

# **Waste Release Due to Human Activities into Freshwater Ecosystems: Forms, Impact and Possible Re-mediation**

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## **Summary**

Water in general and freshwater in particular is the magic of our planet. Despite its crucial role in our lives, water is one of the most badly abused resources. Freshwater ecosystem represented in rivers, lakes, streams etc, are actually used in many countries, Egypt included, as dumping environments for different types of wastes (pollutants). These pollutants are also release either directly or indirectly from different human activities. However, pollutants nature as well as its released forms, into water bodies, is varying from one nation to another. Such variations, in some way, are depending on the economic level of each nation. In poorer, non-industrialized ones water pollution is predominantly caused by human and animal wastes, pathogenic organisms from this waste, pesticides and sediment from unsound farming and timbering practices. Although, rich-industrial countries also suffer from these problems, but with their more extravagant life-style and widespread industry, they create an additional assortment of potentially hazardous wastes such as, heat, toxic metals, acids, pesticides and organic chemicals.

In between the above-mentioned two extremes of economic development, there are numerous countries with various levels of industrialization. They often have inadequate laws or non at all to combat water pollution. Or, if they do have good laws, they frequently lack adequate funding to enforce pollution law. Their waters are, therefore, often badly polluted with an assortment of industrial and municipal wastes.

Because like air, water respect no boundaries, pollutants produced in one country often end up in another's water supply. The thoughtless dumping of wastes in rivers, accidents (e.g. dead bodies in wars or oil spills), and uncontrolled population growth can have dire consequences on lakes, streams and finally on oceans (Charis, 1994).

Wastes release into water bodies may occur through what is called, point and/or non-point sources. The former could be represented by municipal sewage and industrial facilities, while the latter may include agriculture runoffs, urban runoffs, construction runoffs, mining runoffs, land fills spill, and other sources found in the catchments area. In general, the impact of these wastes on living

organisms may also vary from one ecosystem to another according to its nature i.e. the impact will be different between *lotic* and *lentic* water bodies. The same could be also due to morphometric, bio-geochemical and physical characteristics of each water body. But, the end result will surely disturb the naturally balanced ecosystem and may also lead to a complete destruction of life in such environment.

In conclusion we can say that, lake's eutrophication, acidification, and stagnation phenomena found in many freshwater environment worldwide are the end result of human arrogance in thoughtless release of wastes into freshwater environments that represents the life resource for himself and the forthcoming generations.

Although, possible re-mediation and recovery of polluted freshwater bodies is not an easy task, but since adequate eco-technological programs as well as successful law application have been demonstrated in many countries a hope in global action toward water conservation and security for the new millennium is increasing.

### **References**

Charis, D. D., 1994. Environmental Science: action for a sustainable development. 4<sup>th</sup>. Edit., Benjamin/Cummings publishing Co. Inc. California, 611pp.