

# Appendix A) Glossary

## A

**Acidic Soil:** soil with a pH of less than 7.0.

**Acre:** a unit of area used in land measurement equal to 43,560 square feet or approximately the size of a high school football field excluding the end zones.

**Adapt:** how animals or plants change to live in a particular ecosystem.

**Agriculture:** the application of the physical, biological, and social sciences and the principles of management to food production, preservation and processing, crop and livestock production, marketing, and processing, culture of flowers, turf grass, and ornamentals, life processes of plants and animals, natural resources management, economic development, agricultural education and communication, and related fields.

**Agricultural Crops:** crops produced for human food, livestock feed, or consumer and industrial products.

**Agricultural Water Supply:** agricultural uses of water including irrigation and livestock watering.

**Agroforestry:** the integration of tree and shrub plantings into agricultural systems.

**Algae:** microscopic organisms that contain chlorophyll and other pigments and form the base of the food web in a pond or lake.

**Alien Species:** undesirable species brought into the North American continent either accidentally or deliberately for a specific purpose; they adapt and increase rapidly, replacing existing natural or introduced species.

**Alkali Soil:** soil with a pH greater than 8.5 and high levels of sodium. (*Sodic Soil*)

**Alkaline Soil:** soil with a pH greater than 7.0.

**Alluvial Aquifer:** an aquifer that was formed in recent geologic time by sediment that is loosely arranged but not cemented together and has a water table that is fairly close to the surface of the land.

**Alluvium:** sediment that is loosely arranged, but not cemented together, that was deposited during recent geologic time by running water in the bed of a stream or on its floodplain.

**Aquatic:** living or growing in or on the water.

**Aquatic Ecosystem:** the ecosystem of a lake, wetland, pond, river, estuary, or other body of water.

**Aquatic Life Support:** the maintenance of the ecological integrity of lakes, wetlands, and ponds, including the sustained growth and propagation of aquatic, semi-aquatic, or terrestrial wildlife.

**Aquatic Nuisance Species:** a non-native organism that threatens the diversity or abundance of native species, the ecological stability of impacted waters, or a commercial, agricultural, aquacultural, or recreational activity.

**Aquifer:** a natural underground storage area for water.

**Artesian Aquifer:** see *Confined Aquifer*

**Artesian Well:** a well drilled into a confined aquifer in which the water is under pressure forcing the water upwards.

**Atrazine:** a common herbicide used in producing agricultural crops.

**Autosteer:** an automatic guidance system that operates agricultural machinery using GPS for accuracy and GIS information to vary operations at specific sites.

**Awns:** slender, stiff, bristle-like extensions of a plant, such as the beards on a head of wheat.

**Axil:** the space between a leaf and the stem to which it is attached.

## B

**Bacterial Contamination:** the alteration of physical, chemical, or biological properties caused by bacteria at concentrations that may adversely affect human health or the environment.

**Bankfull Flow:** a measurement of the maximum volume of water in a stream or river at the moment of highest flow.

**Bedrock:** the solid rock layer underneath any unconsolidated sediment or soil.

**Bedrock Aquifer:** water trapped underground in layers of solid rock; often used as local sources of water.

**Bendway Weir:** a low rock structure designed to slow the velocity of the water and redirect the water flow away from the streambank. (*Rock Vane*)

**Benthic:** bottom dwelling.

**Biodiesel:** an alternative diesel fuel produced from any animal fat or vegetable oil, such as soybean oil or recycled cooking oil.

**Biodiversity:** the variety of differing organisms that interact in a given area, plus the relative abundance of each.

**Biofuel:** liquid fuel produced from biomass including ethanol, biodiesel, methanol, and reformulated gasoline components.

## Glossary

**Biomass:** plant matter such as trees, grasses, agricultural crops, or other biological material.

**Biome:** a large geographic area with a complex of communities characterized by a distinctive type of vegetation maintained under somewhat uniform climatic conditions.

**Biotechnology:** technology that uses living organisms to add beneficial traits to a product to improve that product or to develop organisms for specific uses.

**Black Sunday:** name given to April 14, 1935, when one of the worst dust storms in history occurred.

**Botany:** the study of plants.

**Brine:** water with a high salt content—usually with more than 10,000 milligrams per liter.

**Buffer Strip:** a strip of permanent vegetation (grasses, trees, and shrubs) located between cultivated fields and bodies of water for the purpose of filtering nutrients, sediments, and other contaminants from runoff waters. (*Filter Strip*)

**Bulb:** an underground stem or root, usually surrounded by scale-like leaves, that contains stored food for the shoots of the new plant that grows within it.

**Bushel:** a unit of measure commonly used to measure grains and oilseeds. One bushel is equal to 60 pounds of wheat or soybeans, 56 pounds of corn or grain sorghum or 27 pounds of oilseed sunflowers.

**By-products:** see *Coproducts*

## C

**Canopy:** the layer formed by the leaves and branches of the tallest trees in a forest or the foliage of a growing crop; said to be a closed canopy when plant growth shades the areas between the trees or plants; an open canopy allows direct sunlight to penetrate between trees or rows of plants.

**Carnivore:** eats animals.

**Carbon Sequestration:** the process of storing excess carbon within plants and soil instead of releasing it into the atmosphere as carbon dioxide.

**Carrying Capacity:** the greatest number of organisms that can be supported by an area without damaging that area.

**Cellulose:** a complex carbohydrate which forms the main constituent of the cell wall in most plants.

**Center Pivot Irrigation:** a system where water is pumped from a well through a line of water distribution pipes mounted on wheels, which rotate (pivot) in a circle around the center of an irrigated area.

**Central Flyway of North America:** the migration corridor between the Mississippi River Valley and the Rocky Mountains in which migratory birds travel between breeding grounds in the north and wintering grounds in the south.

**Cereal Grains:** wheat, rice, corn, grain sorghum, rye, oats, barley, millet, and triticale.

**Chinook Winds:** wind patterns observed where the Great Plains end and the mountains begin which can elevate winter temperatures for a few hours or days, at the end of which the temperatures plummet back to base levels.

**Chlorophyll:** the name given to the green pigment in plant cells that is responsible for absorbing light energy during photosynthesis.

**Christmas Tree Farm:** a farm where trees are grown and harvested for use as Christmas trees and related decorations.

**Chromosome:** a distinct unit of a genome carrying many genes; each chromosome is a long molecule of double-stranded DNA, plus an approximate equal mass of protein; can only be seen during cell division.

**Clay:** the smallest mineral particles that make up soil, so small that they may only be seen through electron microscopes.

**Clean Water Act of 1972:** the federal law that established the basis for current water quality standards and extended protection to all surface waters of the United States; emphasized eliminating major visible sources of pollution and required states to establish water quality standards.

**Climate:** the average weather conditions of a given point during a given set of dates including the average rainfall, temperature, humidity, and wind conditions.

**Coarse Grains:** corn and grain sorghum.

**Commodity:** an item with value that can be bought or sold.

**Community:** all organisms in a particular habitat that are bound together by the food web and other interrelationships.

**Condensation:** the formation of a liquid from a vapor due to the cooling of the vapor.

**Confection Sunflowers:** see *Nonoil Sunflowers*

**Confluence:** the place where two or more streams meet and begin flowing together.

**Confined Aquifer:** groundwater that is trapped beneath layers of impermeable materials; may be under pressure. (*Artesian Aquifer*)

**Coniferous:** trees whose seeds develop inside cones; considered softwoods.

**Conservation:** the wise and intelligent use of natural resources in a way that assures their continuing availability to future generations.

**Conservation Practice:** a specific treatment, such as a structural or vegetative measure, or management technique used to meet specific needs in planning and implementing conservation.

**Conservation Reserve Program (CRP):** a conservation program in which landowners plant long-term, resource conserving plants to improve water quality, control soil erosion, and enhance wildlife habitat.

**Conservation Tillage:** any tillage sequence or tillage and planting combination which minimizes or reduces loss of soil and water by leaving at least 30 percent of the soil surface covered by the residue of the previous year's crops.

**Consumers:** living organisms that feed on trees and green plants directly and those that consume indirectly by eating other organisms that have already fed on the trees or green plants.

**Consumptive Use:** a water use that prevents the water from being immediately available for another use.

**Continuous Cropping:** planting only one crop on the same land for two or more consecutive growing seasons.

**Contour Farming:** performing tillage and planting operations on the contour—with a slope rather than up and down it—for the purpose of soil conservation.

**Coproducts:** additional products resulting from an industrial process, such as the livestock feed and carbon dioxide that result from the production of ethanol. (*By-products*)

**Cropland:** land which can produce a crop for harvest—not including woodlands, marshes, or land suitable only for pasture as they are not considered crops.

**Crop Rotation:** a planned sequence of growing crops versus continuously growing only one crop on the same area of land year after year.

**Crush:** the process of separating and extracting oil from oilseeds.

**Cultivation:** a tillage method performed to prepare land to grow crops or to control weeds.

## D

**Decay:** the progressive deterioration of organic tissues, usually caused by fungal or bacterial organisms, resulting in loss of cell structure, strength, and function.

**Deciduous:** trees that shed all their leaves every year; includes most broad-leaved trees in North America; considered hardwoods.

**Decomposers:** organisms that recycle nutrients and make them available for either producers or consumers to use.

**Delta:** the broad network of branches with water flowing in them created when a stream flattens and slows near its junction with a big body of water and deposits the silt, sand, or fine rock particles the water has been carrying.

**Density:** number of organisms per unit of space.

**Dimension:** the cross sectional shape of a stream or river such as U- or V-shape.

**Discharge:** the outflow from an aquifer or other water body.

**Diversion:** the physical removal of surface water from a channel.

**DNA:** Deoxyribo Nucleic Acid; an acid in a cell's nucleus that carries the genetic information; two long chains of nucleotides twisted into a double helix that determines individual hereditary characteristics.

**Domestic Water Supply:** potable water used for everyday living.

**Dormancy:** in plants, a period of inactivity during winter or periods of cold.

**Dredging:** an excavation activity usually carried out at least partially underwater with the purpose of gathering sediment, such as sand or gravel, and depositing it elsewhere.

**Dryland:** land that is not irrigated.

**Dry Mill:** an ethanol production process in which the entire corn kernel or sorghum berry is ground into flour before processing.

**Drought:** a long period of abnormally low precipitation, especially one that adversely affects growing or living conditions.

**Dust Bowl:** describes the western Great Plains of the United States, which suffered severe wind erosion and drifting soil during the drought years of 1933–1940.

## E

**E10:** a blend of 10 percent ethanol and 90 percent unleaded gasoline.

**E85:** a blend of 85 percent ethanol and 15 percent unleaded gasoline, for use in flexible fuel vehicles.

**Ecofallow:** see *Summer Fallow*

**Ecology:** the study of the relation of organisms or groups of organisms to their environment.

**Ecological Succession:** see *Succession*

**Ecosystem:** a natural unit that includes living and nonliving parts interacting to produce a stable system in which the exchange of materials between the living and nonliving parts follows closed paths.

**Emergent Plants:** plants rooted in soil underwater that grow up through the water, so that stems, leaves, and flowers emerge in the air above the water level.

**Emigrant:** a person who moved (migrated) away from one region of a country to another region of the same country (as used historically).

**Endangered Species:** any species in danger of extinction throughout all or a significant portion of its range or habitat.

**Environment:** the sum of all external conditions and influences, living and nonliving, that affects the development and ultimately the survival of an organism or group of organisms.

**Ephemeral Stream:** a stream that normally is dry and flows only during or shortly after a storm event such as rainfall or snowmelt.

## Glossary

**Erosion:** the detachment and movement of soil or rock by water, wind, ice, or gravity.

**Ethanol:** ethyl alcohol; an alcohol made by fermenting and distilling simple sugars.

**Evaporation:** the process of changing from a liquid to a gas by exposure to air, heat, or both.

**Evapotranspiration:** the process of transferring moisture from the ground to the atmosphere by evaporation of water from the soil and transpiration from plant leaves.

**Evergreen:** trees that have leaves year-round; considered softwoods.

## F

**Fauna:** animals.

**Fallow:** left unplanted.

**Feed Grains:** grain fed to livestock; often interchanged with coarse grains.

**Fertile Crescent:** an area of land near the Mediterranean Sea with rich, fertile soil and a favorable climate for growing crops which encouraged the domestication of plants and animals.

**Fertilizer:** any organic or inorganic material of natural or synthetic origin (other than liming materials) that is added to soil to supply one or more plant nutrients essential to the growth of plants.

**Fiber Crops:** crops produced for the fiber such as cotton and flax.

**Field Border:** a strip of perennial grass or legumes along and around the edge of a crop field.

**Filter Strip:** see *Buffer Strip*

**Fishery:** a place where fish or other aquatic animals are bred and raised, such as a fish hatchery.

**Floating-leaf Plant:** a plant that may or may not be rooted in the bottom of a lake or pond with leaves, and often flowers, that float on the surface of the water while most of the plant remains underwater. (*Free Floating Plant*)

**Flooded Basin:** a wetland that consists of a naturally occurring shallow depression or sinkhole. (*Playa Lake*)

**Floodplain:** the relatively level area of land bordering a stream channel that is covered with water during moderate to severe floods.

**Flora:** plants.

**Florets:** small individual flowers that form a larger flower head, such as in a sunflower.

**Foliage:** the live leaves or needles of a tree; primarily responsible for photosynthesis.

**Food Procurement:** the act of obtaining food for human consumption, including edible forms of wildlife.

**Food Web:** the transfer of energy from one organism to another as an organism is consumed (eaten).

**Forages:** herbaceous, broad-leaf plants (other than grasses) that are consumed by livestock or harvested for livestock feed, such as brome, alfalfa, and forage sorghum.

**Forbs:** plants whose stems and broad flat leaves die down to the soil level at the end of each growing season.

**Forest:** an ecosystem dominated by trees.

**Forester:** a person who manages forests for the maintenance and reoccurrence of desirable conditions.

**Forest Floor:** the bottom layer of the forest including fallen branches and leaves, mosses, and woody debris.

**Forested Wetland:** a wetland that supports many tree species; located in temporarily flooded areas or shallow depressions adjacent to other wetlands.

**Forestry:** the science of managing and caring for forests.

**Formation:** the smallest possible layer of rock that can be mapped and described over a wide area.

**Fossil Fuels:** naturally occurring hydrocarbon compounds that represent the altered remains of organic materials enclosed in rock such as coal, crude oil (petroleum), and natural gas.

**Fragmentation:** occurs when land is sold in small acreages of 1–20 acres, when roads and interstate highways expand rights of way, and when new water impoundments are developed therefore encouraging individuals to move to the country—reducing land available for food and fiber production and limiting management options. (*Urban Sprawl*)

**Free Floating Plant:** see *Floating-leaf Plant*

**Freshwater:** water suitable for human consumption with less than 0.5 parts per thousand dissolved salts.

**Fungi:** simple plant-like organisms that lack chlorophyll and therefore obtain their nutrition from living on or in other organisms (parasitically), from living with other organisms (symbiotically), or by breaking down dead organic materials (saprophytically).

## G

**Gene:** a DNA segment that contributes to function and appearance; a code that determines the amino acid order of a protein.

**Genetics:** the science of heredity.

**Genome:** one complete set of chromosomes; the entire genetic material.

**Geographical Information System (GIS):** a computerized system used to input, store, retrieve, analyze, and display, in map-like form, spatially referenced geographical information.

**Geologic Time:** the time of physical formation and development of the earth, especially prior to human history.

**Geology:** the structure of a specific region of the earth, including its rocks, soils, mountains, fossils, and other features.

**Geohydrology:** see *Hydrogeology*

**Glacial Drift Aquifer:** an aquifer found in glacial debris that traps and holds water or in an ancient river valley buried by debris left behind when the continental glaciers melted and receded.

**Glacier:** a large mass of compacted ice.

**Global Positioning System (GPS):** a navigational tool based on satellites orbiting the earth and transmitting signals allowing GPS receivers to determine the receiver's location, speed, and direction.

**Grains:** crops that produce a small hard seed.

**Grass:** the family of plants characterized by hollow jointed stems and bladelike leaves.

**Grassed Waterway:** a natural or constructed channel used to carry water from natural precipitation through or from cropland.

**Grassland:** an area covered with vegetation types dominated by grasses, including tame pasture and rangeland.

**Grazing Distribution:** the pattern created by livestock grazing an area.

**Great Depression:** the worldwide economic downturn that began in 1929 and lasted until about 1939.

**Great Plains:** a major ecological region in the central part of the continent of North America, extending from the Canadian provinces of Alberta, Saskatchewan, and Manitoba south into northeastern Mexico and from western Indiana to the foothills of the Rocky Mountains; in Kansas, commonly used to identify the western two-thirds of the state.

**Gross Domestic Product (GDP):** the total market value of the goods and services produced by a nation's economy during a specific period of time.

**Groundwater:** underground water that is generally found in the pore spaces of rocks or sediments.

## H

**Habitat:** the area that provides an organism with adequate food, water, shelter, and living space and the conditions of that environment including the soil, vegetation, water, and food.

**Hardwoods:** broad-leaved trees.

**Hay:** fine-stemmed dry forage which is usually seeded with a drill, cut or swathed, and baled to use as livestock feed.

**Haylage:** partially fermented fodder used as livestock feed that is kept in the succulent and slightly sour condition.

**Headwaters:** the source from which a river rises.

**Heliotropism:** the action of plants, such as sunflowers, following the sun from east to west during the day and returning to the east each morning.

**Herbicide:** a chemical used for weed control that kills plants or inhibits their growth.

**Herbivore:** eats plants.

**Higher Education:** the non-compulsory educational level following the completion of high school; generally provided by colleges, universities, and other institutions (such as technical schools) which award an academic degree.

**Homestead Act of 1862:** the federal law that gave title to 160 acres of undeveloped land to a person who was at least 21 years old who built a house at least 12 feet by 14 feet and lived in it for at least five years.

**Horticultural Crops:** fruits, vegetables, flowers, and ornamental plants which are considered agricultural crops.

**Humus:** a rich organic material in soil formed by the decomposition of plants and animals.

**Hundredweight:** a measure of 100 pounds; grain sorghum is sold by the hundredweight rather than by the bushel like most other grains and oilseeds.

**Hybrid:** a plant produced by breeding two genetically unlike parents to create an offspring with more favorable characteristics.

**Hybrid Seed:** seed produced by controlling pollination and allowing only specific genes to be transferred to seed-producing plants, resulting in a plant with specific characteristics that is unable to produce seed for future plants with the same exact characteristics.

**Hydric:** contains little or no oxygen.

**Hydro:** from an Ancient Greek preface meaning water.

**Hydroelectric Power:** electrical energy produced by using the forces of water.

**Hydrogeology:** the study of groundwater and its relationship to geology. (*Geohydrology*)

**Hydrologic Cycle:** the complete cycle of water movement from the atmosphere to earth and back again through evaporation, transpiration, condensation, precipitation, percolation, runoff, and storage. (*Water Cycle*)

**Hydrologic Regime:** refers to how and when a wetland receives water.

**Hydrologic Unit Code:** a number that identifies drainage basins within a watershed based on a classification system for dividing hydrologic regions.

**Hydrology:** the study of the waters of the earth, their distribution on the surface and underground, and the hydrologic cycle involving evaporation, precipitation, etc.

## Glossary

**Hydrophilic:** water loving; substances that will mix well with and dissolve in water such as salt.

**Hydrophobic:** water fearing; substances that do not mix well with water such as oil.

**Hydrophyte:** a plant adapted to grow in water.

**Hydrosphere:** the collective mass of water found on Earth's surface, in the atmosphere, and underground in aquifers.

## I

**Immigrant:** a person who moves (migrates) into a different country.

**Indian Removal Act of 1830:** a federal law providing for an exchange of lands with American Indians residing in any of the states or territories and for their relocation to lands west of the Mississippi River.

**Industrial Water Supply:** water used for a wide range of purposes by industries, including cooling water for electrical power generation, manufacturing, food preparation, washing of wastes, etc.

**Infiltration:** the process in which water is absorbed into the soil or becomes part of a body of water.

**Inflorescence:** the flowering part of a plant that consists of more than one flower, often several distinct individual flowers.

**Inorganic:** composed of matter that is not animal or vegetable.

**Insecticide:** a chemical that kills insects.

**Insectivore:** feeds primarily on insects.

**Intermittent Stream:** a stream that flows most of the year but normally is dry during one or two months of every year.

**Invasive Species:** introduced or native species that have increased in numbers and have replaced desirable species; can occur due to changes in management, weather, or the absence of natural controls.

**Irrigation:** the intentional application of water to the soil, usually for the purpose of crop production.

## K

**Kinetic Energy:** a form of energy represented by matter (mass) in motion such as wind.

**Knot:** in cut wood, a hard dark-colored patch at a point where a branch or stem formerly grew out of the tree.

## L

**Lake:** a body of water—usually over ten acres in size—that is too deep for plants to grow to the surface, except around the shore.

**Landform:** a natural physical feature of the earth's surface.

**Legume:** a family of plants that can convert nitrogen from the air to nitrates in the soil through a process known as nitrogen fixation including many valuable food and forage species, such as peas, beans, soybeans, peanuts, clovers, alfalfas, and sweetclovers.

**Life Cycle:** the phases, changes, or stages through which an organism passes during its lifetime.

**Ligule:** a small flap or row of hairs on the inner or upper side of a leaf where it grows out of the sheath.

**Limnology:** the scientific study of lakes and other bodies of fresh, inland water such as ponds and streams.

**Living Snow Fence:** rows of trees and shrubs planted to keep snow off roads, reducing snow removal and related energy costs and making the roads safer for winter driving.

**Loam:** soil that contains equal amounts of sand, silt, and clay.

**Loess:** the fine-grained sediment left behind by receding (melting) glaciers.

## M

**Mature Tree:** a tree that has reached at least 75 percent of its final height and spread.

**Meal:** the coarsely ground and sifted grains of a cereal grass or the solid residue left after extracting oil from oilseeds.

**Mesopotamia:** "land between two rivers," refers to the basins of the Tigris and Euphrates rivers and the geographical area watered by these two rivers.

**Milo:** grain sorghum.

**Mineralization:** the process through which a substance is converted from an organic substance to an inorganic substance.

**Minimum Desirable Streamflow:** the amount of water deemed necessary to establish and maintain the desired minimum streamflow for an identified water course with the purpose of protecting flow from depleted conditions as a result of extensive water appropriation; not intended to keep the stream flowing through all climatic conditions.

**Mitigation:** restoration or construction in a different location.

**Mollisol:** a highly fertile soil—enriched with large amounts of organic matter—that can hold large amounts of water and is characterized by its distinctive dark color.

**Mulch:** a thick cover of decaying plant matter that insulates the soil and aids in the soil's ability to capture and utilize water.

## N

**Natural Erosion:** the wearing away of the earth's surface by water, ice, or other natural agents under natural environmental conditions of climate, vegetation, etc.

**Natural Processes:** physical processes that occur without human interaction.

**Natural Resource:** a raw material provided by the earth and usually processed into useful products.

**Nonconsumptive Use:** a source of water that can be treated and used again as surface water.

**Nonoil Sunflowers:** black-colored seeds with white stripes, approximately 5/8 inch long; used for baking, eating, birdseed, and pet food. (*Confection Sunflowers*)

**Nonpoint Source Pollution:** pollution from sources that are not easily identified or located.

**Nonrenewable Resource:** a resource, such as a fossil fuel, that is in limited supply and does not have the capacity to be replaced through natural processes, at least not for many thousands of years.

**No-till:** a production practice whereby a crop is planted directly into the soil with no mechanical manipulation of the soil, resulting in reduced soil erosion and the preservation of soil nutrients.

**Nut Farm:** a farm producing nut crops, such as pecan, almonds, or pistachios, from trees planted for that purpose.

**Nutrients:** substances, such as nitrogen and phosphorus, necessary for growth and development.

## O

**Oilseeds:** soybeans, sunflowers, canola, cotton, and flax.

**Oilseed Sunflowers:** small shiny black sunflower seeds used to produce oil for baking, frying, and food products.

**Orchard:** an area of land devoted to the cultivation of fruit or nut trees.

**Organic:** referring to or derived from living organisms.

**Organic Matter:** plant and animal material in various stages of decomposition that provides nutrients to soil.

**Omnivore:** eats both plant and animal materials.

## P

**Pasture:** a unit of grassland which has a fenced perimeter.

**Pattern:** the configuration of the meanders or bends of a stream or river.

**Peat:** the earliest stage of coal that forms when plant material is inhibited from decaying fully by the acidic environment in the soil; historically used as an energy source.

**Percolation:** the process that occurs when gravity pulls excess water down through the soil and rock layers.

**Perennial:** a plant that lives for several years and usually produces seeds each year.

**Perennial Stream:** a stream that flows throughout the year but may be dry during periods of extended drought.

**Permeability:** the ability of fluids to move through porous rock or sediment, directly related to a combination of the size of the pores and the degree to which the pores are interconnected.

**Pesticide:** a product used to keep plants (or animals) healthy and protect them from weeds and insects.

**pH:** a measure of acidity or alkalinity based on the way the electrical charges on the surface of soil particles interact with chemical combinations in the soil mixture.

**Phosphorous:** symbol P; an element that occurs widely in minerals, soils, untreated waters, bones, teeth, and in all living cells, and is a nutrient required for growth and development.

**Photosynthesis:** the process in green plants and trees in which the cells containing chlorophyll convert sunlight into chemical energy.

**Physical Feature:** a natural characteristic of a place such as elevation, landforms, or vegetation.

**Physical Process:** a series of actions, changes, or functions that affect the natural characteristics of a place.

**Playa Lake:** see *Flooded Basin*

**Point Source Pollution:** pollution from a human activity that can be identified and controlled that comes from a specific, identifiable source, such as a pipe, channel, ditch, tunnel, or container.

**Pollinate:** to transfer pollen from an anther to the stigma of a flower.

**Pollutant:** a chemical or physical substance released in the environment which results in detrimental effects of such a nature as to endanger human health, harm living resources and ecosystems, and impair the environment.

**Pond:** a body of water less than ten acres in size which is shallow enough to allow rooted plants to grow in the water.

**Pool:** an area of a stream channel with reduced velocity, little surface turbulence, and deeper water than surrounding areas.

**Porosity:** the capacity of a rock formation to absorb and store groundwater; determined by the number and size of pores.

**Potable:** water fit for human consumption.

**Prairie:** a type of land dominated by grasses with scattered trees and shrubs.

**Precipitation:** any form of water that falls to the earth's surface such as rain, snow, sleet, or hail.

**Precision Agriculture:** see *Precision Farming*

**Precision Farming:** an integrated agricultural management system incorporating several technologies including global positioning systems, geographical information systems, yield monitors, variable rate technology, and remote sensing. (*Precision Agriculture*)

**Prescribed Burn:** a management technique using a fire that is deliberately set and controlled in a specific area.

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**Primary Contact Recreation Uses:** recreational water uses from April 1 through October 31, of each year, during which some inadvertent ingestion of water is probable including activities such as boating, mussel harvesting, swimming, skin diving, waterskiing, and windsurfing.

**Producers:** plants that make food through photosynthesis such as trees and other green plants.

**Profile:** a stream's slope or drop in elevation.

**Pruning:** the selective removal of woody plant parts of any size by using saws, pruners, clippers, or other pruning tools.

**Public Land:** land that is owned by U.S. citizens and is administered and managed by the local, state, or federal government.

**Public Supply:** water used for drinking and other purposes supplied to many people by a system operated by a city, public wholesale water supply district, or rural water district.

## R

**Rain Shadow Effect:** the impact of a barrier, such as a mountain range, that causes the clouds to lose their moisture before reaching an area, resulting in that area receiving less rainfall.

**Rangeland:** land on which the native vegetation is predominately grasses, grass-like plants, forbs, or shrubs; most suitable for grazing.

**Recharge:** the replenishment of water in an aquifer or other water body.

**Regeneration:** the renewal of a tree crop through either natural means (seeded on the site from adjacent stands or deposited by wind, birds, or animals) or artificial means (by planting seedlings or direct seeding).

**Renewable Resource:** a resource that has the capacity to be replaced through natural processes.

**Reservoir:** a natural or artificial place to store water; sometimes created by a dam.

**Residue:** plant material, such as stalks, leaves, or straw, left on a field after the crop has been harvested to increase the organic matter in the soil and minimize erosion.

**Rhizome:** an underground stem that is horizontal and produces roots at the joints.

**Riffle:** a relatively shallow area in a stream's channel where water flows swiftly over a completely or partially submerged obstruction to produce surface turbulence.

**Riparian and Wetland Protection Program:** a State Conservation Commission program to address conservation and management of riparian areas and wetlands by providing financial assistance to landowners to implement practices such as streambank stabilization, wetland enhancement, and other innovative practices.

**Riparian Area:** an area of streamside vegetation on the land adjacent to the banks of streams, rivers, or other water bodies.

**Riparian Buffers:** strips or small areas of land in permanent vegetation along or near a body of water that trap sediment, filter nutrients, and provide habitat for wildlife.

**Riparian Forest:** an area of trees and shrubs located adjacent to streams, lakes, ponds, and wetlands.

**Riparian Forest Buffer Strips:** riparian areas that are planted to shrubs or trees and related plants to slow the flow of runoff and are designed to trap sediment and filter nutrients before they reach the water body.

**Riparian Meadow:** a riparian area found along small streams in upper portions of watersheds; composed of water tolerant grasses.

**Riparian Shrublands:** riparian areas usually associated with intermittent streams; consists of shrub-like plants instead of grasses or trees.

**Riparian Woodlands:** riparian areas common along perennial streams; composed of larger trees with an open canopy allowing for the growth of grasses and shrubs in the understory.

**River:** often used to describe a larger stream with many tributaries.

**Rivers and Harbors Act of 1899:** first water pollution legislation in the United States; prohibited dumping refuse or constructing structures in navigable waters without federal approval.

**RNA:** Ribo Nucleic Acid; a nucleic acid that is similar to DNA in composition but is derived from the DNA code and is single-stranded; delivers genetic information from the nucleus to the rest of the cell and provides the code to manufacture proteins.

**Rock Vane:** see *Bendway Weir*

**Root:** the underground portion of a plant that draws food and water from the soil and stores plant food.

**Rootstock:** any underground stem that will take root at the joints.

**Root System:** the portion of a plant containing the root organs.

**Root Zone:** the area and volume of soil around a plant in which roots are normally found.

**Row Crop:** originally used to describe crops planted in a specific way; includes soybeans, corn, grain sorghum, sunflowers, and cotton.

**Ruminant:** an animal which has a digestive system containing a four compartment stomach that is able to digest grasses that humans cannot, including cattle, bison, sheep, and goats.

**Runoff:** rain, ice, or snow that does not soak into the soil, but flows across the land and eventually runs into streams and rivers when the intensity or volume of that precipitation exceeds the absorption and storage capacity of the land's surface.

## S

**Sand:** the largest and most abundant of the mineral particles that make up soil.

**Secondary Contact Recreational Uses:** recreational water uses during which the ingestion of surface waters is not probable including activities such as wading, fishing, trapping, and hunting.

**Sediment:** solid organic or mineral particles such as sand, clay, or silt that are deposited in a new location by wind, water, or ice.

**Segment:** a length of a stream that is relatively homogeneous with respect to physical, chemical, and biological properties.

**Shallow Freshwater Marsh:** a wetland found in a distinct depression or around the perimeter of deepwater habitat.

**Sheath:** the lower part of a leaf that fits around the stem.

**Shelterbelt:** see *Windbreak*

**Silage:** sweet tasting, easily digestible livestock feed resulting from chopping entire corn or sorghum plants into small pieces during harvest and storing that in an area where it is packed tightly so the plant material will ensile or ferment.

**Silt:** small powdery mineral particles that make up soil but cannot be seen without magnification.

**Silviculture:** the art and science of growing and managing forests and woodlands to achieve desired outcomes.

**Small Grains:** wheat, oats, barley triticale, rye, and rice.

**Snag:** a standing dead tree.

**Sodic Soil:** see *Alkali Soil*

**Softwoods:** conifers and needle-leaved trees.

**Soil:** the naturally occurring mixture of minerals, organic matter, water, and air that forms the surface of the earth.

**Soil Amendment:** material added to soil to alter its physical or chemical properties.

**Soil Horizon:** a specific layer in the soil that has physical characteristics which differ from those of the layers above and beneath this layer.

**Soil Order:** a system of classifying soils using 12 categories.

**Spawning:** to produce and deposit fish eggs.

**Species:** closely related organisms potentially able to breed with one another that belong to a category of biological ranking just below the genus or subgenus category.

**Spike:** a long inflorescence attached directly to a stem with the newest flowers at the tip.

**Spikelet:** a small flower spike; the basic unit of the flower cluster of a grass plant.

**Splash Erosion:** erosion resulting from the impact of raindrops hitting the soil.

**Spring:** a place where groundwater flows naturally from the earth to the surface of the land.

**Stand:** a community of plants sufficiently uniform in species, age, arrangement, or condition to be distinguishable as a group from other plants growing in the area.

**Starch:** a complex carbohydrate that is an energy source.

**Static Water Level:** the water level in a well when the water is not under pressure from a pump or from natural pressure.

**Stewardship:** the concept of responsible caretaking based on the premise that people are managers of natural resources and are responsible to future generations for their condition.

**Stolon:** a long stem or shoot that droops to the ground and may root and form new plants where it touches the soil.

**Strata:** distinct temperature zones.

**Stream:** a body of water confined within two banks and a bed that provides a physical path for flowing water through a channel.

**Streambank:** the sloping ground that borders a stream and confines the water in the natural channel when the water level is normal.

**Streambank Restoration:** the return of a riparian area to its original state, attaining the best possible condition that a particular riparian area is capable of achieving under present circumstances.

**Stream Channelization:** a process of planned human intervention in the course, characteristics, or flow of a river or stream.

**Stream Corridor:** the stream valley and ecosystem that includes the stream and the land, plants, and animals associated with that stream or river.

**Streamflow:** the movement and volume of water that forms the channel of a stream.

**Stream Order:** a classification of streams based on the number and type of tributary junctions.

**Strip Cropping:** the practice of growing two or more crops in alternating strips along contours, often perpendicular to the prevailing direction of wind or surface water flow.

**Submerged Plants:** underwater plants with only a few floating or visible leaves.

**Subsoil:** the layer of soil beneath the topsoil.

**Succession:** the replacement of one plant or animal species over time by another in progressive development. (*Ecological Succession*)

**Summer Fallow:** the practice of leaving land unplanted during at least one period when a crop would normally be grown with the goal of controlling weeds and storing water or other plant nutrients. (*Ecofallow*)

**Surface Water:** water that flows across the surface of the land or is stored in a river, lake, or freshwater wetland.

## Glossary

**Suspended Solids:** solid organic or mineral particles that do not dissolve in water.

**Sustainable Yield:** the amount of groundwater that can be withdrawn from an aquifer without causing adverse effects to springs, streams, wetlands, and other groundwater dependent activities.

**Swamp Land Acts of 1849, 1850, and 1860:** federal laws that gave 65 million acres of wetlands owned by the federal government to 15 states for reclamation, which—at that time—meant drainage.

## T

**Tame Pasture:** land intentionally planted for grazing, usually seeded to perennial grasses or legumes, such as clover or timothy.

**Terrace:** a raised, generally horizontal, ridge of soil embankments constructed across a slope following the contour of the land.

**Terrain:** the surface features of an area of land.

**Terrestrial Ecosystems:** ecosystems of land plants and animals found on upland surfaces of the continents.

**Thermal Stratification:** the formation of distinct parallel layers of different temperatures in a lake or reservoir.

**Thinning:** the process of removing excess and poor quality trees from a stand for the purpose of improving the growth and value of the remaining trees.

**Threatened Species:** species that are likely to become endangered in the near future.

**Tillage:** mechanical manipulation of the soil due to management of crop residues, weeds, incorporation of chemicals for crop production, or any combination of these actions.

**Tillage Operation:** the act of applying one or more tillage actions in a distinct mechanical application of force to all or part of the soil mass.

**Timber Culture Act of 1873:** the federal law that provided free land to settlers if 40 acres of the homestead claim was planted to trees and kept in growing condition for 10 years (later reduced to 10 acres).

**Timberlands:** forested areas capable of producing wood for commercial industrial uses.

**Tonnage:** the number of tons of plant material produced and removed per acre.

**Topography:** the features on the surface of the land such as hills, valleys, rivers, etc.

**Topsoil:** the layer of soil at the earth's surface; moved in cultivation.

**Total Dissolved Solids (TDS):** the total quantity of minerals (salts) in water, usually measured by weight in milligrams per liter (mg/L) or parts per million (ppm).

**Total Maximum Daily Load (TMDL):** the maximum amount of pollution that a water body can receive without violating the standards and the plan to achieve that goal.

**Township:** a measure of land established by Congress when it created a uniform way of dividing land—a square area of land, six miles by six miles (an area of 36 square miles) divided into one-mile squares called sections.

**Transesterification:** a chemical process that separates vegetable oil into methyl esters and glycerin.

**Transpiration:** the process by which water is pulled from the soil into the roots of a plant, up through the cells of the plant, and eventually out into the atmosphere through tiny openings in the plant's leaves.

**Tree:** a woody plant that usually grows to more than 12 feet tall and has one main stem.

**Tree Crown:** the upper branches and leaves of a single tree.

**Tree Farm:** a privately owned woodland where sustainable forest management is the primary objective.

**Tree Plantation:** a site planted to trees, often a single species, that are maintained at about the same age and size and are harvested all at once and then replanted.

**Tributary:** a stream that flows into a larger stream or other body of water.

## U

**Unconfined Aquifer:** an aquifer that does not have rock layers over the top of it that trap or confine the water under pressure; covered by sand, gravel, or sediment.

**Understory:** the layers of vegetation (smaller trees, shrubs, and plants such as weeds, wildflowers, ferns, and grasses) growing under the canopy trees in a forest.

**Urban/Community Forest:** a forest category that includes all trees, shrubs, and associated vegetation in and around population areas, ranging from small towns to large metropolitan areas including trees growing on street right of ways, in parks and cemeteries, in recreational areas, and on other public properties.

**Urban Sprawl:** see *Fragmentation*

## V

**Variety:** a plant with specific genetic characteristics that make it different from other plants of the same species.

**Vegetation:** the mass of plants that covers a given area.

## W

**Wastewater:** water that has been used, as for washing, flushing, or in a manufacturing process, and therefore contains waste products.

**Water:** a colorless, odorless, transparent liquid consisting of two parts hydrogen and one part oxygen, H<sub>2</sub>O or hydrogen hydroxide.

**Water Balance:** see *Water Budget*

**Water Budget:** the average balance between the water that enters an area and the water that is withdrawn or discharges naturally. (*Water Balance*)

**Water Compact:** a legal agreement between states on how to equitably divide and distribute the water supply of a river or river basin.

**Water Cycle:** see *Hydrologic Cycle*

**Water Quality:** the physical, chemical, and biological characteristics of water and how those characteristics relate to a particular use of that water.

**Water Right:** a permit to use a set amount of water from a specific source for a specific purpose.

**Watershed:** a sloping area of land that collects, directs, controls, and discharges the flow of rainwater into a river, river system, or body of water.

**Water Table:** the top elevation of water stored in an aquifer.

**Weather:** the state of the atmosphere for a given site at a given time.

**Well:** a vertical excavation into an underground rock formation.

**Wetland:** a geographic area that is frequently inundated with water and is characterized by hydrophytes, hydric soils, and some saturation or flooding during the growing season.

**Wetlands Reserve Program:** a voluntary program administered by the U.S. Department of Agriculture that provides technical and financial assistance to landowners to address wetlands, wildlife habitat, soil, water, and related natural resource concerns.

**Wet Meadow:** a type of wetland located in lowland prairies that does not drain well, characterized by standing water for short periods during the growing season.

**Wilderness Area:** an area established by the federal government to be managed and preserved in an essentially untouched condition.

**Windbreak:** a line of trees or shrubs planted at regular intervals, perpendicular to the prevailing winds, designed to reduce wind velocities and thus reduce wind erosion. (*Shelterbelt*)

**Winter Wheat:** wheat planted in the fall and harvested the following spring or early summer.

**Woody Plant:** a perennial plant with above ground stems that resemble wood in appearance, texture, or toughness including trees, shrubs, vines, cacti, and yucca.

## Y

**Yield:** the amount of a specified substance produced per unit area.

**Yield Monitor:** a yield measuring device installed on harvesting equipment.

