

# 8.6 Biodiversity

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Name: \_\_\_\_\_ Class: \_\_\_\_\_ Date: \_\_\_\_\_

Total: 9 marks

## Objective

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Build the skills to answer exam questions on **biodiversity**.

**You must be able to:**

- explain why **biodiversity** 生物多样性 makes ecosystems resilient
- link diversity to stability and ecosystem services
- describe threats to biodiversity

## 1 Worked examples

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Study these first. Each one shows the method for a question type used later —follow the steps and you can do the Practice and Exam-style questions yourself.

### ■ Diversity builds resilience

An ecosystem with **high biodiversity** has more species filling more roles, so it is more **resilient** —better able to recover from disturbances (disease, weather).

### ■ Why diversity helps

If one species is lost, others can fill a similar role, keeping the ecosystem functioning. Low-diversity systems are more easily disrupted by a single loss.

### ■ Ecosystem services

Diverse ecosystems provide **services**: clean water, pollination, climate regulation, and food. Losing species can reduce these services.

### ■ Threats

Biodiversity is reduced by **habitat loss**, **pollution**, **invasive species**, **overharvesting**, and **climate change**.

## 2 Practice

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Now apply the methods above.

**2.1** Why is a high-biodiversity ecosystem more resilient?

[1]

**2.2** Give one ecosystem service provided by diverse ecosystems. [1]

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**2.3** State one threat to biodiversity. [1]

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### 3 Exam-style questions

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**3.1** An ecosystem with high biodiversity is generally [1]

- **A** less stable
  - **B** more resilient to disturbance
  - **C** unable to recover
  - **D** identical to a monoculture
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**3.2** A disease removes one species from an ecosystem.

(a) Explain why a diverse ecosystem is more likely to keep functioning. [2]

(b) State one human activity that reduces biodiversity. [1]

**3.3** Explain how the loss of biodiversity could reduce the ecosystem services humans rely on. [2]

### 4 Go further

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You are now ready for the real exam questions on this subtopic:

- work through the **8.6 Biodiversity** lesson on the **Learn** page;
- read the **Biodiversity** section of the AP Biology handout on the **Know** page.

## Solutions

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**2.1** More species fill more roles, so it can recover better from disturbances.

**2.2** Any one: clean water, pollination, climate regulation, food.

**2.3** Any one: habitat loss, pollution, invasive species, overharvesting, climate change.

**3.1 B** —more resilient to disturbance.

**3.2** (a) In a diverse ecosystem, other species can fill the lost species' role, so the ecosystem keeps functioning. (b) Any one: habitat destruction, pollution, overharvesting.

**3.3** Many services (pollination, water purification, food) depend on particular species; losing them removes those functions, reducing the services people rely on.