Notes for Water Watchers

Kansas Department of Health and Environment

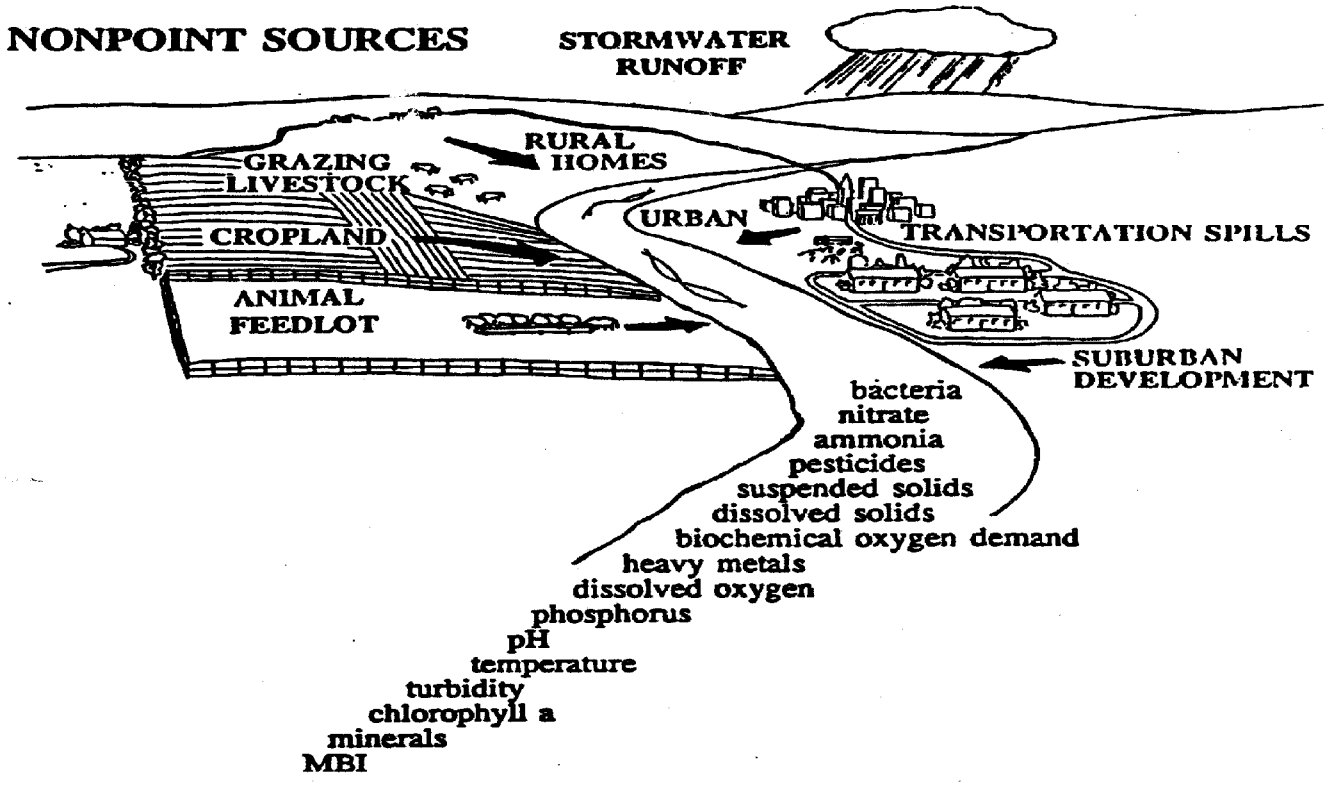
December, 1993 (Revised October, 1997)

Nonpoint Source Pollution

What is Nonpoint Source Pollution?

Water pollution, whether in groundwater or surface water, is contamination or alteration of the physical, chemical, or biological property of the water that causes the water to be harmful, detrimental or injurious to the public's health, safety, or welfare; or to the plant, animal, or aquatic life dependent on the water; or that impairs any designated beneficial use of the water.

Nonpoint source pollution is water pollution that is caused by widely dispersed sources of pollutants. While the majority of nonpoint source-caused pollution problems are associated with pollutants carried by runoff from rain and snow melt, other pollutant sources include spills and leaks, atmospheric deposition, and hydrologic modifications. Nonpoint source pollutants affect groundwater and surface water. KDHE's working definition also includes those activities not requiring an Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit.



Water pollution problems occur and are observed in the water body - groundwater aquifer, river, lake, or wetland. Typically, water pollution problems are identified through sampling and analyzing such items as ammonia, biochemical oxygen demand (BOD), dissolved oxygen (DO), dissolved solids, heavy metals, nitrate, pesticides, pH, phosphorus, total suspended solids (TSS), and turbidity.

Water Pollutant	Sources/Indicators
Ammonia	Toxic to fish and aquatic organisms; livestock, septic tanks, fertilizer; municipal and industrial wastewater.
Bacteria	Indicator of pathogens; livestock, septic tanks; municipal wastewater.
BOD	Amount of oxygen consumed during degradation of organic materials; livestock, septic tanks, leaf litter; municipal and industrial wastewater.
Chlorophyll a	Measure of amount of algae present in water. Used to estimate degree of lake eutrophication.
DO	Amount of oxygen in water. Necessary to support fish and other aquatic life.
Dissolved solids	Salts and minerals dissolved in water.
Heavy metals	Metals such as copper, lead, mercury, and zinc; runoff from urban and industrial areas; municipal and industrial wastewater.
MBI	A measure of the biological community and an indicator of water quality conditions.
Minerals	Chloride, sodium, sulfate, etc.; oil and salt production, road and street deicing, concentrated livestock; municipal and industrial wastewater.
Nitrate	Health hazard, impairs livestock performance, lake eutrophication, stream enrichment; livestock, fertilizer, septic tanks; municipal and industrial wastewater.
Pesticides	Household, agricultural, and industrial pesticide applications; and spills and equipment clean-up.
pH	Indicates the acidity of water.
Phosphorus	Accelerates lake eutrophication and stream enrichment; soil erosion -cropland, stream banks, construction sites, etc.; municipal and industrial wastewater.
TSS	Particles - soil, algae, and finely divided plant material suspended in water; soil erosion - cropland, stream banks, construction sites, etc.; municipal and industrial wastewater.
Temperature	Affects aquatic life, recreation hazard; removal of riparian trees and channelization; municipal and industrial wastewater.
Turbidity	Measure of water clarity related to suspended solids concentration.

Examples of nonpoint pollutant sources:

- Runoff from urban and rural areas, industrial sites, mines, livestock, construction sites, oil fields
- Hydrologic modifications - stream channelization, addition of impervious surfaces, stream obstructions
- Waste disposal areas - landfills, sludge, manure
- Septic tanks and other domestic wastewater disposal
- Equipment washing and material spillage
- Atmospheric deposition
- Nutrient and pesticide application
- Pipeline and storage tank leaks

For additional information, please contact KDHE, Nonpoint Source Section, at (785) 296-4195.

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