

8.2 Human Impacts on Ecosystems

Name: _____ Class: _____ Date: _____ **Total: 14 marks**

KEY WORDS habitat fragmentation

Objective

Build the skills to answer exam questions on **human impacts on ecosystems**.

You must be able to:

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

1 Key knowledge and 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.

■ **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**.

■ **Habitat fragmentation**

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

■ **Biodiversity loss**

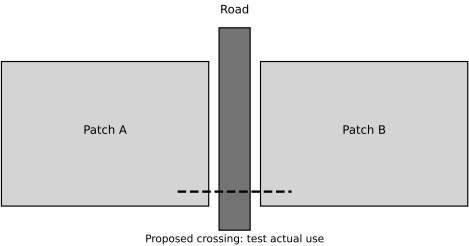
Together these impacts drive **biodiversity loss**, reducing ecosystem resilience and services.

■ **Mitigation**

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

■ **Worked application: Distinguish habitat area from habitat connection**

In an original schematic, a road divides one habitat into two patches. Even if the total habitat area changed little, organisms that avoid the road may move less easily between patches. That can reduce access to mates or seasonal resources. A corridor is a proposed connection, not a guarantee of recovery: its width, location, species use and road crossing all matter. Compare movement records before and after a connection, along with an appropriate reference site, rather than infer success only from drawing a green line on a map. Other simultaneous changes can complicate causal interpretation.



2 Practice

Now apply the methods above.

2.1 What is habitat fragmentation? [1]

2.2 Name two human impacts on ecosystems. [2]

2.3 What is a wildlife corridor for? [1]

3 Exam-style questions

3.1 Habitat fragmentation increases extinction risk by [1]

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

3.2 A new highway cuts a forest into isolated patches.

(a) Explain two effects on the wildlife. [2]

(b) Suggest one way to reduce the harm. [1]

3.3 Explain how wildlife corridors help populations in fragmented habitats. [2]

3.4 A fictional reserve retains the same total wooded area but a fenced road splits it. Explain one consequence of fragmentation and propose a mitigation with one measurable check of its effectiveness. [4]