Your notes

GCSE Geography: revision notes

Ecosystems

Contents

1. What an ecosystem is
2. A small-scale UK ecosystem: a freshwater pond
3. Change in an ecosystem
4. Global ecosystems (biomes)
5. Ecosystem services and management (Eduqas)
6. Key terms
7. Quick questions
8. What to do next

What an ecosystem is

- An **ecosystem** is a community of plants and animals (the **biotic** parts) and the environment they live in (the **abiotic** parts, such as climate, soil, water and light).
- **Producers** (plants) make their own food by photosynthesis. **Consumers** eat other living things: primary **consumers** eat plants, and secondary consumers eat primary consumers. Decomposers (bacteria and fungi) break down dead material and return nutrients to the soil.
- A food chain shows one feeding path. A **food web** shows how many food chains link together.

A small-scale UK ecosystem: a freshwater pond

- **Producers**: algae, pondweed and reeds. **Consumers**: tadpoles and water snails (primary), water beetles, frogs and small fish (secondary), and herons (tertiary). **Decomposers**: bacteria and fungi in the mud.
- **Nutrient cycling**: dead plants and animals sink into the mud, **decomposers** break them down, and the nutrients are released for plants to take up again.

Change in an ecosystem

- A change to one part affects the others. If fertiliser runs into a pond, algae grow quickly and block the light. When the algae die, **decomposers** use up the oxygen, and fish die. This is called **eutrophication**.
- Other changes include draining ponds, introducing new species, removing hedgerows and climate change.

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Global ecosystems (biomes)

- Tropical rainforests are found near the Equator, such as in the Amazon, the Congo and South-East Asia. Hot deserts are found around 30° north and south, such as the Sahara.
- Tundra is found at high latitudes, near the Arctic. Temperate deciduous forest grows in the UK and western Europe. Coniferous forest (taiga) covers northern Canada, Scandinavia and Russia. Grasslands include tropical savanna (such as in East Africa) and temperate grasslands (such as the North American prairies).
- Where each **biome** is found depends mainly on climate (temperature and rainfall), which depends on latitude and the global atmospheric circulation.

Ecosystem services and management (Eduqas)

- Eduqas Component 2, Theme 5. Study the tropical rainforest and one contrasting **biome** (for example savanna, tundra or coral reefs), and one small UK **ecosystem** such as a sand dune, urban park or hedgerow.
- **Ecosystems** give people services: regulating the water cycle, reducing floods, storing carbon, pollinating crops and providing food, fuel and medicines.
- Biodiversity is the variety of living things in an area. Habitat loss, **monoculture** and intensive farming reduce it and can leave isolated populations at risk of extinction.
- Energy production changes environments too: offshore wind farms such as Gwynt y Môr off North Wales, and proposed tidal lagoons, affect seabeds, birds and fish.
- Sustainable management includes zoning in National Parks (some areas protected, others used) and **wildlife corridors** that link habitats so animals can move between them.

Key terms

Ecosystem	A community of living things and the environment they live in.
Biotic	The living parts of an ecosystem, such as plants and animals.
Abiotic	The non-living parts of an ecosystem, such as climate, soil and water.
Producer	A living thing that makes its own food by photosynthesis.
Consumer	A living thing that gets its energy by eating other living things.
Decomposer	A living thing, such as a fungus, that breaks down dead material.
Food web	A diagram showing how many food chains link together.
Nutrient cycling	The movement of nutrients between living things, dead material and the soil.

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Biome	A large-scale global ecosystem, such as tropical rainforest.
Eutrophication	Extra nutrients causing algae to grow and then use up the oxygen in water.
Ecosystem services	The benefits people get from ecosystems, such as clean water, flood control and food. (Eduqas)
Wildlife corridor	A strip of habitat linking two areas, so animals can move between them. (Eduqas)
Monoculture	Growing a single crop over a large area. (Eduqas)

Your notes

Quick questions

Cover the answers and test yourself: remembering is what makes it stick.

1. What is an ecosystem?
2. Which of these is an abiotic part of an ecosystem?
3. What do producers do?
4. What do decomposers do?
5. In a pond, which of these is a producer?
6. What is a food web?
7. What happens when fertiliser runs into a pond?
8. Where are tropical rainforests found?

Answers

1. A community of living things and the environment they live in
2. Rainfall
3. Make their own food by photosynthesis
4. Break down dead material and return nutrients to the soil
5. Pondweed
6. Many food chains linked together
7. Algae grow quickly, then the oxygen is used up and fish die
8. Near the Equator

What to do next

Practise 14 questions on this topic

Try 4 exam questions, with mark schemes

Read the lesson, one step at a time

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