

Welcome Back!





Last Week!

→ Threats to Wetlands

- ◆ Sea level rise
- ◆ Decrease in biodiversity
- ◆ Superfund Sites

→ Threats to Coral Reefs

- ◆ Sea level rise
- ◆ Decrease in biodiversity
- ◆ Invasive species

→ Threats to Mangroves

- ◆ Sea level rise
- ◆ Deforestation, development

→ Threat to all three:

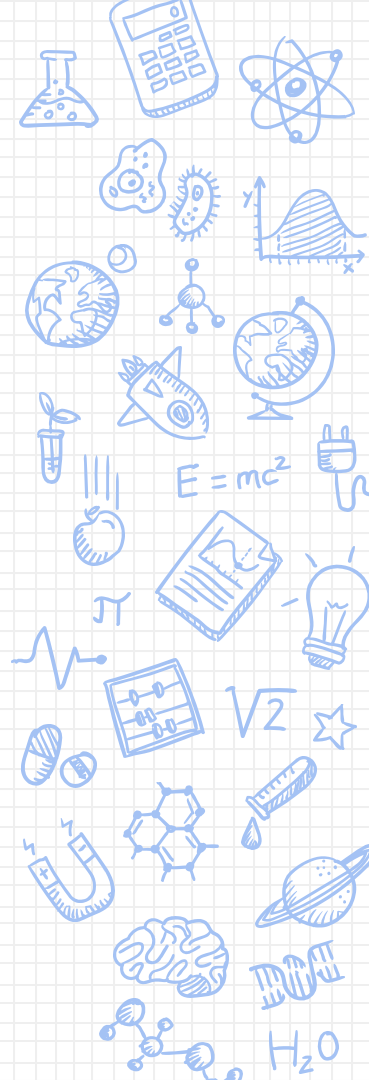
- ◆ MARINE DEBRIS
- ◆ Trashy Timeline: How long to break down specific items





Activity: Two Truths and A Lie

- Wetlands can migrate inland as the sea level rises
- Invasive species do not have natural predators like indigenous species do
- Mangrove capture store carbon in their roots





Let's Talk Trash

- Think about a time you visited a beach, the water, a river, or a stream.
- Did you see any trash, how much?



The Wayward Life of a Plastic Bag





Where Can You Find It?

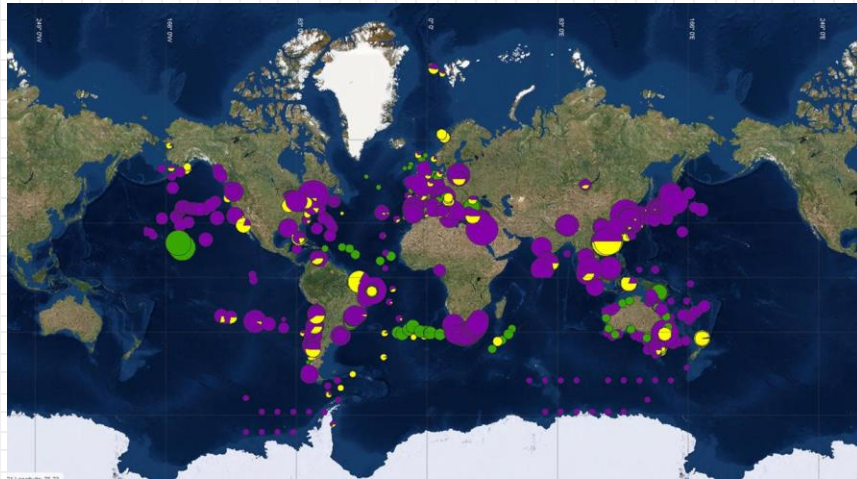
- Marinas
- Beaches
- Inlets
- Underwater
- Above water
- Currents
- Rivers
- Gyres
- **EVERYWHERE**





Why Do We Find Debris Everywhere?

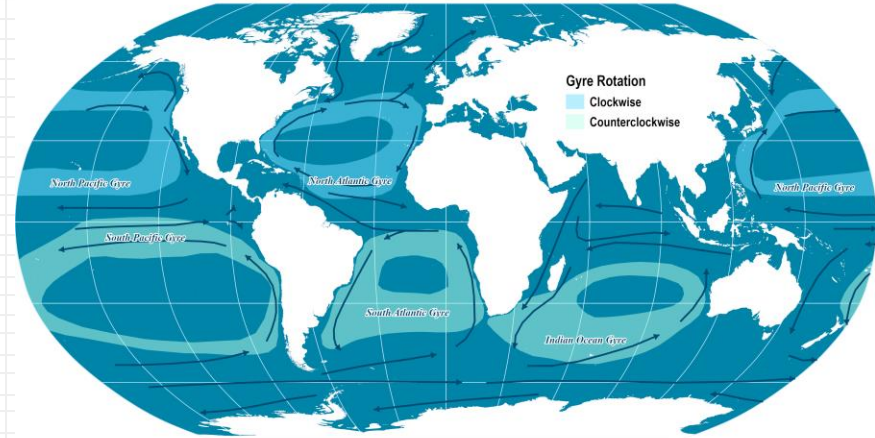
- Many pieces of debris have a positive **buoyancy**
- The more buoyant an object is, the farther it can travel in the water!
- What items are buoyant?





What is Marine Debris?

- Anything man-made that ends up in the marine environment
- 80% of marine debris comes from land-based sources
- Transported by runoff, wind, gyres, or dumping



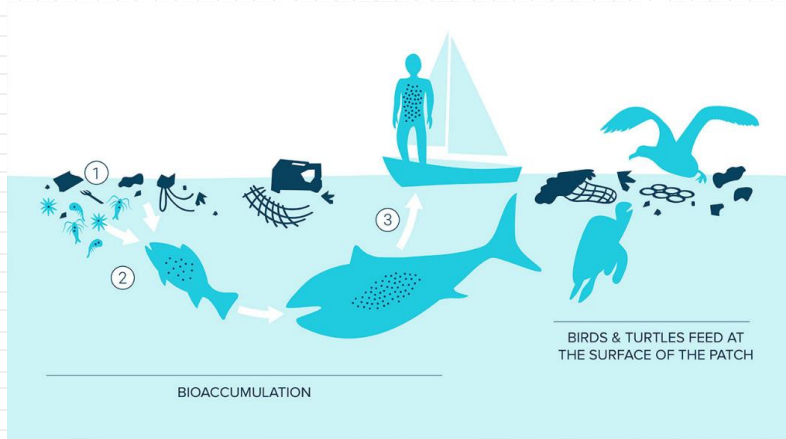


Does Marine Debris Impact Wildlife?





How is Marine Wildlife Impacted?



- Mistaking debris for food causes malnutrition and starvation
- Trapped in fishing line or beverage containers
- Toxic materials can build up in species – **bioaccumulation**
- Debris has been found in the stomachs of plankton
 - What impact could this have?



Are Humans Impacted?

- Seafood economy is damaged
- Tourism decreases
- Navigation hazards

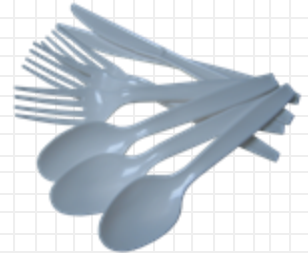




Top 10 Items Collected

What do you think the top 10 items collected are?

1. Cigarette butts
2. Food wrapping
3. Plastic beverage bottles
4. Plastic bottle caps
5. Straws and stirrers
6. Plastic bags
7. Plastic grocery bags
8. Glass beverage bottles
9. Other beverage cans
10. Plastic cups and plates





The Good News: A Global Effort

- **Banned Styrofoam:** European Union, Maine, Costa Rica
- **Banned Single-Use Plastic Bags:** California, Connecticut, Oregon, European Union, Columbia, and many more!
- **Banned Plastic Straws:** Miami, Malibu, Seattle, Scotland, Taiwan

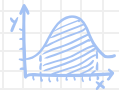




How Can You Help?

- **Advocate!**
 - Speak up about the importance of the ocean to your local officials and other leaders
- **Educate!**
 - Share with your friends and family ways to protect the marine environment
- **Activate!**
 - Conduct a beach or waterway clean up
 - Volunteer with a local organization





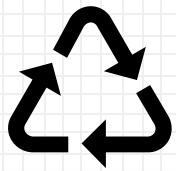
A Way To Help: Beach Cleanup Tips!





How Can You Help? The 5 R's

- **Refuse** what you do not need
- **Reduce** what you do need
- **Reuse** what you consume
- **Repurpose** what you can not refuse, reduce or reuse
- **Recycle** what you can not refuse, reduce, reuse, or repurpose





How Can You Help? Examples!

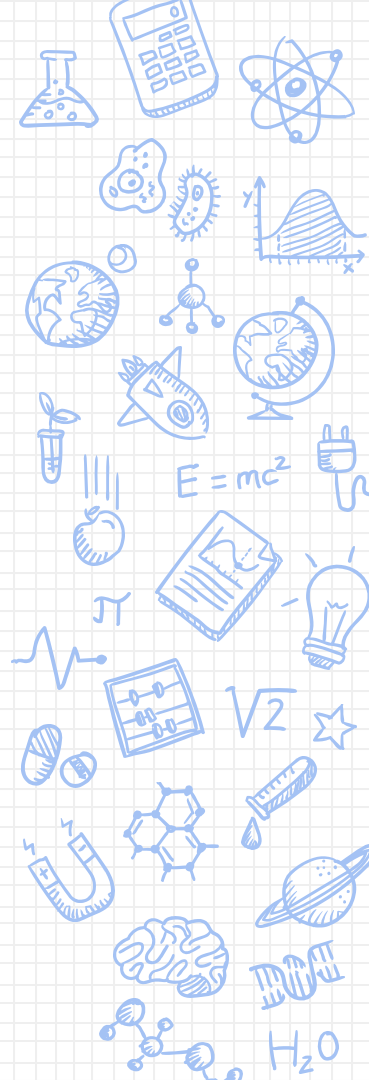
- **Refuse** single-use plastics like plastic bags, cups, bottles, and containers
- **Reduce** using non-recyclable products. This prevents them from entering landfills which ultimately lead to the water
- **Reuse** products like a reusable water bottles, utensils, and bags
- **Repurpose** items by finding a new way to use them!
“Upcycling”
- **Recycle** items properly and dispose of them in their proper places!





Summary of Lesson 5

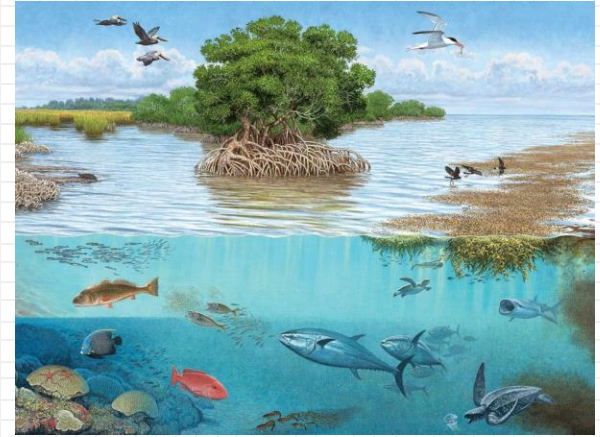
- What is affecting the marine environment?
 - Climate Change: rising sea level, ocean acidification, rising temperatures
 - Pollution
- How can you help protect the marine environment?!
 - The 5 R's
 - Conduct your own beach clean up
 - Make small choices like using reusable water bottles, or reusable bags





Review!

- What is an ecosystem?
 - Food webs and chains
- Coastal habitats
 - Wetlands, Coral Reefs, Mangroves
- Adaptations!
 - Behavioral, Structural, and Physiological
- Importance & Threats to Coastal Habitats
- Solutions - Change One Habit, Change the World!





Survey Questions in the Chat!

- 1) I know how energy flows through an ecosystem.
[Yes or No]
- 2) I can list 5 species that live in either a wetland, coral reef or mangrove habitat.
[Yes or No]
- 3) I can identify 3 environmental important functions of coastal habitats.
[Yes or No]
- 4) I know one positive change I can make to protect coastal habitats.
[Yes or No]

THANK YOU!

