

**Ministry of Higher Education
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University of Ishik
College of education
Department of Biology**



**Practical Ecology
Sampling methods and Strategy
2nd lab.
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Objectives

- Introduction to pollution
 - What is the 5R s ?
- 



Environmental Pollution

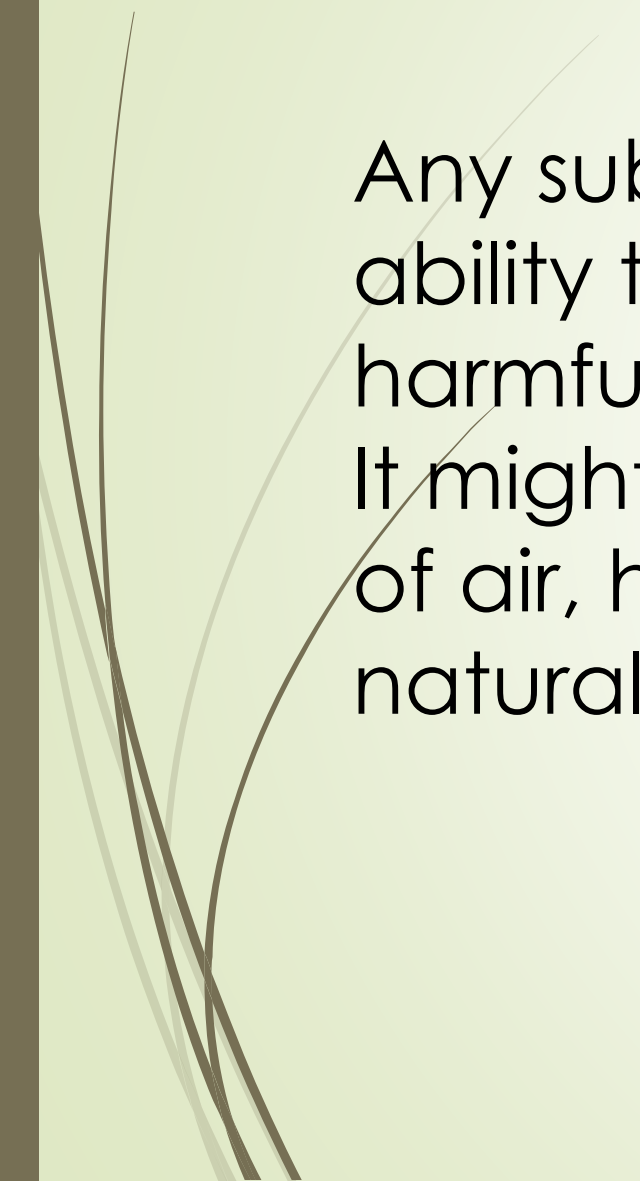
is the introduction of contaminants into a natural environment that causes instability, disorder, harm or discomfort to the ecosystem i.e. physical systems or living organisms.

Environmental pollution is the buildup and accumulation of toxic heavy metals in the air, water, and land that reduce the ability of the contaminated sites to support life.



What is POLLUTANT?

Any substance, or form of energy which has the ability to pollute the environment, causing harmful effects and damaging nature in general. It might affect natural health of plants, the quality of air, human health, etc. Pollutants are either natural or man made.



Forms of pollution

- Air pollution
- Light pollution
- Noise pollution
- Plastic pollution
- Soil contamination
- Radioactive contamination
- Thermal pollution,
- Visual pollution
- Water pollution

Among these types of pollution, **Air pollution** is the main type threatening the environment, humans, plants, animals, and all living organisms.

Air pollution

Refers to the release of **pollutants** into the **air** that are detrimental to human health and the planet as a whole



Light pollution

Is excessive and inappropriate artificial **light**.



Noise pollution

Affects both health and behavior. Unwanted **sound (noise)** can damage physiological health. **Noise pollution** can cause hypertension, high stress levels, tinnitus, hearing loss, sleep disturbances, and other harmful effects



Plastic pollution

Is the accumulation of **plastic** objects (e.g.: **plastic** bottles and much more) in the Earth's environment that adversely affects wildlife, wildlife habitat, and humans.



Soil contamination or soil pollution

As part of land degradation is caused by the presence of xenobiotic (human-made) chemicals or other alteration in the natural **soil** environment.



Radioactive contamination, also called radiological contamination

Is the deposition of, or presence of *radioactive* substances on surfaces or within solids, liquids or gases (including the human body), where their presence is unintended or undesirable



Thermal pollution

Is the degradation of water quality by any process that changes ambient water temperature.



Visual pollution

Is an aesthetic issue and refers to the impacts of **pollution** that impair one's ability to enjoy a vista or view



Water pollution

Is the **contamination** of **water** bodies, usually as a result of human activities





These steps, as well as many others, are things we all can do to help reduce environmental pollution

- **Conserve energy – remember to turn off lights, computers, and electric appliances when not in use.**
- **Use energy efficient light bulbs and appliances.**
- **Participate in your local utility’s energy conservation programs.**
- **Limit driving by carpooling, using public transportation, biking and walking.**
- **Combine errands for fewer trips.**
- **Keep your automobile well tuned and maintained. Follow the manufacturer’s instructions on routine maintenance, such as changing the oil and filters, and checking tire pressure and wheel alignment.**
- **Avoid excessive idling of your automobile.**

- Use electric or hand-powered lawn care equipment.
- Be careful not to spill gasoline when filling up your car or gasoline powered lawn and garden equipment.
- Run dishwashers and clothes washers only when full.
- Choose environmentally friendly cleaners.
- Use water-based or solvent free paints whenever possible and buy products that say "low VOC".
"Volatile Organic Compounds" (VOC)
- Seal containers of household cleaners, workshop chemicals and solvents, and garden chemicals to prevent volatile organic compounds from evaporating into the air.
- Purchase and use low-polluting outboard marine engines and personal watercraft (4-stroke and direct fuel injection 2-stroke outboard marine engines).
- Advocate for emission reductions from power plants and more stringent national vehicle emission standards.

What type of pollution are these ?



What are the 5 Rs?

Refuse, Reduce, Reuse, Repurpose, Recycle

Are commonly used to help people remember to be responsible with their waste



Refuse

Refuse to buy or accept products that can harm you, your company and the environment. Use the power of your dollar to tell companies what you want and do not want



REDUCE

- ▶ Reduce, to use less. Think about what you use and buy. Could you use less? Reduce the amount of energy you use to heat your facility by getting an energy audit (a lot times for free) and save **MONEY** in the process.
- ▶ Keep asking the question, “What is the minimum amount necessary?”



REUSE

Reuse something you already have instead of buying something. Replace needing a single use item, with something you can use over and over again. Both of these options will save you money as well.



Repurpose

- Repurpose – to take something and use it for something else. This requires a bit of thinking and craftiness, but doesn't have to be beautiful.



Recycling

- ▶ Recycling is the process of collecting and processing materials that would otherwise be thrown away as trash and turning them into new products. Recycling can benefit your community and the environment





THANK YOU FOR YOUR ATTENTION 😊



ANY QUESTIONS ????????