

Appendix E

Glossary

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Glossary

Abutment: Foundation at the edge of a stream crossing which supports the ends of a ridge.

Acidic substrate: A layer of surface material that has a pH less, generally having little or no base saturation.

Age classes: Intervals (commonly 10 years) into which the age range of forest is divided; also the trees falling into such an interval.

Alluvial: Relating to and/or sand or silt deposited by flowing water.

Alluvial fan: A mass of sediment deposited at some point along a stream course at which there is a sharp decrease in gradient, e.g. between a mountain range and a plain. Essentially, a fan is the terrestrial equivalent to a river-delta formation

Animal community: The species of animals supported by a habitat association.

Arch pipe: A culvert section, usually formed of bolted plates, that is an arc of a circle (usually one-half or less); a bottomless culvert.

Aspect: The direction a slope face with respect to the cardinal (north, east, south, west) compass points. SE to NW aspect ranges from an azimuth of 136 degrees southeast to 316 degrees northwest. NW to SE aspect ranges from an azimuth of 316 degrees northwest to 136 degrees southeast.

Basic substrate: A layer of surface material that has a pH greater than 7.0, generally having moderate to high base saturation.

Best Management Practices (BMP's): Methods, measures, or practices that prevent or reduce water pollution; including but not limited to, structural and nonstructural controls, operation and maintenance procedures and other requirements, and scheduling and distribution of activities. Usually BMP's are applied as a system of practices rather than a single practice.

Biological Agent: Any predator, pathogen, or parasite that can be used to maintain another, organism's population density at a lower average level than would occur in its absence.

Blowdown: Trees felled by high winds.

Bog: An open area characterized by non-woody vegetation and soil saturated by somewhat stagnant water.

Broad-Based Dip: Surface runoff diversions built into the bed of a forest road; consisting of a long approach section, a low, out-sloped middle section, and a short terminal section with a reverse grade.

Brush Barrier: A linear pile of tree limbs, tops, logs, and other forest debris which is arranged along the lower edge of a road, landing, or site-prepared area to slow, diffuse, or intercept sediment moving off a disturbed site. Sediment trapping efficiency can be increased by placing solid material in contact with the ground surface.

Buffer: An area of land established between two separate and distinct land use regimes, which serves to modify the effects of one land use on the other.

Canopy: The more or less continuous cover of branches and foliage formed collectively by the crowns of adjacent trees. Layers of canopy may be called stories.

Channel: A water-bearing trough eroded vertically into low areas of the land surface. Also, a ditch or canal excavated for the flow of water.

Climax: The culminating stage in plant succession for a given site where the vegetation has reached a highly stable condition and is self-perpetuating or maintained by the physical habitat and natural events.

Closed forest canopy: A forest canopy in which the leaves of the canopy trees (e.g. tallest trees) are so dense that they completely shade the understory layers.

Codominant: Trees with crowns forming the general level of the crown cover and receiving full sunlight from above, but comparatively little from the sides; usually with medium-sized crowns more or less crowded on the sides.

Cold air drainage: A physical situation in which cooler air sinks below warmer ambient air into and following low land features such as streams or tight hollows. This creates areas of cooler than expected temperatures. It is often associated with caves and other karst features.

Cold Water: Streams having summer temperatures of 50 to 70 degrees and winter temperatures less than 58 degrees.

Conifer: The most important order of the Gynospermae, comprising a wide range of trees, mostly evergreens that bear cones and have needle-shaped or scalelike leaves.

Cool Temperatures: Air temperatures below those predominant in the area. Generally associated with higher elevations or cold air drainage.

Cool Water: Streams with water temperatures that fluctuate seasonally, intermediate to warm and cold water. Bank shade, overhead vegetative cover, or the interstitial boundary between mixing cold and warm water greatly controls these fluctuations.

Coarse Woody Debris (CWD): Pieces of wood (branches, whole trees, root wads) that are at least 10 cm (4 inches) in diameter and 1 meter (3 feet) long.

Colluvial: Weathered rock debris that has moved down a hillslope either by creep or by wash.

Cover: Vegetation used by wildlife for protection from predators, or to ameliorate weather conditions.

Cross Drain: Culverts that convey ditch water from one side of a road to the other.

Culvert: A metal, plastic, or concrete pipe installed to allow surface water to flow under roads or trails.

Decadent: Deteriorating, or indicating loss of vigor, often accompanied by disease.

Deciduous: Pertaining to perennial plants and trees that are leafless for some time of the year.

Dense shrub understory: A thick layer of woody perennial plants that comprises the lower level of the forest.

Detritus: Leaf litter, twigs, and other dead organic mater that enters the water.

Diameter at breast height (dbh): The standard method for measuring tree diameter at 4 ½ feet from the ground.

Dissolved oxygen: The amount of atmospheric oxygen that has been absorbed by water. The amount of dissolved oxygen available affects habitat quality for fish and other aquatic organisms.

Diversity: The relative degree of abundance of wildlife species, plant species, communities, habitats, or habitat features per unit of area.

Dominant: Plant species or species groups which, by means of their numbers, coverage, or size, have considerable influence upon or control the existence of associated species.

Downed logs: Trees that have fallen on or near the forest floor. The log could have fallen by any process, mechanical or natural and may be in various stages of decomposition.

Drainage, good: Effective removal of excess surface water or groundwater from land by surface or subsurface drains.

Drainage, poor: Lack of effective means to remove excess surface water or groundwater from land by surface or subsurface drains.

Dry: A condition characterized by the lack or absence of water

Duff: The organic layer of the forest floor which may contain leaf litter, fine roots, and decomposing organic mater. This is located above mineral soil.

Ecosystem: An interacting natural system including all the component organisms together with the abiotic environment and occupying an arbitrarily defined volume.

Edge: The place where different plant communities meet or where distinct successional stages or vegetative conditions within plant communities come together, i.e. woodland and grassland.

Effectiveness monitoring: The means by which managers determine if implemented plans and prescriptions achieve project objectives or other design criteria.

Endangered species: A species officially designated by the U.S. Fish and Wildlife Service as having its continued existence threatened over its entire range because its habitat is threatened with destruction, drastic modification, or severe curtailment, or because of overexploitation, disease, predation, or other factors.

Ephemeral stream: A watercourse that may or may not have a well-defined channel, and which flows only for short periods during and following precipitation. Ephemeral stream bottoms are usually above the water table and do not contain fish or aquatic insects with larvae that have multi-year life cycles.

Ericaceous: Shrub species that belong to the family Ericaceae. Examples of Ericaceae family members are mountain laurel, rhododendron, azalea, blueberry, and huckleberry.

Erosion: The process of detachment, transport, and deposition of soil material.

Even-aged management: A system of forest management in which states are produced or maintained with relatively minor differences in age.

Exfoliating bark: The outer layers of a tree, either alive or dead, that have peeled away from the trunk or limbs. The bark may remain connected to the tree on one or more sides providing habitat for some wildlife species.

Exotic species: A species that is not native to a region.

Fanshape: A low, outspread, relatively flat to gently sloping mass of loose rock material, shaped like an open fan, deposited by a stream at the place where it issues from a narrow mountain valley upon a plain or broad valley, or where a tributary stream is near or at its junction with the main stream, or wherever a constriction in a valley abruptly ceases or the gradient of the stream suddenly decreases; it is steepest near the mouth of the valley where its apex points upstream, and it slopes gently and convexly outward with gradually decreasing gradient.

Filter Strip: Area of land that infiltrates surface runoff and traps sediment and associated pollutants.

Fire dependent: Fire is required during development or life cycle for the health or persistence of the species or community.

Fire enhanced: The presence of fire in the environment will improve habitat conditions or the health and development of a species or community.

Fire intensity: The rate of heat release per unit of time per unit length of fire front. Numerically, it is the product of the heat yield, the quantity of fuel consumed in the fire front, and the rate of fire spread.

Fire line: A barrier to fire constructed with hand tools or equipment such as bulldozers or fire plows that remove burnable material from linear section of ground.

Fire severity: A measure of the amount of organic material consumed from the soil surface and the degree to which soil is exposed and its mineral composition altered.

Fire tolerant: A species that will persist when fire is a part of its environment.

Floodplain: Land areas adjacent to streams that are subject to period flooding and are typically level.

Forb: A grassy community characterized by nonwoody vascular plants including herbaceous, broad-leafed grasses, and grass-like (graminoid) species such as rushes and sedges.

Forest: An area of trees with overlapping crowns.

Gabion: Wire baskets filled with stone and placed to armor streambanks or cut banks against erosion.

Girdling: Making more or less continuous incisions around a tree that cut through the bark and cambium with the intention of killing the tree.

Glide: A gently flowing, calm reach of shallow water in a stream.

Gradient: The rise or fall of a ground surface or streambed expressed in degrees of slope.

Groundwater: Water below the surface of the earth that supplies wells and springs and may enter streams.

Habitat: The physical and biological environment for a plant or animal in which all the essentials for its development, existence, and reproduction are present.

Habitat component: A simple part of an area or environment in which an organism or population normally lives or occurs.

Headwall: A wall built around the inlet opening of a culvert.

Heart rot: Any rot in a tree confined to the heartwood, associated with fungi and generally originating in a living tree.

Herbaceous: Relating to plants having little or no woody tissue.

Herbicide: A chemical substance used for killing plants.

High / Constant Humidity (Microclimate): A microclimate in which relative humidity is maintained above 75% and/or varies little daily or seasonally.

High shade: A condition characterized by the presence of a barrier to direct sunlight, preventing high levels of light from reaching a species. Barriers may include closed upper canopy, dense shrub layers, rock formations, and physical settings such as steep, narrow valleys.

HUC: Hydrologic Unit Code- each hydrologic unit is identified by a HUC consisting of two eight digits based on the four levels of classification in the hydrologic unit system. The U.S. is divided and subdivided into successively smaller hydrologic units which are classified into four levels: regions, sub-regions, accounting units, and cataloging units.

Hummock: A raised area of dry ground within a swamp.

Hydrology: The science dealing with the properties, distribution, and circulation of water.

Implementation monitoring: The means by which managers determine if plans and prescriptions are implemented as designed.

Indigenous: A species naturally occurring in a particular region or environment

Infiltration: Movement of surface water into the soil.

Intermittent stream: A watercourse that flows in response to a seasonally fluctuating water table in a well-defined channel. Intermittent streams do not maintain fish or aquatic insects with larvae that have multi-year life cycles.

Interspersed / Interspersion: The intermixing of plant species and plant communities that provides increased diversity of habitat for animals.

Juxtaposed / Juxtaposition: To situate side by side; to place together.

Keystone species: Animals which, by virtue of their presence, alter the structure of a community creating habitat or conditions on which other species depend.

Land Type Association (LTA): LTAs are the fourth level of the Ecological Classification System in which designated boundaries are placed around a land area containing similar hydrological, geological, and ecological features. LTAs were developed for all lands within the Daniel Boone National Forest proclamation boundary in compliance with the **National Hierarchical Framework of Ecological Units** and for use during landscape level analysis and planning.

Landform: A feature of the earth's surface with distinctive form characteristics which can be attributed to the dominance of particular processes or structures in the course of its development and to which the feature can be clearly related.

Landing/Deck: Areas that are cleared for holding, storing, handling, and loading logs.

Large Decadent Trees: Trees near the end of their lives, with decay (usually represented by fungal diseases such as heartrot) and death proceeding at a rate faster than the production of new tissue. Specifically trees 20-24 inches dbh or larger.

Large Woody Debris: See coarse woody debris.

Leaf litter: The surface layer of the forest floor consisting of leaves that are not in an advanced stage of decomposition.

Leave strip / area: Stands of trees left standing between areas where trees have been removed.

Limiting factor: A single environmental factor or habitat component which by its presence or absence is the determining factor for the presence of a species.

Litter: The uppermost layer of organic debris on a forest floor. It may be composed of leaves, bark, flowers and fruits, and is not in an advanced stage of decomposition.

Logging Slash: Logging residue composed of trees, tops and branches removed from the merchantable trunk and typically left at the site.

Low (wet, i.e. subject to holding water): Forest or other habitat which usually is in an area physically lower than the surrounding area, and which as a result tends to collect and hold surface water for a period of time. Soils are often hydric and vegetation may be partially characteristic of wetlands.

Mature forest: The stage of forest development during which the age of trees is usually greater than 80 years, depending on species composition. Small gaps become more common as trees die, allowing full sunlight to reach portions of the mid- and under-stories. This stage contains the largest trees within a forest and provides the highest capacity for large snags, large live cavities, and den trees. The presence of large downed woody material is highest during this period. Old-growth forests occur during the later periods of this seral stage.

Mast: The fruit of trees suitable as food for wildlife.

Mature / Maturity: The stage at which a tree or other plant has attained full development and is in full seed production.

Meandering: Following a winding, intricate course.

Mesic: Refers to environmental situations characterized by moderately moist conditions.

Mesophytic: Refers to plants which grow under moderately moist conditions.

Microclimate: The climatic conditions within a small or local habitat that is well defined.

Mid-age forest / mid-seral stage: The stage of forest development during which distinct overstory, midstory, and understory canopies are present. The age of trees range from about 20 years to about 90 years depending on the species composition. Trees are usually greater than 10 inches dbh. This stage provides capability for hard mast production, large standing snags, and live cavities.

Midstory: The middle story or layer of a three-storied tree canopy.

Mixed-age stand: A stand composed of trees of two or more ages.

Moderate shade: A condition characterized by the presence of a partial barrier to direct sunlight, allowing only moderate light levels to reach the species. Barriers include a partially closed upper canopy, partially closed-canopy shrub layers, rock formations, and physical settings such as moderately steep, somewhat narrow valleys.

Moist: Characterized by the presence of free water in the soil, sufficient to distinctly darken the soil's hue.

Neutral substrate: A layer of surface material that has a pH value equal or close to 7.0, and generally not saturated with either base cations or acid anions.

Old growth condition: An ecosystem distinguished by old trees and related structural attributes. Old growth encompasses the later stages of stand development that typically differ from earlier stages in a variety of characteristics including tree size, accumulation of large dead woody material, number of canopy layers, species composition, and ecosystem function. Old growth is not necessarily virgin or primeval. It can develop over time following human disturbances, just as it does following natural disturbances. Old growth encompasses both older forests dominated by early seral species and forests in later successional stages dominated by shade tolerant species.

Open: A condition in which little or no barrier exists to prevent sunlight from reaching the species. Generally this condition is found in non-forested habitats, but may be present in a mosaic pattern in a woodland or forest with a very open canopy.

Open forest canopy: A forest canopy in which adjacent crowns of canopy trees (i.e. largest trees) do not touch or are sparse enough to allow large amounts of sunlight to reach the understory layers or the ground.

Open midstory / understory: A forest stand that contains few trees and saplings beneath the canopy layer and is generally dominated by only a canopy layer and a low shrub/forb community.

Outslope: The feature of a road surface, established during construction or maintenance, that slants the roadbed to the outer or downhill side to facilitate drainage of storm runoff from the road in more diffuse flow than occurs at dips and waterbars. Outsloped road designs contrast to crowned roadbeds or to insloped surfaces angled toward a ditchline.

Overstory: The portion of the trees that form the uppermost canopy layer in a forest of more than one story.

Particulate matter: Minute particles of organic or inorganic materials.

Percolate / Percolation: Downward flow or infiltration of water through the spaces between rocks or particles of soil.

PETS species: Federally listed **P**roposed, **E**ndangered, **T**hreatened or **R**egionally **S**ensitive species.

Perennial stream: Any stream that normally contains water year-round. Perennial streams may have subsurface flow.

Pesticide: A substance that destroys pests; e.g. insecticide or herbicide.

Plankton: Free-swimming or floating animal and plant life generally dependant upon water current for locomotion.

Plant community: A vegetative complex unique in its combination of plants occurring in a particular location under particular influences.

Pool: An area of stream that is deep and has low current velocity relative to the main stream.

Planning area: The planning area is defined as the National Forest System lands addressed in the Forest Plan for the Daniel Boone National Forest.

Prescribe burning / fire: Fire used as a management tool within a defined area and under specific conditions to obtain benefits to one or more objectives of silviculture, wildlife and plant management or hazard reduction.

Prescription: The formal plan of action to carry out treatment of an area to achieve specific objectives.

Proposed: A species that has been proposed and is being reviewed for listing as Endangered or Threatened by the U.S. Fish and Wildlife Service.

Regeneration area: The early seral stage of a developing forest during the period beginning when tree cutting or disturbance results in full sunlight to the forest floor to when the crowns of tree species intercept most sunlight. Grasses and herbs are plentiful during the first 1 to 3 years.

Riffle: The faster moving, shallow portion of a stream, whose surface is broken by the substrate .

Riparian: Of, pertaining to, or situated on the banks of a stream body of water, or other perennial aquatic environments.

Riparian Management Area (RMA): No single feature is used to delineate boundaries of the RMA. The dimensions of the RMA are determined by on-site inspection and analysis using features of soil, landform, and vegetation. Characteristics indicative of the riparian prescription area are: 1. soils (dark colored alfisols, entisols, inceptisols, and mollisols); 2. landform (the floodplain and first terrace); 3. Vegetation (the presence of wetland plants classified as obligates or facultative wetland species). The RMA is managed to achieve or maintain desired conditions for riparian-dependent ecological processes and species. It is not classified as suitable for timber production. The RMA does not include riparian areas where legal or administrative mandates, e.g., wilderness or research natural area designation, may restrict certain activities.

Rotation: The planned number of years between the regeneration of a stand and its final cutting at a specified stage.

Salvage cutting: The cutting of trees that are dead, dying, or deteriorating.

Second-growth: A group of trees which was regenerated naturally, usually as a result of cutting or fire.

Secondary (cavity) users: A species that utilizes habitat (e.g. burrows, holes, tunnels) created by another species.

Sensitive species: A species designated by the USDA Forest Service Regional Forester as being locally rare in portions of its range within the South.

Seep: A flow of water above ground level that occurs where the water table intercepts the ground surface. Where the flow from a spring is not distinct (i.e. obvious trickles are not present) but tends to be somewhat dispersed, the flow is correctly termed a 'seep'.

Seral stage: One step in a series of steps in the process of ecological succession.

Shade-intolerant: Plant species that do not germinate or grow well in the shade.

Shade-tolerant: Plant species that grow well in shade.

Shelterwood: Any regeneration cutting designed to establish a new stand of trees under the protection of the remnants of the old stand.

Shrub: A woody plant which branches below or near ground level into several main stems, having no main trunk. It may be deciduous or evergreen. At the end of each growing season there is no die-back of the stem.

Sinkhole: A geologic feature, typically within karst topography, that may provide a direct connection between the land surface and groundwater.

Snag: A standing dead tree from which the leaves and most of the limbs have fallen. Such a tree may be at its original height or have been broken off.

Sphagnum: A genus of mosses, distributed worldwide, that are found, often abundantly, in wet, acidic, habitats (bogs, marshes, pools, moors, wet woodland, damp grassland, etc.) There are many species, which are often difficult to distinguish. The plants are characteristically branched, with branches in fascicles of 2-8. The leaves are nerveless and composed of two main types of cells: narrow, green, living cells, and inflated, colourless dead cells. The dead cells readily fill with water, allowing the plant to hold many times its own weight of water. The capsules are roughly spherical, when ripe, the capsule wall shrinks when it dries, increasing the internal pressure until the lid is blown off, ejecting the spores.

Stand: Plant communities particularly of trees, sufficiently uniform in composition, constitution, age, spatial arrangement, or condition to be distinguishable from adjacent communities. Also may delineate a silvicultural or management entity.

Sterile: Of an organism, unable to produce reproductive structures. Of land or and environment, unable to support growth of plants or other living organisms.

Streamside Management Zone (SMZ): A designated area that consists of the stream itself and an adjacent area of varying width (riparian area) where management practices that might affect water quality, fish or other aquatic resources are modified. The SMZ is an area of closely managed activity, not an area of exclusion. It may provide an effective filter and absorptive zone for sediments, nutrients and pesticides; maintain streamside shade; protect channels, streambanks and maintain aquatic habitats; and promote floodplain stability.

Stream orders: A method of categorizing streams according to their size. First order streams are unbranched usually found at the head of drainage basins. Stream order increases by one, as a stream flows into a stream of equal or greater size (e.g. second order streams are formed when two first order streams come together).

Substrate: The material comprising the bottom of a stream. It can vary from fine silt and sand to cobble, boulder and bedrock. The sizes of each are given below.

Silt/clay - <.062 mm

Sand - .062 mm – 2.0 mm (sub-classes: very fine [.062 - .125]; fine [.125 - .25]; Medium [.25 - .50];

Coarse [.50 – 1.0]; Very Coarse [1.0 – 2]

Gravel - 2 mm – 64 mm (sub-classes: very fine [2 –4]; fine [4 – 5.7]; fine [5.7 – 8]; Medium [8 – 11.3]; Medium [11.3 – 16]; Coarse [16 – 22.6];

Coarse [22.6 – 32]; Very Coarse [32 – 45]; Very Coarse [45 – 64]
Cobble - 64 mm – 256 mm Sub-classes: small [64 –90]; small [90 – 128]; large [128 – 180]; large [180 – 256]
Boulder - 256 mm – 2048 mm (sub-classes: small [256 – 362]; small [362 – 512]; medium [512 – 1024]; large-very large [1024 – 2048]
Bedrock - Bedrock

Subsurface filter strip: An area of land in which soil water moves, and where chemicals are removed from interflow by soil adsorption and plant uptake.

Succession: The changes in vegetation and in animal life that take place as the plant community evolves from bare ground to climax.

Swamp: An area characterized by woody vegetation and soil saturated by flowing water.

Talus: The accumulation of broken rocks that occurs at the base of cliffs or other steep slopes.

Texture: In soils, the relative amounts of silt, clay, and sand that affect drainage and plant growth.

Threatened species: A species officially designated by the U.S. Fish and Wildlife Service as having its existence threatened in a localized area, such as State or province or lesser area, because its habitat is threatened with destruction, drastic modification, or server curtailment, or because of overexploitation, disease, predation, or other factors.

Turnout: Extensions of a road ditch into a vegetated area that provide for the dispersion and infiltration of stormwater runoff.

Understory: Trees and other woody species growing under a more or less continuous cover of branches and foliage formed collectively by the upper portion of adjacent trees and other woody growth.

Uneven-aged management: A system of forest management in which stands are produced or maintained with an intermingling of trees that differ markedly in age.

V-shaped: [v-shaped valley] A valley having a pronounced cross profile suggesting the form of the letter “V”, characterized by steep sides and short tributaries; specifically a young, narrow, valley resulting from downcutting by a stream. The “V” becomes broader as the amount of mass wasting increases

Viable: A population which has the estimated numbers and distribution of reproductive individuals to insure its continued existence and distribution within the planning area.

Warm Water: Streams with summer water temperatures ranging from 80 to 85 degrees and winter water temperatures of 40 to 60 degrees.

Waterbar: A mound or ridge of soil built across a light-duty road, skid road or trail, or fireline, for the purpose of diverting water off the surface and onto porous forest soil.

Waterbody: Any river, creek, slough, canal, lake, reservoir, pond, sinkhole, or other natural or artificial watercourse that flows within a defined channel or is contained within a discernable shoreline.

Wetland: An area that is inundated by surface or groundwater with a frequency sufficient to support a prevalence of vegetation that requires saturated or seasonally saturated soil.

Wildfire: An unplanned fire requiring suppression action, as contrasted with a prescribed fire which burns within prepared lines enclosing a designated area under prescribed conditions. A free-burning fire unaffected by fire suppression measures. A wildfire may be started by events such as arson, lightning, or escaped camp or brush fires.

Windfall: A tree uprooted or broken off by wind. Also an area in which the trees have been uprooted or broken by wind.

Windthrow: See windfall

Xeric: Refers to environmental situations characterized by dry conditions.