



**LAND USE CONDITIONS**



**GREEN**  
(Global Rivers Environmental Education Network)

RURAL OBSERVATIONS	POSSIBLE ASSOCIATED PROBLEMS	POSSIBLE ASSOCIATED CAUSES
<b>AGRICULTURAL</b> Crop Production	Chemical runoff — pesticides, herbicides, insecticides  Temperature increase in body of water adjacent to agricultural fields  Natural flow of water impeded  Reduced ability to contain suspended solids, chemicals, and excess water from runoff	Poor farming practices causing excessive erosion of sediment and chemicals from fields  Shade trees and shrubs removed from stream bank for irrigation or agricultural expansion, exposing the water to direct sunlight  Dams, dikes, and diversions for agricultural practices decrease flow rate of water, absorbing more heat from sunlight  Draining swamps and marshes for farmland
Manure Piles	Organic waste entering water from runoff	Improper containment of farm animal waste
Animal Grazing	Organic waste entering water from runoff	Direct discharge from farm animals with access to waterways or waste entering a body of water as runoff
<b>RESIDENTIAL</b> Housing	Excess water and chemical runoff, runoff from fertilized and impervious land  Reduction in vegetation shading body of water	Urbanization leads to increasing numbers of buildings, homes, and roads on lands that previously were natural areas, runoff from driveways and lawn  Shade trees and shrubs removed from watershed for housing development, exposing the water to direct sunlight and increasing sediment and suspended solids entering a body of water from erosion
Septic Systems and Gray Water Fields	Human wastes and/or gray water leaking into groundwater  Detergents	Leaking or failing septic systems  Household cleaning agents washing into water and sewage systems
Dumping	Trash  Organic waste — once part of a living plant or animal (food, leaves, feces, etc.)	Litter washed into sewer systems  Pet wastes not collected and disposed of properly  Grass, tree, and shrub clippings washed into sewer systems
SCHOOL	Runoff from fertilized and impervious land  Trash	Impervious land cover such as sidewalks, play grounds and parking lots causes excessive runoff  Litter washed into adjacent waterways or sewer systems
COMMERCIAL/INDUSTRIAL	Reduction in vegetation shading body of water  Organic waste  Runoff from fertilized or impervious land  Industry and power plant discharge	Shade trees and shrubs removed from watershed for commercial/industrial development, exposing the water to direct sunlight and increasing sediment and suspended solids entering a body of water  Wastewater treatment plants  Discharge from food-processing plants, meat-packing houses, dairies, and other industrial sources  Organic waste from fibers originating from textile and plant processing plants  Impervious land cover such as parking lots and sidewalks causes excessive runoff  Industrial cooling process; water returned to source body of water is at higher temperature than at initial intake point  Industrial or mining drainage
<b>CONSTRUCTION</b> Buildings and Roadways	Sediment and suspended solids  Temperature increase	Construction of new buildings, homes, and streets causes excessive erosion  Paved roads cannot absorb chemicals, soil, and suspended particles in runoff  Draining swamps and marshes for commercial or residential development reduces water catchment ability and filtering of silt and suspended solids  Dredging waterways  Dams, dikes, and diversions for drinking water intake decreases flow rate of water, absorbing more heat from sunlight
<b>PUBLIC USE</b> Zoo	Organic waste	Direct discharge from mammals and birds as waste entering a body of water as runoff
Parks and Golf Courses	Runoff from fertilized and impervious land	Chemical runoff from golf courses and recreational parks entering a body of water as runoff  Impervious land cover such as parking lots causes excessive runoff
Airports, Bus Stations, Train Stations	Runoff from impervious land	Impervious land cover such as parking lots causes excessive runoff
Marina or Shipping Port	Petroleum products	Chemical pollutants from point or nonpoint source pollution

