

8.6 Biodiversity

Name: _____ Class: _____ Date: _____

Total: 9 marks

KEY WORDS biodiversity 生物多样性 • resilient 有韧性 • ecosystems 生态系统

Objective

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

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

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]

2.3 State one threat to biodiversity. [1]

3 Exam-style questions

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]

Solutions

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.