

Exercise walk-through

4.6

Watersheds

AP Environmental Science

Watersheds and seasons

A **watershed** is all the land draining to one river. Slope & vegetation set water quality; upstream land use becomes a downstream problem.

Axis tilt makes seasons; ray angle sets climate bands.



Watershed: all land draining to one river

A watershed collects everything that happens on it

definition

all the land that drains to one common body of water

why it matters

farming, paving and pollution anywhere on that land end up in the **same** river or lake

soil formation

rock **weathers** and organic matter builds up – a process measured in **centuries**

erosion

wind and water remove soil, sped up sharply by stripping vegetation

Soil forms far slower than it erodes. That asymmetry is the whole argument for soil conservation.

Exercises 2.1-2.3

2.1 Define a watershed.

[1]

2.2 How does water move within a watershed?

[1]

2.3 Name one land use that can pollute a watershed.

[1]

Exercises 2.1-2.3

2.1 Define a watershed.

[1]

2.1

- All the land that drains into a common body of water
-

2.2 How does water move within a watershed?

[1]

2.2

- It runs downhill, collecting into streams and rivers
-

2.3 Name one land use that can pollute a watershed.

[1]

2.3

- Any one: agriculture, urban/city runoff, construction

Exercise 3.1

3.1 A watershed is best described as the land that

[1]

☐

A contains no water

B drains into a common body of water

C is always a desert

D cannot be polluted

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3.1 B

- drains into a common body of water

Exercise 3.2 (a)

3.2 A farm sits within a river's watershed.

(a) Explain how fertilizer from the farm can reach the river.

[2]

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[2]

(a)

- Rain washes fertilizer off the fields as runoff, which flows downhill through the watershed into the river

Exercise 3.2 (b)

3.2 A farm sits within a river's watershed.

(b) State one effect on the river.

[1]

Exercise 3.2 (b)

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[1]

(b)

- Eutrophication / algal blooms (or nutrient pollution)

Exercise 3.3

3.3 Explain why protecting an entire watershed, not just the river itself, is important for water quality. [2]

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3.3

- All land in the watershed drains to the same water, so pollution anywhere in it can reach the water; protecting the whole basin prevents that