

## GLOSSARY

**abandoned well:** any well (drinking water, oil and gas, etc.) which is not used for a long period of time, is not maintained properly, and/or is not properly sealed when its useful life is over.

**acidity:** the strength (concentration of hydrogen [H<sup>+</sup>] ions) of an acidic substance; measured as pH.

**acid rain (or acid precipitation):** rain with a pH of less than 5.6; results from atmospheric moisture mixing with sulphur and nitrogen oxides emitted from burning fossil fuels; may cause damage to buildings, car finishes, crops, forests, and aquatic life.

**The Act to Prevent Pollution From Ships:** legislation regulating the discharge of oil, noxious liquid substances, or garbage generated during normal operations of vessels.

**aeration:** to expose to circulating air.

**aerial photography:** high altitude pictures taken from an aircraft or satellite.

**aerobic:** living or occurring in the presence of oxygen.

**agriculture:** the science, art, and business of cultivating the soil, producing crops, and raising livestock; farming.

**algal bloom:** a heavy growth of algae in and on a body of water; usually results from high nitrate and phosphate concentrations entering water bodies from farm fertilizers and detergents; phosphates also occur naturally under certain conditions.

**alum:** as used in drinking water treatment, aluminum sulfate; added to water in drinking water treatment facilities to cause dirt and other particles to clump together and fall to the bottom of settling basins.

**amendments:** revisions or changes (as to laws).

**anaerobic bacteria:** any bacteria that can survive in the complete or partial absence of air.

**anthracite:** the hardest grade of coal, having very high carbon content: may be used as a filter medium in drinking water treatment.

**Army Corps of Engineers:** Branch of the U.S. Army; responsible for maintaining and regulating inland waterways.

**artesian well:** a well in which the water comes from a confined aquifer and is under pressure. One type of artesian well is a flowing well where water just flows or bubbles out of ground without being pumped.

**aquacade:** an entertainment spectacle of swimmers and divers, often performing in unison to the accompaniment of music.

**Aqua Lung:** a trademark for a self-contained underwater breathing apparatus (scuba).

**aquamarine:** a transparent blue-green variety of beryl, used as a gemstone.

**aquanaut:** a person trained to live in underwater installations and conduct, assist in, or be a subject of scientific research.

**aquaplane:** a board on which one rides in a standing position while it is pulled over the water by a motorboat.

**aquarelle:** a drawing done in transparent water colors.

**aquarist:** one who maintains an aquarium.

**aquarium:** a tank, bowl, or other water-filled enclosure in which living aquatic animals and, often, plants are kept.

**Aquarius:** a constellation in the equatorial region of the Southern Hemisphere near Pisces and Aquila.

**aquatic life:** plants, animals, and microorganisms that spend all or part of their lives in water.

**aqueduct:** a conduit designed to transport water from a remote source, usually by gravity.

**aquifer:** an underground layer of unconsolidated rock or soil that is saturated with usable amounts of water (a zone of saturation).

**atmospheric transport:** the movement of air pollutants from one region to another by wind; may be hundreds of miles.

**bacterial water pollution:** the introduction of unwanted bacteria into a water body.

**bay:** a large estuarine system (e.g., Chesapeake Bay).

**biocontrol agent:** an organism used to control pests (e.g., lady bugs used to control aphids in a garden).

**biodegradable:** capable of being decomposed (broken down) by natural biological processes.

**biosolids:** solid materials resulting from wastewater treatment that meet government criteria for beneficial use, such as for fertilizer.

**blackwater:** domestic wastewater containing human wastes.

**blue baby syndrome:** a pathological condition, called methemoglobinemia, in which blood's capacity for oxygen transport is reduced, resulting in bluish skin discoloration in infants; ingestion of water contaminated with nitrates or certain other substances is a cause.

**bog:** a poorly drained freshwater wetland that is characterized by a build-up of peat.

**bottom lands:** low-lying land along a waterway.

**catch basin:** a sedimentation area designed to remove pollutants from runoff before being discharged into a stream or pond.

**centrifugal force:** the force that causes something to move outward from the center of rotation.

**cesspool:** a covered hole or pit for receiving untreated sewage.

**chemical:** related to the science of chemistry; a substance characterized by a definite chemical molecular composition.

**chemical pollution:** introduction of chemical contaminants into a water body.

**chlorination:** water disinfection by chlorine gas or hypochlorite.

**chlorine:** a chemical element, symbol Cl, atomic number 17, atomic weight 35.453; used as a disinfectant in drinking and wastewater treatment processes.

**cholera:** an acute, often fatal, infectious epidemic disease caused by the microorganism *Vibrio comma*, that is characterized by watery diarrhea, vomiting, cramps, suppression of urine, and collapse.

**Clean Water Act:** water pollution control laws based upon the Federal Water Pollution Control Act of 1972 with amendments passed in 1977, 1981, and 1987; main objective is to restore and maintain the "chemical, physical, and biological integrity of the Nation's waters."

**coliforms:** bacteria found in the intestines of warm-blooded animals; used as indicators of fecal contamination in water.

**communities:** related groups of plants and animals living in specific regions under relatively similar conditions.

**compost:** an aerobic mixture of decaying organic matter, such as leaves and manure, used as fertilizer.

**The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA or Superfund):** legislation passed in 1980 and amended in 1986 by the Superfund Amendments and Reauthorization Act (SARA); provides for short-term actions called removal actions in response to accidents and improper handling of hazardous materials which pose an immediate threat to human health and safety. It also provides for long-term actions called remedial actions for cleanups of other sites which pose no immediate threat to public safety.

**cone of depression:** the cone-shaped area formed when the spaces in the rock or soil are emptied as water is withdrawn from a well.

**confined aquifer (artesian aquifer):** an aquifer with a dense layer of compacted earth material over it that blocks easy passage of water.

**conservation farming:** the management of farm activities and structures to eliminate or reduce adverse environmental effects of pollutants and conserve soil, water, plant, and animal resources.

**constructed wetlands:** wetlands that are designed and built similar to natural wetlands; some are used to treat wastewater. Constructed wetlands for wastewater treatment consist of one or more shallow depressions or cells built into the ground with level bottoms so that the flow of water can be controlled within the cells and from cell to cell. Roots and stems of the wetland plants form a dense mat where biological and physical processes occur to treat the wastewater. Constructed wetlands are being used to treat domestic, agricultural, industrial, and mining wastewaters.

**contaminate:** to make impure (not pure) by contact or mixture; to introduce a substance into the air, water, or soil that reduces its usefulness to humans and other organisms in nature.

**contaminant:** an impurity, that causes air, soil, or water to be harmful to human health or the environment.

**cooling towers:** a towerlike device in which atmospheric air circulates and cools warm water, generally by direct contact (evaporation).

**corrosivity:** ability to dissolve or break down certain substances, particularly metals.

**“cradle to grave”:** phrase used to describe regulations that are part of the Resources Conservation and Recovery Act (RCRA), which requires that hazardous wastes be tracked from their points of origin to their proper disposal; these regulations are designed to protect groundwater, as well as other resources, from contamination by improper treatment, storage, and disposal of solid wastes and are aimed at ending irresponsible “midnight dumping.”

**cumulative:** increasing or enlarging by successive addition; acquired by or resulting from accumulation.

**debris:** dead organic material (leaves, twigs, etc.) and sediment.

**decompose:** to decay or rot; a result of microbial action.

**de-foaming agents:** chemicals that are added to wastewater discharges to prevent the water from foaming when it is discharged into a receiving water body.

**degradable:** capable of decomposition; chemical or biological.

**depression storage:** the storage of water in low areas such as puddles, bogs, ponds, and wetlands.

**desalination:** the purification of salt or brackish water by removing the dissolved salts.

**detergent:** a synthetic cleansing agent resembling soap; has the ability to emulsify oil and remove dirt; contains surfactants that do not precipitate in hard water.

**digestion:** decomposition of organic waste materials by the action of microbes; the process of sewage treatment by the decomposition of organic matter.

**discharged:** released into a water body.

**disinfect (disinfected):** to cleanse of harmful microorganisms.

**dissolved oxygen (DO):** oxygen gas ( $O_2$ ) dissolved in water.

**dissolved solids:** materials that enter a water body in a solid phase and dissolve in water.

**distribution box:** a place where one pipe or line enters and exits through several pipes or lines; they are used in municipal drinking water systems to distribute water to homes, in municipal wastewater systems to retrieve wastewater, and by electric companies to distribute power.

**divining rod:** a forked branch or stick used in an attempt to locate subterranean water or minerals; it is said to bend downward when held over a source.

**downstream:** in the direction of a stream's current.

**dowsing:** to use a divining rod in an attempt to find underground water or minerals.

**drainage basin:** an area drained by a main river and its tributaries.

**drainage system:** a network formed by a main river and its tributaries.

**drainfield:** the part of a septic system where the wastewater is released into the soil for absorption and filtration.

**dredging:** the cleaning, deepening, or widening of a waterway using a machine (dredge) that removes materials using a scoop or suction device.

**duck stamp:** required, for a fee, of all duck hunters over age 16 by the U.S. Fish and Wildlife Service; a conservation program aimed at preserving wetlands.

**ecosystem:** an ecological community together with its physical environment, considered as a unit.

**effluent:** waste material, such as water from sewage treatment or manufacturing plants, discharged into the environment.

**electroplating:** to coat or cover with a thin layer of metal using electricity.

**elements:** substances such as iron, sodium, carbon, nitrogen, and oxygen with distinctly different atoms which serve as some of the 108 basic building blocks of all matter.

**The Emergency Planning and Community Right-to-Know Act of 1986 (SARA Title III):** law requiring federal, state and local governments and industry which are involved in either emergency planning and/or reporting of hazardous chemicals to allow public access to information about the presence of hazardous chemicals in the community and releases of such substances into the environment.

**emission:** a substance discharged into the environment.

**endangered animal species:** a species of animal identified by official federal and/or state agencies as being faced with the danger of extinction.

**environment:** the sum of all external conditions and influences affecting the development and life of organisms.

**Environmental Protection Agency (EPA):** the U.S. agency responsible for efforts to control air and water pollution, radiation and pesticide hazards, ecological research, and solid waste disposal.

**epidemic diseases:** diseases that spread rapidly and extensively by infection among many individuals in an area.

**erosion:** the wearing away of the earth's surface by running water, wind, ice, or other geological agents; processes, including weathering, dissolution, abrasion, corrosion, and transportation, by which material is removed from the earth's surface.

**estuarine intertidal emergents:** herbaceous vegetation that grows in saltwater marshes.

**estuarine intertidal forested/shrub:** a saltwater wetland containing larger woody plants.

**estuarine intertidal unconsolidated shores:** beaches and sand bars.

**estuarine subtidal:** a habitat of open water and bay bottoms continuously covered by salt water.

**estuarine unconsolidated bottom habitats:** sandy bottom area in open water estuaries.

**estuary:** the area where a river empties into an ocean; a bay, influenced by the ocean tides, resulting in a mixture of salt water and fresh water.

**eutrophic:** pertaining to a lake containing a high concentration of dissolved nutrients; often shallow, with periods of oxygen deficiency.

**eutrophication:** a naturally occurring change that take place after a water body receives inputs of nutrients, mostly nitrates and phosphates, from erosion and runoff of surrounding lands; this process can be accelerated by human activities.

**evaporate:** to convert or change into a vapor with the application of heat.

**evapotranspiration:** combination of evaporation and transpiration of water into the atmosphere from living plants and soil.

**Federal Water Pollution Control Act (Clean Water Act):** the law to restore and maintain the “chemical, physical, and biological integrity of the Nation’s waters.”

**feedlots:** confined areas where livestock are quartered and fed, often these are holding areas where animals are fattened-up prior to being shipped to market.

**fertilizer:** any one of a large number of natural and synthetic materials, including manure and nitrogen, phosphorus, and potassium compounds, spread or worked into the soil to increase its fertility.

**fill:** material added to a wetland area to make it suitable for building.

**filtration:** the process of passing a liquid or gas through a porous article or mass (paper, membrane, sand, etc.) to separate out matter in suspension.

**fish kill:** the sudden death of fish due to the introduction of pollutants or the reduction of the dissolved oxygen concentration in a water body.

**flood conveyance:** the transport of floodwaters downstream with minimal, if any, damage.

**fluoride:** a binary compound of fluorine with another element; added to drinking water to help prevent tooth decay.

**food chain:** a succession of organisms in a community that constitute a feeding order in which food energy is transferred from one organism to another as each consumes a lower member and in turn is preyed upon by a higher member.

**fossil fuel:** a hydrocarbon fuel, such as petroleum, derived from living matter of a previous geologic time.

**fresh water:** water containing an insignificant amount of salts, such as in inland rivers and lakes.

**gaining streams:** streams that appear from the ground or cracks in rocks because they are flowing directly out of an aquifer.

**grade:** the slope of the surface of the earth.

**green zones:** areas along river- and streambanks, wetlands, lakes, and ponds where there is high productivity and diversity.

**greywater:** domestic wastewater that does not contain human wastes such as tub, shower, or washing machine water.

**groundwater:** water that infiltrates into the earth and is stored in usable amounts in the soil and rock below the earth’s surface; water within the zone of saturation.

**hardness:** the amount of calcium carbonate dissolved in water.

**hazardous chemicals:** chemical compounds that are dangerous to human health and/or the environment.

**heavy metals:** metallic elements (e.g. cadmium, chromium, copper, lead, mercury, nickel, and zinc) which are used to manufacture products; they are present in some industrial, municipal, and urban runoff.

**herbaceous:** describes animals that are strictly plant-eating.

**holding pond:** an animal waste treatment method which uses a shallow pond to temporarily store animal wastes for land application.

**holding tanks:** a container where wastewater is stored before it is removed for treatment; confined livestock operations have holding tanks to store animal wastes for land application at a later time.

**hydroelectric:** that generation of electricity which conveys the energy of running water into electric power.

**hydrogen sulfide gas (H<sub>2</sub>S):** a flammable, toxic, colorless gas with an offensive odor (similar to rotten eggs).

**Induced recharge:** replenishing a water body or aquifer by transporting water from somewhere else and putting it into the water body or aquifer.

**industrial pollution:** pollution caused by industry.

**infiltration:** the gradual downward flow of water from the surface of the earth into the soil.

**injection wells:** a well in which fluids (such as wastewater, saltwater, natural gas, or used chemicals) are injected deep in the ground for the purpose of disposal or to force adjacent fluids like oil into the vicinity of oil producing wells.

**inorganic nitrogen:** nitrogen not derived from organic matter.

**inorganic phosphorus:** phosphorus not derived from organic matter.

**irrigation:** to supply (dry land) with water by means of ditches, pipes, or streams.

**karst:** a topography formed over limestone, dolomite, or gypsum and characterized by sinkholes, caves, and underground drainage.

**lacustrine:** refers to lake or river habitats.

**lagoon:** as a wastewater treatment method, an animal waste treatment method which uses a deep pond to treat manure and other runoff from a livestock operation, may be aerobic or anaerobic (both use bacteria to break down wastes).

**landfill:** a large, outdoor area for waste disposal; landfills where waste is exposed to the atmosphere (open dumps) are now illegal; in "sanitary" landfills, waste is layered and covered with soil.

**land use:** how a certain area of land is utilized (e.g., forestry, agriculture, urban, industry).

**leachate:** the liquid formed when water (from precipitation) soaks into and through a landfill, picking up a variety of suspended and dissolved materials from the waste.

**leaking underground storage tank (LUST):** an underground container used to store gasoline, diesel fuel, home heating oil, or other chemicals that is damaged in some way and is leaking its contents into the ground; may contaminate groundwater.

**legislation:** a proposed or enacted law or group of laws.

**limiting factor:** a factor whose absence exerts influence upon a population and may be responsible for no growth, limited growth (decline), or rapid growth.

**liner:** a clay or plastic material placed between garbage and soil in a landfill to prevent rotting garbage from coming in contact with groundwater.

**losing streams:** streams which seem to disappear because they flow into an aquifer.

**marine intertidal:** a coastal saltwater wetland flooded by tidewaters.

**The Marine Protection, Research, and Sanctuaries Act of 1972 (Ocean Dumping Act):** legislation regulating the dumping of any material in the ocean that may adversely affect human health, marine environments, or the economic potential of the ocean.

**marsh:** an area of low-lying wetland.

**maximum contaminant levels:** the highest content levels of certain substances allowable by law for a water source to be considered safe.

**membrane:** a soft pliable sheet or layer, often of plant or animal origin.

**mercury:** a poisonous metallic element, Hg, atomic number 80, atomic weight 200.59, existing at room temperature as a silvery, dense liquid.

**Mesopotamians:** people from the ancient country of Mesopotamia located in southwest Asia between the Tigris and Euphrates rivers.

**microbial digestion:** breakdown and use of a substance by microorganisms.

**microbiology:** the science and study of microorganisms, including protozoans, algae, fungi, bacteria, and viruses.

**microorganisms:** organisms too small to be seen with the unaided eye, including bacteria, protozoans, yeasts, viruses, and algae.

**midnight dumping:** a term used for illegal disposal of hazardous wastes in remote locations often at night, hence the term "midnight."

**mill tailings:** rock and other materials removed when minerals are mined; usually dumped onto the ground or deposited into ponds.

**miscible:** capable of being mixed.

**monitoring:** scrutinizing and checking systematically with a view to collecting data.

**mulch:** a protective covering of various substances, especially organic; placed around plants to prevent evaporation of moisture and freezing of roots and to control weeds.

**municipality:** a political unit, such as a city or town, incorporated for local self-government.

**municipal sewage:** sewage originating from urban areas (not industrial).

**National Environmental Policy Act of 1969 (NEPA):** law that requires environmental impact statements be submitted for any major construction projects that uses U.S. federal money.

**National Pollutant Discharge Elimination System (NPDES):** part of the Clean Water Act requiring municipal and industrial wastewater treatment facilities to obtain permits which specify the types and amounts of pollutants that may be discharged into water bodies.

**national water quality standards:** maximum contaminant levels for a variety of chemicals, metals, and bacteria set by the Safe Drinking Water Act.

**nitrates:** used generically for materials containing this ion group made of nitrogen and oxygen ( $\text{NO}_3^-$ ); sources include animal wastes and some fertilizers; can seep into groundwater; linked to human health problems, including "blue baby" syndrome (methemoglobinemia).

**nitric acid ( $\text{HNO}_3$ ):** a component of acid rain; corrosive; damages buildings, vehicle surfaces, crops, forests, and aquatic life.

**nonbiodegradable:** not biodegradable.

**non-compliance:** not obeying all the federal and state regulations that apply.

**non-permeable surfaces:** surfaces which will not allow water to penetrate, such as sidewalks and parking lots.

**nonpoint source pollution (NPS):** pollution that cannot be traced to a single point, because it comes from many individual places or a widespread area (e.g., urban and agricultural runoff).

**nutrient:** an element or compound, such as nitrogen, phosphorus, and potassium, that is necessary for plant growth.

**The Oil Pollution Act:** legislation that imposes substantial penalties and liability for oil spills in the ocean; violators are responsible for the cost of the cleanup and restoration of natural resources.

**organism:** any living being; plants and animals.

**oxygen depletion:** the reduction of the dissolved oxygen level in a water body.

**package plants:** a small, semi-portable prefabricated wastewater treatment system that services an apartment complex, trailer park, camp, or self-contained business that is not connected to a city sewer system and is not on a site appropriate for a septic system.

**palustrine aquatic beds:** inland areas which contain floating or submerged aquatic vegetation.

**palustrine emergents:** plants growing in inland marshes and wet meadows.

**palustrine forested:** inland areas such as forested swamps or bogs.

**palustrine shrub:** inland wetland area with shrub growth.

**palustrine unconsolidated bottom:** muddy bottom of open water ponds.

**percolate:** to drain or seep through a porous substance.

**permeability:** the property of a membrane or other material that permits a substance to pass through it.

**pesticide:** any chemical or biological agent that kills plant or animal pests; herbicides, insecticides, fungicides, rodenticides, etc., are all pesticides.

**petroleum products:** products derived from petroleum or natural gas.

**pH:** a measure of the concentration of hydrogen ions in a solution; the pH scale ranges from 0 to 14, where 7 is neutral and values less than 7 are acidic and values greater than 7 are basic or alkaline; pH is an inverted logarithmic scale so that every unit decrease in pH means a 10-fold increase in hydrogen ion concentration. Thus a pH of 3 is 10 times as acidic as a pH of 4 and 100 times as acidic as a pH of 5.

**phosphate:** used generically for materials containing a phosphate group ( $\text{PO}_4^{3-}$ ); sources include some fertilizers and detergents; when wastewater containing phosphates is discharged into surface waters, these chemicals act as nutrient pollutants (causing overgrowth of aquatic plants).

**plankton:** minute animal and plant life in a body of water.

**point source pollution:** pollution that can be traced to a single point source, such as a pipe or culvert (e.g., industrial and wastewater treatment plant discharges).

**pollutant:** an impurity (contaminant) that causes an undesirable change in the physical, chemical, or biological characteristics of the air, water, or land that may be harmful to or affect the health, survival, or activities of humans or other living organisms.

**pollution:** contaminants in the air, water, or soil that cause harm to human health or the environment.

**porosity:** the property of being porous, having pores; the ratio of minute channels or open spaces (pores) to the volume of solid matter.

**precipitation:** water droplets or ice particles condensed from atmospheric water vapor and sufficiently massive to fall to the earth's surface, such as rain or snow.

**primary treatment:** the first process in wastewater treatment which removes settled or floating solids.

**pristine:** describes a landscape and/or a water body remaining in a pure state.

**privy:** an outhouse; a latrine.

**quadrillion:** the cardinal number represented by 1 followed by 15 zeros.

**radioactive:** having the property of releasing radiation.

**radioactive pollution:** the introduction of a radioactive material.

**radon:** a colorless, radioactive, inert gaseous element (atomic number 86) formed by the radioactive decay of radium; exposure to high levels causes cancer.

**recharge:** replenish a water body or an aquifer with water.

**recharge areas:** an area where water flows into the earth to resupply a water body or an aquifer.

**reclaim:** to return to original condition.

**red tide:** a reddish discoloration of coastal surface waters due to concentrations of certain toxin-producing algae.

**reforestation:** replanting trees and establishing a forest after forest harvesting or destruction.

**regulation:** a governmental order having the force of law.

**reservoir:** a body of water collected and stored in a natural or artificial lake.

**Resource Conservation and Recovery Act (RCRA):** legislation passed in 1976 aimed at protecting the environment, including waterways, from solid waste contamination either directly, through spills, or indirectly, through groundwater contamination.

**restoration:** reestablishing the character of an area such as a wetland or forest; cleaning up a contaminated area according to specifications established by the U.S. Environmental Protection Agency.

**reverse osmosis:** a process where water is cleaned by forcing water through an ultra-fine semi-permeable membrane which allows only the water to pass through and retains the contaminants; these filters are sometimes used in tertiary treatment and to pretreat water in chemical laboratories.

**ridge planting:** a conservation farming method where seeds are planted in ridges which allows warmer soil temperatures and traps rainwater in the furrows between the ridges.

**riparian area:** the area along a waterway.

**river:** a large natural stream emptying into an ocean, lake, or other water body.

**riprap:** large rocks placed along the bank of a waterway to prevent erosion.

**riverine habitats:** tidal and non-tidal river systems that feed into wetlands.

**The Rivers and Harbors Act of 1899:** legislation regulating the discharge of refuse of any kind into navigable waters.

**rough (scavenger) fish:** non-sport species of fish that tolerate polluted water.

**runoff:** water (originating as precipitation) that flows across surfaces rather than soaking in; eventually enters a water body; may pick up and carry a variety of pollutants.

**Safe Drinking Water Act:** a regulatory program passed by the U.S. Congress in 1974 to help ensure safe drinking water in the United States; sets maximum contaminant levels for a variety of chemicals, metals, and bacteria in public water supplies.

**saline intrusion:** the salt water infiltration of freshwater aquifers in coastal areas, when groundwater is withdrawn faster than it is being recharged.

**salt water:** water associated with the seas distinguished by high salinity.

**saturated zone:** underground layer in which every available space is filled with water.

**secondary treatment:** the wastewater process where bacteria are used to digest organic matter in the wastewater.

**sediment:** insoluble material suspended in water that consists mainly of particles derived from rocks, soil, and organic materials; a major nonpoint source pollutant to which other pollutants may attach.

**sediment pollution:** the introduction of sediment into a water body.

**sediment pond:** a natural or artificial pond for recovering the solids from effluent or runoff.

**septic system:** a domestic wastewater treatment system (consisting of a septic tank and a soil absorption system) into which wastes are piped directly from the home; bacteria decompose the waste, sludge settles to the bottom of the tank, and the treated effluent flows out into the ground through drainage pipes.

**settling tank:** a vessel in which solids settle out of water by gravity during drinking and wastewater treatment processes.

**sewage contamination:** the introduction of untreated sewage into a water body.

**sewer system:** an underground system of pipes used to carry off sewage and surface water runoff.

**silage:** livestock food prepared by storing and fermenting green forage plants in a silo.

**sinkhole:** a natural depression in a land surface connected to a subterranean passage, generally occurring in limestone regions and formed by solution or by collapse of a cavern roof.

**slough:** a stagnant swamp, marsh, bog, or pond, esp. as a part of a bayou, inlet, or backwater.

**sludge:** solid matter that settles to the bottom of septic tanks or wastewater treatment plant sedimentation; must be disposed of by bacterial digestion or other methods or pumped out for land disposal or incineration.

**solar radiation:** radiation emitted by the sun.

**solvent:** a liquid capable of dissolving another substance (e.g., paint thinner, mineral spirits, and water).

**stormwater runoff:** surface water runoff that flows into storm sewers.

**stream use classification:** a system for classifying streams according to the intended use of the water (e.g., recreation, industrial cooling, irrigation).

**strip mine:** an open mineral mine (e.g., coal, copper, zinc, etc.) where the topsoil and overburden is removed to expose and extract the mineral.

**substance:** a material of a particular kind or constitution.

**suffocate:** to die due to the lack of oxygen.

**sulfuric acid:** the acid ( $H_2SO_4$ ) formed when sulfur oxides combine with atmospheric moisture; a major component of acid rain.

**surface water:** precipitation that does not soak into the ground or return to the atmosphere by evaporation or transpiration, and is stored in streams, lakes, wetlands, reservoirs, and oceans.

**swamp:** land having soils saturated with water for at least part of the year and supporting natural vegetation of mostly trees and shrubs.

**temperate climates:** climates that are neither hot nor cold; mild.

**terrain:** the characteristic features of a tract of land's surface; topography.

**thermal pollution:** the increase in temperature of a body of water due to the discharge of water used as a coolant in industrial processes or power production; can cause serious damage to aquatic life.

**toilet dam:** a device that is placed inside the tank portion of a toilet to reduce the amount of water the tank will hold by partitioning off part of the tank.

**toxic:** having the characteristic of causing death or damage to humans, animals, or plants; poisonous.

**toxic chemical:** a chemical with the potential of causing death or damage to humans, animals, or plants; poison.

**toxin:** any of various poisonous substances produced by certain plant and animal cells, including bacterial toxins, phytotoxins, and zootoxins.

**transpiration:** direct transfer of water from the leaves of living plants or the skins of animals into the atmosphere.

**treatment plant:** facility for cleaning and treating fresh water for drinking, or cleaning and treating wastewater before discharging into a water body.

**turbidity:** the cloudy or muddy appearance of a naturally clear liquid caused by the suspension of particulate matter.

**turbine:** a device in which a bladed wheel is turned by the force of moving water or steam; connected by a shaft to a generator to produce electricity.

**typhoid (fever):** an acute, highly infectious disease caused by the typhoid bacillus, *Salmonella typhosa*, transmitted by contaminated food or water and characterized by bad rashes, high fever, bronchitis, and intestinal hemorrhaging.

**ultraviolet light:** light waves having energy greater than visible light and less than x-rays; a component of sunlight not visible to the human eye.

**unconfined aquifer:** an aquifer without a confining layer above it; the top surface of water in an unconfined aquifer is the water table.

**underground storage tanks:** large tanks buried underground for storing liquids (e.g., gasoline, heating oil); potential source of groundwater contamination if the tanks leak.

**unsaturated zone:** an area underground between the ground surface and the water table where the pore spaces are not filled with water, also know as the zone of aeration.

**upstream:** toward the source of a stream or current.

**wastewater:** water that has been used for domestic or industrial purposes.

**wastewater treatment:** physical, chemical, and biological processes used to remove pollutants from wastewater before discharging it into a water body.

**waterborne disease:** a disease spread by contaminated water.

**water conservation:** practices which reduce water use.

**water quality criteria:** the degree of water quality needed to support a designated use for a body of water.

**watershed:** land area from which water drains to a particular water body.

**well:** a deep hole or shaft dug or drilled in the ground to obtain water, oil, gas, or brine.

**wellhead:** the area of land surrounding drinking water wells which contributes water to the aquifer supplying the well.

**wellhead contamination:** the addition of substances to the area of land surrounding a water well which reduces the well's water quality and prevents its use unless the water is treated.

**wellhead protection area:** the surface and subsurface areas surrounding a water well or well field supplying a water system.

**wetlands:** areas that, at least periodically, have waterlogged soils or are covered with a relatively shallow layer of water.

**xeriscaping:** landscaping technique designed to minimize the need for watering.