**ECOSYSTEMS**

An ecosystem consists of a number of living organisms and their physical environment. The living оrganisms and their nonliving environment are interrelated and interact with each other. There are 6 major components in an ecosystem:

1. inorganic substances

2. organic compounds

3. climate, temperature, wind, light and rain which affect all the processes in an ecosystem

4. producers; green plants which are able to manufacture food from simple inorganic substance in the process known photosynthesis

5. consumers; Primary consumers: they obtain their energy, from green plants. But secondary consumers such as dogs and cats feed on other animals.

6. decomposers, such as bacteria and fungi. Bacteria break down the flesh of dead animals. Fungi break down plant material. They enable chemical substances to return to the physical environment.

The main processes in ecosystems include:

1. food chains

2. materials cycles

3. development

4. evolution

Food chains. The Sun's energy travels through an ecosystem. The proper transfer of energy through an ecosystem by the producers, the consumers and the decomposers is called a food chain. Materials Cycles. Materials cycles include cycles of nitrogen, carbon, oxygen, water and mineral salts. Chemical substances move from the non-living environment to living things. They are then returned to the environment.

Development. An ecosystem exists in a state of equilibrium. It can support a certain number of plants and animals of different species. If the population of one animal increased, there would not be enough food and water for all the animals. Consequently, some would die. In this way the ecosystem regulates itself and returns to its state of equilibrium. Ecosystems are not static - they change all the time. Plants and animals are able to adapt to changes in the physical environment. For example, if fire destroyed the vegetation in a region, there would be certain changes. First grass and some flowers would grow. Then insects would appear. The wind would blow the seeds of small trees. These trees would grow and birds and animals would appear. Evolution. During long periods of time ecosystems evolve. The evolution of an ecosystem is caused by factors inside and outside it. Consider the evolution of the atmosphere: when life began there was no oxygen in the atmosphere. Consequently, the Sun's rays prevented life from developing on land.

The first living organisms developed under the sea. After the evolution of photosynthesis, the oxygen in the atmosphere increased and life expanded. Complex living organisms developed. As the oxygen in the atmosphere increased, a layer of ozone was formed; life would be impossible without it on the surface of the Earth. Today life on the Earth is in danger: man himself might destroy the equilibrium of ecosystem by pollution, extinction of wildlife and unreasonable utilization of the globe's material resource.