Read About Maintaining Biodiversity

WHAT IS MAINTAINING BIODIVERSITY?

Biodiversity describes the variety of living things within a single ecosystem. This includes numbers and diversity of species. The biodiversity found within an ecosystem can help determine its health. For an ecosystem to maintain diversity, it has to have balance among the organisms living there.

To better understand maintaining biodiversity...

LET'S BREAK IT DOWN!

Ecosystems

In ecosystems, organisms compete for the resources they need in order to survive, grow, and reproduce. Animals compete for air, food, shelter, water, and space. Plants also compete with each other for the resources they need, including air, water, sunlight, and space. These interactions within the ecosystem

ECOSYSTEM: ALL THE LIVING AND NON-LIVING THINGS IN AN AREA

help keep the populations of different organisms in balance and are necessary to keep an ecosystem healthy.

Food webs show the transfer of energy and matter within an ecosystem.

A food web is a model that can be used to show the interactions between living things in an ecosystem. Food webs are used to explain how energy and matter are transferred between the different organizational levels. The arrows in a food web indicate where energy and matter are transferred from and what organism receives the energy and matter.

TIDEPOOL FOOD WEB

SIMPLIFIED FOR CLARITY
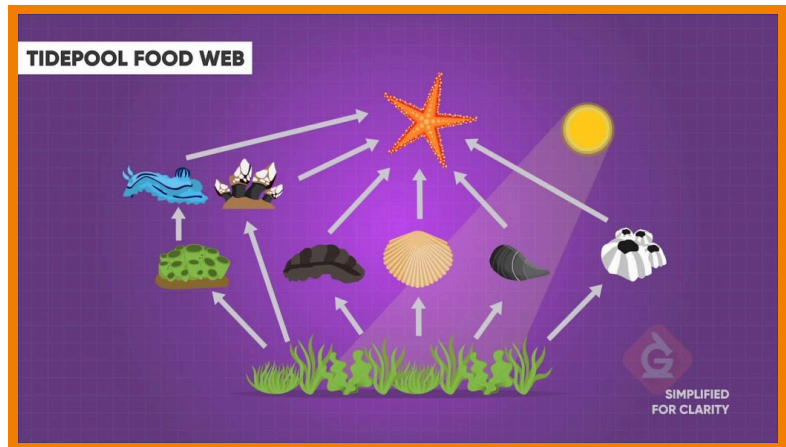
Ecosystems have keystone species.

In ecosystems, some species have a more important role in keeping the system in balance. These are keystone species. Each ecosystem has its own keystone species. For example, the keystone species in the tide pool was the sea star; however, the sea otter is the keystone species in the nearshore kelp forests.

KEYSTONE SPECIES AFFECT THEIR ECOSYSTEM MUCH MORE THAN OTHER SPECIES

National parks help protect biodiversity.

President Woodrow Wilson established the U.S. National Park Service in 1916. Currently, the National Park Service maintains 419 national parks that cover more than 84 million acres, including land in Puerto Rico, the Virgin Islands, American Samoa, and Guam. The system was set up to protect native plants and animals that live within those ecosystems.

Careers in Science: Conservation Biologist

A conservation biologist is scientist who studies how humans impact ecosystems. They study the biodiversity within ecosystems by gathering data on the different populations to determine ecosystem health. If the ecosystem has a problem, a conservation biologist can help develop a solution so that biodiversity and ecosystem health are maintained.

MAINTAINING BIODIVERSITY VOCABULARY

Biodiversity	The different organisms living in an ecosystem.
Ecosystem	A community of interacting organisms and their environment. It includes both living and nonliving things.
Tide pools	Shallow pools of seawater that exist as separate bodies of water, usually only during low

tide.

Species	A group of organisms that have similar individuals and are able to exchange genes through breeding to produce offspring that are able to reproduce.
Keystone species	A species that is necessary to maintain ecosystem health. Without this species, the ecosystem would change drastically.
Decomposer	A species that is responsible for breaking down dead organisms in an ecosystem.

MAINTAINING BIODIVERSITY DISCUSSION QUESTIONS

Explain why biodiversity in an ecosystem is important.

Biodiversity in an ecosystem is important because it helps an ecosystem stay healthy.

Give an example of a keystone species and what can happen if it is removed or leaves an ecosystem.

A sea star is an example of a keystone species, and without it the ecosystem can collapse, like the tide pool example from the video.

How are food webs used to help explain ecosystem interactions?

Food webs are models of the interactions that happen between the organisms found in the ecosystem. They can be used to explain how matter cycles and energy flows, and it is useful in making predictions about the food resources needed to maintain biodiversity in the ecosystem.

Explain how humans rely on the biodiversity of an ecosystem to provide necessary resources, and give an example.

Humans rely on ecosystem biodiversity for things like food, energy, and medicine. For example, humans rely on pollinators like bees to pollinate the crops of food we eat. Without insects, like bees, we wouldn't have the food we need.

How do humans help protect the biodiversity in some ecosystems?

Some humans have jobs that set up areas that protect ecosystems. These protected lands limit human interaction to protect the biodiversity in ecosystems. In the United States, national parks are places that are protected.

Give an example of a bioindicator, and explain why they are important.

Bioindicators, like frogs, are living things that let humans know when something might be wrong in an ecosystem. Bioindicators are important because without them, we might not know

something needs to be fixed.