

Exercise walk-through

Clearcutting ■ 5.2

eXercise

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

Method — What clearcutting is

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

Method — 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.

Method — Selective cutting

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

Method — A worked comparison

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

Practice 2.1 ■ 1 mark

What is clearcutting?

Solution 2.1

Worked steps

Removing all the trees from an area at once **B1**.

Practice 2.2 ■ 1 mark

State one environmental impact of clearcutting.

Solution 2.2

Method: What clearcutting is

Worked steps

Any one: soil erosion, habitat loss, flooding, loss of carbon storage **B1**.

Practice 2.3 ■ 1 mark

How does selective cutting differ from clearcutting?

Solution 2.3

Method: Selective cutting

Worked steps

Selective cutting removes only some trees, leaving the forest largely intact **B1**.

Exam-style 3.1 ■ 1 mark

Clearcutting increases soil erosion mainly because it removes the

A roots that hold soil

B rocks

C groundwater

D air

Solution 3.1

A roots that hold soil



B rocks

C groundwater

D air

Worked steps

A — the roots that hold soil.

Exam-style 3.2 ■ 3 marks

A hillside forest is clearcut.

- (a) Explain why erosion and flooding increase afterward.
- (b) State one advantage of clearcutting to a timber company.

Solution 3.2

Worked steps

(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)

M1 M1 A1. (b) It is cheaper/faster and yields more timber at once **B1**.

Exam-style 3.3 ■ 2 marks

Explain one advantage and one disadvantage of selective cutting compared with clearcutting.

Solution 3.3

Method: Selective cutting

Worked steps

Advantage: less erosion and habitat loss (forest stays intact); disadvantage: it is more expensive and slower **M1** **A1**.