

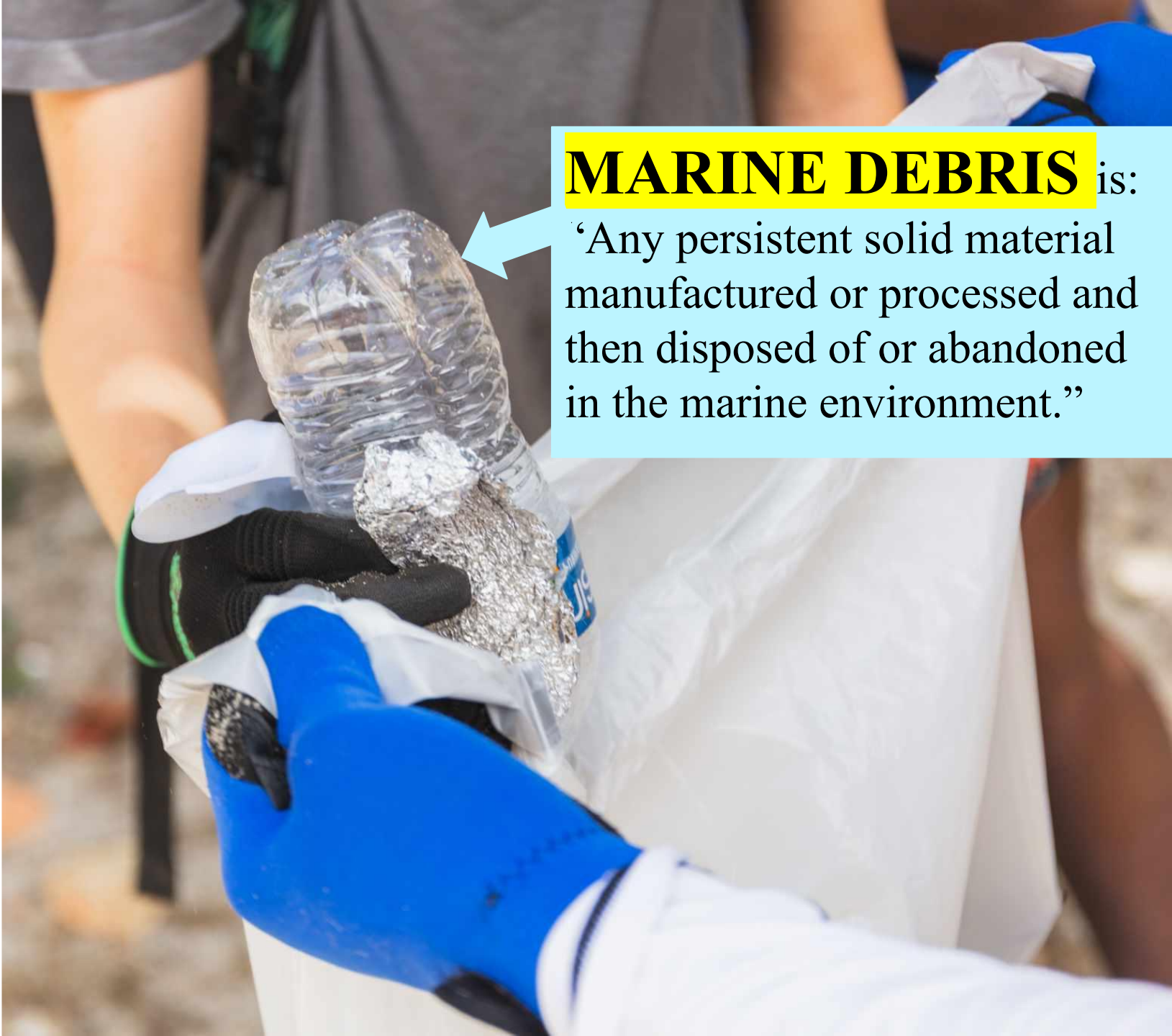
MARINE DEBRIS

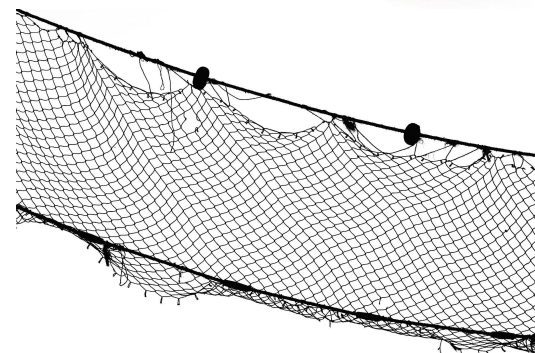




MARINE DEBRIS is:

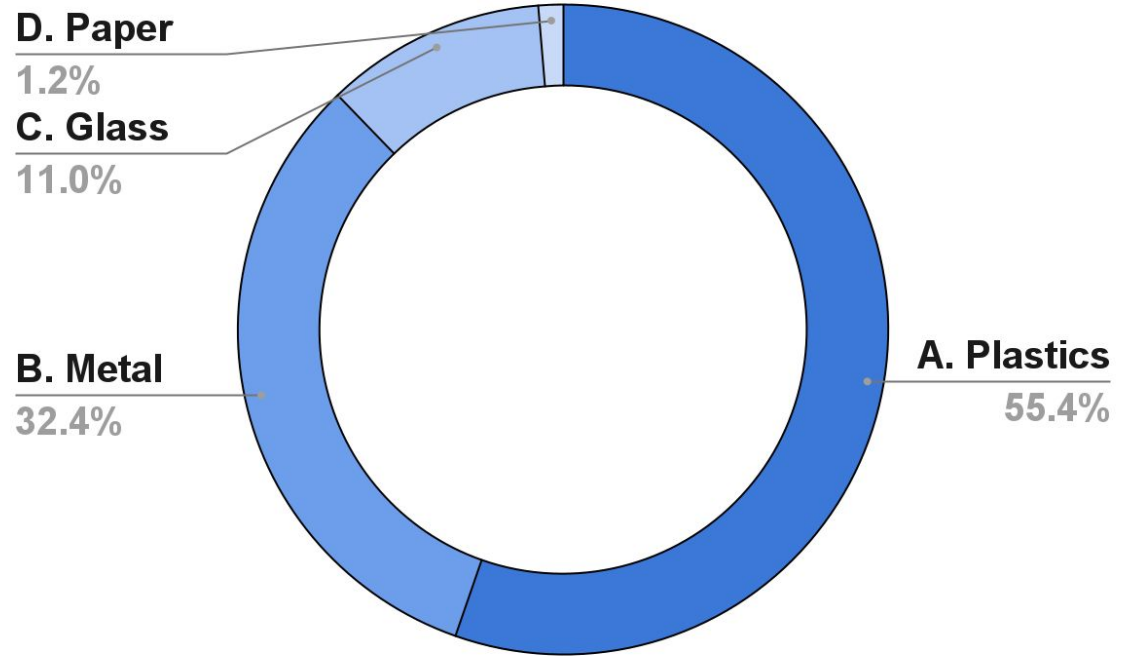
“Any persistent solid material manufactured or processed and then disposed of or abandoned in the marine environment.”





2022 Coastweeks Trash Composition

55% was
plastic waste





When plastics are exposed to sunlight,

PHOTO-DEGRADATION

takes place and causes the plastic to become brittle and can easily break into smaller, and smaller pieces.



*These smaller pieces called **MICROPLASTICS** will never go away and also have negative impacts on the environment and life on Earth.*

ABANDONED or DERELICT VESSELS (ADV)

“**derelict**” often refers to vessels that are neglected with an identifiable owner, while “**abandoned**” vessels are those where the owner is unknown or has surrendered rights of ownership.





*How **BIG**
is your
plastic
footprint?*

*Algalita Marine Research Foundation
Graphic by Raybird Design Copyright 2010*



90% of all marine debris in the USVI comes from land-based sources.

*Studies show that a person's likelihood to litter **increases** based on the distance to the nearest trash receptacle.*





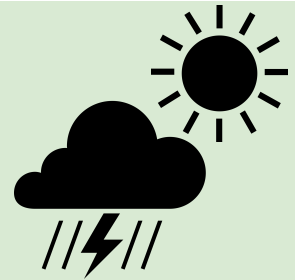
Some trash is properly disposed of; however illegal dumping is still an on-going issue in the USVI.



Animals can tear open plastic bags containing trash thus making it easier for the trash to enter the environment.



Rain and other weather impacts like hurricanes can aid in the transport of trash.



*Rain can transport trash to a **STORM DRAIN** where it can enter the ocean.*



Trash found in the marine environment is easily transported by **OCEANIC CURRENTS** and weather impacts like **TSUNAMIS**.

Some plastics will degrade into microplastics and incorporate into one of the six ocean garbage patches.

GYRE - Large, circulating ocean current.



Some plastics sink and remain on the ocean floor indefinitely.

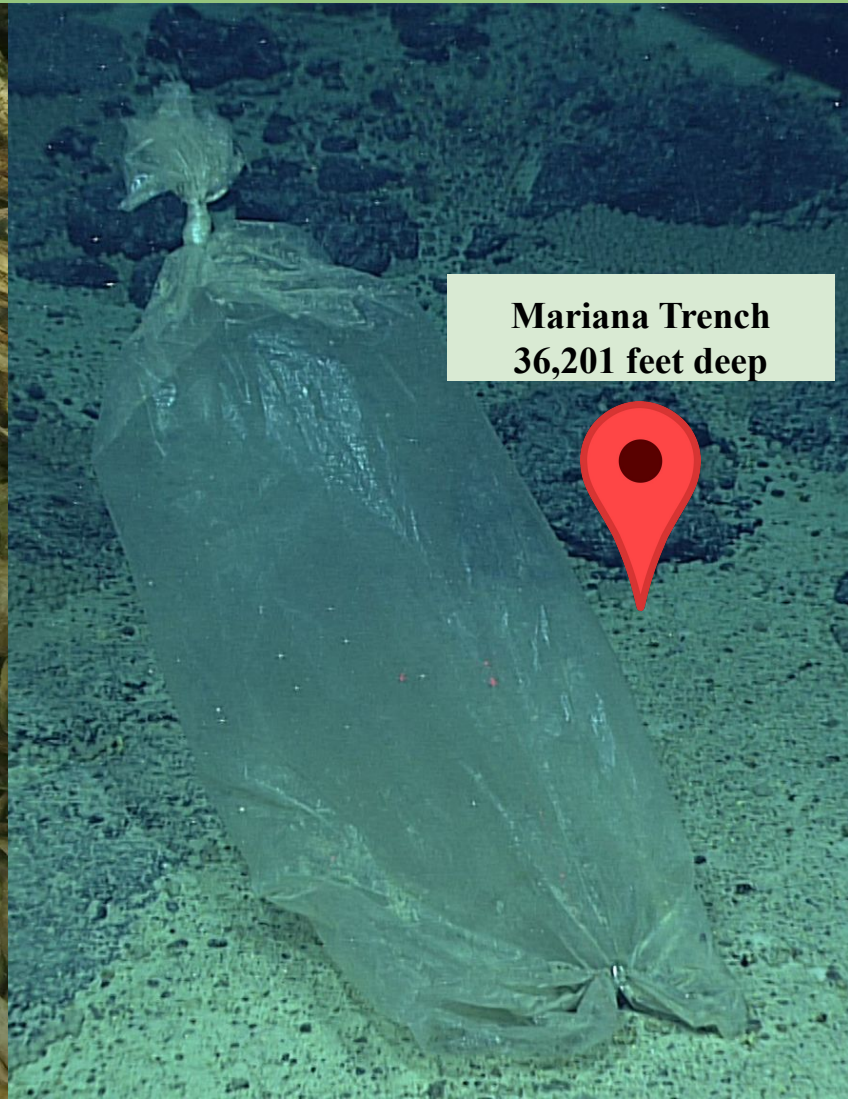
8 MILLION metric tons of plastic waste enters our oceans annually.



No place on Earth is too remote that it hasn't yet been touched by the negative effects of **PLASTIC POLLUTION (MARINE DEBRIS)**.



Neltebergh ghut,
St. Thomas



Mariana Trench
36,201 feet deep

HOW LONG UNTIL IT'S GONE?

Estimated decomposition rates of common marine debris items



Estimated individual item timelines depend on product composition and environmental conditions.

Source: NOAA (National Oceanic and Atmospheric Administration), US / Woods Hole Sea Grant, US
Graphics: Oliver Lüdt / Museum für Gestaltung Zürich, ZHdK

The inherent design of plastics to be **PERSISTENT** is also why they can have far-reaching, negative impacts when they are disposed of improperly.



Wildlife



Humans



Economy



ENTANGLED



TRANSPORT

INGESTION

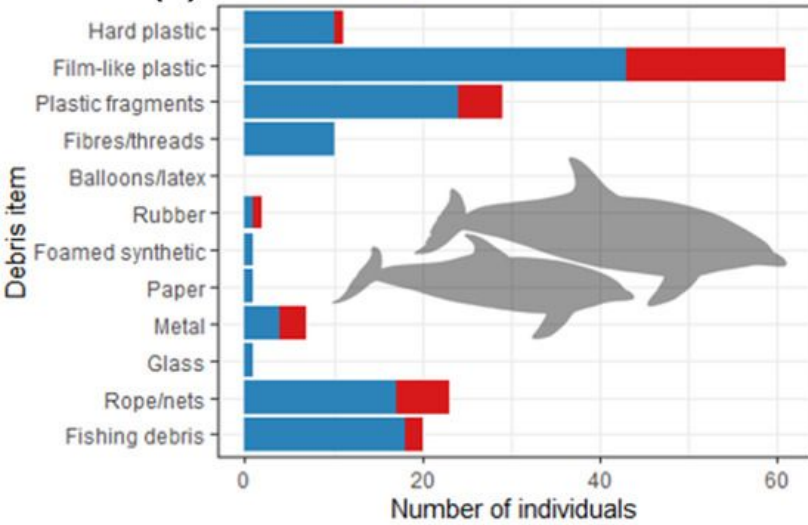


GHOST TRAPS

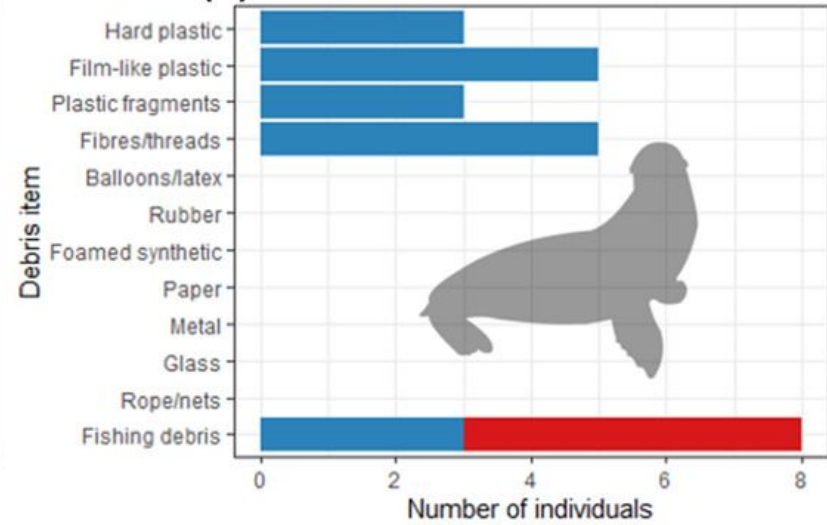


Most marine debris can be problematic if ingested; however, **PLASTICS** account for more animal deaths than other types of marine debris.

(a) Cetaceans

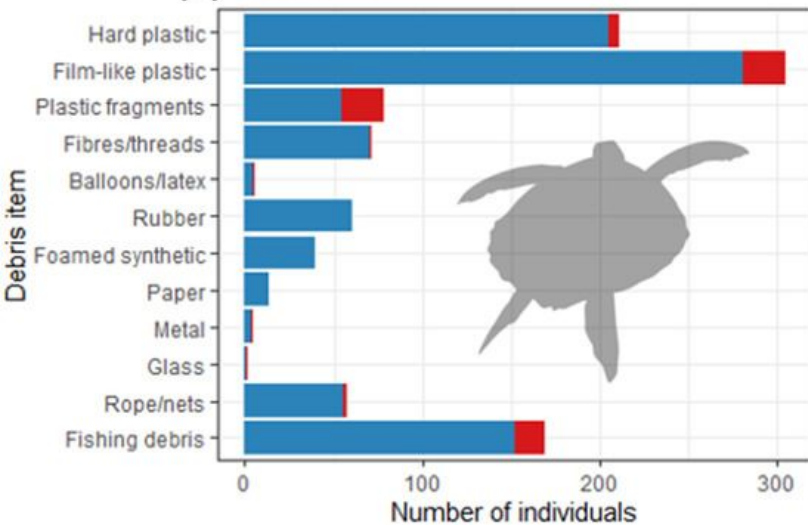


(b) Pinnipeds

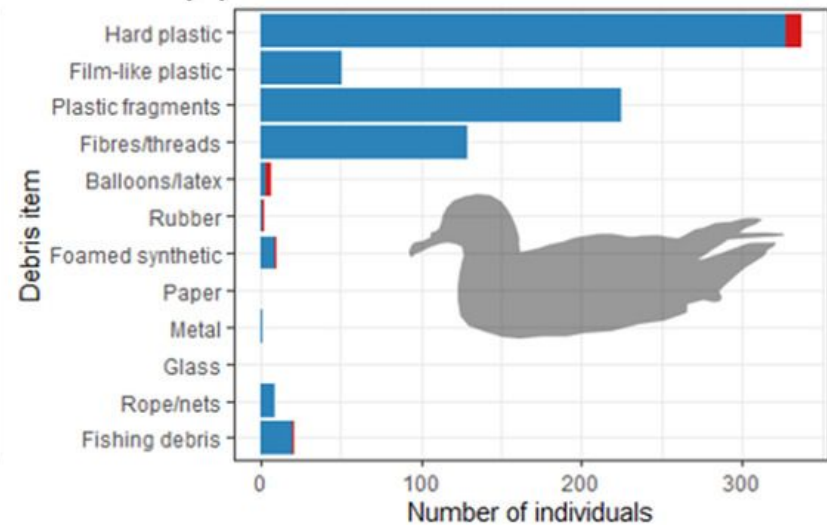


COD
■ Item caused death
■ Item present

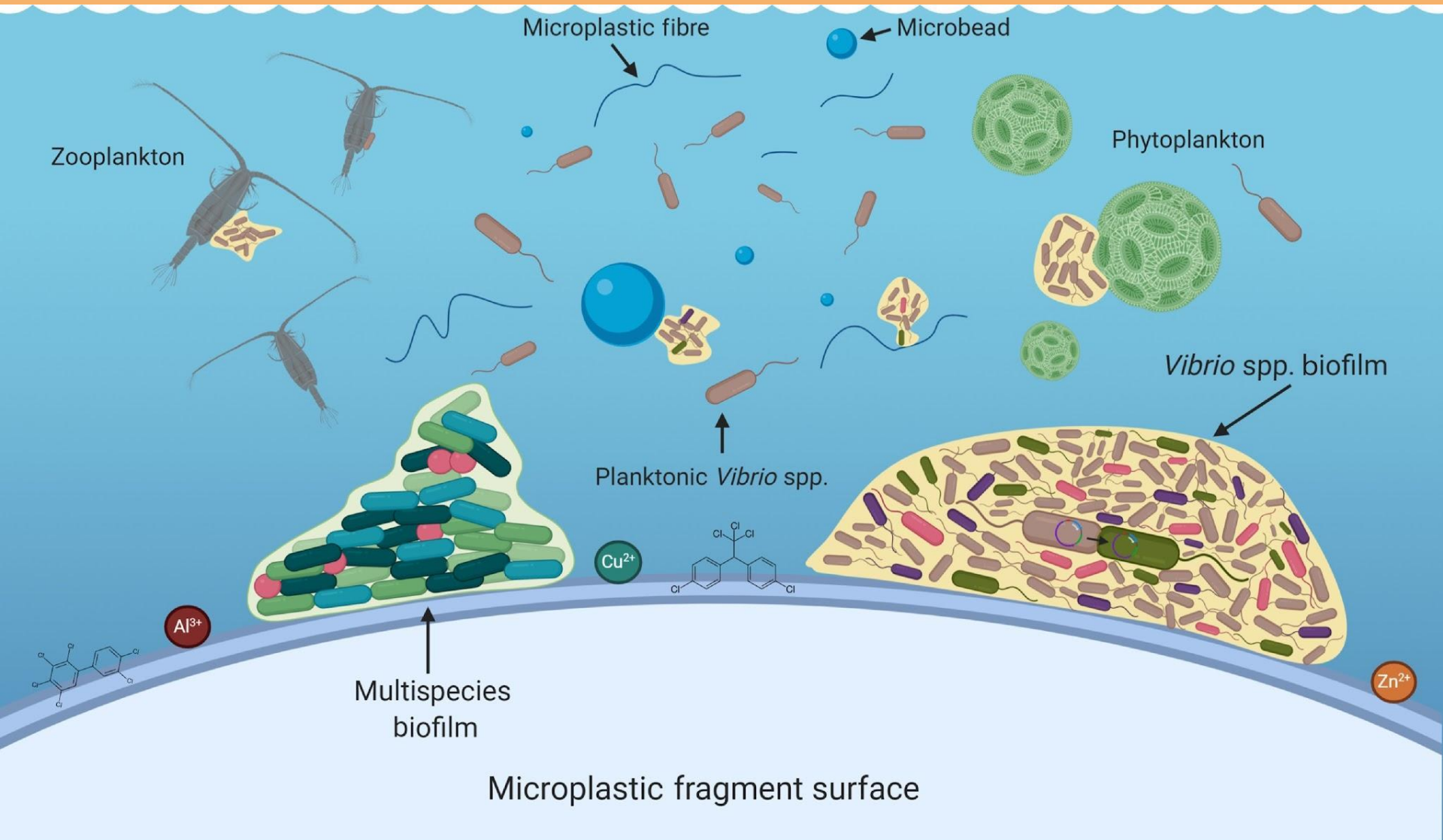
(c) Sea turtles



(d) Seabirds

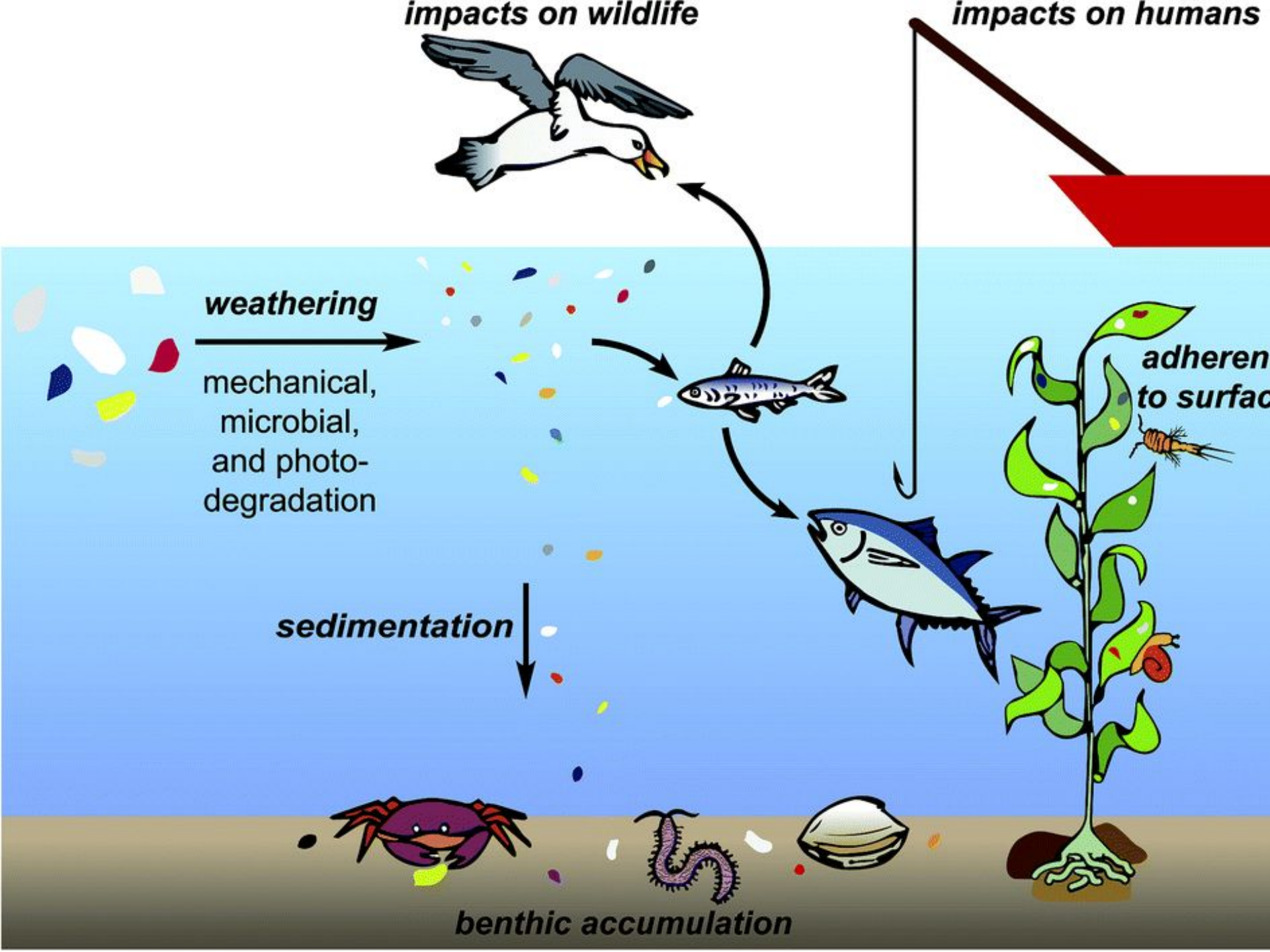


The surfaces of **MICROPLASTICS** can be covered in various substances such as bacterial biofilm, heavy metals, and viruses.



impacts on wildlife

impacts on humans



weathering

mechanical,
microbial,
and photo-
degradation

sedimentation

benthic accumulation

**adherent
to surface**

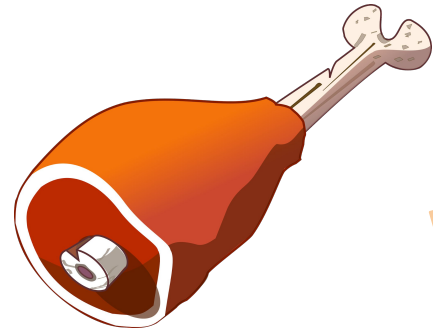
Scientists collected fecal samples from humans with varying diets. **ALL** fecal samples, no matter the diet, contained **MICROPLASTICS**.



VEGETARIAN



PESCETARIAN



CARNIVORE



Plastics are made from **PETROLEUM** with other additives that increase its rigidity or make the plastic resistant to fire.

Many of these chemicals are linked to diseases.



Phthalates - Added to plastics to make them more flexible.
Endocrine disruptor.

BPA/BPB (bis-phenol) - Added to plastics to harden them.
Affects multiple organs, cancer causing.

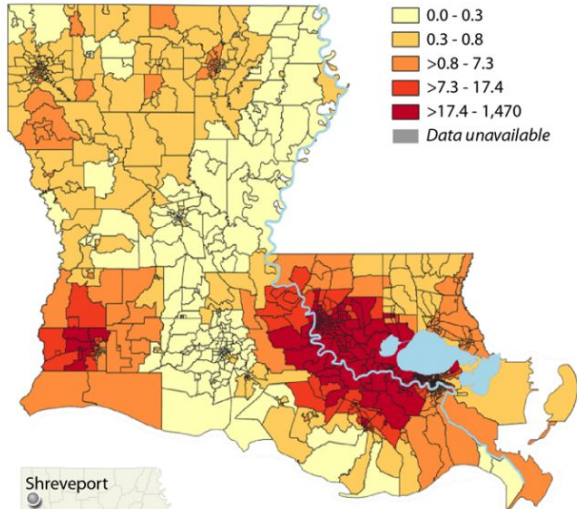
PVC (polyvinyl chloride) - Added to plastics to increase strength. Has both short-term and long-term health risks.

Louisiana's Toxic Air

Tapping data from the Environmental Protection Agency's National Air Toxics Assessment, researchers from the Tulane Environmental Law Clinic mapped cancer risks in Louisiana.

LOUISIANA ESTIMATED CANCER RISK

From point sources of pollution, excess cases per million population, 2014



Louisiana's industrial corridor—the so-called "Cancer Alley"—includes Iberville, Ascension, Assumption, East Baton Rouge, St. John the Baptist, St. James, Jefferson, St. Charles, St. Bernard and Orleans parishes.

SOURCES: Tulane Environmental Law Clinic; ESRI; EPA

Inside Climate News



Cancer Alley, Louisiana

85-mile stretch of land with over **200 petrochemical plants and refineries** mostly located near low-income communities.

Rates of cancer in this area far exceed the thresholds set by the federal government.

United States, Virgin Islands

Economy is largely driven by **TOURISM**. Beaches littered with debris is unsightly for everyone.

Natural disasters (which we are prone to) exacerbate existing marine debris issues and challenges.

Such as the on-going issues with each island's **LANDFILL** to include fires, EPA citations, carrying capacity, and limited waste diversion programs.





Beach cleanups are ideal at removing trash before it enters the marine environment.

DATA should be collected.



TRASH COLLECTED

Citizen scientist: Pick up all trash and record all items you find below. No matter how small the items, the data you collect are important for Trash Free Seas.*

EXAMPLE: Plastic Bags: = **8** **TOTAL #**

Please **DO NOT** use words or check marks. Only **numbers** are useful data.

MOST LIKELY TO FIND ITEMS:		TOTAL #
Cigarette Butts:	=	
Food Wrappers (candy, chips, etc.):	=	
Take Out/Away Containers (Plastic):	=	
Take Out/Away Containers (Foam):	=	
Bottle Caps (Plastic)	=	
Bottle Caps (Metal)	=	
Lids (Plastic) :	=	
Straws/Stirrers:	=	
Forks, Knives, Spoons:	=	
Beverage Bottles (Plastic):	=	
Beverage Bottles (Glass):	=	
Beverage Cans:	=	
Grocery Bags (Plastic):	=	
Other Plastic Bags:	=	
Paper Bags:	=	
Cups & Plates (Paper):	=	
Cups & Plates (Plastic):	=	
Cups & Plates (Foam):	=	

FISHING GEAR:	TOTAL #	PACKAGING MATERIALS:	TOTAL #
Fishing Buoys, Pots & Traps:	=	6-Pack Holders	=
Fishing Net & Pieces:	=	Other Plastic/Foam Packaging:	=
Rope (1 yard/meter = 1 piece):	=	Other Plastic Bottles (oil, bleach, etc.):	=
Fishing Line (1 yard/meter = 1 piece):	=	Strapping Bands:	=
		Tobacco Packaging/Wrap:	=

OTHER TRASH:	TOTAL #	PERSONAL HYGIENE:	TOTAL #
Appliances (refrigerators, washers, etc.):	=	Condoms:	=
Balloons:	=	Diapers:	=
Cigar Tips:	=	Syringes:	=
Cigarette Lighters:	=	Tampons/Tampon Applicators:	=
Construction Materials:	=		
Fireworks:	=		
Tires:	=		

TINY TRASH LESS THAN 2.5CM:	TOTAL #
Foam Pieces	=
Glass Pieces	=
Plastic Pieces	=

2.5cm
(actual size)

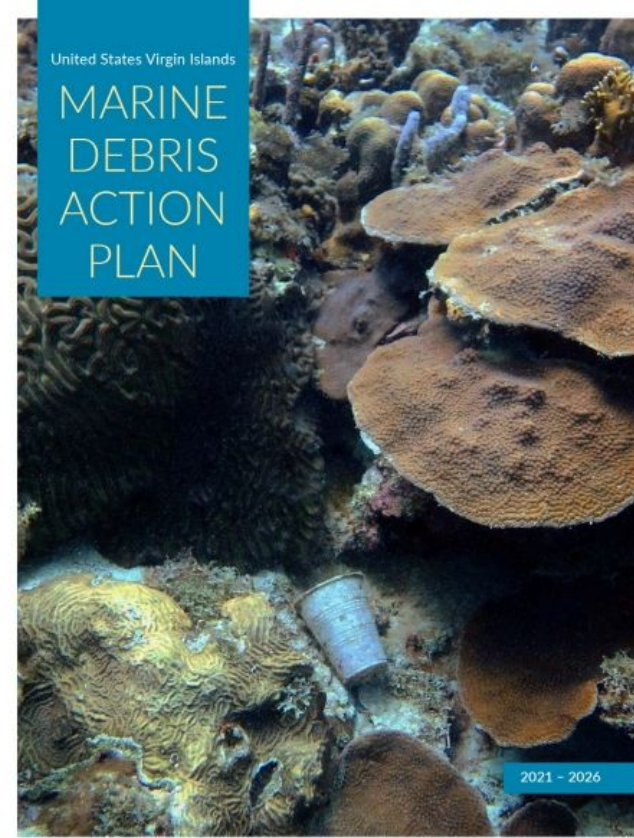
DEAD/INJURED ANIMAL	STATUS	ENTANGLED	TYPE OF ENTANGLEMENT ITEM
	Dead or Injured	Yes or No	

ITEMS OF LOCAL CONCERN:

1. _____ 2. _____ 3. _____

CLEANUP SUMMARY (circle units)

Number of Trash Bags Filled: Weight of Trash Collected: lbs/kgs Distance Cleaned: miles/km



Data can be used to:

- 1) Help visualize **TRENDS** about marine debris.
- 2) Support **LEGISLATION** to address marine debris.
- 3) Support the creation of **MANAGEMENT PLANS** aimed at mitigating marine debris-related issues.



Use products that are **REUSABLE** / sustainable. Sometimes, this may mean purchasing products with better packaging options.



All beverage brands listed above are owned by Coca Cola.

The same Coca Cola that in the 1990s, set itself a target of reaching 25% recycled content in their products. More than 30 years later that figure is still only 10%

*As consumers, you can vote with your dollars by **REFUSING** to support companies that continue to place corporate greed over the environment.*



Be mindful of
GREENWASHING
and/or **BIOPLASTICS**.

Greenwashing: When an organization spends more time and money on marketing itself as environmentally friendly than on actually minimizing its environmental impact.

Bioplastics: Plastics made with reduced or no petroleum. Some of these are marketed as compostable; however, they can only be composted in industrial-scale composting facilities which the USVI has none.



RAISE AWARENESS of the issue through:

- 1) The use of public art to bring the issue to life.
- 2) Writing to your local senator.
- 3) Joining an Environmental Club.



Support existing **RECYCLING** efforts.

The USVI Glass Recovery Program recycles glass beverage bottles back into sand which can be used for a number of applications to include sandbags, aggregate for concrete and asphalt, sand blasting, non-structural concrete, landscaping, and water filtration.



TRIVIA - Let's See How Much You Remember

- 1. What is marine debris?**
- 2. What percentage of marine debris in the USVI comes from land-based sources?**
- 3. TRUE or FALSE: Microplastics do NOT affect human health.**
- 4. Name 2 things you can do today to reduce marine debris.**