

# Changing Environment

## Global Warming

Gases in the atmosphere absorb infra red radiation (that would otherwise radiate into space) and re-radiate it so some of it returns to the Earth's surface. This keeps our planet warm.

These gases are called greenhouse gasses and include carbon dioxide and methane. Humans are increasing the amount of these gases in the atmosphere so global temperatures are increasing.

## Consequences of Global Warming

- Ice caps melt and seawater expands means the sea levels rise increasing the risk of flooding.
- Biodiversity could decrease if species become extinct.
- Increased temperatures and changing rainfall can affect the distribution of animals and plants.
- Changes to migration patterns (eg. birds may migrate further north as there will be more warmer northern areas).

## Protecting Ecosystems and Biodiversity

- Breeding programs help prevent endangered species becoming extinct.
- Rare habitats such as mangroves, heathland and coral reefs are protected. Saving these habitats helps protect the species that live there.
- Government regulations to reduce deforestation and CO<sub>2</sub> production.
- People encouraged to recycle and reduce landfill waste (leaving the land for the species that live there).

## Deforestation – cutting down trees

Trees are cut down to **clear land** for farming or to grow crops to produce **biofuels**.

The problems of deforestation are:

- **Less CO<sub>2</sub> is absorbed** by trees during photosynthesis so less CO<sub>2</sub> is removed from the atmosphere. Some of the carbon absorbed is **locked up** in trees for hundreds of years. If there are less trees, less carbon is locked up.
- **CO<sub>2</sub> is released** when the trees are burnt, so increasing the concentration of CO<sub>2</sub> in the atmosphere. Or, if trees are left to rot, the microorganisms feeding on the dead wood release CO<sub>2</sub> from respiration.
- **Biodiversity is reduced** as habitats are lost so species become extinct.

## Peat Bogs – waterlogged, acidic areas of land

A lack of oxygen means dead plants do not fully decay, so build up in the bog and form peat. The carbon in the plants remain stored in the plant and is not released into the atmosphere. Draining peatbogs to clear land means the peat is usually **burned** or used as **compost** – both allow oxygen to enter the peat so decay microorganisms decompose it, causing CO<sub>2</sub> to be released from respiration.

Species that live in the bogs lose their habitat, so biodiversity is reduced.

## Protecting Ecosystems and Biodiversity

- Protecting diversity costs money. Governments may prioritise other things.
- The livelihood of locals may suffer, eg if deforestation is reduced the people who were employed to cut down the trees may lose their job.
- Some organisms can be seen as pests. Farmers may want to kill them to protect their crops.
- Development of new homes is necessary and land with high biodiversity may be used to build on.