

Welcome Back!





Last week!

- We looked at three distinct **coastal habitats**
 - ◆ **Wetlands**
 - ◆ **Coral Reefs**
 - ◆ **Mangroves**
- Each habitat hosts a variety of species - **biodiversity**
- In order for organisms to thrive in these habitats they have unique **adaptations**
 - ◆ **Wetlands:** Able to survive in salt water at various times with little oxygen present
 - ◆ **Coral Reefs:** Protection from predators!
 - ◆ **Mangroves:** Strong, salt tolerant roots for structure and support





Solve It – Riddle Review

As we get ready to begin today's lesson, let's try these riddles!

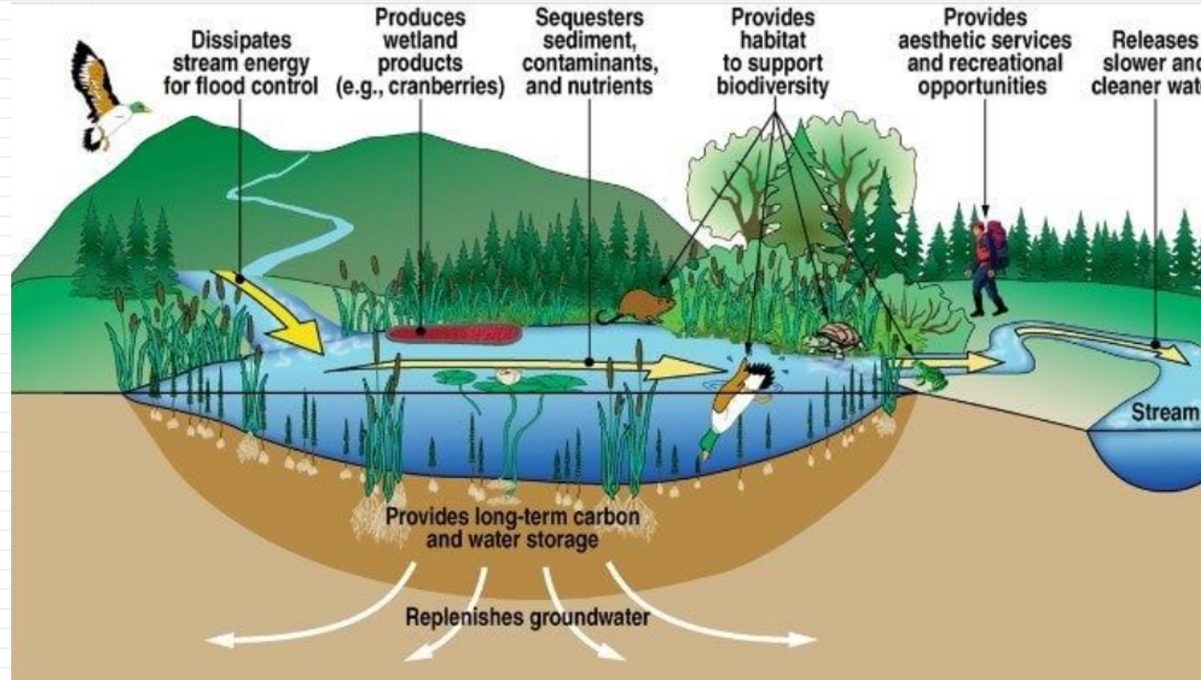
1. I stop by wetlands for food or to rest a bit. I do not live there year round. What am I?
2. I am a type of relationship where both species benefit. What am I?





Wetlands: Environmental Importance

- Protect coastlines from damaging storms
- Purify water
- Provide a habitat for many different species







Wetlands: Protect the Coastlines

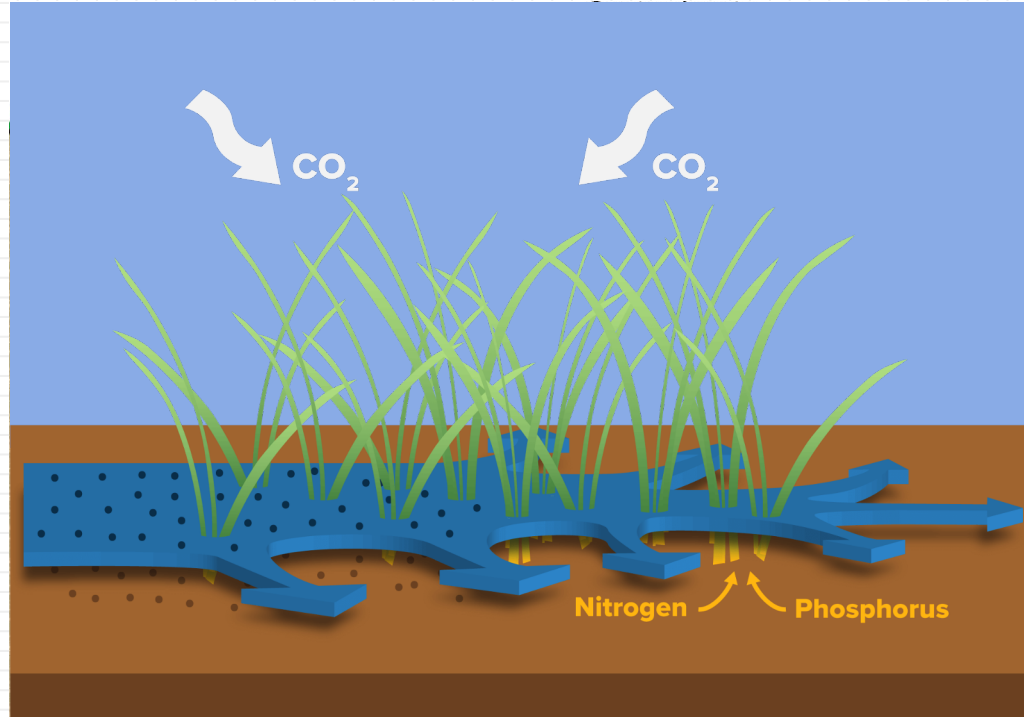
- X Natural defense barrier
- X Soaks up and stores the water
- X Slows wind wave action and storm surges created by tropical storms and hurricanes





Wetlands: Purify Water

- ✗ Wetland plants slow the flow of water
- ✗ Takes up nutrients in its roots
- ✗ Traps sediment
- ✗ Collects and stores carbon





Wetlands: Habitat for Species

- ✗ Highly productive ecosystems
- ✗ 43% of USA's endangered or threatened species' are connected to wetlands
- ✗ Spawning site and nursery for juvenile species



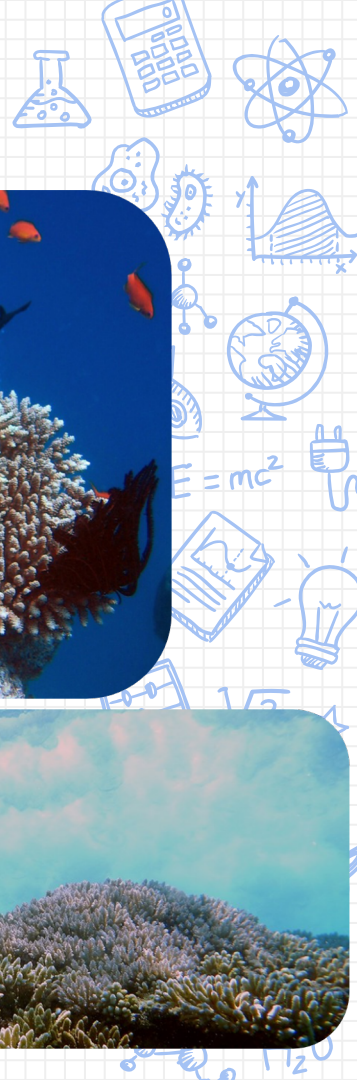


Coral Reefs: Environmental Importance

- Most biologically diverse and complex structure in the marine environment!

Indicator Species: their presence, population size & health tell us the health of the reef!

- ¼ of all marine species depend on coral reefs food and shelter
- Protect coastlines by absorbing storm energy





Coral Reefs: Protection of Coastline

- X Coral polyps build their calcium carbonate exoskeleton - large vertical structures in shallow waters
- X Natural defense to absorb wave energy
- X 90% of wave energy is absorbed by coral reefs!





Coral Reefs: Indicator Species

- ✗ What do you think an indicator species does?
- ✗ Helps determine the health of their habitat!





Coral Reefs: Indicator Species in Action

- X Do you know what this a picture of?
- X Coral bleaching is when coral expel zooxanthellae which make their food
- X Coral are sensitive to changes in temperature, pH, and water quality





Coral Reefs: Biodiversity

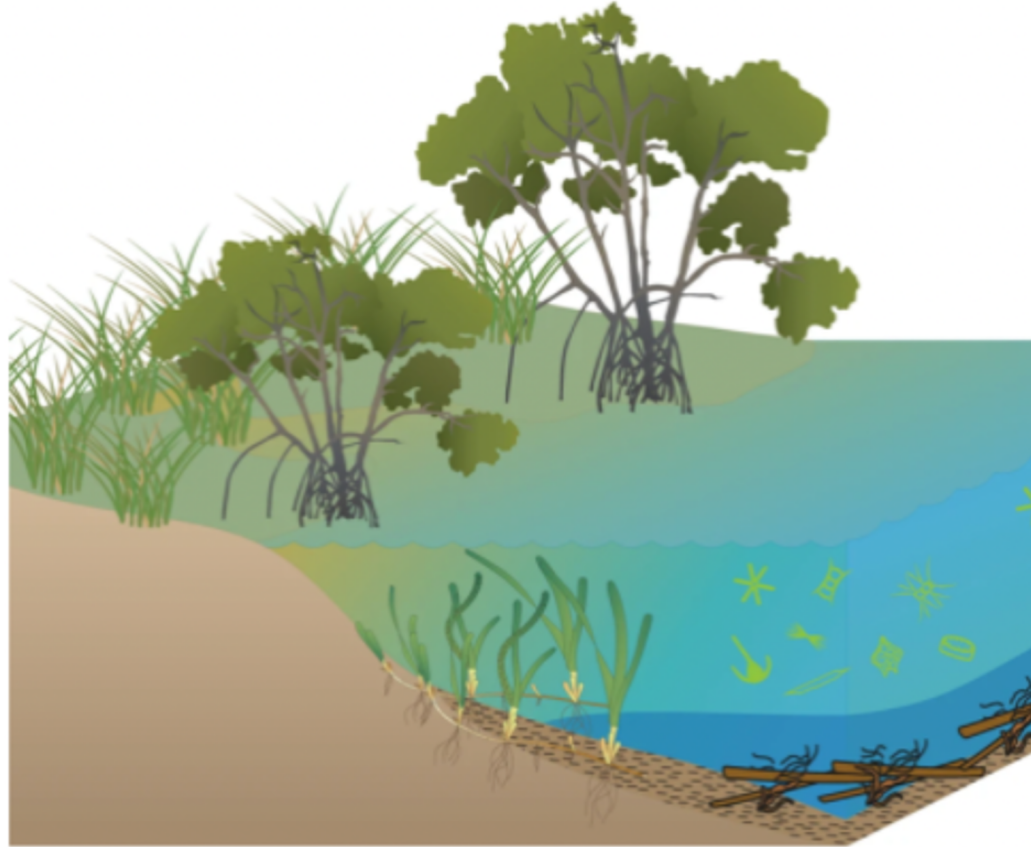
- ✗ Coral reefs are the rainforest of the ocean!
- ✗ 25% of all marine species rely on coral reefs either directly or indirectly for survival





Mangroves: Environmental Importance

- Coastal protection from erosion, storms and waves
- Vital role in food cycles
- Roots capture and hold on to carbon





Mangroves: Protection of Coastline

- ✗ Almost 2 million people live in coastal communities
- ✗ Intricate root systems break wave energy from storms protecting those communities





Mangroves: Vital Role in Food Cycle

- X Leaves fall into the water and are broken down by marine fungi and bacteria into detritus
- X Detritus is organic matter that can be used as food by other organisms – the cycle of life!





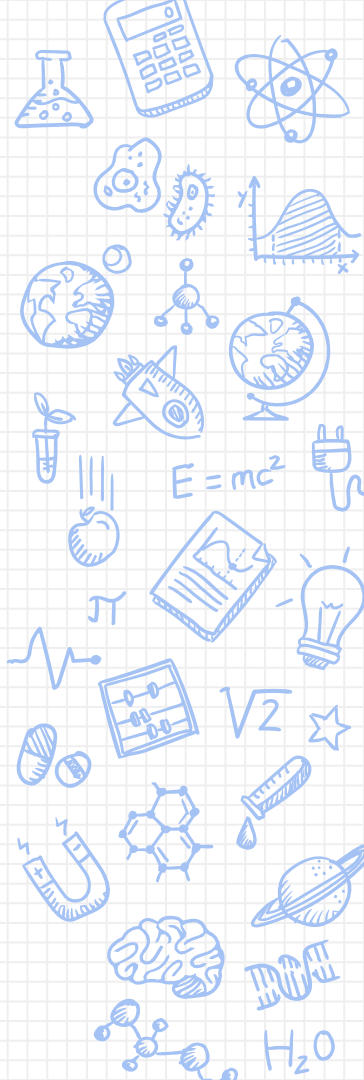
Mangroves: Carbon Sink

- X Mangrove forests cover 75% of tropical coastlines
- X Collect carbon dioxide in their roots and stored, similarly to wetlands





75 BILLION LBS OF
CARBON





Matching: Coastal Habitat Environmental Importance!



I help purify water

**My unique roots
help slow waves
from storms**



**1/4 of all marine species
depend on me for food and
shelter**

Which
description
matches the
coastal habitat?

Coral Reef

Mangrove

Wetland



Summary of Lesson 3

→ **Wetlands:**

- ◆ Coastline protection
- ◆ Purify water
- ◆ Biodiverse habitat

→ Coral Reefs:

- ◆ Coastline protection
- ◆ Indicator species
- ◆ Biodiverse habitat

→ **Mangroves:**

- ◆ Coastline protection
- ◆ Vital role in food cycles
- ◆ Roots capture and hold on to carbon