Exercise walk-through

7.3 Biodiversity and human interactions (4.7.3)

AQA · GCSE · Biology

Biodiversity and human impacts

- in water, from **sewage** , **fertiliser** washed off fields, and toxic chemicals;
- in the air, from smoke and acidic gases;
- on land, from **landfill** and toxic chemicals.

Biodiversity and human impacts (2)

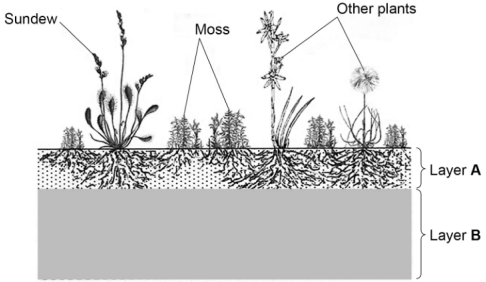
- run **breeding programmes** for **endangered species**;
- protect and regenerate rare habitats such as mangroves and **peat** bogs;
- put **field margins** and **hedgerows** back around fields of a single crop, giving food and shelter to many species;

Biodiversity and human impacts (3)

- reduce **deforestation** and carbon dioxide emissions;
- recycle resources rather than dumping waste in **landfill**.

Figure: Biodiversity and human impacts

Figure 2



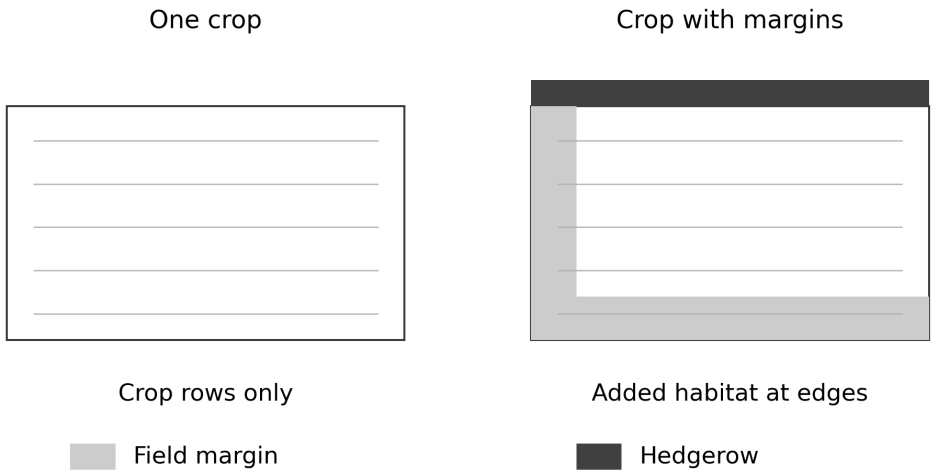
Layer **A** contains a lot of air.

Layer **B**:

- contains the dead remains of plants
- has a low pH
- contains very little oxygen
- contains carbon dioxide and methane.

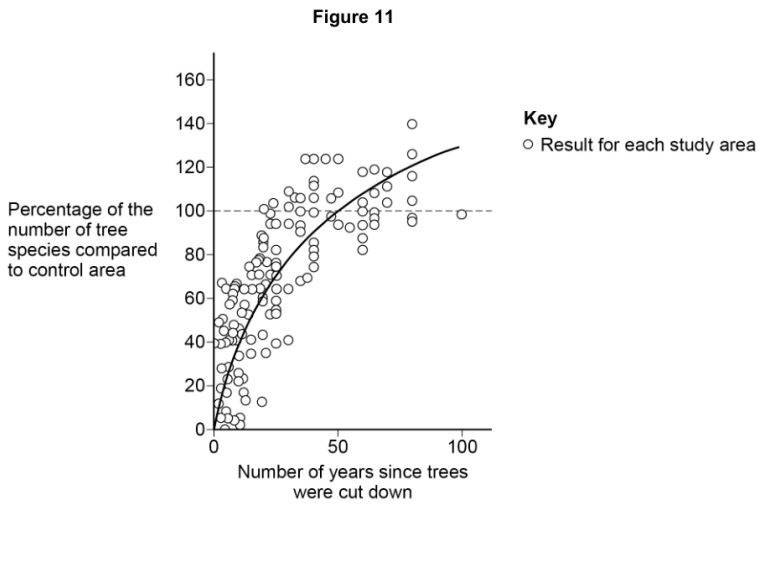
- Layers in a **peat** bog (AQA GCSE Biology Paper 2H, June 2024, Figure 2).
- Match each part of the diagram to the text.

Figure: Biodiversity and human impacts (2)



- **Field margins** and **hedgerows** give food and shelter to many species.
- Match each part of the diagram to the text.

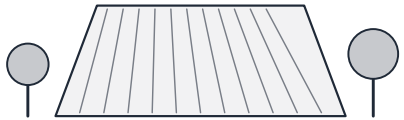
Figure: Biodiversity and human impacts (3)



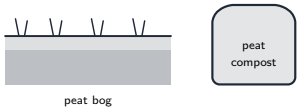
- Recovery of tree species after clearing (AQA GCSE Biology Paper 2H, June 2023, Figure 11).
- Match each part of the diagram to the text.

Exercises 2.1·2.2

2.1 Give **two** ways in which farmers can increase biodiversity on their farms. [2]

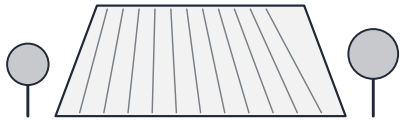


2.2 Peat is dug out of bogs and sold as compost for gardens. Give **two** reasons why peat bogs should be protected. [2]



Exercises 2.1·2.2

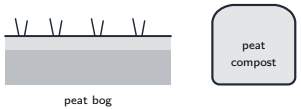
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2.1

- any two: plant hedgerows; leave field margins with wild flowers and grasses; grow different crops; use fewer pesticides and herbicides

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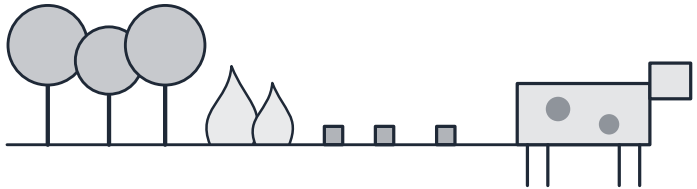
2.2

- any two: when peat is burned or decays it releases CO_2, which adds to global warming; bogs are habitats, so destroying them reduces biodiversity; peat forms very slowly, so it cannot be replaced

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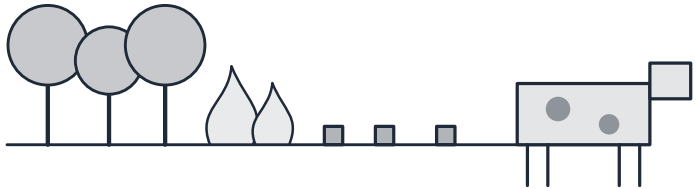
Exercise 3.1

3.1 Large areas of tropical forest are cut down and burned to make space for cattle. Explain how this increases the carbon dioxide in the air. [3]



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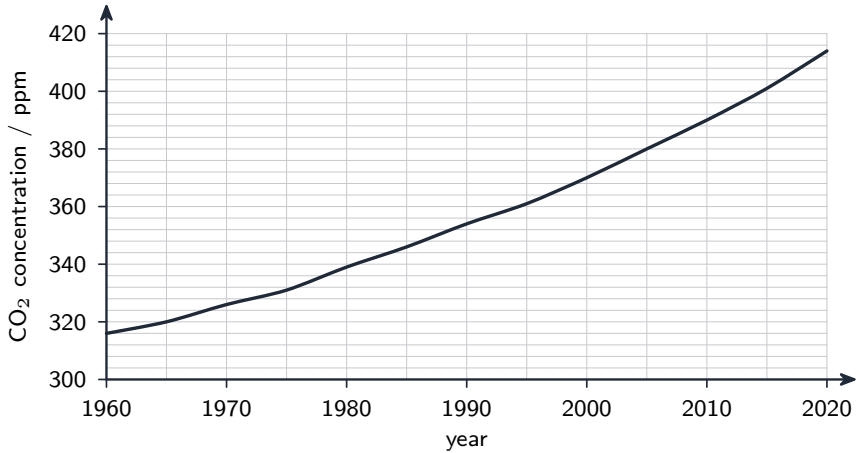
3.1

- burning the trees releases CO_2 (combustion)
- microorganisms decay the dead wood and release CO_2 in respiration
- there are fewer trees, so less CO_2 is taken in by photosynthesis

Exercise 3.2 (a)

3.2 The graph shows the concentration of carbon dioxide in the air from 1960 to 2020.

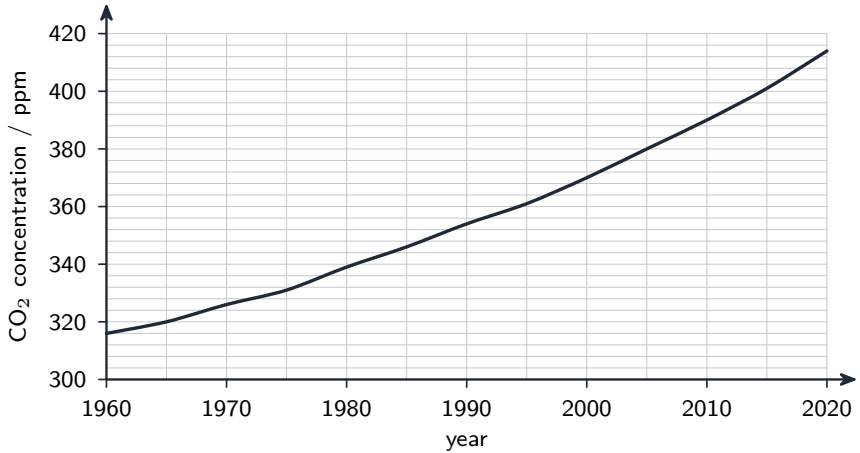
(a) Calculate the percentage increase in carbon dioxide from 1960 to 2020. [2]



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(a) Calculate the percentage increase in carbon dioxide from 1960 to 2020. [2]



(a) $\frac{414-316}{316} \times 100 = \mathbf{31}\%$; accept 30–32%

Exercise 3.2 (b)

3.2 The graph shows the concentration of carbon dioxide in the air from 1960 to 2020.

(b) Describe **three** biological effects of global warming. [3]

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(b) Describe **three** biological effects of global warming. [3]

(b) any three: habitats are lost, e.g. low land is flooded as sea levels rise; species move to new places as their range changes; migration patterns change; some species become extinct, so biodiversity falls

Exercise 3.2 (c)

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(c) Use the graph to calculate the mean increase in carbon dioxide per year between 2000 and 2020. [2]

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(c) $414 - 370 = 44$ ppm in 20 years; $44 \div 20 = \mathbf{2.2}$ ppm per year

Exercise 3.2 (d)

3.2 The graph shows the concentration of carbon dioxide in the air from 1960 to 2020.

(d) Describe how human activities reduce biodiversity, and explain ways of keeping biodiversity high. [6]

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(d) points to include:

- deforestation, building and farming destroy habitats
- pollution of water, air and land kills organisms
- global warming changes where species can live
- breeding programmes for endangered species
- protecting and regenerating rare habitats; hedgerows and field margins on farms
- less deforestation, less CO_2 released, and more recycling instead of landfill

Levels: **5–6** a full, logical answer with correct biology and correct terms; **3–4** several correct points, partly linked; **1–2** one or two relevant points.