

How does changes to an ecosystem affect the stability of cycling matter?

By: Schuyler Stasonis, Hailey Ramirez, Trenten Mallet, Kayla Chaves

Learning Objectives

- An ecosystem is..... What are different types of ecosystems?
- Humans have affected our ecosystems by.....
- How humans have caused more tropical storms.... (That destroy our environment)

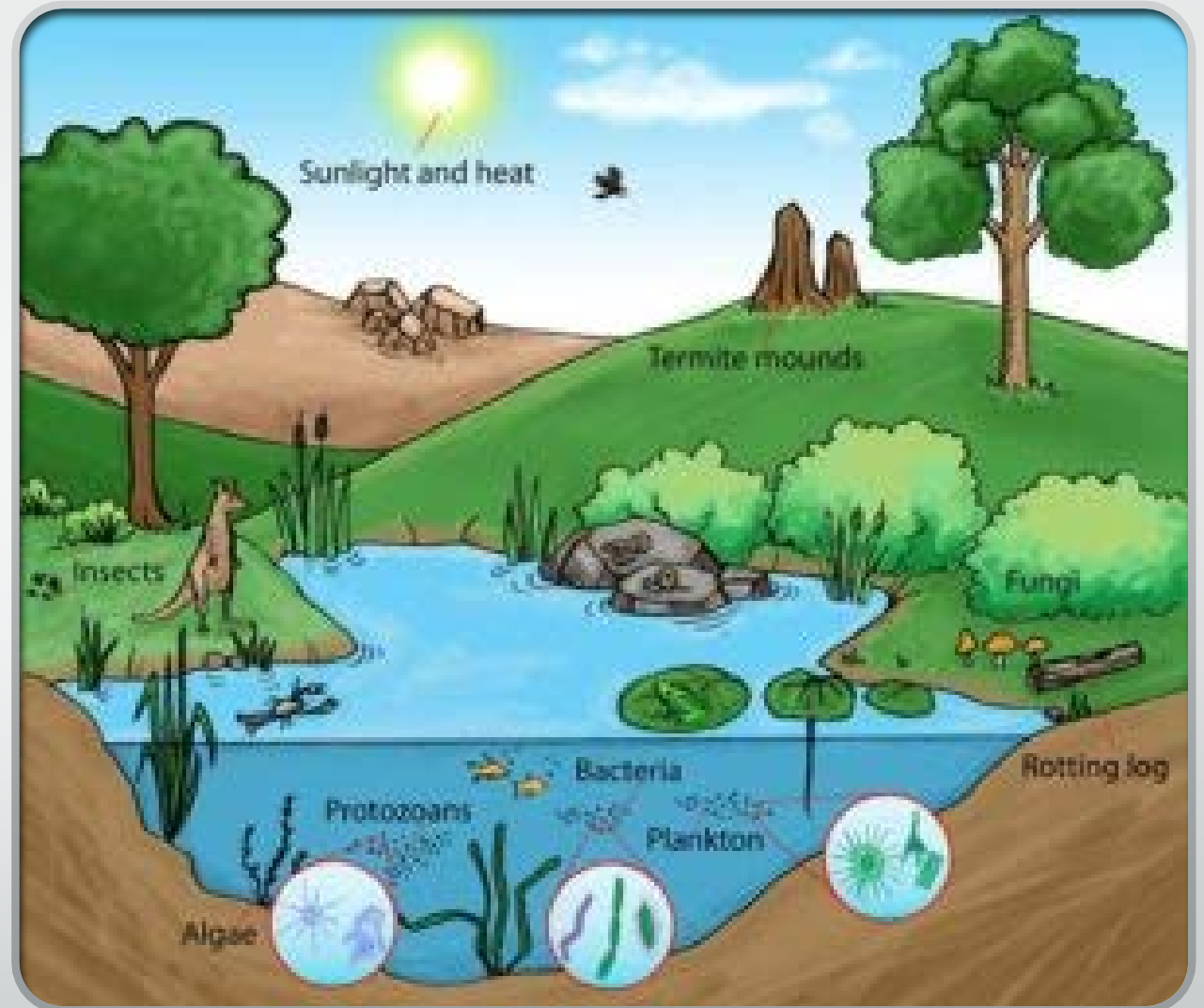
What is an ecosystem? What are different types of ecosystems?

- Ecosystem: a biological community of interacting organisms and their physical environment.
- An ecosystem is also a place that an organism thrives and lives.
- This may consist of the food an animal needs to live.

Ex: Forest Ecosystems. Forest ecosystems are classified according to their climate type as tropical, temperate or boreal,

Grassland Ecosystems. Different types of grassland ecosystems can be found in prairies, savannas and steppes,

Desert Ecosystems, Tundra Ecosystems, Freshwater Ecosystems, Marine Ecosystems.



What is Cycling Matter?

Cycling Matter: Cycling matter is when matter is constantly cycled between living and nonliving parts of the environment.

Ex:

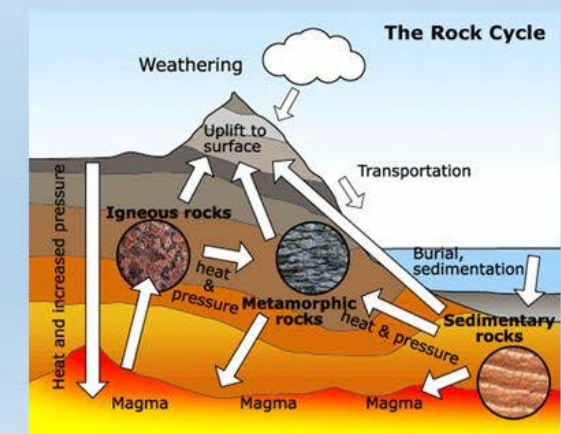
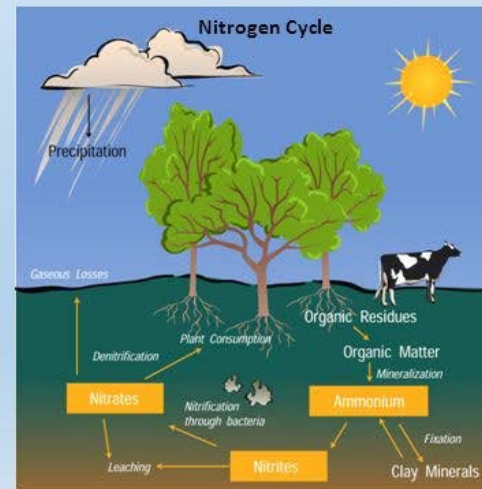
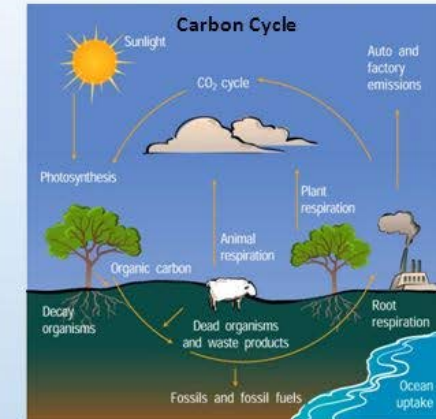
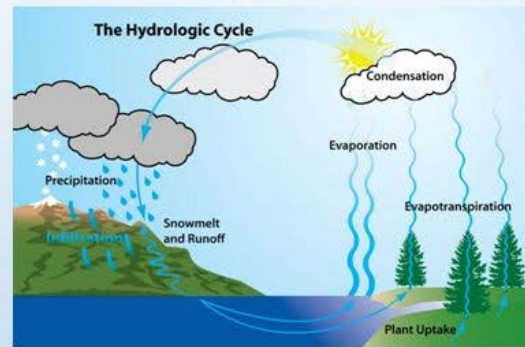
The Water Cycle

The Nitrogen Cycle

The Rock Cycle

The Carbon Cycle

Cycling of Matter

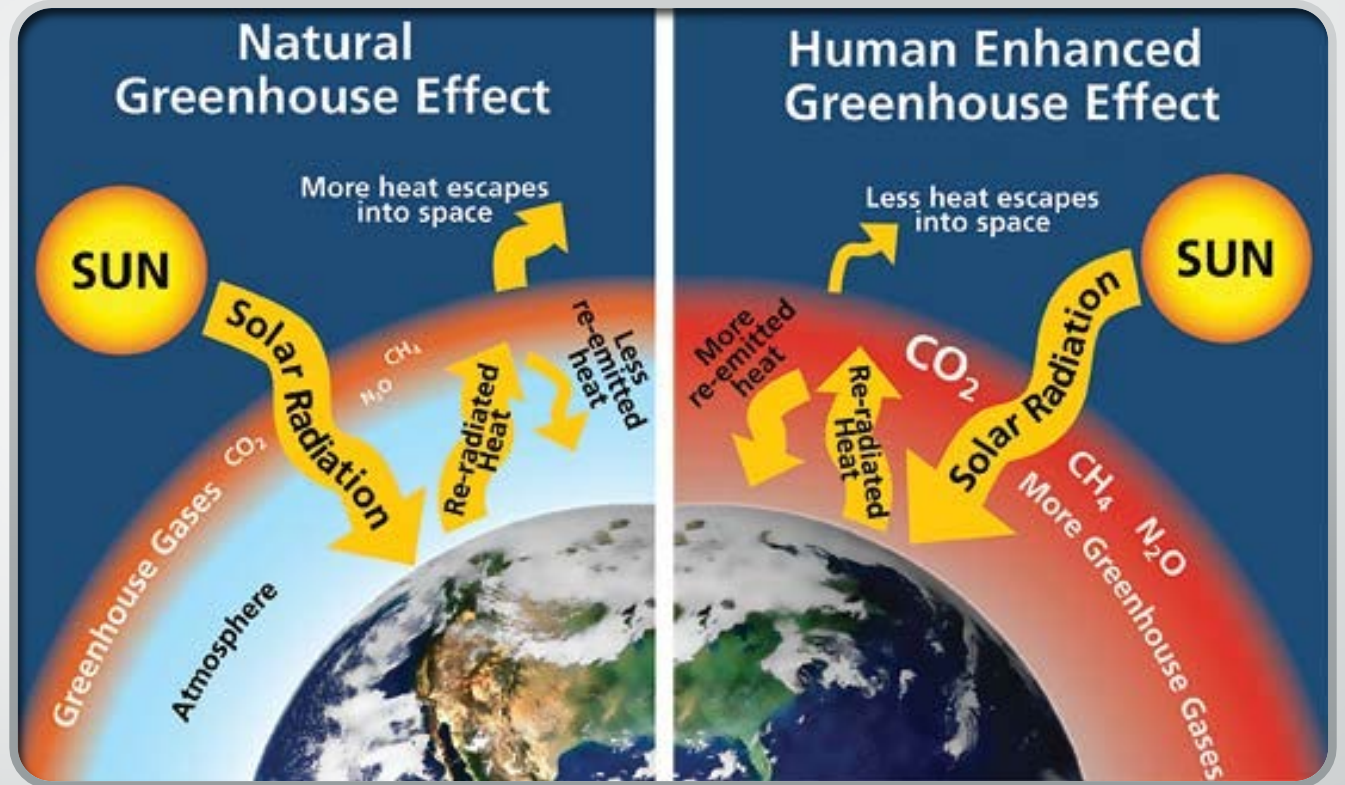


Why ecosystems depend on these cycles

- Ecosystems depend on these cycles because the nutrients move through the ecosystem in biogeochemical cycles. A biogeochemical cycle is a circuit/pathway by which a chemical element moves through the biotic and the abiotic factors of an ecosystem. It is inclusive of the biotic factors, or living organisms, rocks, air, water, and chemicals.
- Humans have modified these cycles by increases of freshwater use, carbon monoxide emissions, and fertilizer use.
- Biogeochemical Cycle: A biogeochemical cycle is a circuit/pathway by which a chemical element moves through the biotic and the abiotic factors of an ecosystem.

The difference between human processes affecting the environment and natural processes.

- Human Processes: A human process is caused by humans without help by natural processes.
- Natural Processes: A process that is natural to our earth.



Natural processes that affect an ecosystem



- Natural disasters and tropical storms affect ecosystems.
- Here's an example:

Nitrogen that is stored in our oceans goes to the polar caps to be frozen in the ice. Because of global warming, the ice melts quickly releasing nitrogen into the atmosphere. At the same time, the oceans start beginning to rise which makes more evaporation happen. Then the more water there is in the air, the more tropical storms and natural disasters will happen.

Human processes that have affected our ecosystems

- Most of the human processes that affect our ecosystems go right to agriculture.

Examples: climate change, deforestation, genetic engineering, irrigation problems, pollutants, soil degradation, and waste.



The balance of an ecosystem and what happens if the balance becomes unbalanced.

- **Balance of an ecosystem:** Both people and nature affect the environment and ecosystem.
- Ecosystems are organized in a state of balance where species coexist with other species. If something happens in an ecosystem, it can shift from a state of balance to a state of imbalance. Ecological imbalance is when a natural or human-caused disturbance disrupts the natural balance of an ecosystem.

How ecosystems are constantly changing

- Ecosystems are constantly changing in small ways.

- Ex:

When new organisms grow in an ecosystem.

Wind, rain, predation and earthquakes, reducing habitat, over-hunting, broadcasting pesticides or fertilizers, and other influences.

Vocabulary

- Balance of an ecosystem: Both people and nature affect the environment and ecosystem.
- Biogeochemical Cycle: A biogeochemical cycle is a circuit/pathway by which a chemical element moves through the biotic and the abiotic factors of an ecosystem.
- Cycling Matter: Cycling matter is when matter is constantly cycled between living and nonliving parts of the environment.
- Ecosystem: a biological community of interacting organisms and their physical environment.
- Succession: The gradual growth of new organisms in an ecosystem.
- Primary Succession: Changes that create a new ecosystem where one did not exist before.
- Secondary Succession: Changes that occur where an ecosystem already existed.
- Conservation: Prevention of wasteful use of a resource.