

This is just an example of one food chain. However, in nature, food chains are not isolated. They are interconnected in the form of the food web. Therefore, killing all the plants of an area will not only affect the deer but will also affect other herbivores such as goats, cattle, sheep, etc.

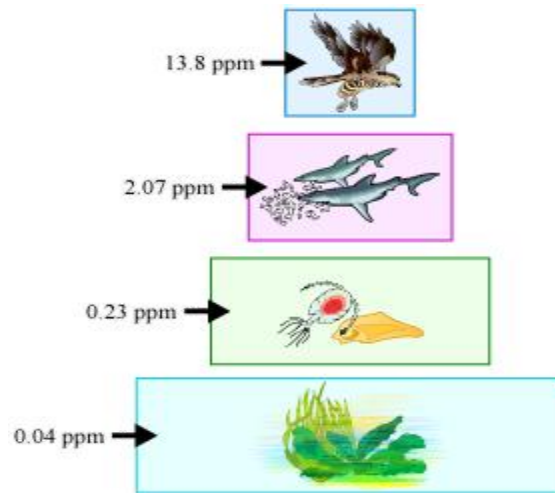
5. Will the impact of removing all the organisms in a trophic level be different for different trophic levels? Can the organisms of any trophic level be removed without causing any damage to the ecosystem?

Ans. Organisms of all trophic levels are equally important and are an integral part of the ecosystem. If all the producers are removed, then it will affect all the herbivores as it is their primary food source. The death of herbivores will soon affect the primary carnivores and so on.

Now let us suppose that all the deer (herbivores) are killed in a region. This can lead to an increase in the number of producers. At the same time, there will be an increase in the number of other herbivores such as rabbits, goats, sheep, etc. due to less competition. This will also lead to the increase in the population of only consumers of these increased herbivores. Thus, the balance in the ecosystem gets disturbed if any of its component organisms are removed.

6. What is biological magnification? Will the levels of this magnification be different at different levels of the ecosystem?

Ans. Biomagnification is the increase in the concentration of pollutants or harmful chemicals within each step of the food chain. The levels of biomagnification will be different at different trophic levels. For example, in a pond of water, DDT was sprayed and the producers were found to have a 0.04 ppm concentration of DDT. Since many types of planktons are eaten by some fishes and clams, their body accumulates 0.23 ppm of DDT. Seagull that feeds on clams accumulates more DDT as one seagull eats many clams. Hawk, the top carnivore, has the highest concentration of DDT.



7. What are the problems caused by the non-biodegradable wastes that we generate?

Ans. Non-biodegradable substances affect the environment in the following ways.

- (i) Since the non-biodegradable substances cannot be broken down, they get accumulated and thus contaminate the soil and the water resources.
- (ii) These substances, when accidentally eaten by some stray animal, can harm them and can even cause their death.
- (iii) These substances occupy more space in the landfills and require special disposal techniques.
- (iv) These materials can accumulate in the environment and can also enter the food chain.

8. If all the waste we generate is biodegradable, will this have no impact on the environment?

Ans. The generation of only biodegradable waste will have a positive impact on the environment. There will not be any pollution caused by the non-biodegradable wastes. The problem associated with waste management and disposal will also not occur. The population of decomposers will increase to break down the extra biodegradable waste generated.

9. Why is damage to the ozone layer a cause for concern? What steps are being taken to limit this damage?

Ans. Ozone depletion occurs widely in the stratosphere. However, it is more prominent over the Antarctic region and is known as the ozone hole.

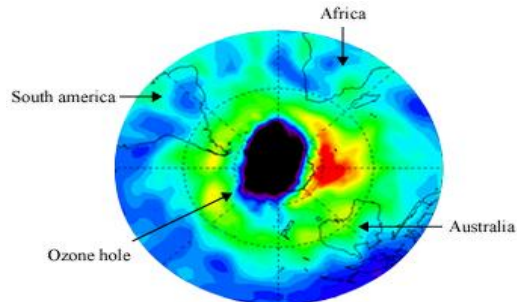


Diagram representing ozone hole

Consequences of ozone depletion.

- It causes skin darkening, skin cancer, ageing, and corneal cataracts in human beings.
- It can result in the death of many phytoplanktons that leads to increased global warming.

To limit the damage to the ozone layer, the release of CFCs into the atmosphere must be reduced. CFCs used as refrigerants and in fire extinguishers should be replaced with environmentally-safe alternatives. Also, the release of CFCs through industrial activities should be controlled.