

# Soil Glossary

## -A-

### **abiotic**

Non-living factor in an environment; for example, light, water, temperature, or rocks.

### **Abney level**

A surveying instrument designed to measure angles of elevation or depression. Measurements made with an Abney level are expressed in degrees or in percentages.

### **acid**

Substances with a pH of less than 7.

### **acid rain**

Rain, snow, or other forms of water that are made more acid by the waste gases that come mainly from the burning of coal and oil products. The gases (usually sulfur dioxide and oxides of nitrogen) mix with water and other materials in the air. Acid rain falls on the land and water, and can affect wildlife, plants, soil, and building materials.

### **acorn**

The fruit of an oak tree; single seeded; popular wildlife food

### **active solar power**

A solar energy collection system in which water, air, or another heat-absorbing fluid is actively pumped through a solar collector. After absorbing the heat from the sun, the fluid is stored in insulated tanks until the heat energy is needed.

### **acre**

A unit of measurement of land equal to the area of land inside a square that is 209 feet on each side (43,560 square feet).

### **adapted, adaptation**

The process of making adjustments to the environment. For example, plants grow only where soil types, moisture, and sunlight are balanced to the proper degree. Desert plants have adapted so they live under intense sunlight, on poor quality soils, and with a much reduced water supply.

### **adipose fin**

The fatty fin on some species of fish, such as catfish and bullheads.

### **aerate, aeration**

To supply with air or oxygen; to loosen the soil to add air space to it; to supply running water with additional oxygen, as when a stream runs over falls or rapids or when wind creates waves on a lake.

### **aerobic**

Living or occurring only in the presence of oxygen.

### **aesthetic**

Sensitivity to or appreciation of beauty through recognition of its unique and varied components or through its orderly appearance.

### **aestivation**

Dormancy, typically seasonal.

### **afforestation**

The establishment of a forest on an area not previously forested.

### **age, rotation**

The age at which a tree stand is considered ready for harvesting under the adopted plan of management.

### **aggregate**

To gather into a group or mass.

### **air quality**

A gauge of the concentration of one or more chemicals in the atmosphere that could potentially be harmful to humans, other animals, vegetation, or materials.

### **algae**

Any of numerous chlorophyll-containing plants of the phylum *Thallophyte*, ranging from unicellular to multi-cellular forms in fresh or salt water.

### **alidade**

An instrument used in fire towers to locate forest fires. The alidade is equipped with sights for determining the direction of a fire.

### **all-aged**

Applies to a stand of trees where (theoretically) trees of all ages are found.

**alkalinity**

The alkali concentration or quantity

**allantois**

Part of an egg that receives waste from the embryo.

**alluvial deposits**

Sedimentary deposits (like a delta) in fresh water.

**Alluvium**

Material, such as sand, silt, or clay, deposited on land by streams.

**amnion**

A thin, fluid-like sack that encloses the embryo in an egg.

**amphibian**

Typically, an animal that, when young, lives in an aquatic habit and breathes by gills; as an adult, an amphibian lives primarily in a terrestrial habitat breathing by lungs and through moist glandular skin. For example, frogs and salamanders are amphibians.

**amphibole/pyroxenes**

Easily weathered group of minerals that provides calcium and magnesium; not as abundant as feldspars.

**anadromous**

Any species of fish that lives in saltwater and spawns in freshwater. Some examples are salmon, shad, and striped bass.

**Anaerobic**

An organism, like bacteria, that lives without the presence of oxygen

**anal fin**

The fin found on the lower portion of a fish's body near the tail.

**angiosperm**

Any class of flowering plants characterized by seeds that are fully enclosed by fruits.

**animal community**

Animals of various species living within a certain habitat, each occupying a specific position in that particular environment; directly parallel to plant communities.

**annual**

When referring to plants, those that complete their life cycle—from seed to mature, seed bearing plant—in one growing season.

**annual rings**

Rings that are visible in a cross cut section of a tree. Each ring represents a layer of growth.

**annual turnover**

The rate of replacement of individual animals in a population. Birds, such as quail, may have a 70 percent turnover annually. This means that only 30 percent of the birds alive at the beginning of one year are still alive at the end of the year. The reproductive capabilities of a species will match the mortality, or turnover rate.

**anthropomorphism**

The attribution of human characteristics to non-humans, especially animals. Biologists recognize that animals may exhibit emotions and behavior patterns resembling those of humans. Anthropomorphism is generally used to refer to a fictionalized portrayal of animals such as those found in children books, cartoons, and so on.

**arboreal**

Pertaining to or like a tree; adapted to living in trees.

**arid**

Dry; receives little precipitation.

**asbestos**

A natural fibrous material that was once commonly used for fireproofing and sound or heat insulation. Prolonged inhalation of very fine asbestos particles can cause lung disease.

**atmosphere**

Consists of the troposphere and the stratosphere, which comprise the whole mass of air surrounding the Earth. The troposphere is the innermost layer of the atmosphere, containing about 95% of the mass of the Earth's air and extending 11 miles above sea level. The stratosphere is the second layer of the atmosphere and extends from about 11 to 30 miles above the Earth's surface.

**aquatic**

Growing, living in, or frequenting waters.

**aquifer**

A geological formation that is permeable; a water-bearing layer of rock or soil. An aquifer has an impervious layer of rock or soil at the top and at the bottom of a pervious layer that contains water.

**available water capacity**

The capacity of soils to hold water available for use by most plants. It is commonly defined as the difference between the amount of soil water at field moisture capacity and the amount at wilting point. It is commonly expressed as inches of water per inch of soil. The capacity, in inches, in a 60-inch profile or to a limiting layer is expressed as:

Very low	0 to 3
Low	3 to 6
Moderate	6 to 9
High	9 to 12
Very high	more than 12

**-B-**

**BMP**

Best Management Practices

**bacteria**

Single celled microorganisms that lack chlorophyll. Many bacteria break down organic matter in the air, the water, and the soil. Some bacteria are capable of causing diseases in humans, other animals, and plants.

**bag limit**

The maximum number of animals allowed to be taken by an individual in regulated hunting. For example, a deer hunter may kill one deer per year.

**barbel**

A whisker-like projection for the jaws of some fish such as a carp or catfish. Barbels help a fish to taste and feel.

**bark**

The tough exterior covering of a woody root or stem. The **inner bark** is the physiologically active layer of tissue between the cambium and the last-formed periderm. The **outer bark** is the layer of dead tissue, of a dry, corky nature, outside the last-formed periderm.

**basal area**

The cross-section area of a tree or trees measured at breast height (4 ½ feet above the ground line) and expressed in square feet. For example, a well-stocked pine stand might have a basal area of 80 to 120 square feet per acre.

**bauxite**

A mineral, composed of 45 to 60% aluminum, making it the primary source of this versatile metal. Australia is the world’s largest supplier of bauxite ore; the United States is the largest processor of aluminum from bauxite.

**behavior**

What an animal does.

**benthic**

Having to do with the ecosystem at the bottom of a lake

**biennial**

A plant that lives for two growing seasons, producing foliage during the first season and flowers, fruit, and seeds during the second.

**“big game”**

A term designating larger hunted species, such as deer, elk, moose, bear and big horn, as opposed to “small game” (rabbits, woodchucks, squirrels, doves, and quail) or “non-game” (songbird and birds of prey). In many states, species are legally designated as “big game”, “small game” or “non-game”.

**Biltmore stick**

An instrument used for measuring the diameter of a tree, height of a tree, and diameter of a log. A Biltmore stick also has board foot tables on it.

**bioaccumulation**

The build-up of chemicals in a plant or animal. For example, DDT in bluebirds.

**biology**

The study of living organisms

**biodegradable**

The property of a substance that permits it to be broken down by microorganisms into simple, stable compounds such as carbon dioxide and water.

**biodiversity (biological diversity)**

A term used to represent the variety of life forms in a given area.

**biogeochemical cycles**

Movement of matter within or between ecosystems caused by the interaction of living organisms, geologic forces, or chemical reactions.

**biologist**

A person who studies living organisms and their relationship to one another.

**biological diversity**

The variety of life forms in a given area. Diversity can be categorized in the number of species, the variety in the areas of plant and animal communities, the genetic variability of the animals, or a combination of these elements.

**biomass**

The total weights of all living matter in a particular habitat, at a given moment in time.

**biome**

A large geographic area with somewhat uniform climatic conditions; a complex of communities characterized by a distinctive type of vegetation and maintained under the climatic conditions of the region.

**biotic**

The living components of an ecosystem (fauna and flora); a reference to the living components of the biosphere or of an ecosystem as distinguished from the non-living components.

**biosphere**

The part of the earth's crust (water and atmosphere) where living organisms can exist.

**biota**

The animal and plant life of a region or period.

**biotic community**

The living organisms in a given community. It includes all plant and animal life within the community. The non-living parts are considered the abiotic parts of the community.

**biotic potential**

The capacity of a population of animals or plant to increase in numbers under optimum environmental conditions.

**blind**

A hiding place for observing.

**block**

An area of land or timber that has been defined for management purposes. One block may be composed of stands of different species or ages.

**board foot**

A unit of wood measuring 144 cubic inches; a piece of wood that is 12 inches long by 12 inches wide by 1 inch thick is equal to 1 board foot.

**bog**

A wetland formed in a former glacial depression by the accumulation of organic matter, known as peat, and which supports mosses tolerant of acidic conditions

**bole**

The main trunk of a tree.

**Boreal Forest**

The northernmost broad band of mixed coniferous and deciduous trees that stretches across northern North America, Europe, and Asia.

**borer (increment)**

An auger like instrument with a hollow bit, used to extract cores from trees for the determination of growth and age.

**borers (insect)**

Insects that bore into and feed on twigs, branches, trunks, nuts, or logs.

**botanist**

A specialist in the study of plants.

**bottomlands**

A forest area near a stream, river, or other moving body of water. Bottomlands are subject to periodic flooding and usually have wetland hardwood species.

**brackish**

The water in the area where fresh and salt water meet; often has varying salinity but is saltier than fresh water.

**breast height**

Four and a half feet high; the point on a tree where diameter measurement is taken.

**breeding**

A series of complex behavioral interactive patterns from courtship to mating; rearing of young, which are necessary for the continuation of a species.

**broadleaf**

The term describing a plant with wide bladed leaves, such as an oak or maple; generally refers to flowering trees in contrast to conifers.

**bromeliad**

A member of a family of tropical American and epiphytic herbaceous plants that includes the pineapple and various other ornamentals.

**brood**

The offspring of a bird or mammal.

**browse**

A general term, commonly used in wildlife management to signify brushy plants eaten by deer, elk, or cattle; to eat the twigs and leaves or woody plants.

**buffer strip**

A narrow zone or strip of land, trees, or vegetation bordering an area. Common examples include visual buffers, which screen the view along roads, and streamside buffers, which are used to protect water quality. Buffers may also be used to prevent the spread of forest pests.

**burrowing**

Digging a hole or tunnel.

**butte**

A hill that rises abruptly from the surroundings. The sides are steeply sloped or with cliffs, and the top is nearly flat.

-C-

**cacti**

Plants that have adapted to dry conditions; Cactus have small leaves and thorns and can store water in leaves and other parts of the plant.

**caliper, tree**

An instrument used to measure diameters of trees or logs. The tree caliper is a graduated rule with two arms, one fixed at right angles to one end of the rule, and the other sliding parallel to the fixed arm.

**cambium**

In woody plants, the layer of living tissue between the bark and wood from which new bark and wood are formed.

**camouflage**

Colors, tones, patterns, shapes or behaviors that enable an organism to blend in with its surroundings. Some organisms, for example, have a skin or coat color that lets them hide from predators.

**canopy**

The forest layer formed by the leaves and branches of trees or shrubs. There may be several canopy layers.

**canopy cover**

The cover formed by the branches, leaves, and stems of plants. Can specify as

herbaceous, shrub, tree, or all canopy cover.

**canyon**

A deep, narrow gap or cleft in the earth historically caused by running water or glaciers.

**carbohydrates**

Sugars, starches, and cellulose that are produced by green plants and are important nutritional sources of energy for many animals.

**carbon cycle**

The circulation and recycling of carbon atoms, especially through the processes of photosynthesis, respiration, and decomposition.

**carnivore**

A meat eater.

**carrion**

The bodies of dead animals, usually found in nature in the process of decay; not "fresh meat".

**carrying capacity**

A wildlife management term for the equilibrium expressed by the availability of habitat components and the number of animals in a given area. In general ecological usage, carrying capacity is the dynamic equilibrium established between any life form and its environment. It is frequently expressed as a number indicating the population of any given animal a given area can support. Carrying capacity varies throughout the year. The population number varies from year to year, dependent upon conditions within the habitat such as rainfall, weather, and habitat conditions.

**cast**

To regurgitate indigestible prey remains.

**catadromous**

Any species of fish that lives in freshwater and spawns in saltwater, such as the eel.

**catfish**

A group of fish without scales named for the long barbels around their mouths that look like the whiskers of a cat.

**cation**

An ion carrying a positive charge of electricity. The common soil cations are calcium, potassium, magnesium, sodium, and hydrogen.

**cation-exchange capacity**

The total amount of exchangeable cations that can be held by the soil, expressed in terms of milliequivalents per 100 grams of soil at neutrality (pH 7.0) or at some other stated pH value. The term, as applied to soils, is synonymous with base-exchange capacity but is more precise in meaning.

**caudal**

Related to, or being a tail; the tail fin.

**cell**

The smallest living unit of an organism.

**cellulose**

A complex carbohydrate that constitutes the chief part of the cell walls of higher plants and yields fiber for many products.

**chart**

A "map" of water areas; showing water depths for the shorelines, reefs, rocks, shoals, wrecks, and other areas of dangers.

**chip-n-saw**

A cutting method used in cutting lumber from trees that measure between 6 and 14 inches diameter at breast height. The process chips off the rounded outer layer of a log before sawing the remaining cant or rectangular inside section into lumber. Chip-n-saw mills provide a market for trees larger than pulpwood and smaller than saw timber.

**chlorophyll**

The green coloring matter in plants necessary for photosynthesis.

**chloroplasts**

The structures within plants that contain chlorophyll and enable photosynthesis to occur.

**chorion**

The outer membrane enclosing the embryo in reptiles, birds, and mammals

**chromatography**

A method of analyzing materials of various compounds by testing their absorption rates.

**clay**

Fine-grained soil with particles less than .002 millimeters; plastic when wet, but hardens when dry

**clearcut**

A method of harvesting in which all trees in a given area are removed and the area is then replanted or allowed to regenerate. This method is usually used with shade-intolerant species.

**climate**

The kind of weather a place has over a period of years, based on conditions of heat and cold, moisture and dryness, clearness and cloudiness, wind and calm.

**climatic**

The average condition of the weather as defined by temperature, precipitation, and wind velocities; the environmental conditions relating to weather.

**climax**

The final stage of plant or animal succession; when environmental conditions have been stable long enough for an area to develop a semi-permanent biome.

**clinometer**

A device used in measuring the angle of elevation from eye level to the top of a tree. This instrument is used to help calculate tree height.

**climax community**

The relatively stable association under existing conditions of soil and climate that represents the final stage of succession. Unlike earlier stages of successions, climax communities usually contain a large variety of different species and complex interactions.

**coastal plain**

Large, nearly level areas of land near ocean shores.

**codominate**

To be one of two or more of the most characteristic species in a biotic community

**colluvium**

Soil material, rock fragments, or both, moved by creep, slide, or local wash and deposited at the base of steep slopes.

**coloration**

Genetically-controlled patterns or markings that can protect an individual organism.

**columnar**

Having the shape of a column

**combustion**

An oxidative chemical process that results in the creation of heat and light.

**commensalism**

A relationship between two organisms of different species in which one organisms benefits, while the other is generally neither helped nor harmed.

**commercial forest land**

A forest land that is either currently or prospectively accessible capable of bearing merchantable timber, not withdrawn from such use.

**community**

An association of organisms—plants and animal—each occupying a certain position or ecological niche, inhabiting a common environment and interacting with each other; all the plants and animals in a particular habitat that are bound together by food chains and other interrelationships.

**competition**

When two or more organisms compete to use the same resource; may be inter- or intra-specific.

**compound leaf**

A leaf that is subdivided into many leaflets. A leaf that is comprised of a single leaf blade is a simple leaf.

**condensation**

The physical change of state in which a gas or vapor is transformed into a liquid, as in the formation of water droplets when water vapor cools.

**cone**

A structure composed of many spirally-arranged scales in which pollen ovules are produced.

**conifer**

A plant that bears naked seeds in cones; usually refers to needleleaf trees, although some needleleaf, such as yew, do not bear cones.

**coniferous**

Refers to cone-bearing. A coniferous forest is one composed of pines, firs, or spruces.

**conservation**

The use of natural resources in a way that ensures their continuing availability to future generations; the intelligent use of natural resources for long-term benefits.

**Conservation Reserve Program (CRP)**

A federal program designed to remove highly erodible, marginal farmland from production through a one-time cost-sharing payment to establish trees, grass, or other cover. The landowner receives a 10-year annual rental payment to maintain the cover.

**consumer**

An organism that obtains energy by feeding on other organisms and their remains.

**congregate**

When animals group together in an area.

**consistence, soil**

The feel of the soil and the ease with which a lump can be crushed by the fingers. Terms commonly used to describe consistence are: *Loose*.—Noncoherent when dry or moist; does not hold together in a mass.

*Friable*.—When moist, crushes easily under gentle pressure between thumb and

forefinger and can be pressed together into a lump.

*Firm*.—When moist, crushes under moderate pressure between thumb and forefinger, but resistance is distinctly noticeable.

*Plastic*.—Readily deformed by moderate pressure but can be pressed into a lump; will form a "wire" when rolled between thumb and forefinger.

*Sticky*.—Adheres to other material and tends to stretch somewhat and pull apart rather than to pull free from other material.

*Hard*.—When dry, moderately resistant to pressure; can be broken with difficulty between thumb and forefinger.

*Soft*.—When dry, breaks into powder or individual grains under very slight pressure.

*Cemented*.—Hard; little affected by moistening.

**contour farming**

Plowing along the contour lines of uneven terrain to help prevent erosion

**controlled burn (See prescribed burn.)****consumptive use**

In general terms related to wildlife, any use resulting in the use of wildlife after harvest. Examples may be the death of an individual animal as in hunting, fishing, and trapping.

**conventional crude**

The viscous liquid drilled and pumped from underground oil deposits, or reserves. After the crude oil has been extracted, it is sent to a refinery for processing into gasoline, heating oil, and other petroleum products,

**conventional natural gas**

Underground deposits of gases that are associated with crude oil deposits. Natural gas consists primarily of methane gas,

**conventional nuclear fission**

The process by which the nucleus of a heavy element (such as uranium-235 or plutonium-239) is split into lighter nuclei,

resulting in the release of a large amount of heat. This heat is then used to power a turbine that generates electrical energy.

**cord**

A volume measure of stacked wood. A standard cord is 4 x 4 x 8 feet, or 128 cubic feet of wood and space. A long cord contains 160 cubic feet and is 4 x 5 x 8 feet. Since round wood cannot be stacked to give solid volume, actual wood volume varies between 70 and 90 cubic feet per cord.

**core sample**

A small section removed from the trunk of a tree that allows foresters to determine the age of the tree (by looking at growth rings) without killing the tree.

**corridor**

A track of land forming a passageway

**courtship**

A pre-mating behavior where the male tries to woo or court the female in order to mate.

**cove**

A small bay or inlet in a body of water.

**cover**

Vegetation and other land features that provide areas for wildlife to hide, sleep, feed, and reproduce.

**covey**

A small flock or group, often a family group of birds such as quail.

**creel limit**

A term to indicate the number of fish, by species, which can be legally caught in one day.

**crepuscular**

Active at dawn and dusk.

**creosote, wood-tar**

Distillate oil derived from wood tar and produced as a by-product in the destructive distillation of either hardwoods or softwoods.

**cross section**

A sample meant to be representative of a whole

**crop tree**

Any tree selected to grow to final harvest or to a selected size. Crop trees are selected for quality, species, size, timber potential, or wildlife value.

**crown**

The top branches of a tree.

**crown-class**

A tree classification system based on the tree's relative height, foliage density, and ability to intercept light. Crown-class measures past growth performance and calls attention to crop trees that could benefit from future thinning and harvest operations.

There are four classifications:

**dominant trees**—Larger-than-average trees with broad, well-developed crowns. These trees receive direct sunlight from all sides and above.

**codominant trees**—Average-to-fairly large trees with medium-sized crowns that form the forest canopy. These trees receive full light from above, but are crowded on the sides.

**intermediate trees**—Medium-sized trees with small crowns below the general level of the canopy. Intermediate trees receive little direct light, are poor crop trees, and should be removed during thinning operations.

**suppressed or overtopped trees**—Small trees that grow below the tree canopy and receive no direct sunlight from any direction.

**crown-sprout**

The ability of some plants to regrow after plant material above ground is removed by fire or other disturbances.

**cruise**

Measuring timber to determine the volume of a stand. Cruising shows landowners how much timber they are growing and is basic in determining how much timber should be marked for cutting and how much should be allowed to grow.

**cull**

A tree or log of marketable size that is useless for all but firewood or pulpwood because of crookedness, rot, injuries, or damage from disease or insects.

**cultivate**

Tilling or working the soil for the purpose of growing crops and other desired plants.

**cunit**

A stack of logs containing 100 cubic feet

**current**

Any movement of water, whether caused by tides, ocean water movements, or flowing water in rivers and stream.

**cutting**

The name given to the a type of harvesting system—clear cutting, seed tree, selection, and shelter wood.

**cutting cycle**

The planned time interval between major harvesting operations within the same stand—usually within uneven-aged stands. For example, on a 10-year cutting cycle in a hardwood stand, trees are harvested every 10 years.

**Cycle**

A periodically repeated sequence of events.

**-D-****DDT**

A colorless contact insecticide. Banned in the United States for most uses since 1972

**DBH**

Diameter at breast height; a term used by foresters when measuring trees

**dabbling ducks**

Ducks which frequent shallow marshes, ponds and rivers and “tip up” to feed. They feed with their body above water and take off vertically when startled.

**daphnia**

Any of many kinds of water fleas

**decadent**

Declining in health and/or productivity.

**decibel**

A unit of intensity of sound. A measurement of 50 decibels is considered moderate sound; 80 is loud; sound beyond 100 becomes intolerable.

**deciduous**

Plants that annually shed their leaves; usually hardwood trees and shrubs.

**decomposer**

A plant, animal, or fungi, which feeds on dead material and causes its mechanical or chemical breakdown.

**defoliation**

The removal of leaves or needles from trees or plants, usually caused by insects, diseases, or chemicals and often causing mild to severe damage—even death—to the tree.

**deforestation**

The permanent replacement of forests by non-forest uses.

**dehiscent**

Fruits with their seeds inside that spill out when the outer layer is ruptured.

**delta**

A body of alluvium having a surface that is nearly flat and fan shaped; deposited at or near the mouth of a river or stream where it enters a body of relatively quiet water, generally a sea or lake.

**dendrology**

A branch of botany devoted to the study of trees.

**dendrochronology**

The science of dating events and variations in the environment in former periods by the comparative study of growth rings in trees and aged wood.

**dendrometers**

An instrument used to measure trees

**detritus**

Disintegrated material or debris; loose fragments washed away from rocks

**denitrification**

To remove nitrogen or nitrogen-containing gases

**dense**

Thick, or crowded closely together.

**densimeter**

A device used for measuring the density of the canopy cover.

**density**

Number of organisms per unit of space.

**depredation**

The act of preying upon, usually in relation to wildlife damage to people's crops or animals.

**desert**

An arid habitat with limited amounts of vegetation.

**desert scrub**

Arid environments with irregular winter rainfall, summer rainfall, or bi-seasonal rainfall and highly varied plant life that includes leafless, drought deciduous, or evergreen species of trees, shrubs, herbs, grasses, yuccas, agaves, and cacti.

**detrimental**

Having harmful effects.

**dew**

Water droplets condensed from the air onto cool surfaces such as grass or leaves. Usually occurs at night.

**diameter at breast height (dbh)**

The diameter of a tree measured in inches at breast height—a standard 4.5 feet above the ground.

**diameter-limit cutting**

A selection method in which all marketable trees above a specified diameter are harvested. Diameter-limit cutting can lead

to long-term degradation of the stand.

**dioecious**

Male and female flowers produced on separate plants.

**direct or broadcast seeding**

(a) Sowing seed for broad coverage from the air or on the ground. (b) Seeding of forest stands, roadways, or specified plots for wildlife.

**dissolved oxygen**

The oxygen mixed into water and used by fish. Dissolved oxygen is originally put into water by things such as wind, current, plants, and micro-organisms..

**display**

An observable behavioral pattern that carries a specific message. The message may be inter- or intra-specific.

**diurnal**

Active by daylight; the opposite of nocturnal.

**diversity**

Variety.

**diving ducks**

Ducks that prefer to feed in deep water like lakes and bays.

**domesticated**

Referring to animals, which humans have tamed, kept in captivity, and bred for special purposes.

**dominant species**

The plant or animal species, which exerts major controlling influence on the community. Removal of dominant species results in important changes in the community. Generally, dominants have the greatest total bio-mass represented by total number or weight.

**dorsal fin**

A fin located on the back or upper-most part of a fish.

**DNR**

Department of Natural Resources; abbreviation for the name of the natural resources agency in many states. In North

Carolina the name of the agency is DENR—Department of Environment and Natural Resources.

**drought**

The lack of normal precipitation for an extended period of time. A long period with little or no rain.

**dune**

A low mound, ridge, bank, or hill of loose, windblown, granular material (generally sand), either bare or covered with vegetation, capable of movement from place to place but always retaining its characteristic shape.

**-E-**

**early successional**

Describes a species adapted to the beginning or early stages of biotic succession. The first species to invade a cleared area are early successional species.

**ecology**

The scientific study of the relations of living things to one another and their environment. A scientist who studies these relationships is called an ecologist.

**ecological diversity**

The variety of forest, desert, grasslands, oceans, stream, and other biological communities interacting with one another and with their nonliving environment.

**ecological islands**

Small spaces of wildlife and plant habitat remaining when land is cleared for farming or urban development.

**ecological niche**

The role played by an organism in a biological community: its food preferences, its requirements for shelter; its special behaviors, and the timing of its activities (nocturnal or diurnal). The ecological niche of organism has little to do with where it is found but much more to do with its function or role in the community (for example,

predator or decomposer) and how it performs that function.

**ecosphere**

A term for the total of all the regions on the earth capable of supporting life.

**ecosystem**

All living things and their environment in an area of any size where all are linked together by energy and nutrient flow. Also, the interacting system of a biological community and its nonliving environment; the place where these interactions occur.

**ecosystem management**

Use of ecosystem concepts to predict the effects of management actions on the ecosystem and to guide management planning and actions.

**ecological succession**

The changes, over time, in the structure and function of an ecosystem. When no previous vegetation exists on a site, the process is called primary succession. When a site supported vegetation previously but was disturbed, the process is called secondary succession.

**ecologist**

A scientist who studies the interrelations of living things to one another and their environment.

**ecology**

The scientific study of the relations of living things to one another and to their environment.

**ecotone**

A land area where two different succession layers come together; edge. Good wildlife habitat.

**edaphic**

Relating to soil

**edge effect**

The tendency of wildlife to use the areas where two different vegetative types come together forming an edge; where rabbits, for example, concentrate in an area where brush land and meadow land meet because

of the diversity of food, shelter, and other habitat components provided by the edge.

**edge habitat**

The transition zone between two different habitat types.

**effluent**

The outflows from sewage or industrial plants.

**emergent**

A tree that grows above the general level of the forest canopy. In ecology, a plant which emerges from the water to grow in wetlands.

**endangered**

A species that is in danger of extinction throughout all or a significant portion of its range. (A *threatened* species is one that is likely to become endangered.)

**energy flow**

The one-way passage or transfer of energy through an ecosystem according to the laws of thermodynamics.

**endemic**

Pertaining to a population that is restricted to a particular geographic area.

**entomology**

The study of insects

**environment**

The sum of all external conditions and influences, living and nonliving, that affect the development and survival of an organism (or group of organisms); includes other plants, animals, climates, and locations.

**eolian soil material**

Earthy parent material accumulated through wind action; commonly refers to sandy material in dunes or to loess in blankets on the surface.

**epidermis**

The outermost layer or layers of cells in a plant or animal.

**epilimnion**

The warm layer of water above the thermocline.

**epiphyte**

A plant that grows on the surface of another plant but is not a parasite since it gets its nourishment from the air.

**erosion**

The wearing away of the land surface by wind or water. Erosion occurs, naturally from weather or runoff, but it is often intensified by some human practices.

**estuary**

A partly enclosed body of water where sea water and fresh water meet and mix.

**ethanol**

A grain alcohol produced by fermentation or the anaerobic (occurring in the absence of oxygen) digestion of plant materials with a high sugar content. Ethanol is also an unconventional or alternative fuel source for automobile engines.

**ethnobotany**

The study of the relationship between societies and the plants of their environment.

**ethics**

A personal or social moral code.

**eutrophication**

Enrichment of water due to fertilization, sewage, effluent or other waters that carry a high plant-nutrient component which speeds up the ecological aging of a body of water.

**evaporation**

A physical change of state in which a liquid is transformed into a vapor or gas.

**evapotranspiration**

The evaporation of water from the soil and the transpiration of water from the plants that live in that soil. Approximately one-quarter of a forest's annual rainfall returns to the air through evapotranspiration.

**even-aged management**

A forest management method in which all trees in an area are harvested at one time

or in several cuttings over a short time to produce stands that are all the same age or nearly so. This management method is commonly applied to shade-intolerant conifers and hardwoods.

**even-aged stand**

A forest area in which all the trees are in the same age due to simultaneous germination, planting, or harvesting.

Even-aged stands are desirable for species whose young trees do not thrive in the shade of taller trees.

**evergreen**

Plants that do not lose their leaves during the winter. These are usually conifer trees but some, such as the live oak, are broadleaf trees.

**excavate**

To make a cavity or hole. To hollow out.

**exotic species**

A species that is not native to the ecosystem; also known as an invader species.

**exclusion**

Keeping something out of an area.

**extinction**

The condition of having been removed from existence. An animal or plant facing extinction is one in danger of vanishing from our world.

**eutrophic**

A type of body of water that has high levels of nutrients.

**-F-**

**famine**

An extreme shortage of food in a given area.

**fauna**

Animals, especially the animals of a particular region or period considered as a group.

**feed lot**

An enclosed area in which animals, such as hogs or cattle, are fed before being sold for meat.

**feldspars**

The most abundant group of minerals in the earth's crust.

**feral**

Used in wildlife as referring to domesticated animals gone wild, for example, wild burrows, goats, cats, and dogs.

**fiber**

A thread-like body or filament many times longer than its diameter. Paper pulps are composed of fibers—usually of vegetable origin, but sometimes animals, minerals, or synthetic—for special types of papers.

**field**

An area devoid of trees and generally characterized by either grasses or cultivated crops.

**filter**

Any substance (paper, charcoal, sand, cloth, or fiber) through which air, smoke or liquid passes to remove impurities or recover solids.

**fingerling**

A young fish, about as long as the length of your finger.

**fire scars**

Scar tissue that develops when a tree or shrub is burned by fire but is not killed.

**fire triangle**

The three components necessary for a fire to burn—heat, fuel, and oxygen.

**firebreak**

Any nonflammable barrier used to slow or stop fires. Several types of firebreaks are mineral soil barriers; barriers of green, slow-burning vegetation; and mechanically cleared areas.

**fisheries management**

The science of management of fish populations through research, habitat manipulation, stocking, water quality control, and regulations.

**flat or straight planting**

Planting trees directly into the ground without beds or, in some cases, without first moving logging debris.

**flood plain**

A nearly level alluvial plain that borders a stream and is subject to inundation under flood-stage conditions unless protected artificially. It is usually a constructional landform built of sediment deposited during overflow and lateral migration of the stream.

**flora**

A list of the species of plants that make up the vegetation for an area. (See also **vegetation**.)

**fluctuate:**

To vary; or rise and fall irregularly.

**flyway**

Fly routes established by migratory birds

**food chain**

The transfer of food energy from organisms in one nutritional level to those in another.

**food web**

A complex and interlocking series of food chains.

**forage**

Refers to the vegetation eaten by animals.

**forb(es)**

Low growing herbaceous plants, both annuals and perennials.

**Forest Development Program (FDP)**

A state-and industry-funded cost-sharing program administered by the North Carolina Division of Forest Resources. The program pays landowners for approved tree site preparation and planting activities.

**forest**

A community of trees, shrubs, herbs, and associated plants and organisms covering a considerable area, that use oxygen, water and soil nutrients as the community attains maturity and reproduces itself.

**forest ecosystem**

The organisms, soil, water and air, associated with a forest, along with other forest-related areas.

**forest floor**

The lowest level of the forest, typically composed of small plants, fungi, and decomposing material.

**forest management**

The practical application of scientific, economic, and social principles to the administration of a forest, for specified objectives.

**Forest Management Plan**

Write guidelines for current and future management practices recommended to meet an owner's objectives.

**forest region**

An extensive area of a continent in which the climax forest associations are closely similar. The major forest regions of North America are West Coast Forest, Western Forest, Central Hardwood Forest, Tropical Forest, Northern Forest, and Southern Forest.

**Forest Stewardship Program**

A technical assistance program to help private landowners manage all their forest resources – soil, water, wildlife, timber, recreation, beauty, and endangered species—for today and for future generations.

**Forest Stewardship Plan**

A written document listing activities that enhance or improve forest resources (wildlife, timber, soil, water, recreation, and aesthetics) on private land over a 5-year period.

**forestry**

The principles and practices for managing, using, and enjoying forests. Forestry includes a broad range of activities: managing timber, fish, wildlife, range, and watersheds; protecting forest and timber products from diseases, insects, and fire,

harvesting; transporting, manufacturing, marketing, preserving, and protecting wood and other forest products; maintaining water and air quality; and maintaining the well-being of the society as it is influenced by forest and other renewable natural resources and their derived products and values.

**Forestry Incentives Program (FIP)**

A federally funded cost-sharing program of the Agricultural Stabilization and Conservation Service (ASCS). FIP produces payments to landowners who complete certain approved forest management practices, including site preparation, tree planting, and timber stand improvement (TSI).

**fossil fuel**

Coal, oil, and other energy sources that formed over millions of years from the remains of ancient plants and animals. Fossil-fuel use is a major factor in pollution issues.

**freshwater**

Water that contains little or no salt.

**fruit**

The ripened ovary or ovaries of a seed bearing plant along with accessory parts.

**fungi**

Simple plantlike organisms that lack chlorophyll. Fungi get their nutrition from living on or in other organisms (parasitically), from living with other organisms (symbiotically), or by breaking down dead organic materials (saprophytically). Examples of fungi include: mushrooms, molds, and yeast.

**fusiform rust**

A disease resulting in a canker or swollen area on the limbs or trunks of pine trees from orange spores produced by infected oak

leaves. Bursiform rust degrades stem quality and tree value, often leading to breakage, disfigurement, and eventual death of the tree.

**-G-**

**gaff**

A "J" shaped, barbless hook on a long handle used to hook large fish while landing them.

**gamate**

A reproductive cell having the haploid number of chromosomes capable of fusing with a gamate cell of the opposite sex to produce a fertilized egg.

**game animal**

Legal designation for animals, which may be managed and hunted only under regulation.

**gas**

The physical state of a compound that characteristically has no fixed shape or size. Gases will fill and take the shape of any container in which they are placed.

**generalists**

Species that have broad adaptability; more likely to survive changes in habitat

**genetic diversity**

Variability in genetic or hereditary makeup among individuals within a single species.

**geothermal energy**

Heat transferred from the earth's interior to underground concentrations of water trapped in fractured or porous rock to form steam or hot water.

**gill**

A breathing organ located behind the gill cover on a fish's head.

**girdling**

Encircling the stem of a living tree with cuts that completely sever the bark and the cambium and often go further into the outer sapwood for the purpose of killing the tree

by preventing the passage of nutrients.

**glacial deposits**

Sediment left after glaciers recede.

**glaciations**

The action of huge masses of moving ice formed from compacted snow.

**glacier**

A flowing body of ice, formed in a region where snowfall exceeds melting.

**glean**

After the harvest has been completed, gather wasted food in a systematic manner with a minimum of waste and unnecessary effort.

**global climate change**

The long term changes in temperature, moisture, and air mass movements occurring globally as a result of changes in the earth's atmosphere.

**global warming**

The observed increase in the average temperature of the Earth's innermost atmosphere; believed to be a result of the greenhouse effect of trapping gases.

**granular**

Comprised of particles measuring between 2 and 4 millimeters in diameter.

**grass**

Relatively short plants (less than 4 to 5 feet) typically having long narrow leaves and hollow jointed stems. Flowers for grasses are inconspicuous and often in clusters.

**grassland**

A vegetation community in which grasses are the dominant plants.

**grazer**

A herbaceous organism that consumes primarily grasses.

**greenhouse effect**

The trapping of heat by gasses, such as chlorofluorocarbons and carbon dioxide, in the Earth's atmosphere.

**greenhouse gases**

Gases in Earth's lower atmosphere (troposphere) that trap heat. Examples are carbon dioxide, chlorofluorocarbons, ozone, methane, water, vapor, and nitrous oxide.

**greenway**

A linear park or connected system of recreational trails linking parks to residential and urban areas.

**gross national product**

Total market value in current dollars of all goods and services produced by a country's economy for final use during a year.

**ground litter**

Layer of the forest floor consisting of decaying organic matter such as leaves, branches, and dead plants.

**groundwater**

Water that infiltrates the soil and is stored in slowly flowing and slowly renewed underground reservoirs called aquifers.

**group selection**

The harvest of clusters of two or more trees in a forest stands. The creation of gaps in the canopy promotes the regeneration of seedlings that grow well in direct or partial sunlight.

**growth rings**

Growth rings represent the annual increases in wood and diameter growth of the tree. Each ring consists of early wood (or springwood) and late wood (or summerwood).

**guide**

One of the circular rings made of metal or artificial material attached to the shaft of a rod for the fishing line to travel through; someone who is hired to show a customer how and where to fish on a body of water.

**gymnosperm**

Any class of seed plants, mostly trees such as conifers, which produce naked seeds not enclosed in fruit.

## -H-

### **habitat**

The native environment of an animal or plant, or the kind of place that is natural for an animal or plant; an area that provides adequate food, water, shelter and living space.

### **hardwood**

Deciduous or broadleaf trees.

### **harvest**

Removal of forest crops for eventual use in the marketplace.

### **heartwood**

The inner core of a woody stem, wholly composed of nonliving cells and usually differentiated from the outer enveloping layer (called *sapwood*) by its darker color.

### **herb**

Any flowering plant or fern that has a soft, rather than woody, stem.

### **herb layer**

The layer of soft-stemmed plants growing close to the forest floor.

### **herbaceous**

All grasses and forbs having soft rather than woody stems, including plants called weeds and flowers.

### **herbicide**

Chemicals used to control the growth of plants.

### **herbivore**

A plant-eating animal.

### **hibernate**

To pass the winter in a dormant state.

### **high-grading**

A harvesting technique that removes only the biggest and most valuable trees from a forest stand.

### **home range**

The area in which an animal travels in the scope of normal activities; not to be confused with *territory*.

### **hormones**

A substance produced by one tissue and conveyed by the bloodstream to another to affect physiological activity like growth.

### **horticulture**

The science of growing plants.

### **humus**

The dark organic part of soil formed from decaying plant and animal matter; often called *topsoil*.

### **hunter**

A person or animal who searches for wildlife with the intent of catching or killing it.

### **hunting pressure**

The numbers, amount, or concentration of hunters in a specific area and upon a specific animal.

### **hydric**

A descriptive term referring to plants and soils existing in flooded, saturated, or ponded areas. (For example, hydric soils.)

### **hydrocarbon**

An organic compound containing only carbon and hydrogen, often occurring in petroleum, natural gases, and coals.

### **hydrological cycle**

The process where water circulates through the ecosystem; includes precipitation, respiration, evaporation; the water cycle.

### **hydrophyte**

A plant adapted to grow in water.

### **hydropower**

Electric energy produced by falling or flowing water.

### **hyphae**

A threadlike filament forming the mycelium of a fungus.

### **hypothermia**

The rapid and abnormal chilling of the body. Hypothermia can occur even in mild and warm weather. Victims must be warmed by special means to prevent long-term damage or death.

**hypsonometer**

An instrument used to measure the heights of trees, employing geometric or trigonometric principles.

-|-

**iceberg**

A large floating mass of ice detached from a glacier or polar ice cap.

**ichthyology**

The branch of zoology that deals with fish, their classification, structure, habits, and life history.

**IGFA**

Abbreviation for the International Game Fish Association, a group that keeps records on fish catches and supports sport fishing.

**igneous rock**

Rock formed by the cooling of magma, or molten rock, from within the Earth. Igneous rocks include basalt, lava, and granite.

**impoundment**

A man-made body of water.

**improvement cut**

An intermediate cut made to improve the form, quality health, or wildlife potential of the remaining stand.

**impervious**

Cannot be penetrated

**increment borer**

An instrument used to take core samples to determine the rate of a tree's radial growth and its age.

**indehiscent**

Fruit with the seeds on the outside like a strawberry; therefore they don't split open when mature.

**indigenous**

Pertaining to plants or animals that are native to a particular region or country.

**infiltration**

The act of permeating a porous area with a

liquid or gas.

**infiltration rate**

The rate at which water penetrates the surface of the soil at any given instant, usually expressed in inches per hour. The rate can be limited by the infiltration capacity of the soil or the rate at which water is applied at the surface.

**inorganic**

Composed of matter that is not animal or vegetable; not having the organized structure of living things.

**insecticide**

Chemicals used to kill insects.

**innate**

Possessed at birth.

**instinctive**

Actions taken as a result of an inborn pattern of behavior.

**interaction**

The relationships of one organism to another; the action of one population affecting the growth or death rate of another population. For example, one population may eat members of the other population, compete for food, excrete harmful wastes, or otherwise interfere with the other population. Some interactions are positive; some negative; and some are completely neutral.

**interdependencies**

The interrelationships of wildlife with one another and with the various elements of their environments

**interior basin**

Land areas that are generally bowl-shaped and surrounded by hills and mountains. Usually drained by one river system and isolated from ocean influence by mountains and hills.

**invade**

To enter, to encroach upon, to spread over into. In wildlife usage, this usually describes when an organism is removed

from a community and another organism spreads over into this community.

**invertebrate**

Animals lacking a backbone. Some examples are insects, spiders, mollusks, and crustaceans.

**IPM**

Integrated pest management; a pest management system that can reduce the amount of pesticides applied to crops.

**irrigate**

To supply cropland, parks, yards, and so on, with water through the use of diversions, ditches, and pipes.

**-K-**

**key plant species**

Those plant species which are used to indicate the general condition of a habitat. For example, when plants show overuse, the animals may have exceeded the carrying capacity of the habitat.

**keystone species**

A wildlife species whose removal will effect many different plants and animal species. For example, a beaver would be a keystone species in a beaver pond.

**kiln (dry kiln)**

A structure heated by gas or electricity in which lumber is seasoned artificially or pinecones are dried and opened.

**knee**

A round or spur like growth rising from the roots of some swamp trees such as bald cypress and tupelo.

**-L-**

**lacustrine deposit (geology)**

Material deposited in lake water and exposed when the water level is lowered or the elevation of the land is raised

**landfill**

A specially engineered site for disposing of solid waste on land, designed to confine the

refuse to the smallest practical area and reduce it to the smallest practical volume.

**late successional**

Describes a species adapted to the later stages (those approaching the climax community) of biotic succession.

**lateral line system**

A system of sense organs in fish, a series of pores or canals running along a line on each side of the body and on the head; detects pressure changes (including vibrations) in the water.

**leaching**

The removal of soluble substance from soil by percolating water .

**legume**

Plants that bear seeds in a pod. Typically have characteristics that allow them to improve the fertility of the soil by adding nitrogen. Some examples are: alfalfa, clover, soybeans, and peas.

**lichen**

Algae and a fungus growing together in a symbiotic relationship.

**life cycle**

The phases, changes, or stages through which an organism passes during its lifetime.

**limiting factors**

Influences in the life of any animal, population of animals, or species such as: food, water, shelter, space, disease, perdition, climatic condition, population, hunting, poaching and accident. When one or more of these exceeds the limit of tolerance of that animal, population of animals, or species, it then becomes a limiting factor and can directly affect the well-being of that animal and may even cause the animal's death. Limiting factors may result from causes in nature as well as human activities

**litter**

The number of young born per birthing; the

leaves or needles that fall from trees and lie on the ground to decompose and form soil.

**littoral**

Of or on a shore.

**loam**

A type of soil that consists of a mixture of clay, sand, and silt.

**loess**

Windblown deposit of fine-grained silt or clay.

**log**

To cut and deliver tree segments suitable for lumber and other products in segments 8-16 feet in length.

**log rule or log scale**

A table based on a diagram or mathematical formula used to estimate volume or product yield from logs and trees. Three log rules are used today in North Carolina: Scribner is the common scale for pine; Doyle is the common hardwood scale; and the International 1/4" Rule best measures mill output, although it is used less frequently than the other log scales.

**lop**

To cut the limbs from a felled tree.

**lumber**

Timber sawed or split into planks.

**-M-**

**macrofauna**

Large animals; extremely visible.

**management**

In general terms related to wildlife, the intentional manipulation or non-manipulation of habitat and/or the organisms within the habitat.

**management, forest**

The application of business methods and technical forest principles to the operation of a forest stand.

**manipulate**

Manage or influence to achieve desired results.

**map**

A drawing of land or physical features. Maps are useful to find streams and access points to rivers and lakes.

**marginal land**

Land that does not consistently product a profitable crop because of infertility, drought, or other physical limitations such as shallow soils.

**marine deposits**

Sediment deposited in oceans.

**marking**

(a) The physical process of selecting trees to be cut or left during a harvest. (b) Delineating a boundary. Marking is usually done by spraying a spot of bright paint on a prominent part of the tree.

**marl**

A type of bottom under a body of water; a mixture of clay and carbonate of lime.

**marsh**

A wetland without trees which often has standing water.

**mast**

Fruits or nuts used as a food source by wildlife. Soft mast includes most fruits with fleshy coverings, such as persimmon, dogwood seed, or black gum seed. Hard mast refers to nuts such as acorns and beech, pecan, and hickory nuts.

**mature tree**

A tree that has reached a desired size or age for its intended use. Size, age, or economic maturity varies depending on the species and intended use.

**MBF**

Abbreviation denoting 1,000 board feet. MBF is a typical unit of trade for dimension

lumber and saw timber stumpage. (It takes 11 MBF of wood to build an average 1,900-square-foot house.)

**meandering**

Curving; often used to describe rivers and streams in lowlands.

**merchantable height**

The stem length, normally measured from the ground to a 10-, 6-, or 4-inch diameter top, above which no other saleable product can be cut. Diameter, local markets, limbs, knots, and other defects collectively influence merchantable height.

**metamorphic rock**

Rock formed when a pre-existing rock is exposed to high heat or pressure or when it undergoes a chemical reaction.

**methanol**

Alcohol made from wood.

**microclimate**

A “small climate;” the environmental conditions within a restricted area.

**microfauna**

Very small animals, barely visible to the eye.

**microhabitat**

A small habitat within a larger one in which environmental conditions differ from those in the surrounding area. A hole in a tree trunk or a decaying log is a microhabitat within the forest.

**microorganism**

An organism microscopic in size, observable only through a microscope.

**migration**

The movement of animals—including fish—from one area to another.

**migratory**

In wildlife usage, birds or other animals which make annual migrations; that is, travel distances in the course of seasonal movements. Migrations may be great or very short, depending upon the species.

**mineral**

A naturally occurring inorganic crystalline

material found in the Earth’s crust.

**mitigate**

To make up for; to substitute some benefit for losses incurred.

**mixed forest**

A forest that includes both coniferous and deciduous trees.

**mixed stand**

A timber stand in which less than 80 percent of the trees in the main canopy are of a single species.

**moldboard plow**

A type of plow that turns the soil completely upside down, burying all crop remains underneath. Does not leave crop residue on ground surface.

**monoculture**

The raising of a crop of a single species, generally even-aged.

**monoecious**

Unisexual flowers of both sexes, produced on the same plant.

**montane zone**

The band of vegetation that occurs at intermediate elevations in mountainous regions between foothills and sub alpine zones.

**mortality rate**

The death rate—usually expressed in deaths per thousand.

**mosses**

Small green nonvascular plants.

**mottled**

A variegated pattern of color.

**mucus**

In fish, a slimy substance that coats the skin and helps protect fish from infection and disease. Also helps them move through the water.

**mulching**

To add materials to soil to protect the soil from cold, to reduce evaporation, to control weeds, or to enrich the soil. Common materials for mulching include: sawdust,

bark, and leaves.

**multiple-use**

A term referring to a system of management in which the same lands and waters are used for a variety of purposes. The uses are not necessary simultaneous but are intended to be compatible. For example, a tract of forest land can serve as a home for wildlife, provide clean air and water, be a place for recreation, be used to grow and harvest trees for products, and be aesthetically pleasing—all at the same time. (See also **Stewardship**.)

**multiple-use forestry**

Any practice of forestry fulfilling two or more objectives of management.

**multiple-use management**

The practice of managing forest resources for a variety of benefits including water quality and yield, forage, wildlife habitat, wood, recreation, wilderness, and minerals.

**mutualism**

A close association between two different species whereby each species derives some benefits. For example, the yucca plant and the yucca moth each benefit from their relationship.

**mycelium**

The mass of interwoven filaments that forms the vegetative portion of a fungus.

**mycorrhiza**

The symbiotic association between the mycelium of a fungus and the roots of certain plants.

**-N-**

**nares**

The nostrils in the snout of a fish, used for smelling.

**naturalist**

A specialist who studies and/or teaches about nature.

**natural resources**

Those raw materials supplied by the Earth and its processes. Natural resources include nutrients, minerals, water, plant animals, and so on.

**natural selection**

A process in nature resulting in the survival and perpetuation of only those forms of plants and animal life that have certain favorable characteristics that enable them to adapt best to a specific environment.

**naval stores**

Turpentine and resin derived from the distillation of oleoresins from slash and longleaf pine.

**needleleaf**

Refers to a trees or shrub with narrow, needle-like leaves.

**niche**

Refers to specific place where an individual organism can live.

**nitrogen-fixation**

Conversion of elemental nitrogen from the atmosphere to organic combinations or to forms readily usable in biological processes. Nitrogen-fixation is normally carried out by bacteria living symbiotically in legumes, or by free-living soil bacteria.

**nocturnal**

Active by night; the opposite of diurnal.

**nonconsumptive use**

In general terms related to wildlife, any use which does not directly kill wildlife. For example, most forms of bird watching, photography, hiking and other pursuits involving activity as well as various forms such as movie, television, and gallery viewing of wildlife.

**non-game**

All wildlife species which are not commonly hunted, killed, or consumed by humans, such as songbirds and raptors.

**nonrenewable resources**

Nonliving resources such as rocks and minerals; resources which do not regenerate themselves; substances, such

as petroleum, coal, copper, and gold which, once used, cannot be replaced—at least not in this geological age.

**non-point-source pollution**

Pollution that enters water through run-off from farmland, forestland, and urban areas. It can not be determined exactly where this pollution comes from.

**nuclear fusion**

Nuclear change in which two nuclei of isotopes of elements with a low mass number (such as hydrogen-2 and hydrogen-3) are forced together at extremely high temperatures until they fuse to form a heavier nucleus (such as helium-4). This process releases a large amount of energy.

**nutrients**

Chemicals required for plants and animals to grow and exist; a chemical compound required for the life of an organism.

**nymph**

A larval phase of an aquatic insect.

**-O-**

**old growth**

Describes virgin forests or forests with trees over 100 years of age.

**olfactory**

Nerves involved in the sense of smell.

**oligotrophic**

Lake type used to describe bodies of water characterized by low amounts of nutrients in proportion to their total volume of water.

**omnivores**

Organisms that eat both animals and plants.

**organic**

Referring to or derived from living organisms; in chemistry, any compound containing carbon.

**organic matter**

Chemical compounds of carbon combined with other chemical elements and generally manufactured in the life processes of plant

and animals. Most organic compounds are a source of food for bacteria and are usually combustible.

**organism**

Any form of life (composed of mutually dependent parts) that maintains various vital processes.

**owl pellets**

Regurgitated, undigested bones, fur, feathers compacted into a pellet.

**ozone**

A form of oxygen that has three atoms to a molecule.

**-P-**

**pathology**

The study of the nature of disease and its causes.

**parasite**

An organism that lives on or in an organism of another species and derives nutrients from it.

**parasitic**

To be a parasite on. For example, mistletoe is a parasite growing on trees.

**parasitism**

Any relationship in which a consumer organism lives on or in and feeds on a living plant or animal, known as the host. The parasite draws nourishment from it and may gradually weaken its host and kill it.

**parent material**

The earthy materials—both mineral and organic—from which soil is formed. These include: minerals and rocks, glacial deposits, loess deposits, alluvial and marine deposits, and organic deposits. Rocks are generally considered the parent material.

**partial cutting**

Tree removal other than by clear cutting.

**particulate**

Small particles of liquid or solid in matter.

**passive solar power**

A solar energy collection system in which natural materials or large stationary absorptive surfaces absorb and temporarily store the heat of the sun. Heat collected during the day is usually released from the absorptive surfaces at night.

**peat**

Moist, semi-decayed, organic matter.

**pectoral fins**

Side fins on fish

**pedon**

A three-dimensional soil body depicting the range of characteristics of a given soil.

**pelagic**

Relating to or living in deep, open water as opposed to along the banks.

**pelvic fins**

Fins on each side of a fish's belly. These fins aid in positioning and balance.

**percolation**

The downward movement of water in soil; leaching.

**perennial**

A plant that lives for several years and, when mature, usually produces seeds each year.

**permeability**

The quality of soil that allows air or water to move through it.

**perpetual resource**

A resource, such as solar energy, that is virtually inexhaustible on a human time scale.

**pest**

An undesirable, harmful, or noxious organism.

**pesticide**

An agent to control undesirable organisms. This can be an insecticide for insect control, a herbicide for weed control, a fungicide for control of fungal plant diseases, or a rodenticide for killing rats and mice. Some pesticides can contaminate water, air soil, or accumulate in the tissues of living organisms, and should therefore be used carefully.

**pH**

The hydrogen-ion activity used in expressing both acidity and alkalinity on a scale whose values range from 0-14, with 7 representing neutrality. Numbers less than 7 represent increasing acidity; numbers greater than 7, represent increasing alkalinity. Also, pH describes the condition represented by such a number.

**pheromones**

A chemical secreted by an animal or insect that influences the behavior or development of others of the same species.

**phloem**

The plant tissue that transports dissolved nutrients from the leaves to the other parts of the plant.

**phosphate**

A chemical compound that aids root growth and is essential in energy transfer. It is commonly incorporated into beds as triple super phosphate (TSP) at time of planting.

**photosynthesis**

Complex process that takes place in cells of green plants. Radiant energy from the sun is used to combine carbon dioxide and water to produce oxygen and carbohydrates (such as glucose) and other nutrient molecules.

**phytoplankton**

Microscopic floating and suspended aquatic plants. Phytoplankton are the first step of the food chain in many aquatic systems.

**pigment**

A chemical substance that reflects and transmits only certain light rays and thus imparts color to an object.

**pioneer species**

An organism capable of growing on bare sites (such as a newly exposed soil or rock surfaces) and persisting there until supplanted by successor species.

**pith**

Soft, spongy center of the stem of most flowering plants.

**plant communities**

An associations of plants, each occupying a certain position or ecological niche, inhabiting a common environment and interaction

**plankton**

Organisms suspended in an aquatic habitat that control their own movements. Plankton are usually microscopic and include bacteria, algae, protozoan, rotifers, larvae, and small crustaceans. Phytoplankton are plant plankton; zooplankton are the animal species of plankton.

**plantation**

A forest established by planting seeds or seedlings.

**plateau**

An elevated, relatively level, expanse of land.

**platy**

Related to or being soil or minerals that occur in flaky layers.

**playa**

The level area at the bottom of a basin that is often covered with water from rain runoff and snowmelt.

**plywood**

An assembled product constructed of three or more layers of veneer joined with glue and usually laid with the grain of adjoining plies at right angles to one another. Usually an odd number of plies are used to give balanced construction.

**point source pollution**

Pollution that comes from a specific place such as a drain or pipes.

**pollution**

Harmful substances deposited in the air,

water, or land leading to a state of dirtiness, impurity, or unhealthiness.

**pore spaces, pores**

The area of the soil through which water and air move. The space between soil particles.

**porous**

Admitting the passage of gas or liquids through pores.

**precipitation**

Rain, snow, and other forms of water that fall to earth.

**predator**

An animal that hunts or captures other animals for food.

**prescribed burn**

The planned burning of a forest, stand, prairie, or slash pile with the intent to confine the burning to a predetermined area.

**presuppression**

Step in preventing forest fires, includes weather prediction, detection, and planning.

**prey**

Animals that are killed and eaten by other animals.

**primary producers**

Green plants which are able to manufacture food from simple organic substance.

**prismatic**

Of, relating to, or being a prism.

**producers**

Organisms that synthesize organic compounds from inorganic substances by way of *photosynthesis* (green plants) or *chemosynthesis* (anaerobic bacteria).

**productivity**

The amount of crops or animals that can be harvested from land. It can also mean the general amount of goods made in a given time or in a given area.

**profundal**

Zone of water at the bottom of deep, open water.

**propane**

A heavy, flammable, gaseous, paraffin hydrocarbon found in crude petroleum and natural gas; used especially as fuel and in chemical synthesis.

**protoplasm**

The complex of protein, other organic and inorganic substances, and water that constitutes the living nucleus, cytoplasm, plastids, and mitochondria of a cell.

**public land**

Land owned by the citizens and administered and managed by the local, state, or federal government agencies.

**pulp**

Fibrous material prepared from wood, recovered paper, cotton, grasses, etc. by chemical or mechanical processes for use in making paper or cellulose products.

**pulpwood**

Timber that is cut and made into pulp for paper and other products.

**pure stand**

A timber stand in which at least 75 percent of the trees in the main crown canopy are of a single species.

**-R-****radon**

An odorless, colorless gas produced naturally from the radioactive decay of radium-226, Radon breaks down into several radioactive parts which can attach to large particles in the air. When inhaled, these particles settle in the lungs and increase the risk of lung cancer.

**rain shadow**

The area on the leeward side (as opposed to the windward side) of a mountain barrier that receives little rainfall.

**range**

The land where animals live; an area grazed by livestock and/or wildlife.

**range land**

An open region of lands that produce grasses and other forms of vegetation on which organisms can feed. Two common types of range land are pasture (enclosed, managed grazing lands) and open range (unmanaged, open grazing lands).

**raptor**

Eagles, hawks, owls, and other birds which are predators (preying upon other animals.)

**rare**

Referring to wildlife species not presently in danger but of concern because of its low numbers.

**rare species**

Species that populate a site or region infrequently, or in very low numbers. Rare species are not necessarily endangered.

**reaction, soil**

A measure of acidity or alkalinity of a soil, expressed in pH values. A soil that tests to pH 7.0 is described as precisely neutral in reaction because it is neither acid nor alkaline.

**recreation**

Entertainment, frequently implying activity in the out-of-doors.

**recycle**

The salvage and reprocessing of used materials (paper, metals, glass, cloth or fiber).

**redd**

A nest dug on the bottom of a body of water by spawning trout.

**reforestation**

Reestablishing a forest by planting or seeding an area from which forest vegetation has been removed.

**regeneration cut**

A cutting strategy in which old trees are removed while favorable environmental conditions are maintained for the establishment of a new stand of seedlings.

**reintroduction of species**

A wildlife management technique where a species is reintroduced into their historic range; the repopulation of animals in areas where they have become extinct.

**regenerate**

To replace lost or damaged parts with new tissue.

**renewable resource**

A resource that has the capacity to be replaced through natural processes. Trees are a renewable resource. (Nonrenewable resources are in limited supply and cannot be replenished by natural processes—at least not for thousands of years. Fossil fuels are a nonrenewable resource.)

**rejuvenate**

To stimulate and return to youthful health and vigor.

**resident wildlife**

Animals which are residents to a specific area on a year-round basis as opposed to migratory.

**residual stand**

Trees left in a stand to grow until the next harvest. This term can refer to crop trees or cull trees.

**residuum**

Rock that is altered either chemically or physically but not moved from its place of origin.

**resource**

Portions of an environment upon which people have placed or assigned value or see as being available for use.

**respiration**

An energy-yielding oxidation process that goes on in living plants and animals; an exchange of gasses.

**rill**

A type of erosion.

**ring, annual**

Any yearly growth layer as viewed on the cross-section of a stem, branch, or root.

**riparian**

On or near the bank of water areas. The land area and plants that are influenced by the adjacent water.

**rock**

A complex mineral aggregate.

**root collar**

The transition zone between stem and root at the ground line of a tree or seedling.

**root hairs**

A filamentous outgrowth near the tip of a rootlet that absorbs water and minerals.

**rootlet**

A small root.

**rotation**

The planned number of years between the formation of a crop and its final cutting at a specified stage of maturity.

**row crops**

Agricultural crops, such as corn and soybeans, that are grown in rows.

**runoff water**

Fresh water from precipitation and melting ice that flows on the ground into nearby streams, lakes, wetlands, and reservoirs.

**-S-**

**salinity**

Level of salt in a given substance (like water).

**saltwater**

Water with salt in it, such as in an ocean or sea.

**salvage cut**

The harvesting of dead or damaged trees or of trees in danger of being killed by insects, disease, flooding, or other factors in order to save their economic value.

**sand**

Loose soil made up of small rock particles.

**sapling**

A young tree, less than 4 inches dbh (diameter at breast height). The minimum

size of saplings is usually placed at 2 inches.

**sapwood**

The younger, softer, living or physiologically active outer portion of a tree's wood that lies between the cambium and the heartwood. The sapwood is more permeable, less durable, and usually lighter in color than the heartwood. The tree's water and nutrient needs are transported within the sapwood.

**sawlog or sawtimber**

A log or tree that is large enough (usually 10 to 12 inches in diameter) to be sawed into lumber. Minimum log length is typically 8 feet.

**scale**

One of the small covering plates on the body of many fish.

**scarifying**

For soil: The removal of the top litter layer of an area (usually in strips) for site preparation. For seed: The abrasion or weakening of the seed coat to encourage germination.

**scat**

Another name for animal droppings or excrement.

**scavenger**

An animal that eats the dead remains and wastes of other animals and plants.

**scrub**

Low, woody vegetation composed principally of shrubs.

**school**

A number of fish of the same species that are grouped together.

**secondary succession**

The sequential development of communities in an area in which natural vegetation has been removed or destroyed, but the soil was not destroyed.

**secluded**

Removed or screened from view of other areas and disturbances.

**sedges**

Grass-like plants with solid stems and leaves that grow in threes.

**sediment**

The matter that settles to the bottom of a liquid (such as water).

**sedimentary rock**

Rock that is formed by the accumulation of sediments that are compacted and solidified by heat, pressure, or chemical reactions.

**sedimentation**

The deposition or accumulation of sediment.

**seedling**

A young tree grown from a seed to a small sapling.

**seed tree**

A tree left behind when a stand is harvested or partially cleared to provide a source of seed for the species desired to be renewed.

**seed tree cut**

A harvesting method in which a few scattered trees are left behind to provide a source of seed.

**selective cutting**

The cutting of intermediate-aged, mature, or diseased trees in an uneven-aged forest stand, either singly or in small groups. This encourages the growth of younger trees and maintains an uneven-aged stand.

**selective harvesting**

The removal of individual or small clusters of trees to manage a forest stand so that it has a mixture of age classes and products.

**sere**

The series of communities that follow one another in a natural succession, as in the change from a bare field to a mature forest. A serial stage refers to one such community.

**serotinous**

A pinecone or other seed case that requires heat from a fire to open and release the

seed.

**shearing**

Slicing or cutting trees or stumps at the ground line. Shearing may be done at harvest or with a KG blade during site preparation.

**shelterbelt (or windbreak )**

A row of trees and shrubs planted along the edge of a cultivated field to limit soil erosion caused by wind.

**shelterwood cut**

The removal of the understory of a forest so that younger saplings can grow in the shade of older and larger trees.

**shrink-swell**

The shrinking of soil when dry and the swelling when wet. Shrinking and swelling can damage roads, dams, building foundations, and other structures. It can also damage plant roots.

**shrub**

Plants with woody stems that are usually less than 12 feet tall. Shrubs often have many main stems rather than one main stem (trunk).

**silt**

Very fine particles of soil often transported by water and deposited as sediment.

**silviculture**

The science and art of cultivating forest crops according to a study of the life history and general characteristics of forest trees. A *silviculturalist* is a person who practices silviculture.

**single-tree selection**

Harvesting single trees in a forest stand.

**site index**

A relative measure of forest site quality based on the height (in feet) of the dominant trees at a specific age (usually 25 or 50 years, depending on rotation length). Site index information helps estimate future returns and land productivity for timber and wildlife.

**site preparation**

Preparing an area of land for planting,

direct seeding, or natural reproduction by burning, by chemical vegetation control, or by mechanical operations such as disking, bedding, scarifying, wind-rowing, or raking.

**slash**

The residue left on the ground after trees are harvested.

**slope**

The degree to which the land surface is inclined.

**sloughs**

A swampy place or marshy inlet.

**smog**

Originally, a combination of smoke and fog, now also applied to the photochemical haze produced by the action of the sun and the atmosphere on automobile and industrial exhausts.

**snag**

A standing dead tree. Snags frequently provide homes for wildlife.

**softwood trees**

Usually refers to coniferous trees. Some deciduous trees, such as aspen, also have relatively soft wood.

**soil compaction**

The compression of soil to a smaller volume.

**soil texture**

The feel or composition of the soil (sand, silt, or clay) as determined by the size of the soil particles.

**soil type**

Soils that are alike in all characteristics, including texture of the topsoil. Soil maps and information on site index, erodibility, and other limiting properties are available from the county Soil Conservation Service offices.

**solar energy**

Heat from the sun that can be used to do work.

**solid waste**

Discarded solid materials, excluding recovered materials.

**spawn**

The act of releasing eggs into the water by female fish for fertilization by male fish.

**spawning run**

The movement of fish to an area for the purpose of spawning.

**species**

Animals and plants that are the same and successfully reproduce the same kind of plant or animal; a category of biological ranking just below the genus or subgenus category. Members of the same species are closely related organisms that are potentially able to breed with one another.

**species diversity**

The number of different species and their relative abundance in a given area.

**springwood**

The less dense, larger-celled, first-formed part of a growth layer.

**sport fishing**

Fishing for recreation, not for profit or commercial reasons.

**stagnant**

Sluggish, not producing to potential.

**stand**

An easily defined area of the forest that is relatively uniform in species composition or age and can be managed as a single unit.

**stewardship**

The concept of responsible care taking is based on the premise that we do not own resources but are managers of resources and are responsible to future generations for their condition.

**stewardship forest**

A privately owned forest tract that exhibits integrated forest management to protect and enhance wildlife, timber, recreation, natural beauty, and soil and water quality.

**Stewardship Incentive Program (SIP)**

A cost-sharing program available to forest landowners who have a multi-resource

forest stewardship plan. Practices include cost-sharing assistance for the enhancement of forest recreation, fisheries, wildlife, and timber production and the protection of soil and water, wetlands, riparian zones, and rare and endangered species.

**stomata**

Small openings found in the epidermal layer of plants that allows: access for carbon dioxide; the release of water; and the release of oxygen. Stomata are surrounded by guard cells that control the opening size.

**stratification, forest**

The various layers of trees in a forest from the upper layer (canopy) to saplings, seedlings, and small herbaceous plants.

**Streamside Management Zone (SMZ)**

An area adjacent to a stream in which vegetation is maintained or managed to protect water quality. The width depends on slope, but 50 feet is the normal minimum. Trees may be removed from SMZs as long as the stream bed is not disrupted and sufficient vegetation is left to protect water quality.

**structure, soil**

The arrangement of primary soil particles into compound particles or aggregates. The principal forms of soil structure are: *platy* (laminated), *prismatic* (vertical axis of aggregates longer than horizontal), *columnar* (prisms with rounded tops), *blocky* (angular or subangular), and *granular*. *Structureless* soils are either *single grain* (each grain by itself, as in dune sand) or *massive* (the particles adhering without any regular cleavage, as in many hardpans).

**subclimax**

A stage in succession that is short of the climax stage, but in which further development is inhibited by some factor(s) other than climate.

**succession**

The natural sequence of plant community replacement: beginning with bare ground and resulting in a final, stable community in which a climax forest is reached. Foresters, wild life biologists, and farmers constantly battle ecological succession to try to maintain a particular vegetative cover.

**successional disking or mowing**

A wildlife-enhancement practice in which a disk harrow or rotary mower is used to knock down existing vegetation every 1 to 3 years to promote the regrowth of annuals, legumes, forbs, and perennials.

**successional stage**

A distinguishable stage in the process of succession.

**sustainable forestry**

Managing forests to meet the needs of the present without compromising the ability of future generations to meet their own needs. This is done by practicing a land stewardship ethic which integrates the reforestation, managing, growing, nurturing and harvesting of trees for useful products with the conservation of soil; air and water quality; wildlife and fish habitat; and aesthetics.

**sustained yield**

The rate at which a resource may be used without reducing its long-term availability or limiting its ability to renew itself.

**summerwood**

The denser, smaller-celled, later-formed part of a growth layer.

**suppression**

Containing a fire by robbing the fire of fuels, lowering temperature, or cutting off the oxygen.

**swamp**

A wetland dominated by trees.

**symbiosis**

The living together in close association of two or more dissimilar organisms; includes parasitism, mutualism, and neutralism.

**succulent**

Having thick fleshy leaves that conserve moisture.

**-T-**

**taproot**

The main rot of a tree that strikes downward with or without heavy branching until it either reaches an impenetrable layer or one so lacking in oxygen or moisture that further downward growth is impossible.

**temperate forest**

A forest with moderate year-round temperatures and distinct seasons that are characterized by both broadleaf evergreens and conifers. Characteristic trees of a temperate forest include: oaks, magnolias, and royal palms.

**terrace**

An embankment, or ridge, constructed across sloping soils on the contour or at a slight angle to the contour. The terrace intercepts surface runoff so that water soaks into the soil or flows slowly to a prepared outlet. A terrace in a field is generally built so that the field can be farmed. A terrace intended mainly for drainage has a deep channel that is maintained in permanent sod.

**terrace (geologic)**

An old alluvial plain, ordinarily flat or undulating, bordering a river, a lake, or the sea.

**terrain**

The character or topography of the land.

**territory**

An area used for breeding, feeding, or both, which is defended by an animal against others of the same species.

**thin**

To reduce the number of trees in a stand.

**threatened species**

A species that, in nature, is abundant, but because of a decline in its numbers, may become endangered.

**tillage**

Cultivation of land.

**timber**

A forest stand containing trees of commercial size and quality suitable for sawing into lumber.

**timber cruise**

The process of determining estimates of timber volume, growth, stand density, and other kinds of information on a forest property.

**timberland**

Forests that are capable of growing 20 cubic feet (.6m) per acre per year of commercial wood.

**timberline**

The upper limit of tree growth on mountains.

**tissue**

A group of cells, usually a particular kind of cells, that function together and form the structural material in an organism.

**tolerant species**

A species of tree that has the ability to grow in the shade of other trees and in competition with them.

**transitional**

The process of changing from one form to another.

**transpiration**

Vapor water lost or given off by land plants.

**tree**

A plant that is usually more than 12 feet tall and has a single main woody stem with a distinct crown of leaves.

**tree farm**

A privately owned woodland where sustainable forest management is the primary objective. The American Forest Foundation promotes good forest management practices and recognizes accomplishments on private forestlands through its certified management program. When their land is certified as a Tree Farm, landowners formally commit to preserve water quality, to preserve soil quality, to enhance wildlife habitat, and to provide

recreation opportunities while still producing wood for products.

**turbid**

Having sediment or foreign particles stirred up or suspended; muddy.

**-U-**

**understory**

The layer formed by the crowns of smaller trees in a forest.

**undulating**

A regular rising and falling or side-to-side motion.

**uneven-aged stand**

A forest area composed of intermingling trees of markedly different ages.

**urban forestry**

A specialized branch of forestry that has as its objective the cultivation and management of trees for their contribution to the physiological, social, and economic well being of urban activity.

**-V-**

**valley**

Elongated lowland between mountains, hills, or other upland areas that often has a river or stream running through it.

**vegetation**

The mass of plants that cover a given areas. (*Flora* sometimes used—incorrectly—as a synonym for vegetation is actually a list of the species of plants that compose the vegetation.

**vegetative reproduction**

An asexual means of propagating new plants through root shoots, bulbs, leaf cutting, or underground stems.

**vertical vegetation zones**

The belt of distinctive plant cover in mountainous regions resulting from climatic changes related to elevation changes.

**vigor**

In plants and animals, refers to the capacity for strong growth and high survival.

**VOC (Volatile Organic Compound)**

A “naturally” derived compound which can cause serious environmental and health threats when found in high concentrations or used in poorly ventilated areas. VOC can be found in several products, including household cleaners, paints, wood finishers, and pesticides.

**-W-**

**waste stream, solid**

Discarded solid materials, excluding recovered materials.

**waste water**

Water that runs off cropland during irrigation.

**watershed**

The land area where all rain drains into a body of water—delivering both runoff water and sediment to a major river or stream and its tributaries.

**wedge prism**

A type of angle gauge made of glass that bends light that lets a forester determine which trees should be counted or tabulated in a forest sample and which should not. Prisms may also be used for timber cruising, for locating points at a desired distance from a target, or for determining the basal area of growth.

**wetland**

An area that is regularly wet or flooded where the water table stands at or above the land surface for a least part of the year. Wetland plant communities are made up of species which require hydric soils.

**wilderness**

Area that has never been developed by humans.

**wilderness area**

An area established by the federal government to be managed and preserved in an essentially untouched condition. Wilderness areas are open to some recreational activities. Use of machinery, mining, logging, and many other commercial pursuits are generally not allowed in wilderness areas.

**wildfire**

Any fire other than a controlled or prescribed burn occurring on wild land.

**wildlife**

A loose term that includes non-domesticated animals, especially mammals, birds, and fish.

**wildlife management**

The application of scientific knowledge and technical skills to protect, preserve, conserve, limit, enhance, or extend the value of wildlife and its habitat.

**wind energy**

Power harnessed from the wind by the use of windmills or turbines.

**windrow**

A long, narrow row of vegetation, debris, and some soil created during site preparation and clearing operations.

**windthrow**

Trees uprooted by excessive wind. Shallow-rooted trees are almost always affected.

**woodlands (or open forest)**

A wooded area in which the crowns of the trees do not form a closed canopy.

**-X-**

**xylem**

The complex woody tissue of higher plants that includes systems for transporting water, storing nutrients, and supporting the plant's structure. (See **transpiration**.)

**-Y-**

**yard up**

To gather in a sheltered area in winter; used typically in reference to deer, moose, and similar animal populations.

**-Z-**

**zero population growth**

Maintaining population numbers at a fixed level resulting in no increase in population.

**zone**

An area composed of groups of tree species having the same specific moisture and nutrient requirements for growth.

**zoologist**

A specialist who studies the animal kingdom with respect to the behavior of individual animals, species, or both.

**zooplankton**

Plankton that consists of animals including coral, sea anemones, and jellyfish.