

3.7 Extinction

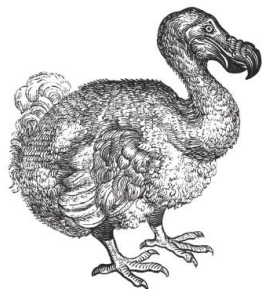
Learning objectives

After this topic you will be able to:

- describe some factors that may lead to extinction
- describe the purpose of gene banks.



▲ An ammonite fossil. These animals lived in the sea and could grow up to 2 m wide.



▲ The dodo was a large, flightless bird.

Key Words

extinct, biodiversity, endangered, gene bank

Can you think of any species that no longer live on the Earth? You might think of dinosaurs; millions of years ago these organisms were found all over the Earth. There are many other animal and plant species that have completely died out.

What does extinction mean?

If a species is not adapted to its environment, it will not survive. Organisms will die before reproducing. Eventually the species becomes **extinct**. A species becomes extinct when there are no more individuals of that species left anywhere in the world. An extinct species has gone forever; no new organisms can be created.

A State what is meant by the word extinct.

How do we know other species existed?

The fossil record shows that many species have become extinct. For example, you may have seen the fossils of ammonites. These animals existed at around the same time as the dinosaurs. They had spiral shells and could be up to 2 m wide.

How do organisms become extinct?

There are a number of factors that can cause a species to become extinct, including:

- changes to the organism's environment
- destruction of habitat
- outbreak of a new disease
- introduction of new predators and competitors.

B State three causes of extinction.

Extinction occurs naturally. For example, most scientists believe that dinosaurs became extinct due to a dramatic change in the Earth's climate, after a meteor hit the Earth. Dinosaurs could not adapt to these changes in their environment and died out.

Humans can make extinction more likely. For example, the dodo lived on island of Mauritius, which was an uninhabited island. It had no natural predators. In the 17th century people arrived on the island,

and dodos were hunted for food. Rats that came on the ships ate the dodos' eggs. In less than a century, the dodo became extinct.

Climate change has resulted in many organisms losing their habitat. For example, the size of the polar ice caps is shrinking. If a species that lives in these habitats cannot adapt successfully, or find somewhere else to live, it could become extinct.

When a species becomes extinct, **biodiversity** is reduced. Biodiversity is the range of organisms living in an area.

C Name two organisms that have become extinct.

How can we prevent extinction?

Species of plants and animals that have only a small population in the world are said to be **endangered**.

Scientists are trying to help prevent these species becoming extinct, and therefore maintain biodiversity. One way is by using **gene banks**. Gene banks store genetic samples from different species. In the future they can be used for research, or to produce new individuals.

There are a number of different types of gene bank. These include:

- seed banks – dried seeds of plants are stored at low temperatures
- tissue banks – buds and other cells from plants are stored
- cryobanks – a seed or embryo is preserved at very low temperatures, normally in liquid nitrogen; sperm and egg cells from animals can also be stored in this way
- pollen banks – pollen grains are stored.



▲ A seed bank.

D State what is meant by a gene bank.

● B2 Chapter 3: Adaptation and inheritance



▲ The black rhino has become endangered due to poachers killing them for their horns.

Extinction

Find out about an organism that has become extinct. Write a newspaper article that describes how and why the organism became extinct.

Summary Questions

- Copy and complete the sentences below.
A species becomes _____ when there are no more individuals of that species left _____ in the world.
Changes in a species' _____ or the introduction of new _____ can cause a species to become extinct.
Gene banks store genetic samples from organisms, which can be used for _____ and to create new individuals.
(5 marks)
- Describe the role of gene banks in preventing extinction.
(3 marks)
- Explain in detail how a species could become extinct.
(6 marks)