**Ecosystems and Communities - The Role of Climate**

**Climate vs. Weather**

**Weather** is the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of Earth’s atmosphere at a particular **\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_**

- The weather in Regina could be sunny and warm one day, and cold and cloudy the next.

**Climate** refers to the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of temperature and precipitation in a particular region.

* Climate is caused by a combination of factors including the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the atmosphere, the **\_\_\_\_\_\_\_\_\_\_\_\_**, the transport of heat by **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, and the amount of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in a region. The shape and elevation of the land also contributes to the local climate and global climate patterns.

**The Greenhouse Effect**

* The gases that are trapped in the atmosphere act like **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in a greenhouse. They cause the heat to stay within the atmosphere. Without the greenhouse effect, the earth would be about **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** cooler on average.

**The Effect of Latitude on Climate**

 Earth is a sphere that is spins on a **\_\_\_\_\_\_\_\_\_\_\_\_** axis, which means that solar radiation strikes different parts of the earth at an angle that **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** throughout the year. At the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,** the sun is directly **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** at noon all year, whereas at the North and South **\_\_\_\_\_\_\_\_\_\_\_\_**, the sun is much **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the sky for months at a time.

As a result of differences in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and thus the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, Earth has three main climate zones:

* **\_\_\_\_\_\_\_\_\_\_\_\_ zones: \_\_\_\_\_\_\_\_** areas where the sun’s rays strike Earth at **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** angle. These zones are near the North and South **\_\_\_\_\_\_\_\_\_,** between **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;** both North and South.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zones:** between the polar and tropical zones. The temperature in these zones ranges from **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, depending on the **\_\_\_\_\_\_\_\_\_\_\_\_**. This depends on the changing angle of the sun over the course of the year.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zones:** the area near the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,** between **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** latitudes. The tropics receive direct or nearly direct sunlight year-round, making the climate **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

**Heat Transport in the Biosphere:**

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** heating of the earth’s surface affects currents in both wind and water; as air and water are **\_\_\_\_\_\_\_\_\_\_\_\_\_** at the **\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** near the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** near the equator tends to **\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** from the poles tends to **\_\_\_\_\_\_\_\_\_\_** toward the ground. The movement of these air masses, along with the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the earth, creates the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* **\_\_\_\_\_\_\_\_\_\_\_\_** currents are affected by the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_,** density, and salinity (saltiness) or the oceans, as well as by the action of **\_\_\_\_\_\_\_\_\_**, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the earth, and the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** on the bottom of the ocean.
* Wind and ocean currents create **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** patterns and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, and have major impacts on the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the world.
	+ The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Circulation is called the Global Conveyor Belt, and in particular it has huge effects on weather and climate around the world.

**What Shapes an Ecosystem?**

**Biotic and Abiotic Factors**

Ecosystems are influenced by a combination of biological and physical factors.

* The biological influences on organisms within an ecosystem are called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
* Biotic factors include **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** things) with which an organism might interact.
* Physical, or **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, factors that shape ecosystems are called **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** factors include:

* + - **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, humidity, wind, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**,
		soil type, sunlight
	+ Biotic and abiotic factors determine the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of an organism and the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the ecosystem in which the organism lives.

**Habitat and Niche**

The area where an organism lives is called its **\_\_\_\_\_\_\_\_\_\_\_\_\_**. A habitat includes both **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** factors.

A **\_\_\_\_\_\_\_\_\_\_** is the full range of physical and biological conditions in which an organism lives and the **\_\_\_\_\_\_\_\_** in which the organism uses those conditions (it’s **\_\_\_\_\_\_\_\_\_\_\_** within the ecosystem).

* The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** that an organism needs to survive and its place in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are part of its niche.
* The combination of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** factors in an ecosystem often determines the **\_\_\_\_\_\_\_\_\_\_\_\_** of different **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in that ecosystem.
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** can share the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the same habitat.
	+ Different species can occupy niches that are **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.

**Community Interactions**

Organisms living in the same ecosystem are constantly **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**. These community interactions can powerfully affect an ecosystem. There are three main types of interactions:

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**
	+ Competition occurs when **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (same or different species) attempt to use an ecological **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** at the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
		- Example: the **\_\_\_\_\_\_\_\_\_** & the great horned **\_\_\_\_\_\_\_\_\_** compete over their prey, the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Principle**: where **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** can compete for the same resources and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the same **\_\_\_\_\_\_\_\_\_\_\_** in the same **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
		- This leads to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** (each species focusing on slightly different resources)
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**
	+ Predation is the situation where one living **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for another. The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is the organism obtaining the food, and the **prey** is the food source.
		- Example: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** hunt down and eat **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
		Hawk = **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, Prairie Dog = **\_\_\_\_\_\_\_\_\_\_\_**
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_:**
	+ Symbiosis is a relationship between two organisms that **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the two organisms.
	+ Symbiosis means **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- These relationships means there is a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** between these species
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: **\_\_\_\_\_\_\_\_** species **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** from the relationship.
		- Examples:
			* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and the plants they live in
			* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and the flowers they pollinate
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: One organism **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and the other organism is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Examples:
			* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and bison; **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and sharks
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**: the organism **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the host **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** instantly but may weaken and cause death later on.
		- Examples:
			* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and other types of birds; **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in humans

**Ecological Succession**

The series of steps by which **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to an area after a natural or human **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**Two Types of Succession:

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** succession:
	+ Occurs when there is **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** on the land, usually after a major disturbance like a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** or bare rock is exposed when a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** has melted
	+ Takes a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for primary succession to progress due to the need to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** first
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ succession:**
	+ When **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the species in an area have been **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, but the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Large **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** that has been plowed and then abandoned
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** after a building is demolished
	+ Occurs **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** than primary succession
* Pioneer Species
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and hardy **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are the first species to come back after a disturbance.
* Climax Communities
	+ The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of succession to an ecosystem. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are an example.

**Succession in Marine Ecosystems:**

* Succession can occur in any ecosystem, even in the permanently **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* In **\_\_\_\_\_\_\_\_\_\_\_\_**, scientists documented an unusual community of organisms living on the remains of a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
* The community illustrates the stages in the succession of a whale-fall community.
	+ Succession begins when a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and sinks to the ocean floor.
	+ Within a year, most of the whale’s tissues have been eaten by scavengers and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.**
	+ The decomposition of the whale’s body **enriches** the surrounding sediments with **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**.
	+ When only the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, heterotrophic bacteria **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in the whale bones.
	+ This releases compounds that serve as **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** for **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** autotrophs.
	+ The chemosynthetic bacteria support a diverse community of organisms.

Biomes Notes

**Terrestrial Biomes**

* A biome is a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of terrestrial communities that covers a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and is determined by certain **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** conditions.
	+ Organisms exhibit **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, or differences in their ability to survive and reproduce in conditions that are different from their optimal conditions.
		- Example: Plants in the desert can tolerate a wide range of temperatures, while plants in the tropics cannot withstand much variation in temperature at all
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** exist within larger Biomes.
	+ A small area that has a **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** than the area around it is called a microclimate
		- Some organisms depend on these localized microclimates
* There are Ten Major Terrestrial Biomes of the World (see chart)

Other Land Areas

* Mountain Ranges
	+ Found on all continents
	+ Abiotic and biotic conditions vary with **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Temperatures **\_\_\_\_\_\_\_\_\_** and precipitation **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** as you move up the mountain
	+ Rocky Mountains: bottom to top
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**>Forests of coniferous trees > alpine meadows with **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and stunted trees > bare rock with **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** at the top of some mountains
* **\_\_\_\_\_\_\_\_\_\_\_\_** Ice Caps
	+ Border the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and polar oceans
	+ Cold year round, thick ice caps
		- **\_\_\_\_\_\_\_\_\_\_** thick in places in Antarctica
	+ Mosses and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** are the major producers
	+ Main animals:
		- Arctic: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, seals, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, mites
		- Antarctic: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, fish and marine mammals

**Aquatic Ecosystems:**

* All aquatic ecosystems are determined by the abiotic factors that affect them.
	+ 1. The **\_\_\_\_\_\_\_\_\_\_\_** of the water.
		2. The **\_\_\_\_\_\_\_\_\_** of the water.
		3. The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** of the water.
		4. The **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** make of the water.

Freshwater Ecosystems

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** water ecosystems.
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, streams, creeks, & brooks
	+ These usually originate in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, hills, or from an **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** water source.
	+ Types of organisms that live here:
		- Insects, **\_\_\_\_\_\_\_\_\_\_**, leeches, **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, beavers, and plants
* **Standing** water ecosystems
	+ - These are **\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_\_**.
		- Some flow in and out, but there is also water **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** within the ecosystem.
			* The circulation allows heat, oxygen and **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** to be moved within the ecosystem.
		- Major organisms:
			* Plankton often inhabit the ecosystem.
				+ Algae (**\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**) make up most of the producers
				+ Small **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** will feed upon the algae.
			* Fish, frogs, insects, plants and leeches will inhabit the ecosystem
* Freshwater **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Areas that have **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** either **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the soil or just below the surface of the soil for at least part of the year
	+ Wetlands are very **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** ecosystems, with many insects, fish, migratory birds, and amphibians come there to reproduce.
	+ Three types
		1. **\_\_\_\_\_\_\_\_\_\_\_\_** – mossy and very acidic
		2. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – shallow wetlands along rivers
		3. **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** – wet year round

Blending Fresh and Salt Water

* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Are located where **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Contain a mixture of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** and **\_\_\_\_\_\_\_\_\_\_\_** water.
	+ Most of the material that enters the ecosystem is detritus
	+ Large amount of **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** is supported, but fewer species than freshwater or marine ecosystems
	+ Major organisms:
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_**, **\_\_\_\_\_\_\_\_\_\_\_\_\_**, worms, sponges
	+ Subtypes:
		- **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
		- Mangrove swamps

Marine Ecosystems

* Marine systems are divided into various zones
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone**: relatively thin surface layer, where photosynthesis **\_\_\_\_\_\_\_\_** occur (depth down to **\_\_\_\_\_\_\_\_\_\_\_\_**)
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ zone**: deeper layer, below 200m, where it is permanently **\_\_\_\_\_\_\_\_\_\_\_.** Chemosynthetic organisms are the only producers in this zone.
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** zone: The area between low and high **\_\_\_\_\_\_\_\_\_** lines
	+ Organisms here must be adapted to regular and frequent **\_\_\_\_\_\_\_\_\_\_\_\_\_**  in their surroundings
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** ocean: Low tide mark to the edge of the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Mostly within the photic zone, lots of productivity
	+ **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** in particular are very productive
* **\_\_\_\_\_\_\_\_\_\_\_\_** Reef: Found in the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** oceans
	+ Some of the most productive ecosystems on earth
	+ Corals are tiny animals which grow in **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** which produce hard **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**structures
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** ocean: Begins at the edge of the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**  shelf
	+ Largest zone, covers more than **\_\_\_\_\_\_\_\_\_\_** of the surface of the oceans
	+ Ranges from **\_\_\_\_\_\_\_\_\_\_\_\_\_\_** deep to **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** deep
* **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** Zone: The zone along the **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**
	+ Organisms: **\_\_\_\_\_\_\_\_\_\_\_\_\_\_**, anemones, and marine worms
	+ These food webs often depend on **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** that drifts down from the photic zone, or on **\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_** organisms