

# 2.5 Natural Disruptions to Ecosystems

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

Total: 11 marks

## Objective

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Build the skills to answer exam questions on **natural disruptions to ecosystems**.

**You must be able to:**

- give examples of natural disruptions (fire, flood, volcano, drought)
- distinguish periodic, episodic, and random events
- explain both harmful and beneficial effects

## 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.

### ■ Types of natural disruption

- **Periodic** —regular, predictable (seasonal flooding).
- **Episodic** —occasional, irregular (a fire every few decades).
- **Random** —unpredictable (a volcanic eruption).

### ■ Harmful and beneficial

Disruptions can harm an ecosystem (killing organisms) but also **benefit** it: fire clears dead material and releases nutrients; floods deposit fertile sediment.

### ■ A worked example

A wildfire kills many plants (harm) but also clears the canopy, returns nutrients to the soil, and triggers some seeds to germinate (benefit) —so some ecosystems depend on periodic fire.

### ■ Recovery

Ecosystems often recover through **succession** after a disruption. High biodiversity speeds recovery.

## 2 Practice

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Now apply the methods above.

**2.1** Give two examples of natural disruptions. [2]

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**2.2** Classify seasonal flooding (periodic, episodic, or random). [1]

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**2.3** State one beneficial effect of a wildfire. [1]

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### 3 Exam-style questions

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**3.1** A volcanic eruption is an example of a [1]

- **A** periodic disruption
- **B** random disruption
- **C** human disruption
- **D** gradual change

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**3.2** A forest experiences a wildfire.

(a) State one harmful and one beneficial effect. [2]

(b) Explain why some ecosystems depend on periodic fire. [2]

**3.3** Explain how an ecosystem recovers after a natural disruption. [2]

### 4 Go further

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

- work through the **2.5 Natural Disruptions to Ecosystems** lesson on the **Learn** page;
- read the **Natural Disruptions to Ecosystems** section of the AP Environmental Science handout on the **Know** page.

## Solutions

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**2.1** Any two: fire, flood, volcanic eruption, drought, storm.

**2.2** Periodic.

**2.3** Any one: clears dead material, releases nutrients, triggers germination.

**3.1 B** —a random disruption.

**3.2** (a) Harmful: kills plants/animals; beneficial: releases nutrients / clears the canopy.

(b) Some plants need fire to release seeds or clear competitors, and periodic fire recycles nutrients, so those ecosystems are adapted to it.

**3.3** Through ecological succession —pioneer species recolonize, and the community rebuilds over time; high biodiversity speeds this recovery.