AP ENVIRONMENTAL SCIENCE • EXERCISE SHEET

8.2 Human Impacts on Ecosystems

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS habitat fragmentation 生境破碎化

Objective

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

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

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.

■ 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.

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]

Solutions

2.1 Breaking a habitat into small, isolated pieces.

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

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

3.1 B — isolating small populations and limiting movement.

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

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