Extinction is Permanent [MC]

Adapted from National Geographic

Grades: 3-5
Time: 45 minutes to 1 hour

Goal: To explore extinction within an aquatic ecosystem and introduce human interactions with whole populations of species.

Objectives:
Students will be able to: define an ecosystem; define extinction; understand the food web; and describe anthropogenic causes of species extinction.

Directions:

Read each scenario. Decide if the organism is **Thriving**, **Endangered**, **Extinct**, or **Threatened**. Write you answer in the box beside the scenario. Explain why you choose your answer.

Scenario	Answer
The dodo bird used to live on an island, but sailors landed on the island in the 1700's. They killed many for food. Over time there were fewer and fewer birds. What finally happened to the dodo birds?	
A dam is built in an area that usually has a lot of water. The water is now gone in some areas. What will happened to the fish if this is their only home?	
Logging is taking away the shelter and food source of the Carolina northern flying squirrel. What is happening to this squirrel?	

Key Words:

Ecosystem	Food chain	Food web
Extinction	Endangered	Impacted
Anthropogenic		

Background Information:

Adapted from Ducksters

When a species has been dubbed endangered, it means that they are in danger of becoming extinct. Extinct means there will be no more of them found anywhere on earth. Many species have gone extinct over time, some never before documented by scientists. When a species has very little chance of survival, it is placed into one of four categories: vulnerable, threatened, endangered, and critically endangered. There is a special category for those that are no longer able to survive in the wild and can only be found in captivity: extinct in the wild.

Extinction is permanent. Once there are no more individuals left within a species, they can no longer reproduce to create more. Unless scientists find a way to culture their DNA or reproductive organs in a laboratory, once an organism has gone extinct, it is not going to be found on earth again. Sometimes extinction is caused by natural forces. Earth has gone through many natural processes such as earthquakes, floods, ice ages, continental shifts, and volcanic eruptions. All of these have the potential to cut off food supplies, introduce new predators to ecosystems that did not have them, or change the ecosystem dynamics completely, such as creating wetlands where there used to be deserts. Some of these natural-process induced extinctions have not occurred on a global scale, but some, such as the great dinosaur extinction, occurred globally and the dinosaurs were wiped out across the planet.

Aside from natural extinctions, humans have forced extinction or have caused many species to become threatened and endangered because of their interactions with them. There are several reasons for this. Some species are hunted for food. Commercial fisheries have caused major declines in populations across the world and have contributed to certain species going completely extinct. Some species are hunted for their furs, feathers, horns, or organs. Ivory was once used to make piano keys, sea turtle shells to make hair clips, and whale oil to use for oil lamps.

Another major threat to species is habitat destruction. As human population grows exponentially, they begin to move into habitats and ecosystems not previously occupied. These habitats that have already been occupied by other species soon become too crowded for them to survive. Humans also can cause extinctions because of pollution that makes its way through the water cycle as well as the introduction of non-native species that did not inhabit the ecosystem before.