

OZONE LAYER DEPLETION (6 MARKS)

Ultraviolet radiation could destroy the organic matter. Plants and plankton cannot thrive, both acts as food for land and sea animals, respectively. For humans, excessive exposure to ultraviolet radiation leads to higher risks of cancer (especially skin cancer) and cataract

The main cause for the depletion of ozone is determined as excessive release of chlorine and bromine from man-made compounds such as chlorofluorocarbons (CFCs) and N₂O (Nitrous Oxide).

1. Damage to human health

If the ozone layer is depleted, it means humans will be overly exposed to strong UV light. Overexposure to strong UV light causes skin cancer, cataracts, sunburns, weakening of immune system and quick aging.

2. Devastation to environment

Many crops species are vulnerable to strong UV light and overexposure may well lead to minimal growth, photosynthesis and flowering. Some of the crop species vulnerable to UV light include barley, wheat, corn, oats, rice, broccoli, tomatoes, and cauliflower just to name a few. Forests equally bear the brunt of ozone depletion.

3. Threat to marine life

Certain marine life, especially planktons, is greatly impacted by exposure to strong ultraviolet rays. In the aquatic food chain, planktons appear high up. If planktons decrease in number due to ozone layer destruction, the marine food

chain would be disrupted in many ways. Also, overexposure of sun rays could reduce the fortunes of fishers. On top of that, certain species of marine life have been greatly affected by overexposure to ultraviolet radiation at their early stage.

4. Effect on animals

In domesticated animals, too much Ultraviolet radiation could also lead to skin and eye cancer.

5. Impacts certain materials

Materials like plastics, wood, fabrics, rubber are massively degraded by too much ultraviolet radiation

The Montreal Protocol formed in 1989 helped a lot in the limitation of Chlorofluorocarbons (CFCs). However, the protocol never covered nitrous oxide, which is a known harmful chemical that can destroy the ozone layer. Nitrous oxide is still in use today. Governments must take action now and outlaw nitrous oxide use to reduce the rate of ozone depletion

Although fair-skinned, fair-haired individuals are at highest risk for skin cancer, the risk for all skin types increases with exposure to UV-B radiation. The effects of UV-B on the human immune system have been observed in people with all types of skin

Cataracts are a clouding of the eye's lens and are the leading cause of permanent blindness worldwide. They are a result of overexposure to UV. A

sustained 10% thinning of the ozone layer is expected to result in nearly two million new cases of cataracts per year globally.

1. **Avoid the consumption of gases dangerous to the ozone layer**, due to their content or manufacturing process. Some of the most dangerous gases are CFCs (chlorofluorocarbons), halogenated hydrocarbon, methyl bromide and nitrous oxide.
2. **Minimize the use of cars.** The best transport option is urban, bicycle, or walking. If you use a car to a destination, try to carpool with others to decrease the use of cars in order to pollute less and save.
3. **Do not use cleaning products that are harmful to the environment and to us.** Many cleaning products contain solvents and substances corrosive, but you can replace these dangerous substances with non-toxic products such as vinegar or bicarbonate.
4. **Buy local products.** In this way, you not only get fresh products but you avoid consuming food that has travelled long distances. As the more distance travelled, the more nitrous oxide is produced due to the medium used to transport that product.
5. **Maintain air conditioners**, as their malfunctions cause CFC to escape into the atmosphere.