SNS COLLEGE OF TECHNOLOGY

Vazhiamyampalayam,Coimbatore-35

(An Autonomous institution)

Accredited by **NBA-AICTE** and Re-Accredited by **NAAC-UGC with A+ Grade**

Approved by **AICTE,** New Delhi & Affiliated to **Anna University**, Chennai

DEPARTMENT OF CHEMISTRY

COURSE NAME : 19HST101- ENVIRONMENTAL SCIENCE

I YEAR / I SEMESTER

UNIT : 3. ENVIRONMENTAL POLLUTION

TOPIC : 3. WATER POLLUTION

BRAINSTORMING WITH RECAP

INTRO

- The contamination of a stream, river, lake, ocean or any other stretch of water, depleting water quality and making it toxic for the environment and humans.

- Any physical or chemical change in water that adversely affects the health of humans and other organisms

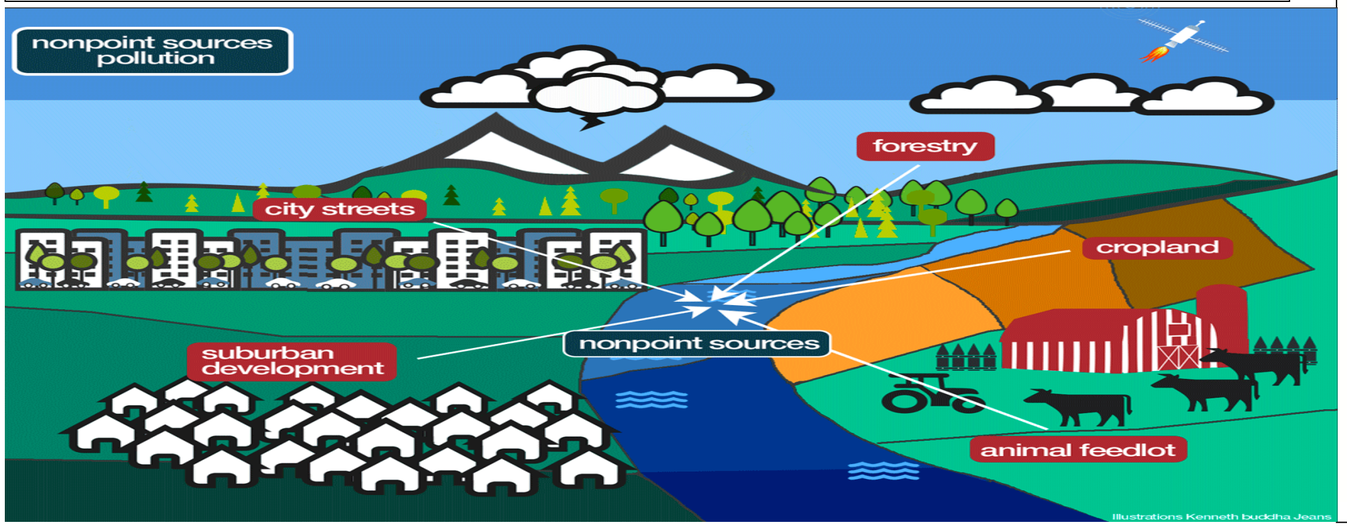
SOURCES

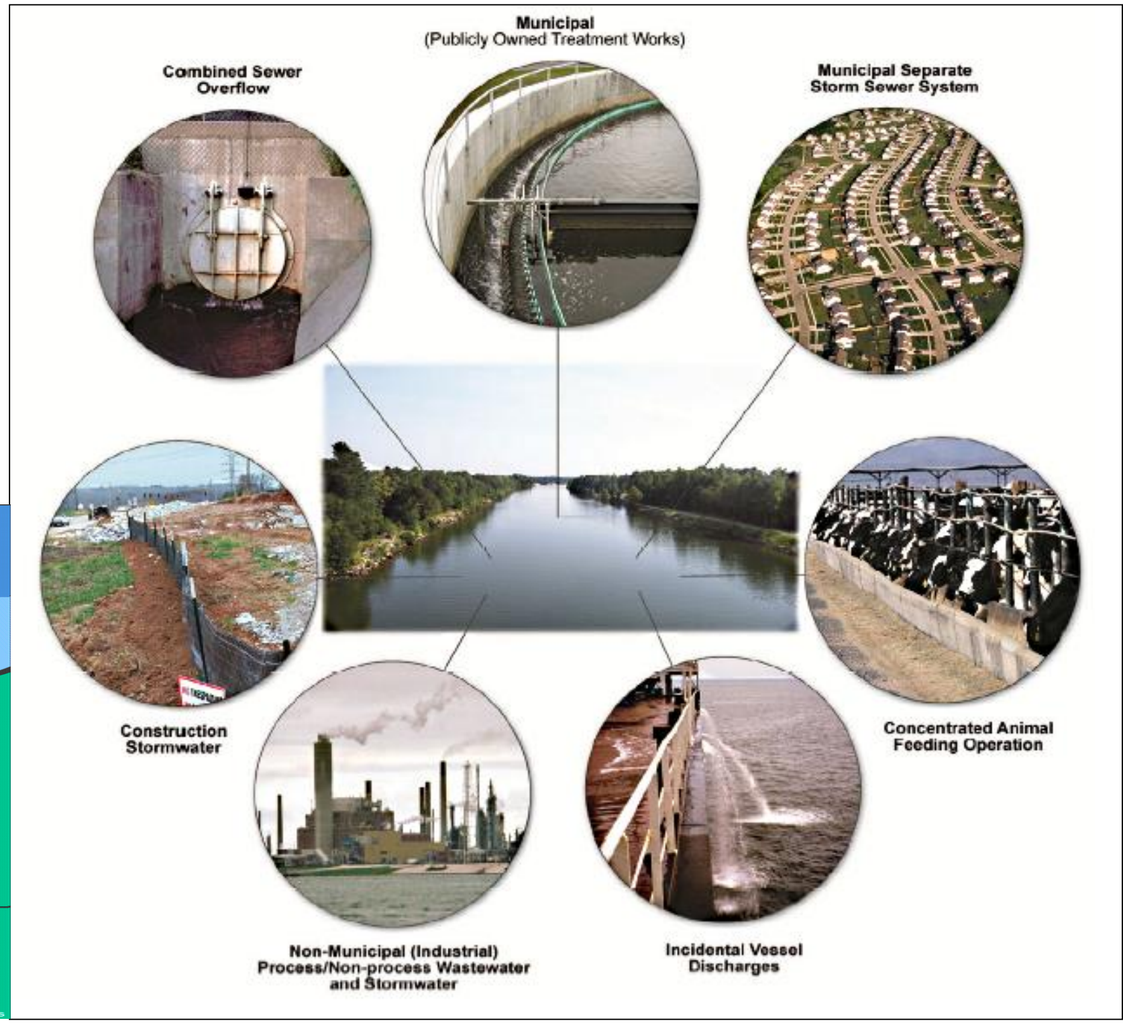
1.Point sources

Specific sites which directly discharge the effluents to water bodies

2.Non-Point sources

Non-Specific sites which are scattered





SOURCES

3.Industrial waste- Organic & Inorganic waste

4.Domestic / community waste

SOURCES

5. Agricultural waste

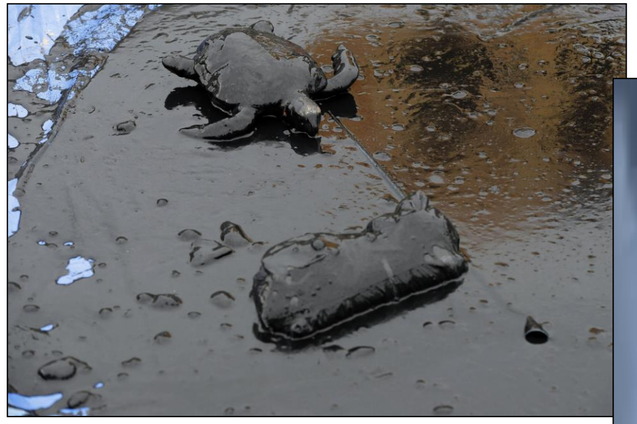
6.Oil spillage

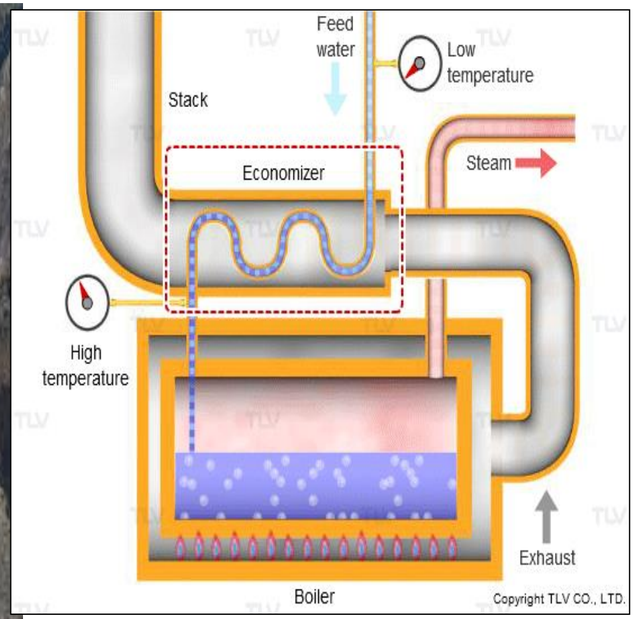
7.mining

8. Ground water pollution

9.Waste heat

10. Air pollution

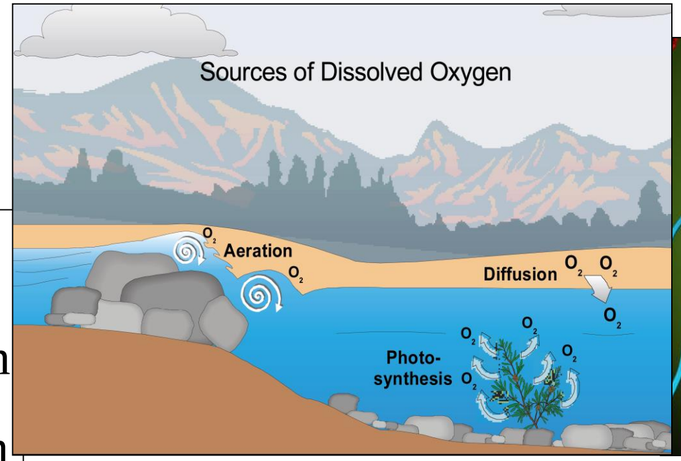


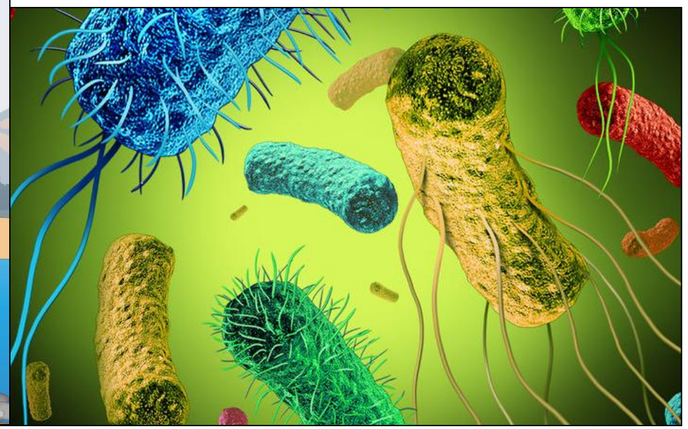


EFFECTS

1.Pathogens

Spreading water born diseases like--





2.O2 demanding waste

- **DO** – The amount of O2 dissolved in a given quantity of water at a particular temperature & atm
- **DO varies – 8-15 mg/l**
- **BOD**
- The amount of O2 required for microorganisms to decompose the aerobic decomposers for biochemical degradation of organic matters in water

EFFECTS

- **COD**
- The amount of O2 required for chemical oxidation of organic matters in water using oxidizing agents like K2Cr2O7/KMnO4

3.N/P compounds

Causes eutrophication

4. Toxic compounds

Bio accumulation

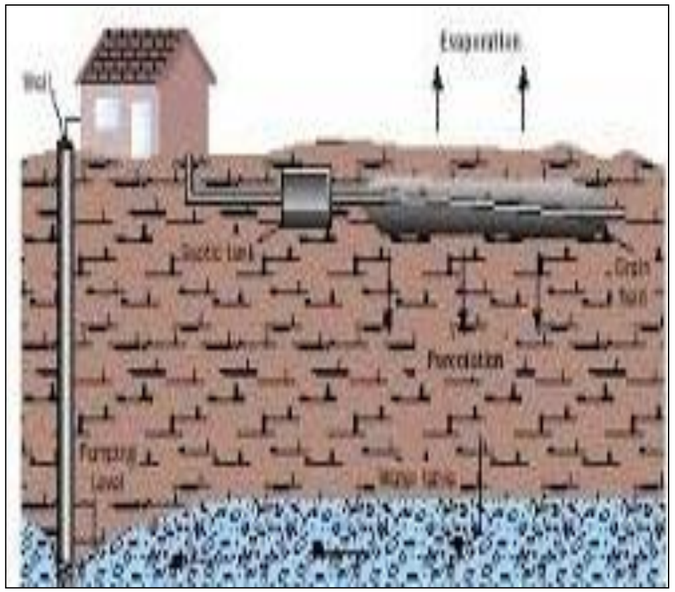
5. Effect of sediments

6. Effect of metals like Pb, Ar, etc

CONTROL MEASURES

1.Source control

- Waste water treatment- before discharge
- Plant more trees- avoid surface runoff
- Integrated usage of pest management
- N fixing plants
- Limits the usage of pesticides & fertilizers
- Proper drainage system
- Maintance of water bodies
- monitoring



Activity

WATER QUALITY PARAMETERS

Parameters	Water quality standard	Assigned weight (AW)	Relative weight (RW)
pH (pH unit)	6.5-8.5 (8.0)	2.1	0.095023
DO (mg/L)	5.0	4.0	0.180995
Turbidity (NTU)	5.0	2.4	0.108597
Conductivity (µS/cm)	250.0	2.7	0.122172
Hardness (mg/L)	100.0	1.1	0.049774
Alkalinity (mg/L)	100.0	1.6	0.072398
Na (mg/L)	200.0	1.0	0.045249
BOD (mg/L)	5.0	3.0	0.135747
NO_3 (µg/L)	50.0	2.2	0.099548
NO_2 (µg/L)	3.0	2.0	0.090498
Total		22.1	1.0

ASSESSMENT

List out the various sources & effects of water pollutants

SUMMARY

REFERENCES

1. Dr. A.Ravikrishnan, Environmental science & Engineering" Srikrishna hitech Pub. Co. Ltd,2013.
2. G.Tayer Miller :Environmental Science", Cenage Learning India Pvt Ltd, 2011.
3. Benny joseph, "Environmental science & engineering" Tata McGraw-Hill.Pub.Co.Ltd. New Delhi.2009.