

5.2 Clearcutting

Name: _____ Class: _____ Date: _____

Total: 10 marks

Objective

Build the skills to answer exam questions on **clearcutting**.

You must be able to:

- describe **clearcutting** 皆伐 and its impacts
- link it to erosion, habitat loss, and flooding
- compare it with selective cutting

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.

■ What clearcutting is

Clearcutting removes **all** trees from an area at once. It is cheap and efficient for timber, but has severe environmental impacts.

■ Impacts

- **Soil erosion** —no roots hold the soil; heavy rain washes it away.
- **Habitat loss** —species lose their homes.
- **Flooding and sedimentation** —more runoff (less infiltration/transpiration) raises flood risk and silts up rivers.
- **Loss of carbon storage** —fewer trees absorb CO₂.

■ Selective cutting

Selective cutting removes only some trees, leaving the forest largely intact —less erosion and habitat loss, but more costly and slower.

■ A worked comparison

A clearcut hillside erodes badly after rain; a selectively-cut one keeps most roots and soil in place.

2 Practice

Now apply the methods above.

2.1 What is clearcutting? [1]

2.2 State one environmental impact of clearcutting. [1]

2.3 How does selective cutting differ from clearcutting? [1]

3 Exam-style questions

3.1 Clearcutting increases soil erosion mainly because it removes the [1]

- **A** roots that hold soil
 - **B** rocks
 - **C** groundwater
 - **D** air
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3.2 A hillside forest is clearcut.

(a) Explain why erosion and flooding increase afterward. [3]

(b) State one advantage of clearcutting to a timber company. [1]

3.3 Explain one advantage and one disadvantage of selective cutting compared with clearcutting. [2]

4 Go further

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

- work through the **5.2 Clearcutting** lesson on the **Learn** page;
- read the **Clearcutting** section of the AP Environmental Science handout on the **Know** page.

Solutions

2.1 Removing all the trees from an area at once.

2.2 Any one: soil erosion, habitat loss, flooding, loss of carbon storage.

2.3 Selective cutting removes only some trees, leaving the forest largely intact.

3.1 A —the roots that hold soil.

3.2 (a) Without trees, roots no longer hold the soil and there is less transpiration and infiltration, so rain washes soil away (erosion) and runs off quickly (flooding). (b) It is cheaper/faster and yields more timber at once.

3.3 Advantage: less erosion and habitat loss (forest stays intact); disadvantage: it is more expensive and slower.