SB/L02 17/05/23

Ecosystem Model

Atmosphere

Composition of atmosphere

Definition of Pollution

- When harmful substances contaminate the atmosphere.
- Undesirable changes in the abiotic components

Atmosphere pollution

Types of Pollution

Different Pollutants

Environmental Challenging

Green House Effect

Formation of Photochemical Smog

Acid Rain

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Air Pollution

Ans - An Atmospheric condition in which certain substances (including normal substances but in higher concentration) are present in concentrations which are can cause undesirable effects on man and his environment.

Sources of air pollution

- Natural : Volcanic eruptions, - -
- Anthropogenic : Thermal power, vehicular emissions, - - -

Classification of Air Pollutants

- Natural Pollutants.
- Primary Pollutes
- Secondar "

$2SO_2 + O_2 \longrightarrow 2SO_3$

$2SO_3 + H_2 \longrightarrow H_2SO_4$

Q. what is the difference between primary & secondary pollutents?

Criteria Air Pollutants

- EPA

Indoor air pollutants

Effects of air pollution

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Air pollution monitoring

∴ AQI for a particular pollutant,

$$\therefore I_p = \frac{I_{Hi} - I_{Low}}{BP_{Hi} - BP_{Lo}} (C_p - BP_{Lo}) + I_{Lo}$$

I_p = index value for the pollutant p

C_p = conc. of a pollutant p

BP_{Hi} = the breakpoint $\geq C_p$

BP_{Lo} = " " $\leq C_p$

I_{Hi} = corresponding AQI value of BP_{Hi}

I_{Lo} = " " " BP_{Lo}

Water Pollution

- Hydrolic cycle
- Types of water pollution
- Types of Pollutants

Pathogens: Desease causing organisms that grow and multiply within the host

Nutrient: Chemical that are essential for growth

Eutrophication

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Water Pollution

- Salts
- Suspended solids
- Heat
- Oxygen demanding
  - Organic matter + O_2 $\xrightarrow{\text{bacteria}}$ $CO_2 + H_2O$ + New cells + stable product
- Effects
  - Heavy metals

POP

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Heavy metals

Pesticides

Volatile Organic Compounds (VOC)

Persistent Organic Pollutants

Water Pollution: Adverse effects on ~~Hy~~ Human Health and ~~Ecosys~~ Ecosystem.

~~Impacts of water~~

Impacts on human life

Impacts on soil

Eutrophication/ The

Pollution discharge

Control of water Pollution

On-site Sanitation

Agriculture waste Treatment

Sediment & runoff

Control

Mid syllabus

Water Pollution

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Water pollution monitoring

Surface quality

Monitoring scenarios

water quality params

Soil

Soil Pollution



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Soil Pollution

Agricultural waste

Industrial waste

Urban waste

Effects micro-organism

Effect of bio-accumulation

Organ damage

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Soil Pollution Effects Sources

Soil Pollution Effects

How to prevent Soil Pollution

3R principle → Recycle, Reduce, Recover

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Noise Pollution

[when mentioning sources, include dB >.

—

Sound Pressure Level

- Decibel → $\log\left[\frac{\text{acoustic energy}}{\text{reference energy}}\right]$

addition → $SPL_T = 10 \times \log\left[\sum_{i=1}^{n} 10^{\left(\frac{SPL_i}{10}\right)}\right]$

—

100, 91, 90, 89 dB

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Effects of Noise Pollution on wildlife.

Control of Noise Pollution

Thermal Pollution

(Cause)

Nuclear Power Plant

Coal-fired Power Plant

Industrial effluents

Domestic Sewage

Hydro-electric Power

Thermal Pollution due to ~~—~~

Effects of thermal pollution

" " increased water temp.

Control measures for Thermal Pollution

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Thermal Pollution

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03/08

Nuclear Pollution

Pollution from detergents & dyes

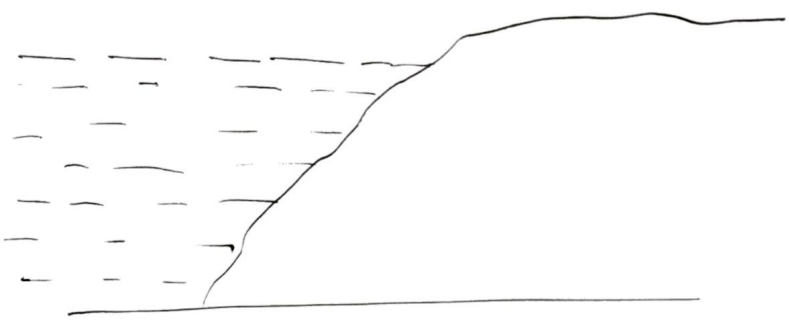
sources, distribution, and effects of detergent in env
graph

SB

09/08/23

Detergent:

Effects



Impacts on water

—

Impacts on human

—

Control of Dye Pollution

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10/08/23

Pollution From Agricultural Activities

Agricultural impact on water quality

Management measures

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Environmental laws & regulation

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Environmental Laws and Regulation

EA - Environmental Impact Assessment.

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10 marks from today's lecture
