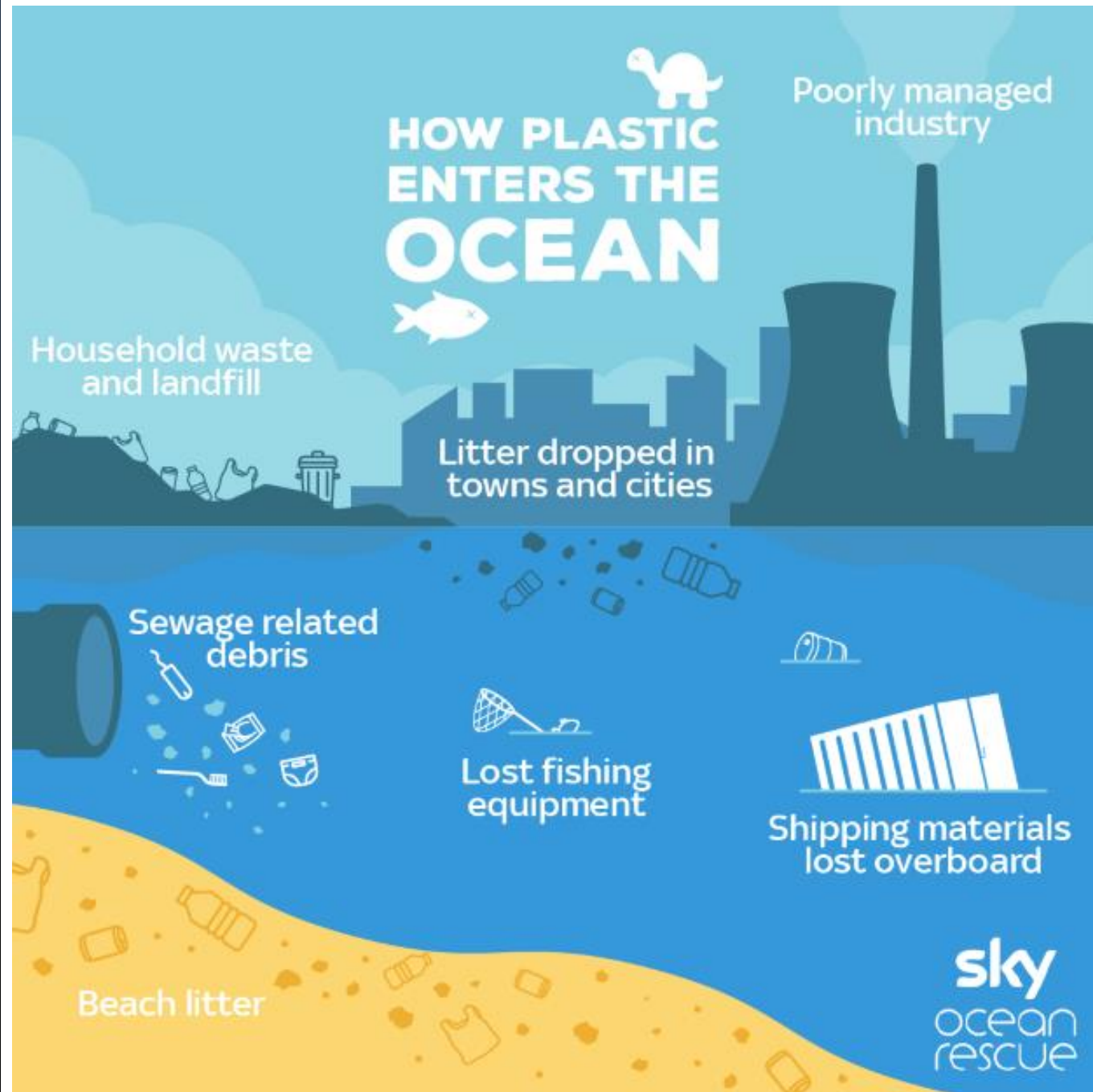




An aerial photograph showing a vast, dense island of plastic debris floating in the ocean. The debris is composed of numerous small pieces of plastic, including bottle caps, fragments, and larger pieces of trash, creating a thick, textured surface. The ocean is a deep blue, and the sky is clear and bright. The debris island stretches across the horizon, with a small gap or channel visible on the right side.

**Plastic  
Debris off  
Honduras**

# Plastics in the Oceans



# A River in Guatemala



# Off Roatan, Honduras





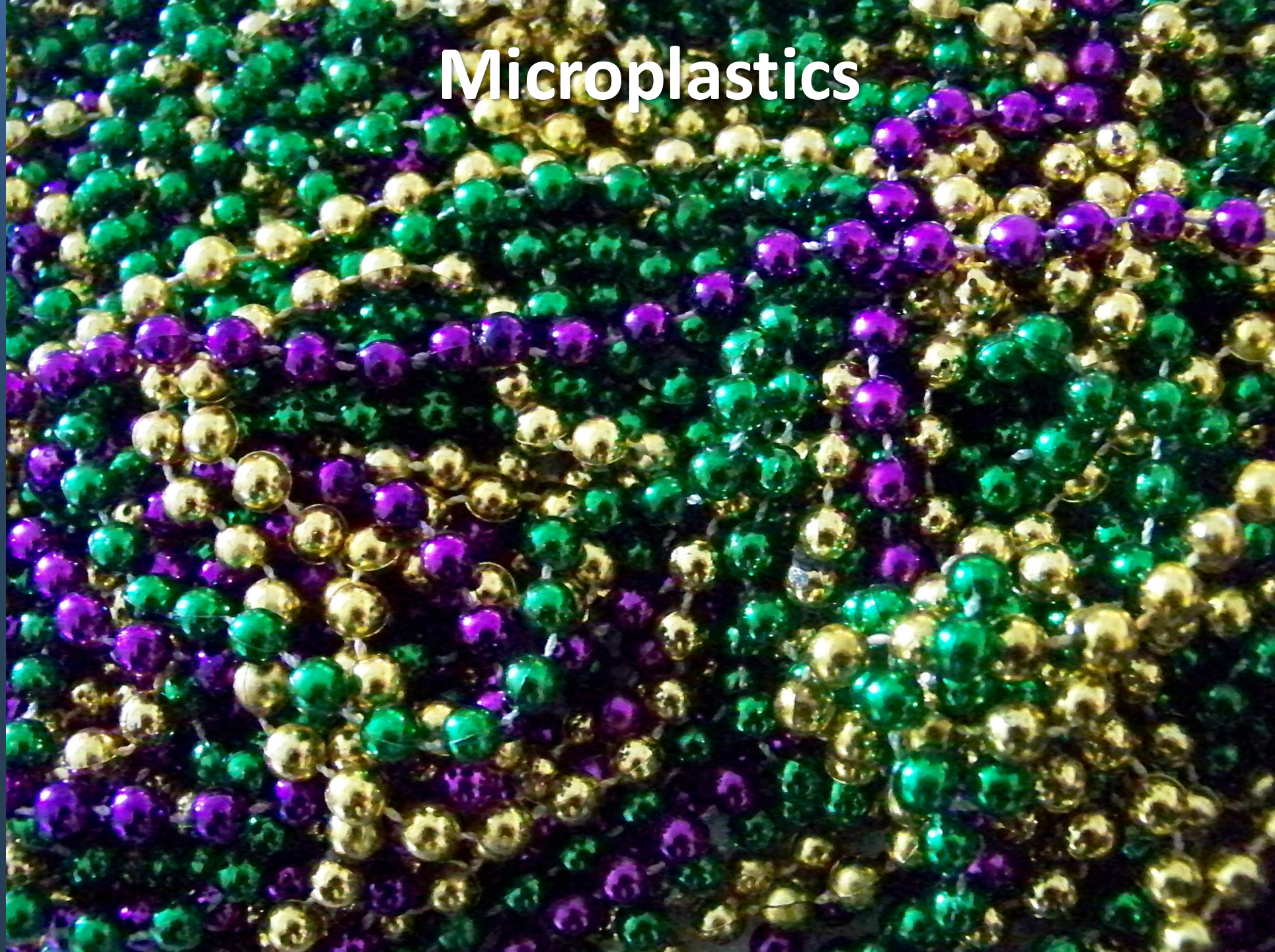
Ultraviolet light, weathering, and mechanical damage = fragmentation.



Images: Olympic Coast National Marine Sanctuary



# Microplastics



# Sources of Microplastics

## Fragmentation of Macroplastics

Personal Care Products



Paint Flakes



Spillage of Raw Resin



Laundering of Synthetic Fabrics



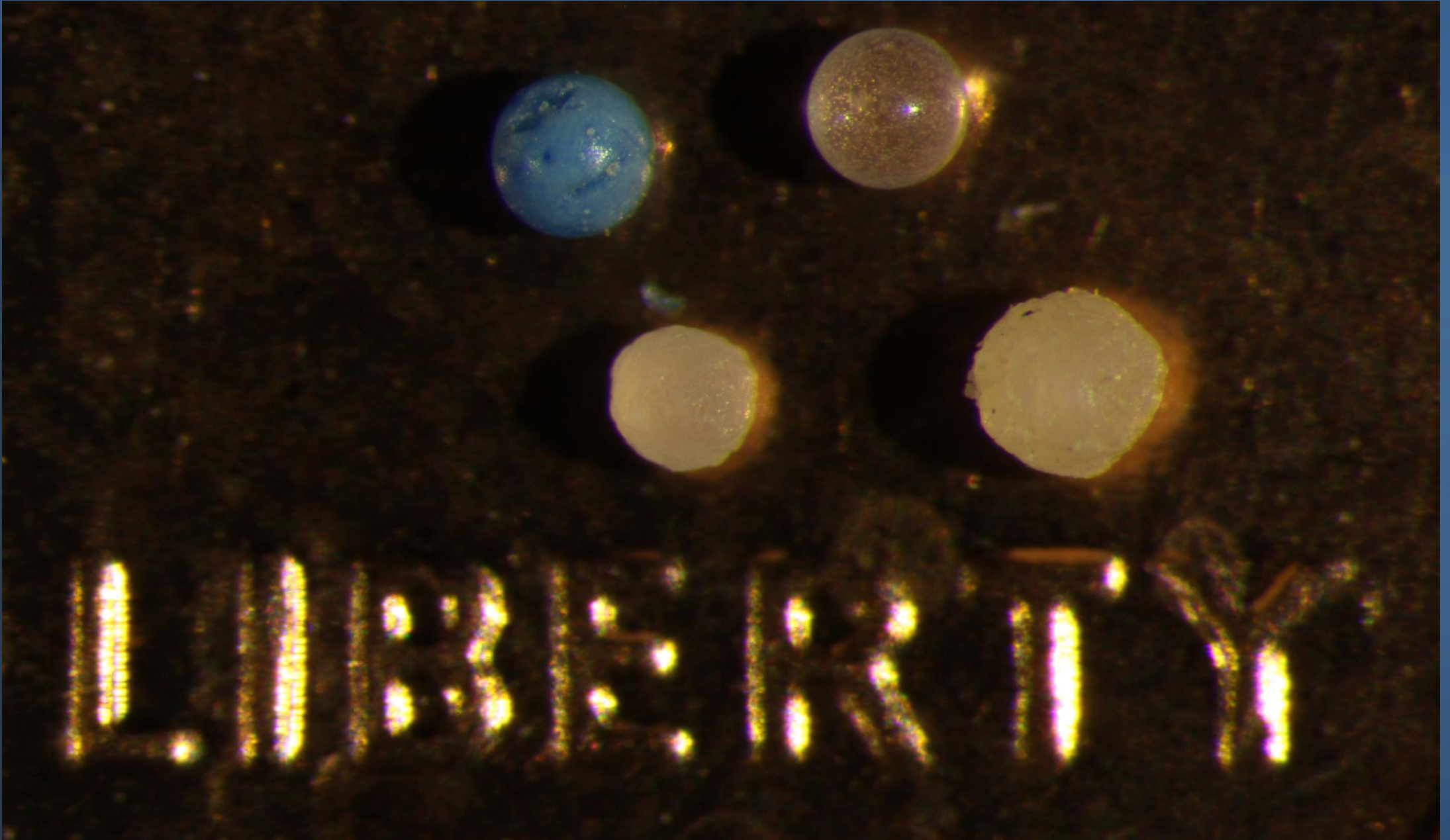
Bead Blasting



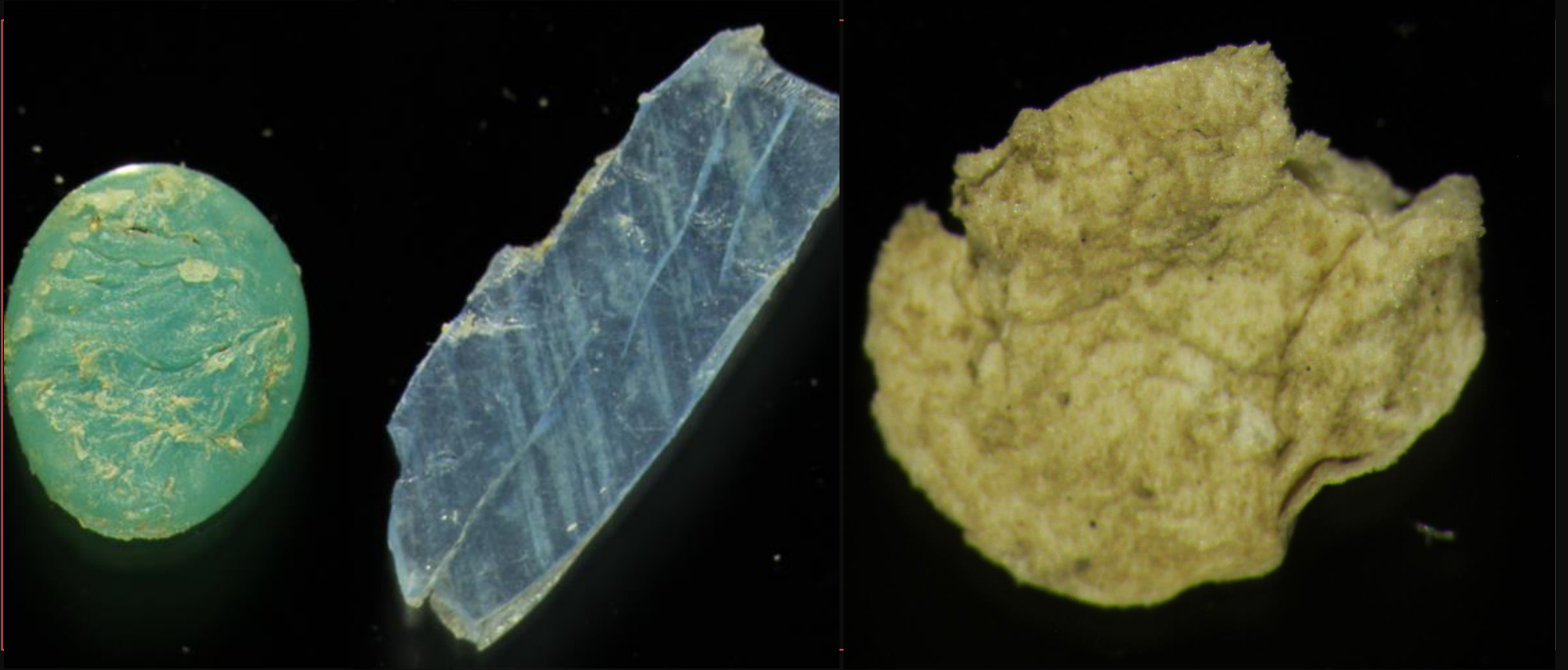
Tire Wear



# Characteristics of Microplastics



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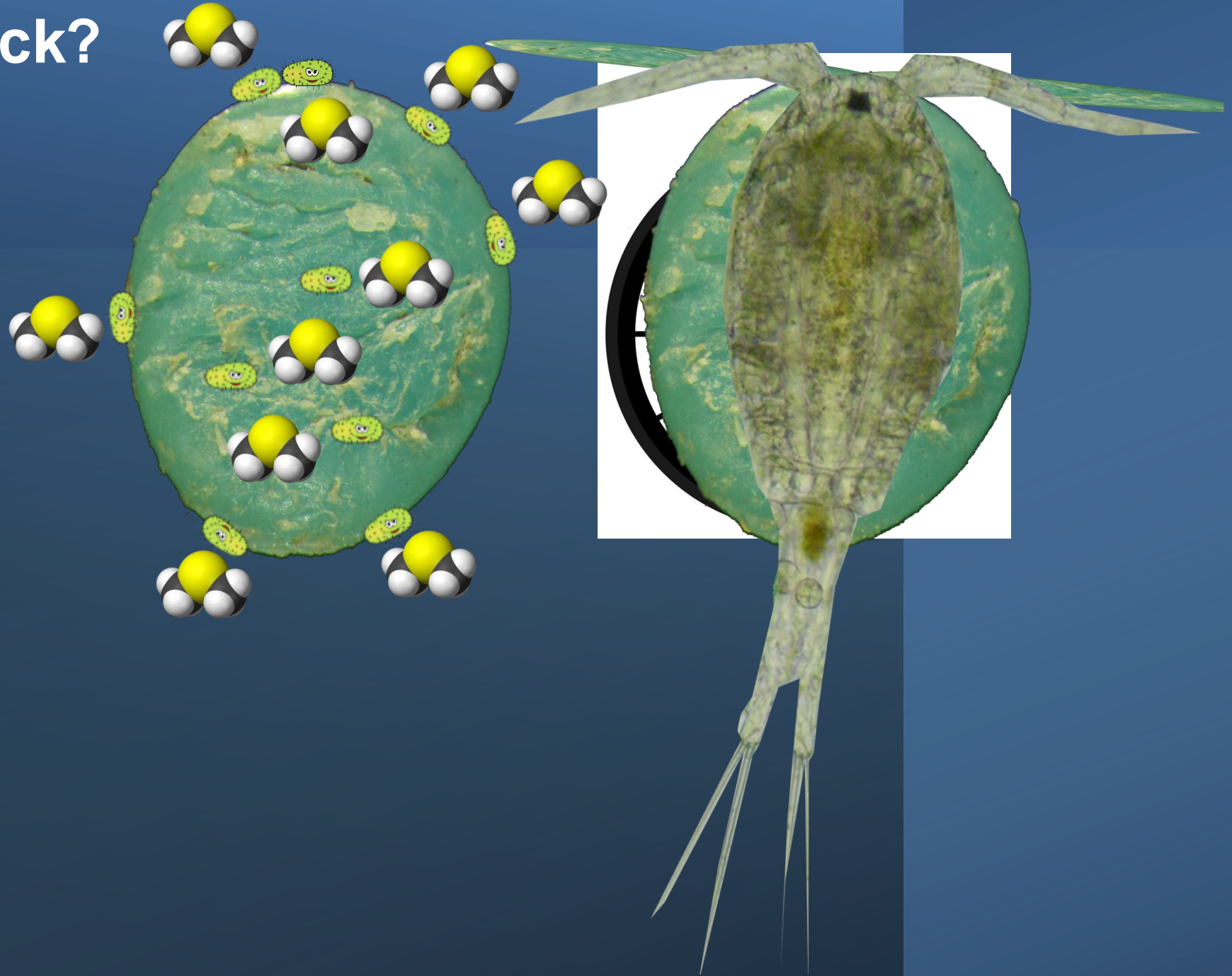


• Image: Flickr



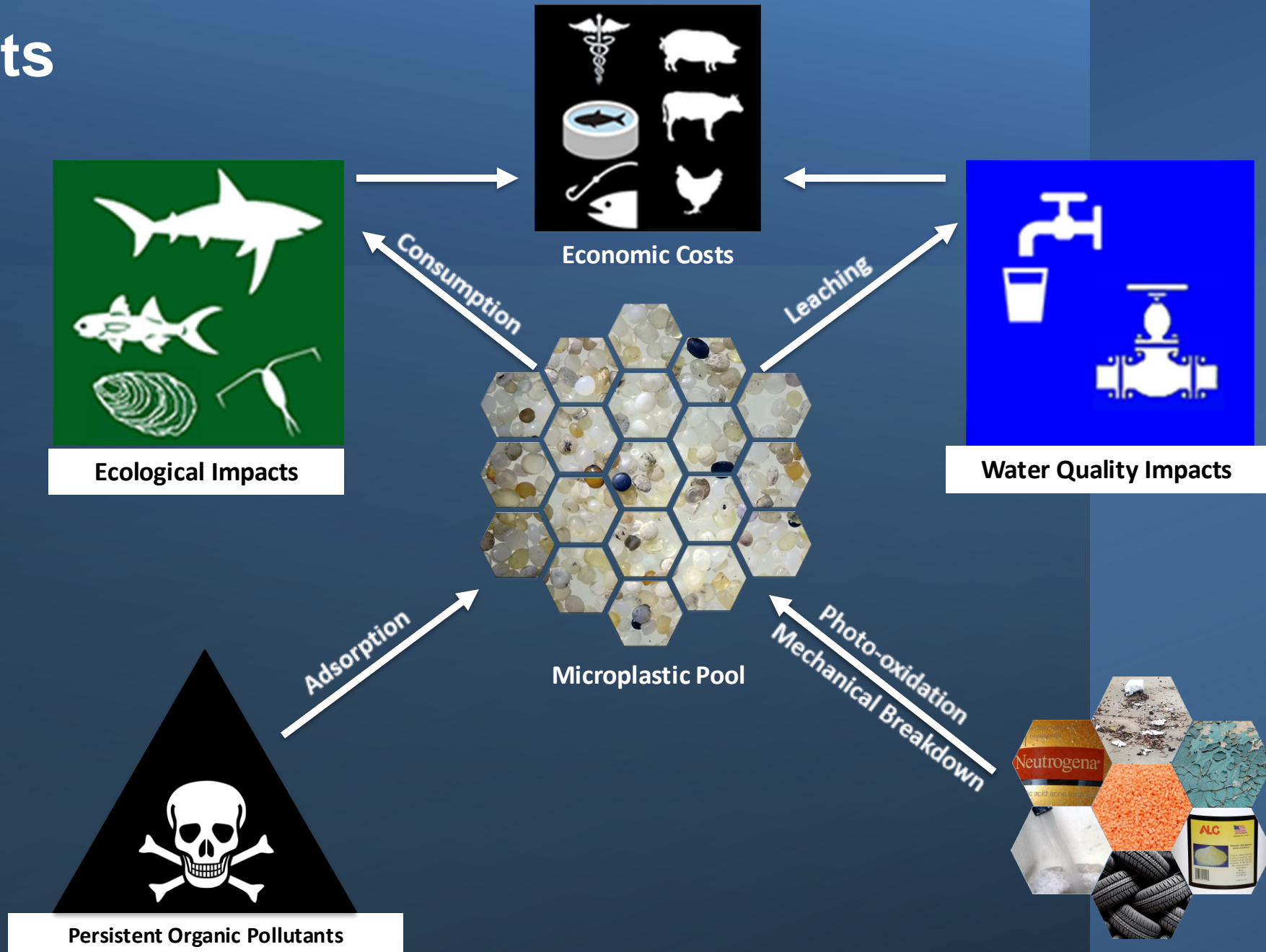


# A Tasty Snack?





# Impacts







# Evidence from a Remote Barrier Island







Image: Jane Patton

# Where's the Plastic Coming From?



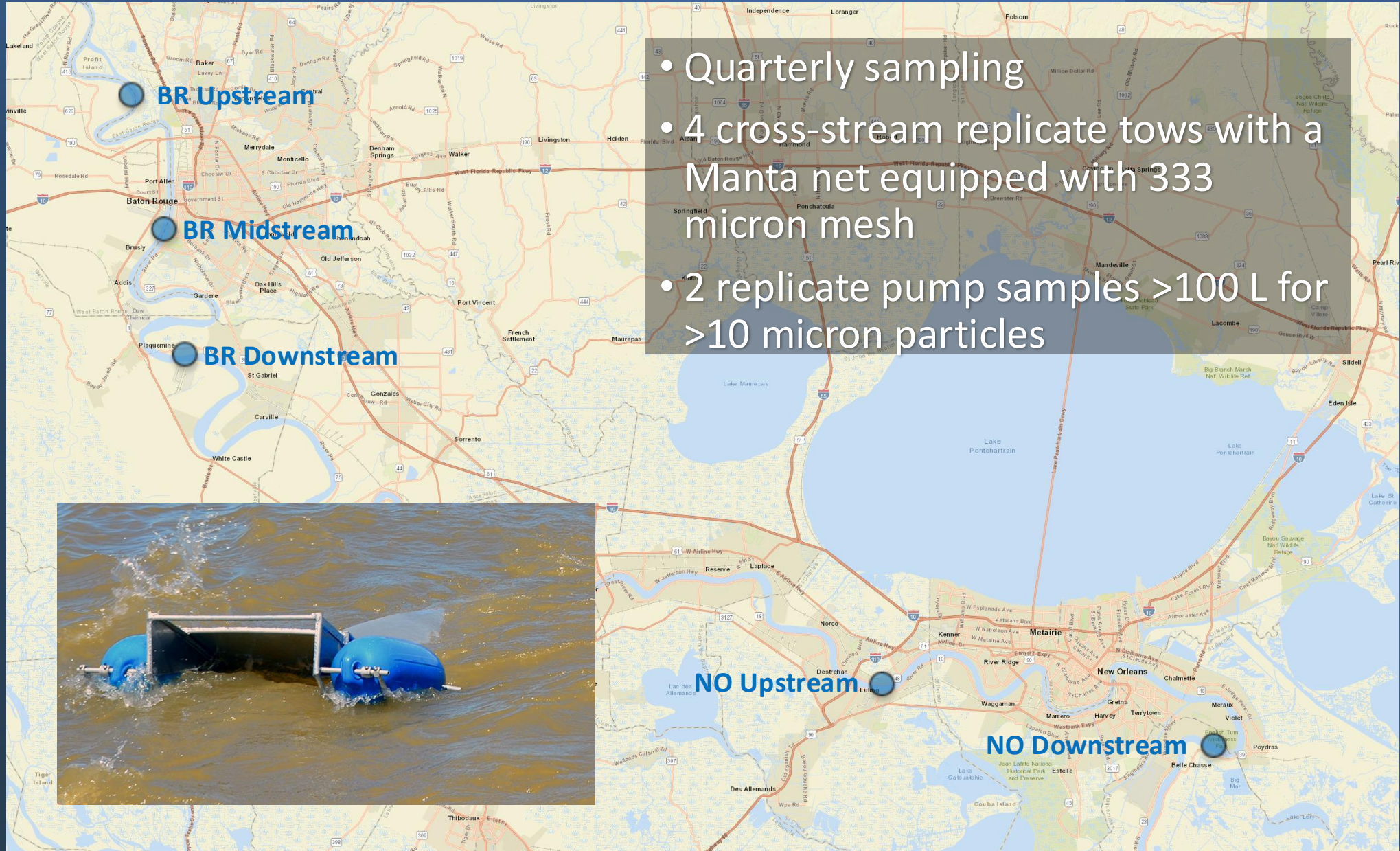
# >100 Million People Live in the Mississippi River Basin





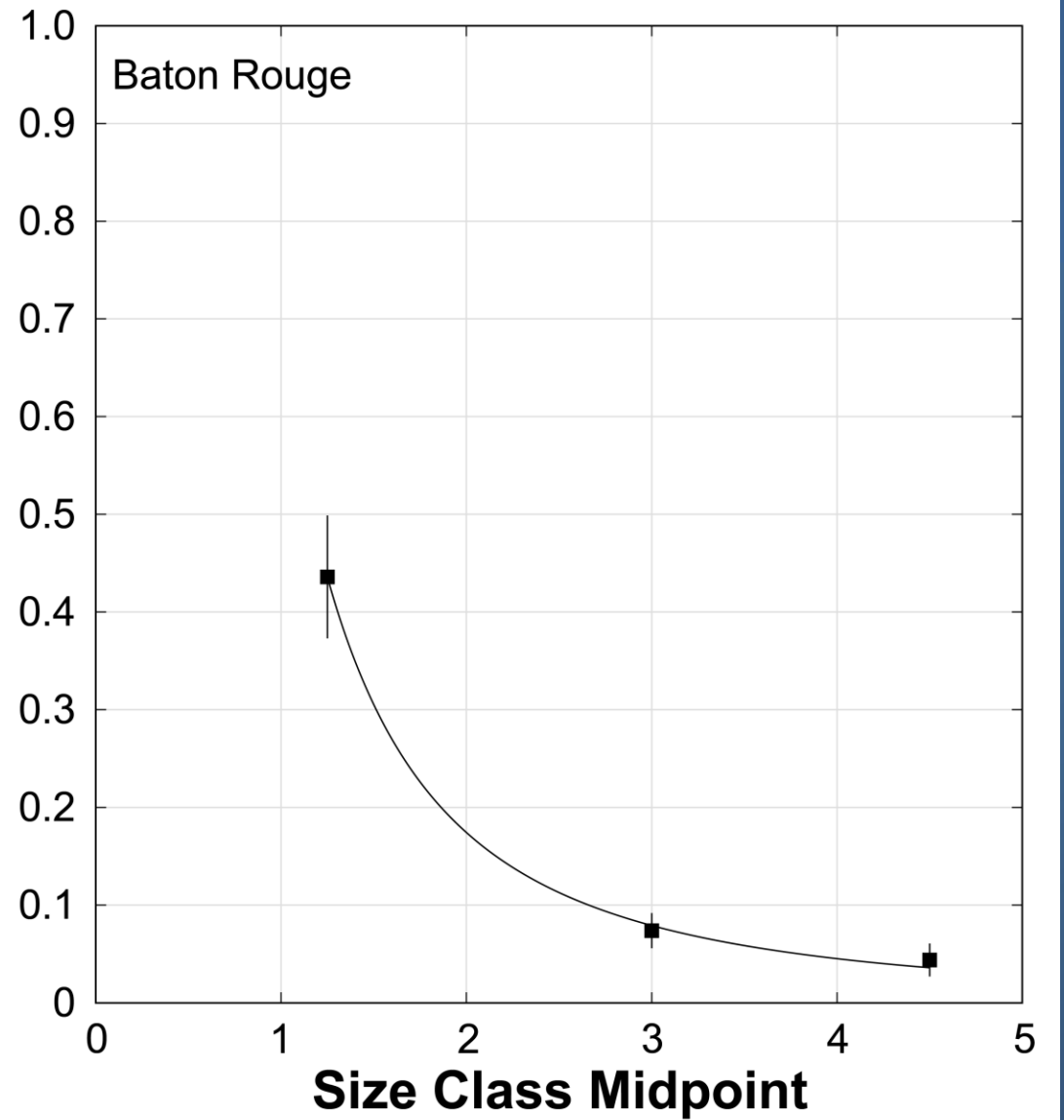
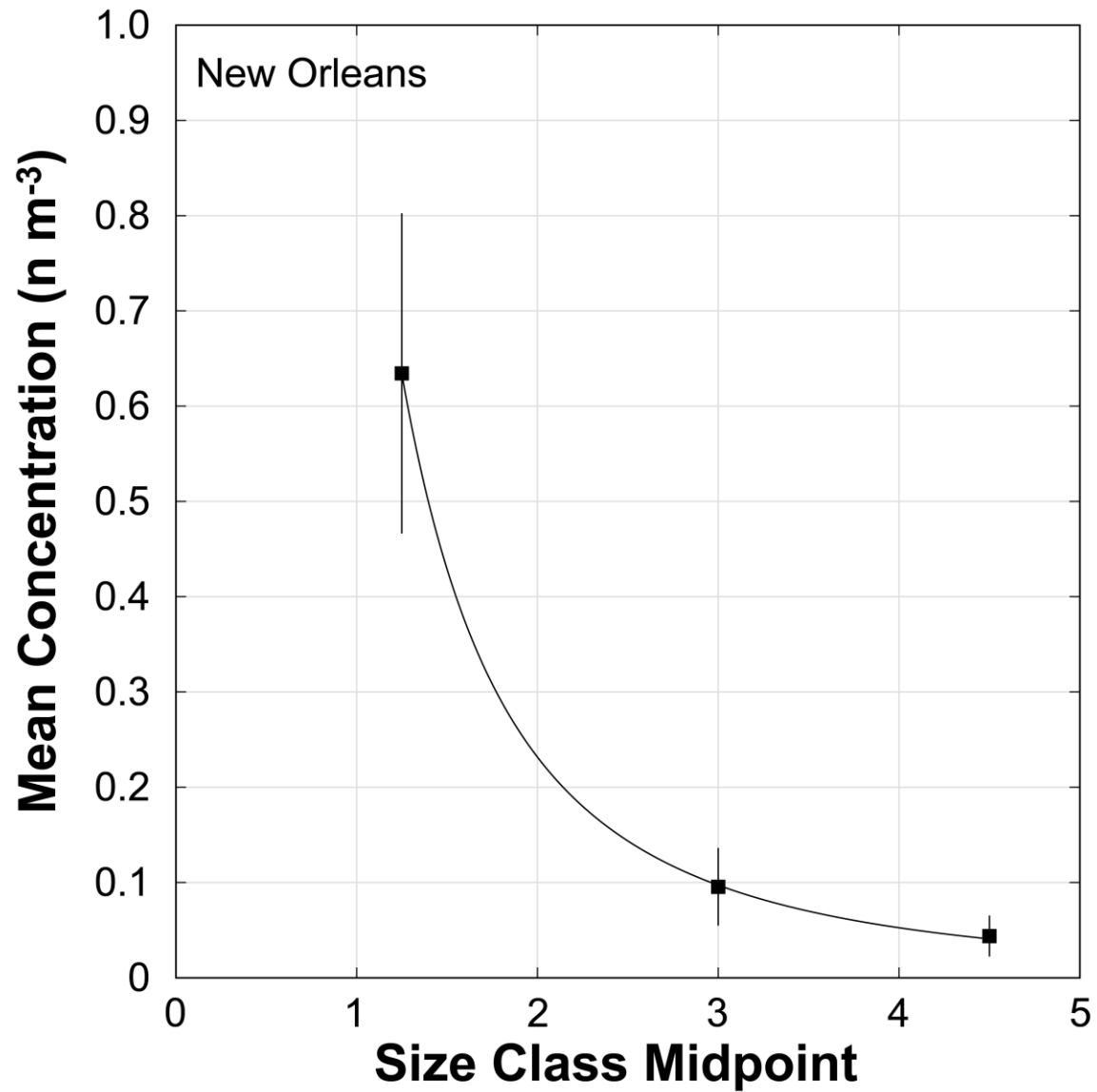
# 2016-2017 Mississippi River Microplastics Study

- Quarterly sampling
- 4 cross-stream replicate tows with a Manta net equipped with 333 micron mesh
- 2 replicate pump samples >100 L for >10 micron particles





• Images: Dani Dilullo/La Sea Grant





0.9 – 0.97



0.91 – 0.94



0.85 – 0.92



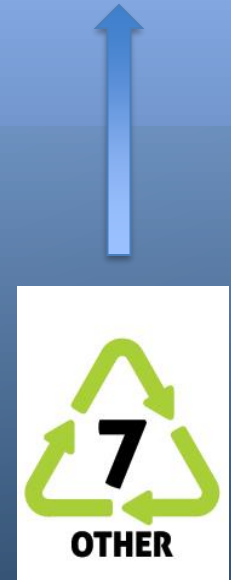
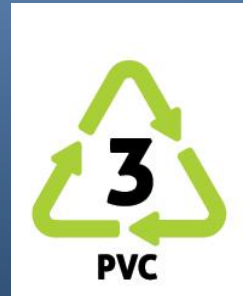
0.96 – 1.05

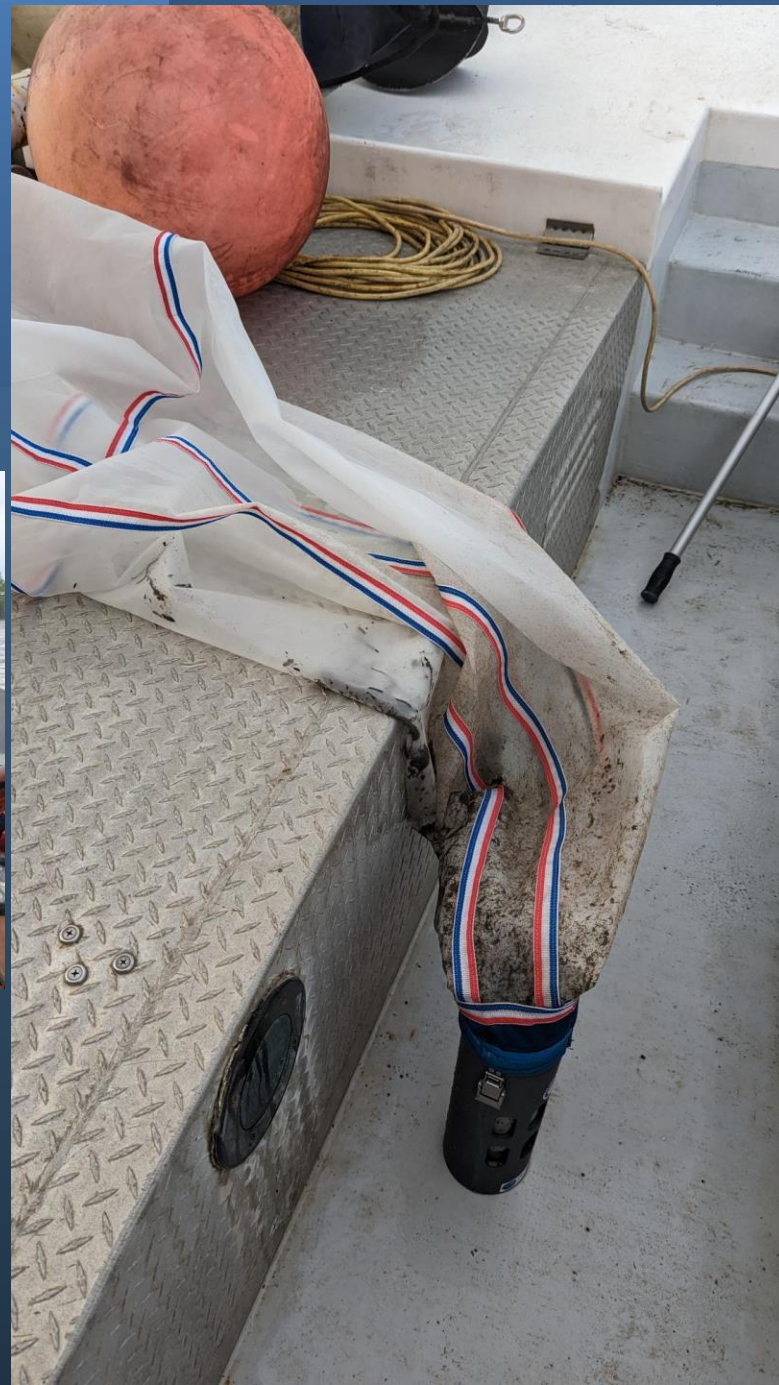


1.3



1.38





Coastal Desk

# Army Corps greenlights Louisiana's \$2.2 billion sediment diversion to combat land loss

WWNO - New Orleans Public Radio | By Halle Parker

Published December 19, 2022 at 4:46 PM CST



Kezia Setyawan / WWNO

An aerial view of broken wetlands in Plaquemines Parish. Projections by Climate Central indicate that the parish could lose another 100,000 acres of wetlands by the end of the century.

WIRED

BACKCHANNEL BUSINESS CULTURE GEAR IDEAS SCIENCE SECURITY

BOYCE UPHOLT

SCIENCE JUL 23, 2022 8:00 AM

# The Controversial Plan to Unleash the Mississippi River

A long history of constraining the river through levees has led to massive land loss in its delta. Can people engineer a way out?



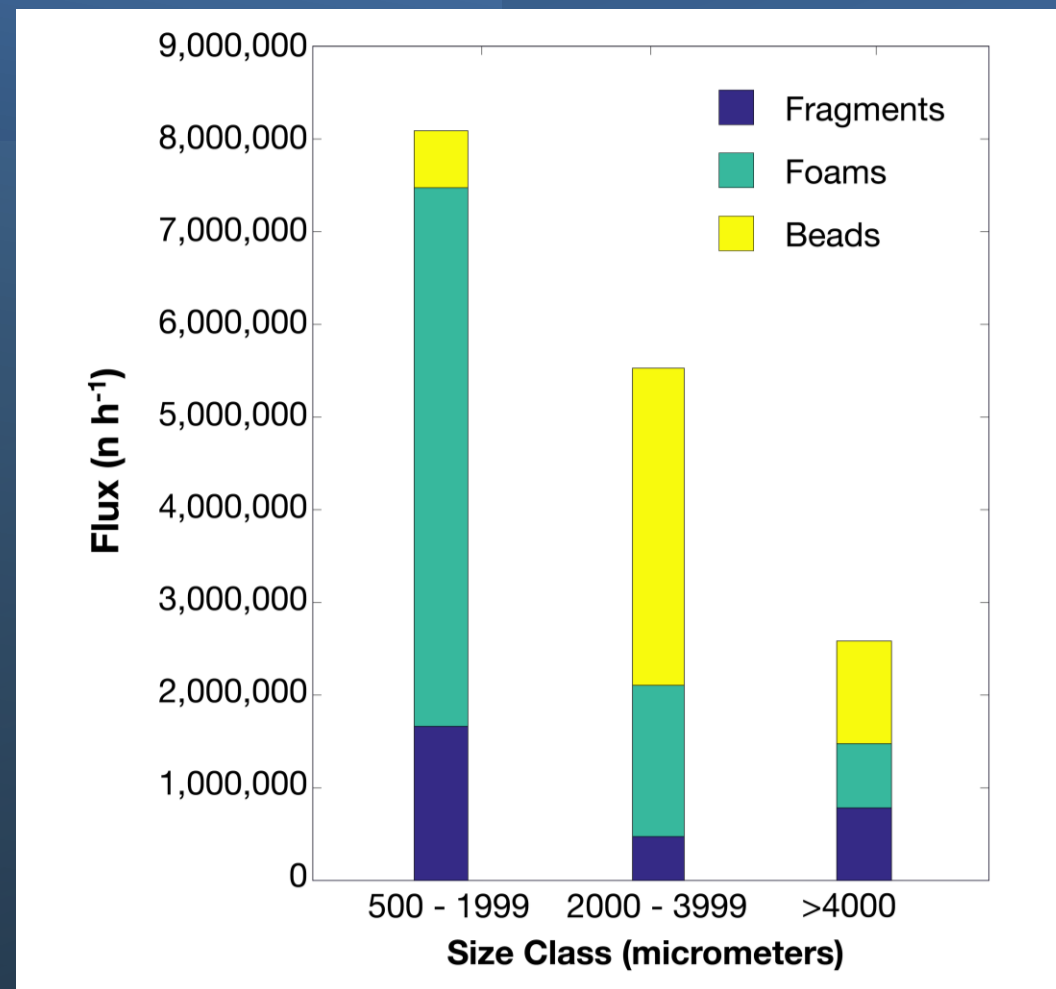
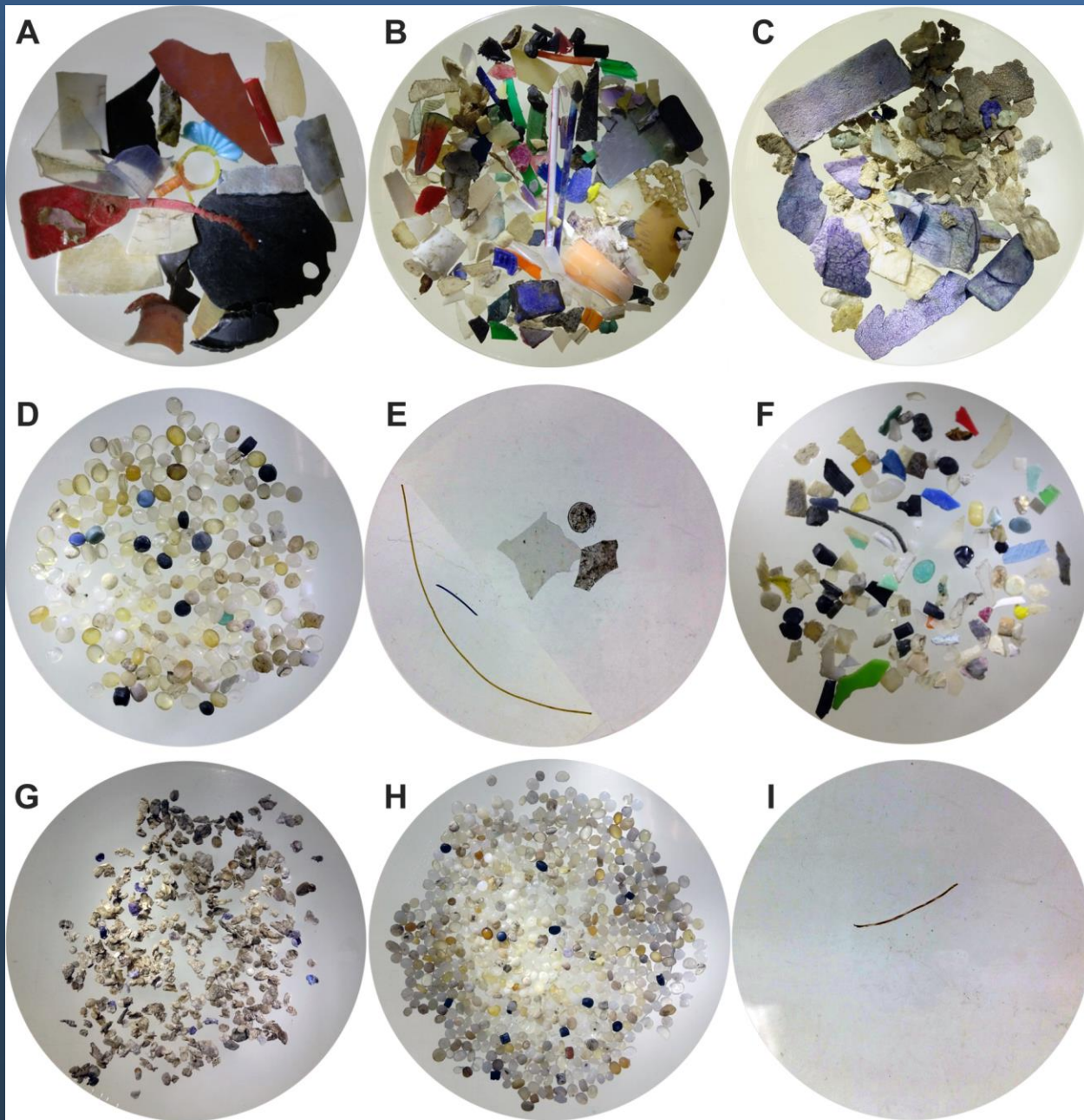
A history of levee construction has resulted in significant land loss along the Mississippi River Delta in Louisiana. Plans to reroute some of the river sediment will have direct impacts on the communities in Plaquemines Parish, located along the river's final stretch. PHOTOGRAPH: DREW ANGERER/GETTY IMAGES

# Microplastic Sampling at Davis Pond Diversion

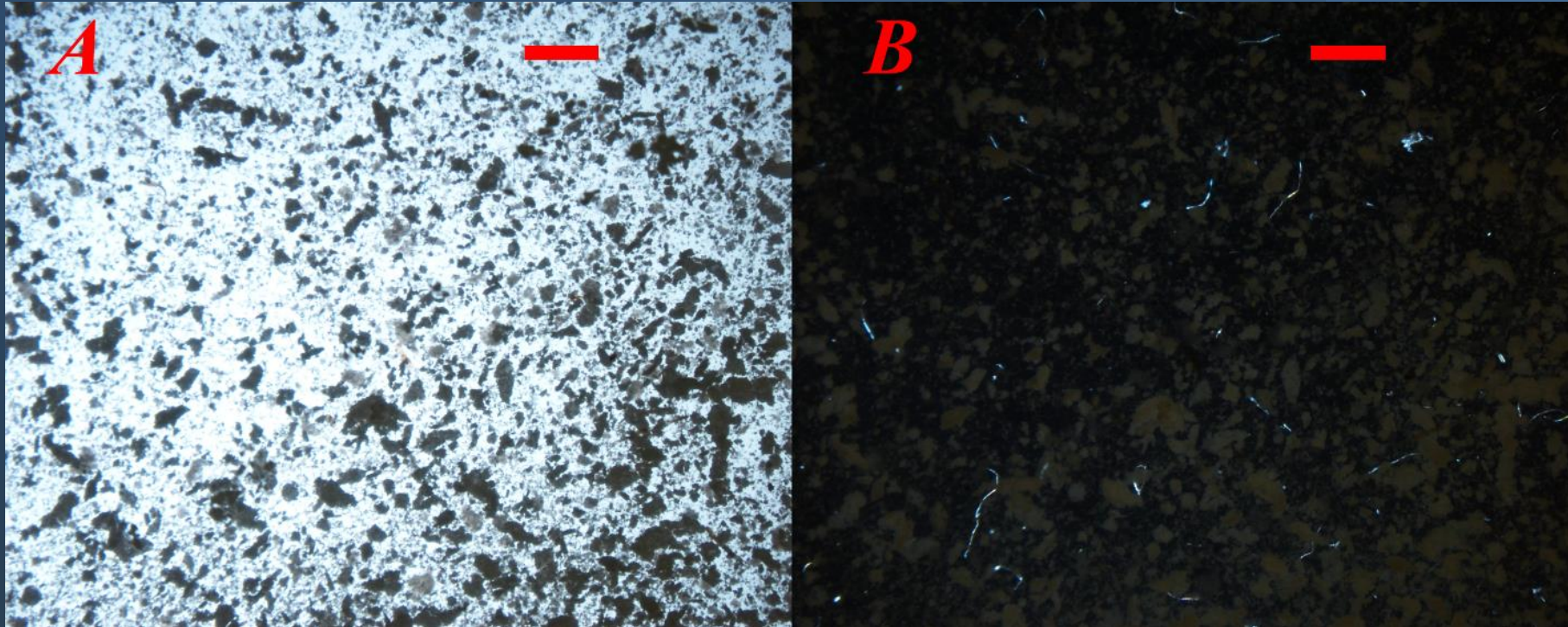




# Microplastics from Davis Pond

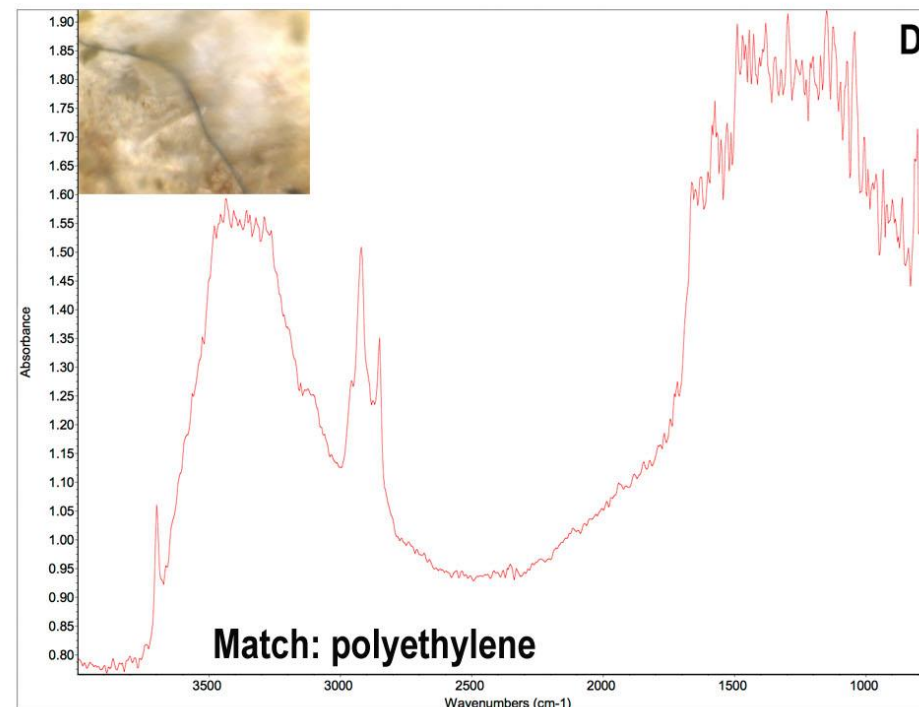
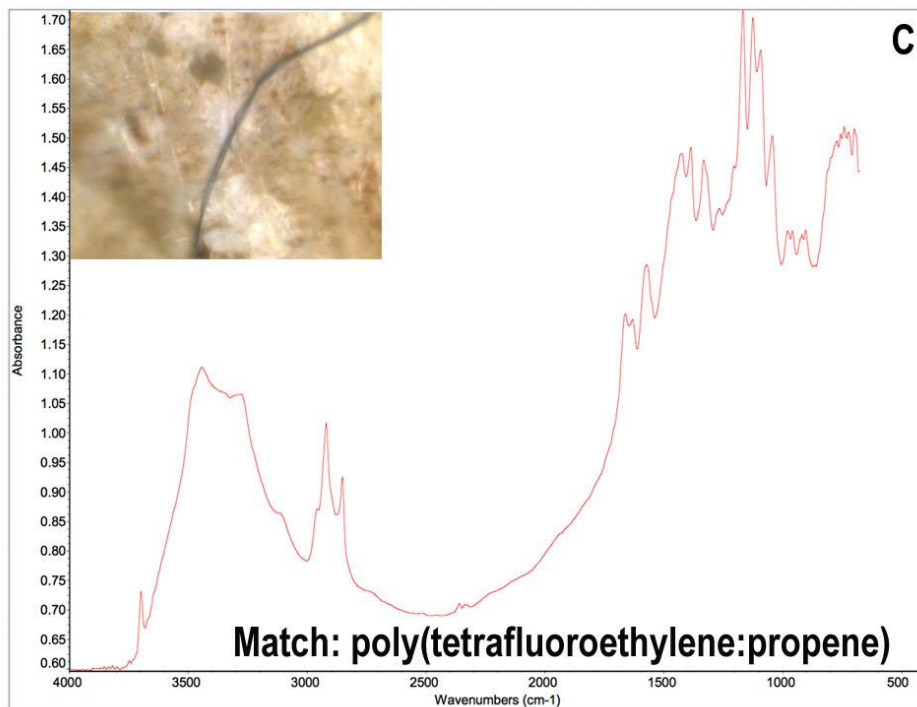
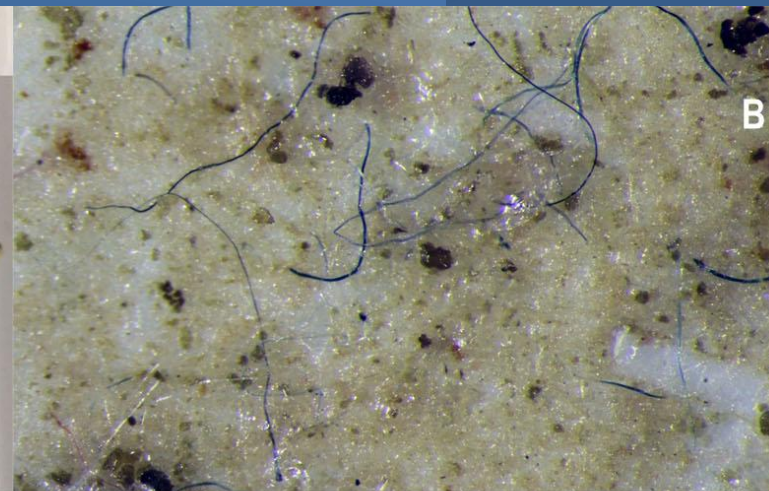


# Microplastics in a Menhaden



An image of the filtered material rinsed from the glass filters after caustic digestion of gut and intestines of a Gulf menhaden. (A) shows the image under polarized transmitted light, with the scale bar length of 1 mm. (B) shows the same field of view and sample as before, but under cross-polarized light. Microplastic fragments in the sample that were not visible in (A) are now visible in (B).

# Microplastics in an Estuarine Fish



# What Can We Do?



- Invest in reusable shopping bags, stainless steel water bottles, reusable coffee cups
- Don't bag produce, wash it before use
- Request no lids or straws when ordering beverages
- Read labels on personal care products (polyethylene)
- Pick up litter (Marine Debris Tracker App)
- Volunteer to participate in beach/lake/river cleanups
- Bag your trash before putting it in the bin
- Close the bin lid



NATIONAL

# New Orleans Hopes 'Gutter Buddies' Will Keep Mardi Gras Beads Out Of Storm Drains

February 12, 2018 · 6:50 PM ET

TEGAN WENDLAND

EVIE STONE

FROM **wwno**

Mardi Gras beads strewn on a New Orleans street.

Gerald Herbert/AP

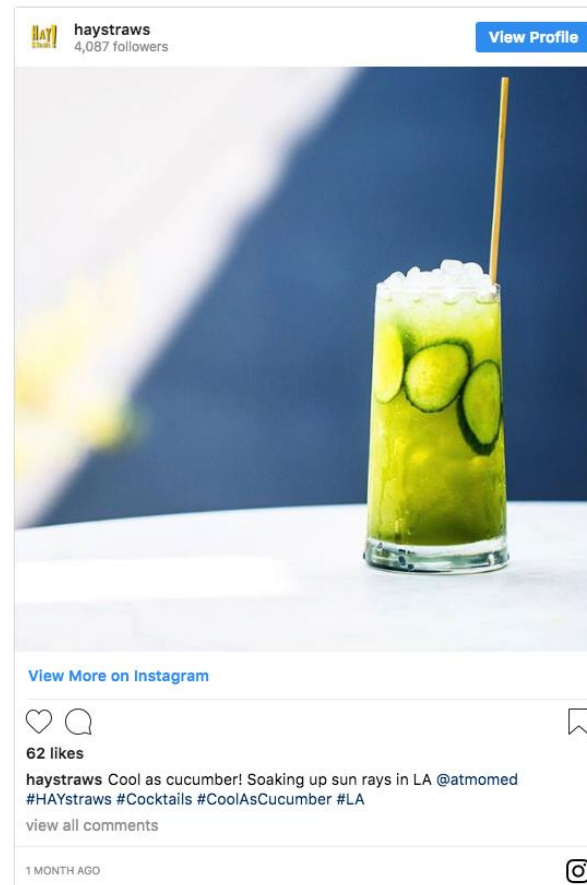
# The first Baton Rouge bar to switch from plastic straws is...

DIG DIG Staff 1 month ago

Hats off to you, The Station Sports Bar & Grill!

According to [WAFB](#), The Station believes that they are the first bar in the city to switch to totally biodegradable straws. While it may be the first local bar to make the switch, The Station follows other companies like Disney and Starbucks who have started the switch this year.

The Station will be using [HAY! Straws](#), which are made from wheat stems and 100% biodegradable.





# THE LITTER INSTITUTE

LOUISIANA STATE UNIVERSITY







When *Fear the Walking Dead* set designers were asked what they did to transform Los Angeles into a post-apocalyptic wasteland.



They said, “We just picked up some of the trash.”

Thank You!



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