

THE EXTINCTION CRISIS

Vocabulary

As you read and answer questions, think about these words and how they relate to the extinction crisis.

Biodiversity

- The variety of life on Earth, including the number of species on Earth or within an area, genetic variation within a species, and different habitats available.

Ecosystem processes

- Key interactions among living and nonliving parts of an ecosystem. These are common to all ecosystems, but may be performed by different species in different ecosystems. They include energy transfer, primary production, decomposition, nutrient cycling, and water cycling.

Ecosystem services

- Benefits humans receive from ecosystems such as pollination, soil formation, and water regulation.

Evolution

- Theory first proposed by Charles Darwin that all species on Earth are descended from ancestral species due to changes in the genetic composition of a population over successive generations.

Introduced species

- Species introduced by humans to a geographical area where it is not native.

Extinction

- The dying out of a species. Local extinction happens when a species becomes extinct in one geographic area, but persists in another. In global extinction, the species disappears from everywhere on the planet.

Fossil

- Remains or evidence of a once-living organism. A fossil may be an entire organism or parts of it, impressions the organism made such as trails or footprints, or artifacts such as dung, burrows, or nests.

Invasive species

- An exotic, or introduced, species that becomes so well adapted to its new environment that it tends to spread rapidly and cause harm to the environment, economy, or human health.

Mass extinction

- A major episode of extinction involving many taxa over a relatively short period of geologic time.

Megafauna

- Large (>45 kg or 100 pound) land animals.

Microclimate

- Localized climate that differs from the surrounding regional climate. Microclimates may be only a few square meters to several square miles in area.

Positive feedback cycle

- Amplification of an initial change in a system as a result of interactions among the components of the Earth system.

Reading Questions

“The Big Five Mass Extinctions”

1. Name the five previous mass extinctions (what time period). List what percent of species were lost.

2. How many years ago was the most recent mass extinction?

“Take Me Out to the Extinction Game”

3. What is *anthroparchy* and what does it have to do with sports?

4. How could sports teams help the conservation effort?

“In the Shadow of Extinction”

5. How does the author link Groundhog’s Day to the role of prairie dogs in warning us about extinction?
6. How do prairie dogs help other animals? What animals are associated with prairie dogs?
7. What threatens prairie dogs?

“When We Love Our Food So Much That it Goes Extinct”

8. Name two examples of species we used to use as a food source that are now extinct.
9. What type of food do we harvest in a way that might drive it to extinction now? What is a way we could avoid that?
10. What is one change that people can make when choosing their food to be more sustainable?

“The Comeback”

11. What are some characteristics of puffins that make them special?

12. Why did puffins originally disappear from the islands off the coast of Maine?

13. How did Kress bring puffins back to the Maine coast?

14. What efforts did Kress take to attract puffins and help them feel at home?

“Are the Everglades Forever?”

15. Why is biodiversity good for ecosystems?

16. What is resilience?

17. What are some things people are doing that are helping the Everglades?

Conceptual Questions

1. How are mass extinctions different from normal extinctions?
2. What are some things that are thought to have caused past mass extinctions?
3. What are some factors causing current extinctions?
4. Are we currently in the midst of a sixth mass extinction? Why do you think this?
5. How does the extinction of one species affect the ecosystem as a whole?
6. What can we learn from the importance of protecting vulnerable, and often undervalued, underrepresented species? How might this apply to our social interactions and human communities?