

	INDIAN SCHOOL AL WADI AL KABIR	
Class X	Department of Science 2020-2021 SUBJECT: BIOLOGY	
HANDOUTS	TOPIC : OUR ENVIRONMENT	ATTACH IN : A4 File format
Name of the student:	Class & Section:	Roll No.

ECOSYSTEM

The smallest functional unit of the biosphere where there is an interaction between living and non living components.

TYPES OF ECOSYSTEM

The two types of ecosystem are: Natural ecosystem -Eg: Forest , Sea

Artificial ecosystem -Eg :Garden , Aquarium

COMPONENTS OF ECOSYSTEM

The components of an ecosystem are:

Abiotic components – Physical factors like temperature, light, soil, water etc are called physical factors.

Biotic components – Biological components like plants, animals and microbes etc are called biotic components.

BIOTIC COMPONENTS- The biotic components are further classified as :

Producers, consumers and decomposers.

Producers- These include green plants and other autotrophs that trap solar energy and convert it into a usable form of energy source (chemical).

Consumers – These are heterotrophs who directly or indirectly depend on producers for their energy requirements. Eg: Carnivores, omnivores and parasites.

Decomposers – These include fungi or bacteria that break down complex organic matter into simple inorganic substances. They help in removing dead remains from the earth surface and also in recycling of nutrients.

FOOD CHAIN

The sequential transfer of energy from one organism to another through the food consumed.

Each level in the food chain is called a trophic level.

The various trophic levels are –Producers ,Primary consumers, Secondary consumers etc.

The primary consumer in a food chain is mostly herbivores as they depend directly on the producer for their nutrition. The secondary and higher levels include carnivores, omnivores etc who indirectly derive their nourishment from producers.

CHARACTERISTICS OF A FOOD CHAIN

i)In a food chain there is flow of energy and matter.

ii)In a food chain energy flows in one direction that is, always from producers to the various consumers and cannot be returned back to the previous level.

iii) Energy flow in a food chain is according to the ten percent law.

At each trophic level only 10% of the received energy is transferred to the next higher trophic level.90 percent of the received energy is utilized by the organism itself and so is considered to be lost.In nature we do not find longer food chains, as the energy loss will be more .

iv)The removal of any organism from a food chain leads to ecological imbalance.

FOOD WEB

Interconnected food chains form a food web.

BIOLOGICAL MAGNIFICATION

When a chemical enters into a food chain, it accumulates in higher concentrations at the higher trophic levels.This is called bio accumulation or biological magnification.

OZONE DEPLETION

The use of Chlorofluorocarbons (CFCs) had affected the formation of ozone gas in the atmosphere and there by a decrease in the thickness of ozone layer has occurred. This is called ozone depletion.

In the polar regions, the ozone depletion has led to total absence of ozone in certain areas which is referred to as the “Ozone hole”.

The harmful effects of ozone depletion are that the UV rays will reach the earth’s surface. UV radiations affect and damage many forms of life

- UV rays cause skin cancer, decrease immunity of the body, cause eye infections, cataract etc in humans.

- UV radiations affect the phytoplankton growth and also kills larval forms of various aquatic organisms .This can create imbalance in aquatic ecosystems.
- UV rays kill useful microbes in the soil thereby affecting the fertility of the soil and also the vegetation growth.

Prevention and Control of ozone depletion

- Stop the use of CFCs and other ozone depleting substances(ODS).
- Proper servicing of refrigerators, air conditioners etc to check leakage of any ODS into the atmosphere.

BIODEGRADABLE AND NON BIODEGRADABLE SUBSTANCES

BIODEGRADABLE SUBSTANCES	NON BIODEGRADABLE SUBSTANCES
1.These are substances that can be broken down to simple inorganic substances by the action of microbes naturally	1.These are substances that cannot be broken down to simple substances by the action of microbes.
2.These are less polluting as they are naturally degraded.	2.These cause environmental pollution as they are chemically degraded.
3.They are considered to be more ecofriendly as the products formed by their degradation are not toxic.	3.They are considered non ecofriendly as the degradation of these by chemical processes release certain substances which are toxic.
4.These substances do not disturb the ecological balance.	4.They create ecological imbalance.
5.Examples are: Vegetable peels, Paper, Animal waste etc	5.Examples are: Plastics, DDT, Metals etc

Measure to manage the disposal of waste :

- Proper disposal of biodegradable and non-biodegradable waste into separate bins.
- Converting biodegradable waste into manures and using for farming.
- Using alternative materials in the place of non-biodegradable substances.
- Following the 3Rs for management of non-biodegradable waste -Reduce, Reuse and Recycle.

PREPARED BY : Ms Zeema Viswanathan

CHECKED BY : HOD - SCIENCE