

Exercise walk-through

7.8

Noise Pollution

AP Environmental Science

Atmospheric CO₂ and particulates

the source

rising atmospheric CO₂ comes from burning fossil fuels

the effect

it enhances the greenhouse effect and warms the climate

particulate matter

tiny solid or liquid particles suspended in air

its sources

combustion, industry, road dust and wildfires

its effect

respiratory and cardiovascular disease – and PM_{2.5} penetrates deepest

and on climate

particulates can cool by reflecting sunlight, which is the opposite sign to CO₂

The two act in opposite directions, which is why cleaning up particulate pollution can unmask warming that was already there.

Noise pollution

what it is

unwanted or harmful sound in the environment

sources

road traffic, aircraft, trains, industry, construction

effect on people

hearing loss , stress , sleep loss, raised blood pressure

effect on wildlife

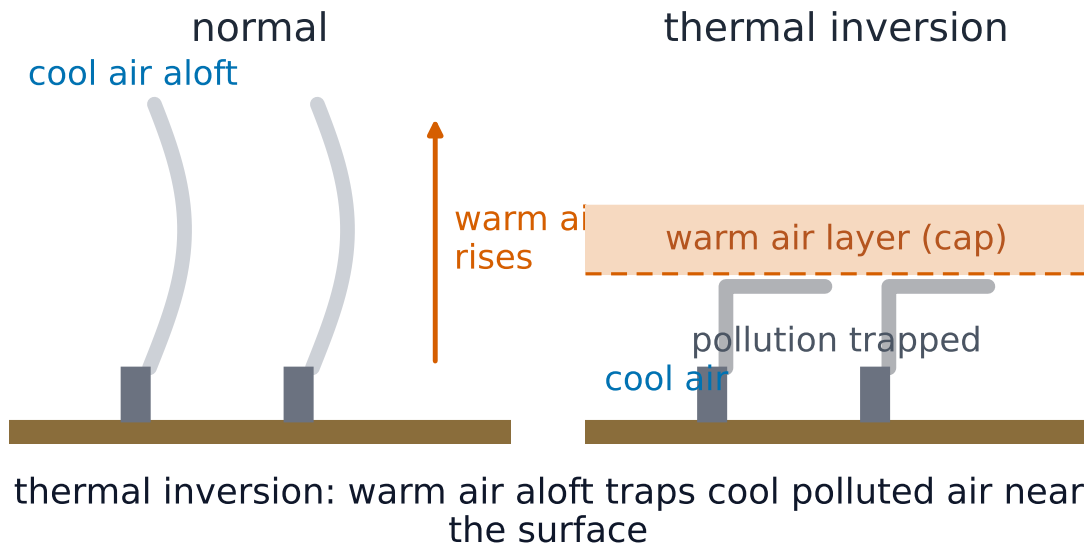
masks the sounds animals use to communicate, navigate and find mates; ship noise is especially harmful to whales and dolphins

controls

sound barriers, quieter engines and mufflers, buffer zones around airports

Noise is the pollutant with **no residue**: it harms while it is present and vanishes the moment it stops – which is exactly why it is under-regulated.

Thermal Inversion, continued



Normally warm air rises and disperses pollution; an inversion caps it near the ground

Exercises 2.1-2.3

2.1 Give one source of noise pollution.

[1]

2.2 State one effect of chronic noise on humans.

[1]

2.3 State one way to reduce noise pollution.

[1]

Exercises 2.1-2.3

2.1 Give one source of noise pollution. [1]

2.1

- Any one: traffic, industry, construction, aircraft
-

2.2 State one effect of chronic noise on humans. [1]

2.2

- Any one: stress, sleep disruption, hearing loss, high blood pressure
-

2.3 State one way to reduce noise pollution. [1]

2.3

- Any one: sound barriers, quieter technology, zoning, hour limits

Exercise 3.1

3.1 Underwater noise pollution most harms marine animals by disrupting their [1]

☐

A communication and navigation

B photosynthesis

C digestion

D skeletons

Exercise 3.1

3.1 Underwater noise pollution most harms marine animals by disrupting their [1]

☐

A communication and navigation

B photosynthesis

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D skeletons

3.1 A

- communication and navigation

Exercise 3.2 (a)

3.2 A new highway is built near a residential area.

(a) State one human health effect of the added noise.

[1]

Exercise 3.2 (a)

3.2 A new highway is built near a residential area.

(a) State one human health effect of the added noise.

[1]

(a)

- Any one: stress, sleep disruption, hearing effects

Exercise 3.2 (b)

3.2 A new highway is built near a residential area.

(b) Suggest two ways to reduce the noise reaching homes.

[2]

Exercise 3.2 (b)

3.2 A new highway is built near a residential area.

(b) Suggest two ways to reduce the noise reaching homes.

[2]

(b)

- Any two: sound walls, quieter road surfaces/vehicles, zoning/hour limits, tree buffers

Exercise 3.3

3.3 Explain how ship noise can affect whales.

[2]

Exercise 3.3

3.3 Explain how ship noise can affect whales.

[2]

3.3

- Ship noise masks the sounds whales use to communicate and navigate, disorienting them and interfering with finding mates or food