



# Coastal Ecosystems



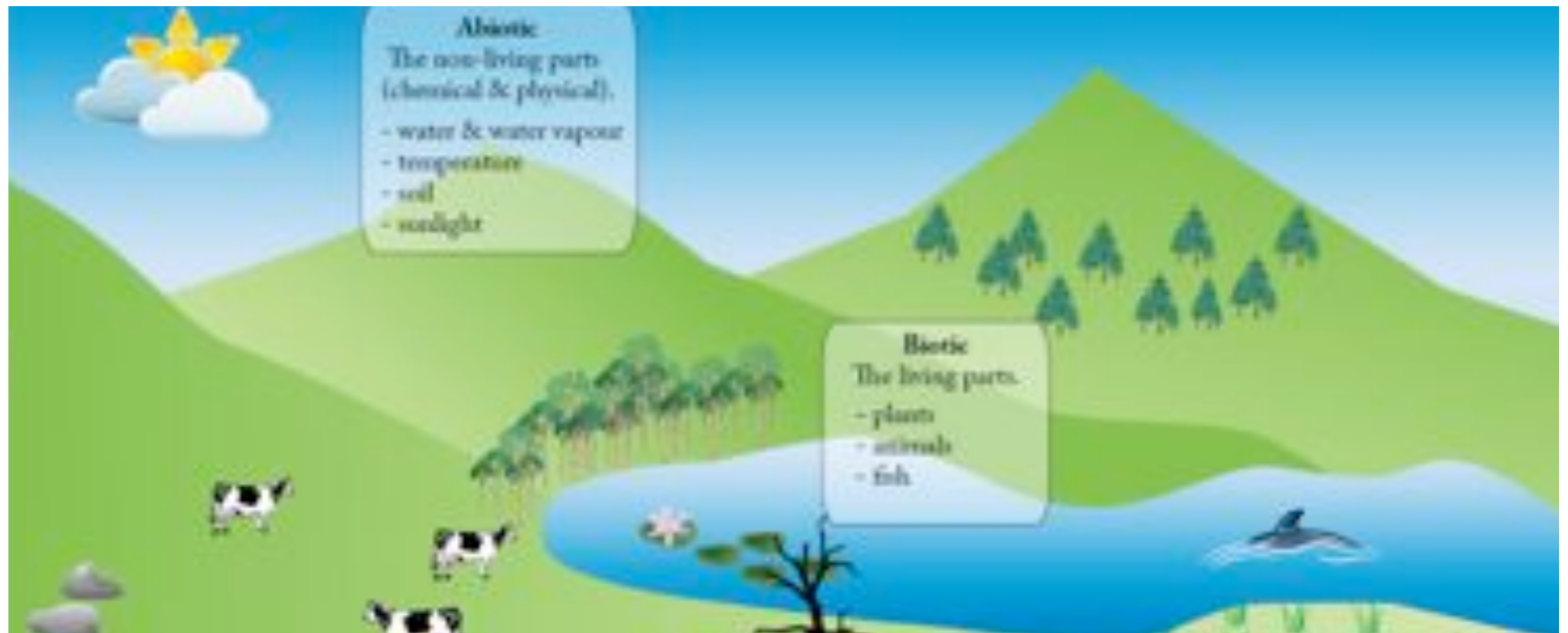
# What is an Environment?

---

An organism's **Environment** is all the living and nonliving things that surround and affect the organism.

Biotic parts are living things in an environment, such as plants, animals, and other organisms.

Abiotic parts are nonliving things in an environment, such as climate, water, soil, light, air, and nutrients.



# What is an Ecosystem?

---



# What is an Ecosystem?

---

An **Ecosystem** is all the organisms living in a place together and interacting with their environment.

An ecosystem can be huge, such as a large forest, or it can be small, such as a mud puddle or a single bush.



# Coastal Ecosystem!

---

**Coastline** - the area where land meets the sea.

**Coastal Ecosystem** - community of interacting organisms and their physical environment at coastlines.



# Types of Coastal Ecosystem

---

- ✓ Mangroves
- ✓ Rocky Shores
- ✓ Sandy Beaches
- ✓ Seagrass Meadows
- ✓ Tidal Creeks



# What to know...

---

- **population** - a group of organisms from the same species that occupy the same area.
- **community** - A community consists of all the populations of various species that live and interact in an area.
- **habitat** - An organism's habitat is the place where it lives within an ecosystem. Several populations share the same habitat. Habitats provide food, water, shelter and space.
- **limiting factors** - environmental factors that limit the growth, abundance, or distribution of a population, there is only enough food, water, shelter, and space to support a certain number of organisms.

# Mangroves

- salt-tolerant, woody trees – really land plants
- flowering plants - with true roots, stems, and leaves

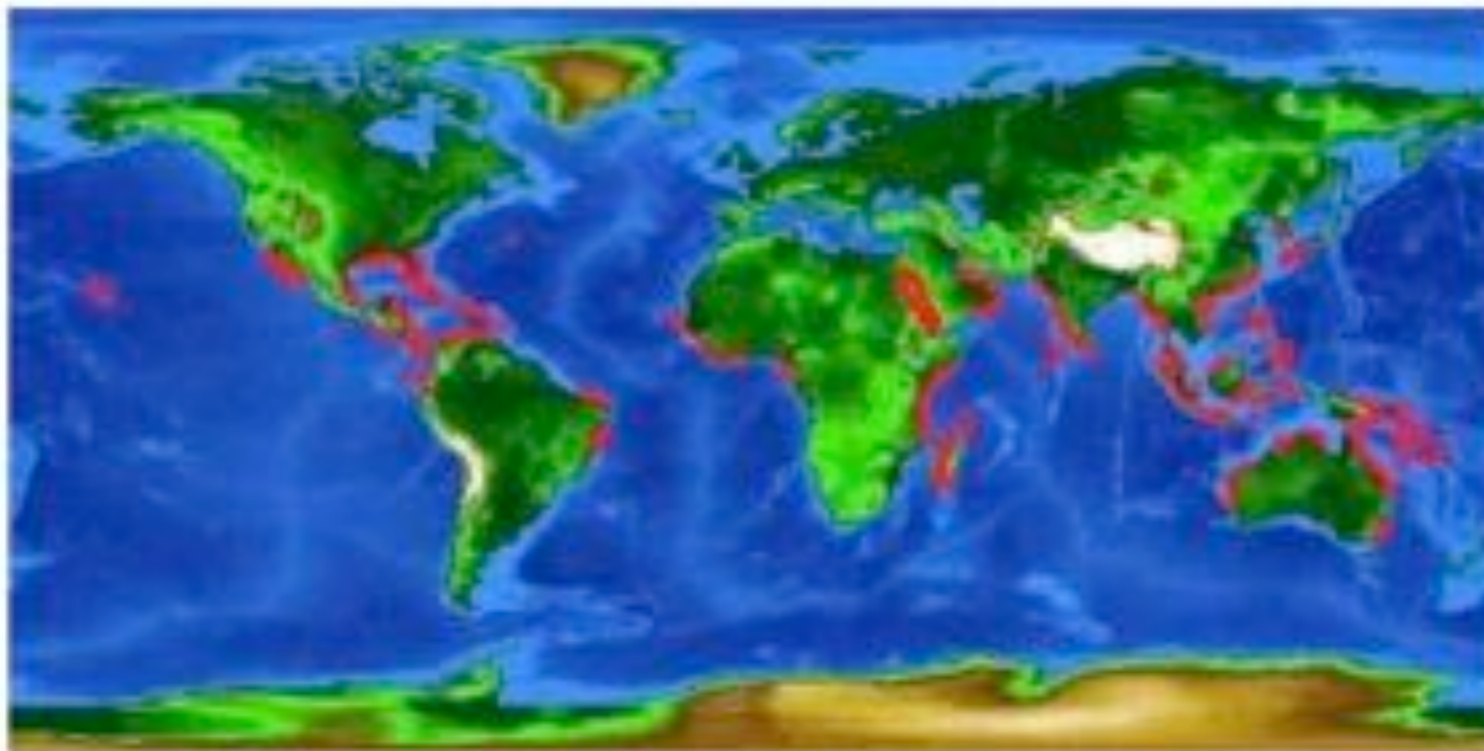




# Mangroves

---

- warm, tropical and sub-tropical regions
- cover 60 – 75% of tropical shores



# Mangroves

---

- salty, muddy water
- anaerobic sediments



# What are the functions of a Mangrove Ecosystem?

---

- Flood Control
- Coastal Protection
- Sediment trap
- Nursery for Marine fisheries
- Habitat for biodiversity
- Climate control and improvement of air quality
- Waste treatment
- Wetland products

## Not to mention:

Natural beauty, heritage, recreation, and education



# Threats to Mangrove Ecosystems

---

## Natural Threats

- Storms
- Disease

## Human-induced threats

- excavation for marinas
- filling for development
- dumping of solid and liquid waste
- physical destruction of mangroves



# Who or what is the main culprit in the destruction of Mangroves?

**Humans**

**Land reclamation and industrial effluences are the main causes for mangroves degradation.**

**Nowadays we prefer...**



**And not...**



# Rocky Shores

---

Rocky shore habitats can withstand intense coastal forces because they are mostly comprised of rocky ledges with boulders and pebbles.

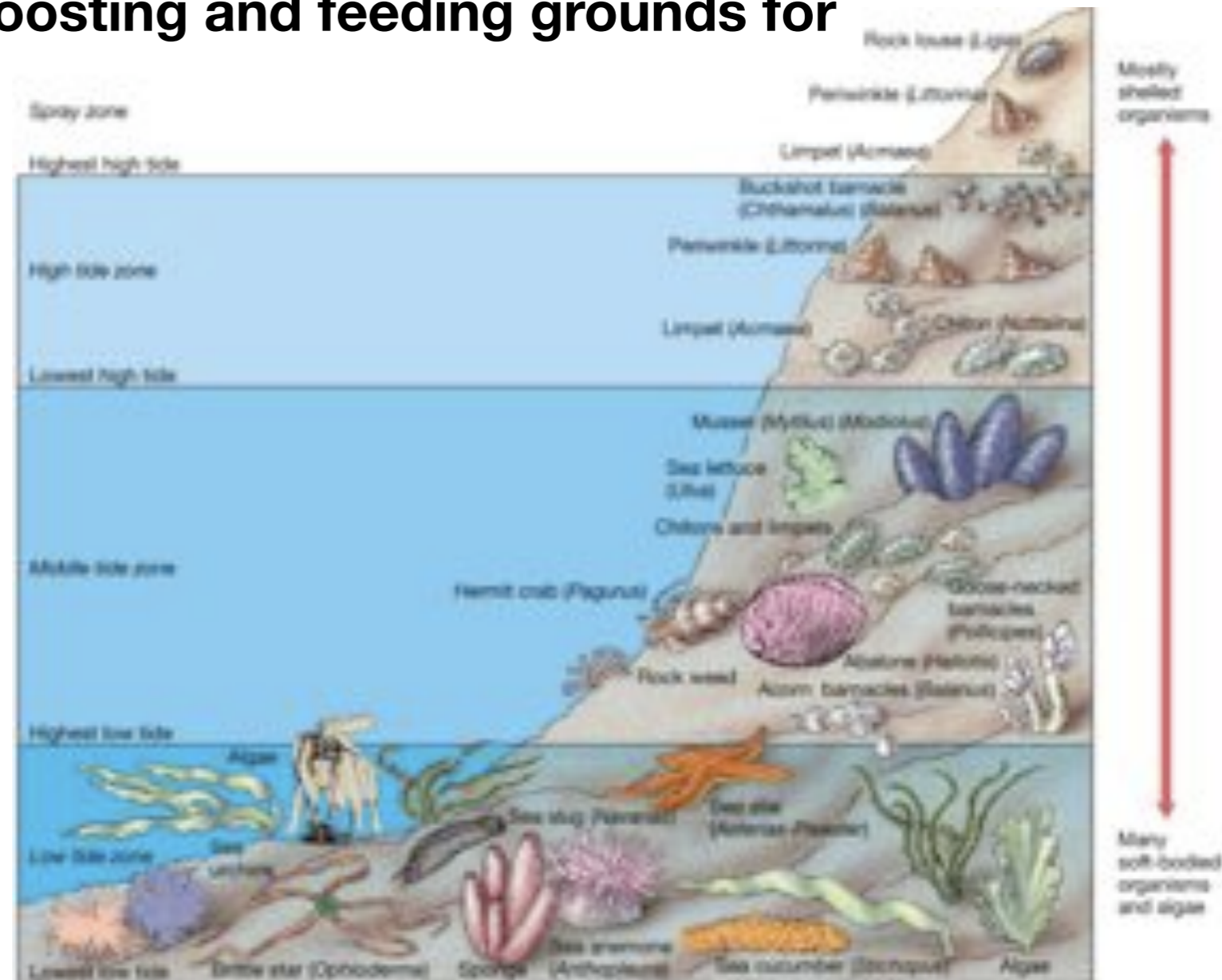
Rocky shores and the animals that live there are subject to constant wave action and the rise and fall of tides.



# What are the functions of a Rocky Shore Ecosystem?

Supporting lots of unusual plants and animals, rocky shores are an important fish nursery as well as roosting and feeding grounds for birds.

- Coastal Protection
- Habitat for biodiversity
- Recreation and Education



# Threats to Rocky Shore Ecosystems

---

- **Pollution**
- **Construction of buildings on these shores**
- **Invasive Plant Species**





# Sandy Beach Ecosystems

---

Sandy beaches provide important habitat for a variety of birds, wildlife and fish that feed on intertidal and sub-tidal invertebrates.



**Can you name animals that use Sandy Beaches?**

# Sandy Beach Ecosystems

---

- Beaches are also widely used for recreational activities.



- **Natural Beauty, Heritage, Recreation and Education.**



# Sandy Beach Ecosystems

---

## Threats to Sandy Beaches

**Same As All Other Coastal Ecosystems!**

- Storms
- Dumping of all kinds of waste and debris
- Invasive Species



# Species Highlight: Piping Plover

---

- One of the most endangered species of shorebird
- Total population is estimated at about 6,510 individuals
- They nest on the East Coast of the United States
- Spend \_\_\_% of their life in The Bahamas



# Species Highlight: Piping Plover

---

- Small shorebird that spends most of their time on sandy beaches or flats
- Piping Plovers eat marine invertebrates like small worms, crustaceans and molluscs. They also like beetles and insect larvae.
- Their colouration allows them to blend in with the sand in order to avoid predators
- Their eggs are laid directly on the sand, usually 4 at a time.

**Breeding Plumage**



**Winter Plumage**



# Species Highlight: Piping Plover

---

How Can We Help?

## Awareness!

When visiting the beach observe them but don't hurt or interfere with them.



# Lets do our part! Protect our Coastal Ecosystems!

---

- The Bahamas is signatory to the Biodiversity Convention. This means that we have pledged to the world to preserve the biodiversity of The Bahamas. The seashore is a fine example of a unique ecosystem with a great variety of flora and fauna.

