

Exercise walk-through

Human Impacts on Ecosystems ■ 8.2

eXercise

You must be able to

- describe major impacts (**habitat fragmentation** 生境破碎化, pollution, overexploitation)
- link human activity to biodiversity loss
- suggest mitigation

Method — Major human impacts

- **Habitat destruction and fragmentation** — roads/farms break habitat into isolated pieces.
- **Pollution** — chemicals, plastics, nutrients.
- **Overexploitation** — overfishing, overhunting.
- **Invasive species and climate change.**

Method — Habitat fragmentation

Breaking a habitat into small, isolated pieces reduces populations, limits movement and gene flow, and raises extinction risk (like island biogeography).

Method — Biodiversity loss

Together these impacts drive **biodiversity loss**, reducing ecosystem resilience and services.

Method — Mitigation

Protected areas, wildlife corridors (connecting fragments), pollution limits, and sustainable harvesting reduce the impacts.

Practice 2.1 ■ 1 mark

What is habitat fragmentation?

Solution 2.1

Worked steps

Breaking a habitat into small, isolated pieces **B1**.

Practice 2.2 ■ 2 marks

Name two human impacts on ecosystems.

Solution 2.2

Method: Major human impacts

Worked steps

Any two: habitat destruction, pollution, overexploitation, invasive species, climate change **B1** **B1**.

Practice 2.3 ■ 1 mark

What is a wildlife corridor for?

Solution 2.3

Worked steps

To connect isolated habitat fragments so animals can move between them **B1**.

Exam-style 3.1 ■ 1 mark

Habitat fragmentation increases extinction risk by

- A** enlarging populations
- B** isolating small populations and limiting movement
- C** adding resources
- D** removing predators only

Solution 3.1

Method: Habitat fragmentation

- A enlarging populations
- B isolating small populations and limiting movement 
- C adding resources
- D removing predators only

Worked steps

B — isolating small populations and limiting movement.

Exam-style 3.2 ■ 2 marks

A new highway cuts a forest into isolated patches.

- (a) Explain two effects on the wildlife.
- (b) Suggest one way to reduce the harm.

Solution 3.2

Method: Mitigation

Worked steps

(a) Any two: smaller isolated populations, reduced gene flow, higher extinction risk, blocked migration **B1** **B1**. (b) Build a wildlife corridor or crossing **B1**.

Exam-style 3.3 ■ 2 marks

Explain how wildlife corridors help populations in fragmented habitats.

Solution 3.3

Method: Mitigation

Worked steps

Corridors let animals move between fragments, increasing gene flow and immigration and lowering extinction risk, effectively linking the patches into a larger habitat

M1 **A1**.