

Pollution continued




Thermal Pollution

In various energy conversion plants and other industrial establishments, water that does not contain any pollutants is given to the receiving environment (usually the sea or river), which leads to an increase in temperature locally in that region and a deterioration of the natural balance.⁸

This situation is too dangerous, especially for bays and bays that do not have a runoff. The **reproduction, feeding** and **development of living things** are directly affected, and species composition varies towards species with temperature tolerance. Temperature also has negative effects on migratory organisms.

The increase in temperature shows indirect effects by decreasing the **oxygen dissolving capacity** of the water.

Increasing temperature in a given region can increase microbial activity, then the increase of the abundance of other invertebrate vertebrate organisms. Such processes can lead to a complete alteration in the natural flora and fauna.

A decorative graphic consisting of several parallel white lines of varying lengths, slanted diagonally from the bottom right towards the top right, set against a blue gradient background.

2. Domestic Pollution

When the water used for domestic purposes is returned to the receiving environment, its properties are completely changed. Many detergents, sewage waste (sewage and urban rainwater), drug residue, cosmetic residue etc. may contain. This is a serious problem, especially in areas where sewage infrastructure is not available or inadequate.

There is also a risk of **domestic solid** waste seeping from landfills into aquatic environments or groundwater by superficial flows. Domestic wastes are mainly composed of organic wastes, but if they are not properly classified, they also contain inorganic substances.

Domestic waste also contains significant amounts of nitrogen and phosphate. Nitrogen and phosphate compounds can lead to acceleration of eutrophication in water bodies.

3. Agricultural Pollution

Various drugs and fertilizers used for agricultural purposes and waste from animal farms are also dangerous in terms of aquatic environments. These risks due to agriculture and livestock can be summarized as follows:

Due to erosion

Due to excessive fertilizer use

Due to agricultural use of pesticides

Due to animal husbandry

a. Due to erosion: Improper farming techniques and alteration of natural vegetation for agricultural purposes causes the fertile upper layers of the soil to be washed away by rainfall and transported to rivers and lakes. This soil is rich in nutrients and may trigger eutrophication in lakes.



b. Due to excessive fertilizer use:

In order to meet the needs of the growing population, fertilizers containing nitrogen and phosphorus are used extensively in order to achieve high yields in a short time. Their increase in soil leads to increase in water with superficial flows. Some of the compounds contained in these fertilizers are also directly effective on human health. There is also a risk that groundwater may be contaminated with these fertilizer ingredients.

c. Due to agricultural use of pesticides

Agricultural pests encountered during the process from cultivation to harvest of the cultivated product in the field cause significant decreases in the amount of the product and increase in the cost. As a result of this, there is also a significant increase in agricultural drug use. Some of these drugs remain intact for a long time in nature and when mixed into water negatively affect human and environmental health.

d. Due to animal husbandry

Feces and urine, feeds, additives in feeds (drugs) that leak from animal shelters such as barns, Pennis and poultry in animal husbandry places may leak into aquatic environments by washing with rain. In addition, aquaculture plants can pose a serious risk to the environment and human health.