



WATER QUALITY IN AQUACULTURE

POINT SOURCES

By definition a point source is a pollution input that can be related to a single outlet.

Untreated, or inadequately treated, sewage disposal is probably still the major point source of pollution to the global water bodies.

POINT SOURCES

Other important point sources include mines and industrial effluents.

Point sources are localised, and some of them are characterised by a relatively constant discharge of the polluting substances over time such as:

- *domestic sewers,
- *leaks,
- *accidental spillages.

NON-ATMOSPHERIC DIFFUSE SOURCES

- Diffuse sources cannot be described to a single point or a single human activity.
- Diffuse sources may be due to many individual point sources to a water body over a large area.

NON-ATMOSPHERIC DIFFUSE SOURCES

- **Typical examples are:**

- **Agricultural run-off**, including soil erosion from surface and sub-soil drainage.

These processes transfer organic and inorganic soil particles, nutrients, pesticides and herbicides to adjacent water bodies.

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NON-ATMOSPHERIC DIFFUSE SOURCES

- **Urban run-off** from city streets and surrounding areas.

Likely contaminants include derivatives of fossil fuel combustion, bacteria, metals (particularly lead) and industrial organic pollutants, particularly PCBs.

Pesticides and herbicides may also be derived from urban gardening, landscaping.....

NON-ATMOSPHERIC DIFFUSE SOURCES

- **Waste disposal sites** which include municipal and industrial
 - solid waste disposal facilities;
 - liquid waste disposal
 - dredged sediment disposal sites
 - waste from navigation, harbour and marine sediment pollution.

WATER QUALITY VARIABLES

- **Temperature:**

The temperature of surface waters is influenced by **latitude, altitude, season, time of day, air circulation, cloud cover and the flow and depth of the water body.**

Temperature affects physical, chemical and biological processes in water bodies and, the concentration of many variables.

WATER QUALITY VARIABLES

- **Temperature:**

- As water temperature increases, the rate of chemical reactions generally increases together with the evaporation and volatilisation of substances from the water.
- Increased temperature also decreases the solubility of gases in water.