

Exercise walk-through

8.4

Human Impacts on Wetlands and Mangroves

AP Environmental Science

Eutrophication

Too many nutrients set off a chain that suffocates the water:

- nutrients run off → **algal bloom**
- algae die, bacteria decay → **hypoxic** dead zone

Cultural eutrophication : human phosphorus and nitrogen speed it up.



Algal bloom: nutrient run-off fuels hypoxia

Where solid waste actually goes

sanitary land-fills

buried in lined cells to limit **leachate** ; takes land and can still leak

incinerators

burning cuts the *volume* sharply but emits air pollutants and leaves toxic ash

composting

organic waste returned to soil – the cheapest diversion there is

e-waste

phones, computers, televisions – small in volume, but loaded with **toxic metals**

garbage patches

ocean-dumped plastic gathered by currents into vast floating fields far out at sea

The hierarchy is **reduce**, **reuse**, **recycle** – and reducing is best because waste you never make needs no disposal at all.

The pathogens the exam names, and how each travels

dysentery

bacterial – untreated sewage in streams and rivers

plague

bacterial – an infected flea's bite, or infected fluids

tuberculosis

bacterial – breathing in an infected person's bacteria

malariaparasitic – an infected **mosquito** ; sub-Saharan Africa**West Nile / Zika**

viral – an infected mosquito again; Zika also passes sexually

SARS / MERS

viral – infected fluids; MERS crosses from animals

Poverty deepens all of it: low-income areas often lack sanitary waste disposal and clean water in the first place.

Exercises 2.1-2.3

2.1 State two services provided by wetlands.

[2]

2.2 Name one human activity that destroys mangroves.

[1]

2.3 State one consequence of losing a wetland.

[1]

Exercises 2.1-2.3

2.1 State two services provided by wetlands. [2]

2.1

- Any two: water filtration, flood control, nurseries/habitat, carbon storage
-

2.2 Name one human activity that destroys mangroves. [1]

2.2

- Any one: clearing for shrimp farms, coastal development, pollution
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2.3 State one consequence of losing a wetland. [1]

2.3

- Any one: more flooding, worse water quality, lost fisheries, released carbon

Exercise 3.1

3.1 Mangroves protect coastlines mainly by

[1]

☐

A increasing storm surge

B absorbing storm surge and reducing flooding

C adding pollution

D blocking sunlight

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3.1 B

- absorbing storm surge and reducing flooding

Exercise 3.2 (a)

3.2 A coastal mangrove forest is cleared for development.

(a) State two ecosystem services that are lost.

[2]

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3.2 A coastal mangrove forest is cleared for development.

(a) State two ecosystem services that are lost.

[2]

(a)

- Any two: storm/flood protection, nursery habitat, water filtration, carbon storage

Exercise 3.2 (b)

3.2 A coastal mangrove forest is cleared for development.

(b) Explain how this increases storm damage to the coast.

[2]

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(b) Explain how this increases storm damage to the coast.

[2]

(b)

- Without the mangroves' natural barrier, storm surge reaches the coast directly, causing more flooding and damage

Exercise 3.3

3.3 Explain why draining a wetland can worsen local water pollution.

[2]

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3.3 Explain why draining a wetland can worsen local water pollution. [2]

3.3

- Wetlands filter pollutants from water; draining one removes that filtration, so more pollutants pass into rivers and groundwater