

# AQA B7b Ecology COMBINED HIGHER

Key word	Definition
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<b>Biodiversity</b>	The variety of all different species of organisms on Earth, or within an ecosystem
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### Maintaining a great biodiversity

- **Ensures the stability of ecosystems** by reducing the dependence of one species on another for food, shelter and maintenance of the physical environment
- **Ensures the future of the human species.** Many human activities are reducing biodiversity.

Scientists and concerned citizens have put programs in place to reduce the negative impacts of humans on biodiversity including:

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| <ul style="list-style-type: none"> <li>• Breeding programs for endangered species</li> <li>• Protection and regeneration of rare habitats</li> <li>• Field margins and hedgerows in agricultural areas where farmers grow one crop</li> </ul> | <ul style="list-style-type: none"> <li>• Reduction of carbon dioxide emissions and deforestation by governments</li> <li>• Recycling resources rather than dumping waste</li> </ul> |
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### Waste management

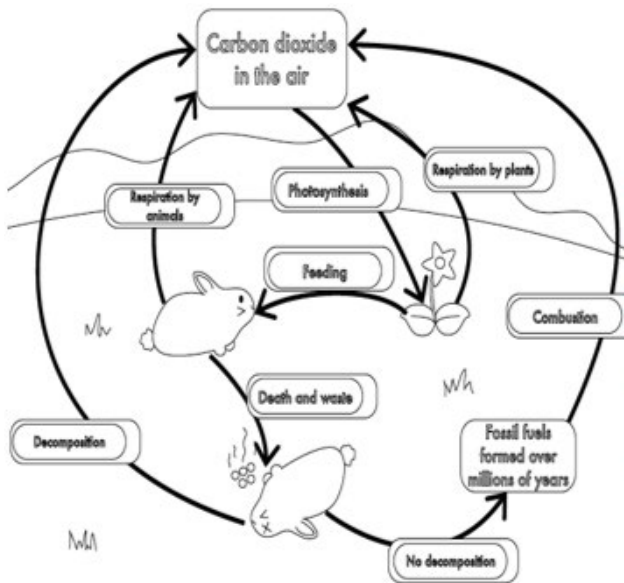
Rapid human population growth and increase in standard of living means that more waste is being produced.

This causes pollution which can kill animals and plants, reducing biodiversity

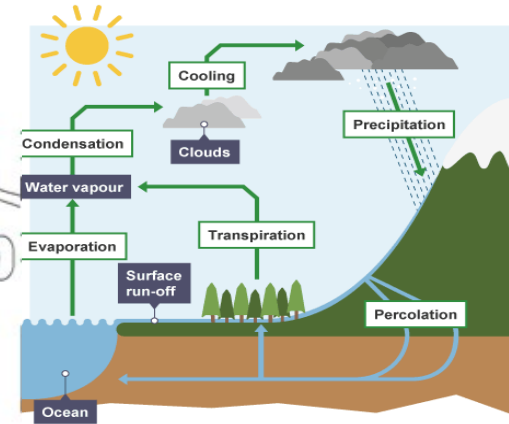
#### Pollution can occur:

- In water from sewage and toxic chemicals
- In air from smoke and acidic gases
- On land from landfill and toxic chemicals

### The carbon cycle



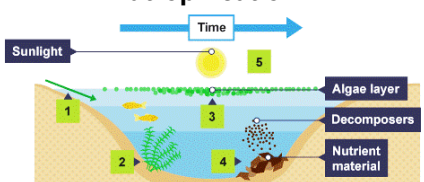
### The water cycle



All materials in the living world are recycled to provide building blocks for future organisms

Microorganisms cycle materials by returning carbon to the atmosphere as CO<sub>2</sub> and mineral ions to the soil.

### Eutrophication



- 1 Nutrient load up: excessive nutrients from fertilisers are flushed from the land into rivers or lakes by rainwater.
- 2 Plants flourish: these pollutants cause aquatic plant growth of algae, duckweed and other plants.
- 3 Algae blooms, oxygen is depleted: algae blooms prevent sunlight reaching other plants. The plants die and oxygen in the water is depleted.
- 4 Decomposition further depletes oxygen: dead plants are broken down by bacteria decomposers, using up even more oxygen in the water.
- 5 Death of the ecosystem: oxygen levels reach a point where no life is possible. Fish and other organisms die.

### Large scale deforestation has occurred across the world, particularly in tropical areas to:

- Provide land for cattle
- Provide land for rice fields
- Provide land for growth of biofuels

This deforestation leads to a reduction in biodiversity.



### Land use

- Humans reduce the amount of land available for plants and animals by for example: building, farming, quarrying and dumping waste
- Decay or burning of peat from peat bogs releases a large amount of carbon dioxide to the atmosphere as peat bogs are a major **carbon sink**
- Destruction of peat bogs and other areas to produce garden compost reduces biodiversity

### Global warming

- Levels of carbon dioxide and methane are increasing in the atmosphere due to human activity
- There is a global consensus about the human impact on global warming and climate change, based on thousands of **peer reviewed** publications.

Some effects of global warming on biodiversity are:

- Sea level rise
- Decreased land availability caused by sea level rise
- Damaged and destroyed habitats due to temperature rise
- Extreme weather events harm populations of plants and animals

