



North Carolina  
Forest Service

# FORESTRY Leaflets

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## Glossary of Forest Management Terms

Additional forestry terms, with supporting photographs, are defined in a glossary available within the water quality portion of the N.C. Forest Service Web site, [www.ncforestservice.gov](http://www.ncforestservice.gov). Also, there are more definitions of selected forestry terms in the rules for the Forest Development Program (FDP): Administrative Code 15A NCAC 09C .0903.

**Basal Area (BA):** The cross-sectional area in square feet of a tree trunk when measured at 4½ feet above ground. This measurement is used to estimate the stocking of trees per acre. A young, sapling-sized pine stand may have a BA of 200 square feet/acre, while a mature pine stand that has been thinned and has large diameter trees may have a BA of 60 to 80 square feet/acre.

**Board Foot (BF):** A unit of wood measuring 1 inch thick by 12 inches by 12 inches. The volume of 1 BF = 144 cubic inches.

**Canopy:** The entire layer of tree crowns within a stand of trees. Can be sub-divided into overstory (the dominant upper tree crowns) and understory (the lower, sub-level tree crowns.)

**Chip-N-Saw (CNS):** A type of lumber produced from medium-sized pine trees. At the sawmill, the CNS method grinds away the outermost layer of wood in the log, then saws lumber from the interior wood of the log beam, making 2x4 boards and other lumber.

**Clearcut:** A harvesting and regeneration technique which removes all trees within a designated area. Clearcuts are a proven and sound method of regenerating tree species that demand full exposure to sunlight to regenerate and grow, including pines and many hardwoods. Clearcuts should not be confused with land clearing activities that strip the land of all features in order to convert the land to another use.

**Competition:** The struggle among trees and other vegetation for sunlight energy, water, nutrients, growing space and other site resources. Competition usually refers to undesirable or non-marketable plants or vegetation within a stand of trees.

**Cord:** A stack of round or split wood containing 128 cubic feet of wood, bark and air space. A standard cord measures 4 feet high by 4 feet across by 8 feet wide. Firewood and sometimes pulpwood is bought and sold using "Cord" unit volume.

**Crop Tree:** A tree of desirable, high-value species whose crown is within or just below the overstory. A crop tree should be well formed and free from defects, insects or disease. This term is usually used when managing hardwood timber.

**Crown:** All of the branches, limbs, needles or leaves of an individual tree. All of the crowns in a stand of trees comprise the canopy.

**Cruise:** A survey or sampling of standing trees to estimate their volume, product class, size, quality and/or financial value.

**Cull:** A tree or log that has a defect that makes it unusable for its original intended purpose. Cull may be caused by natural defects, such as rotten wood or knots, or may be caused by mistakes made when the tree was harvested and prepared for shipment to the mill.

**DBH:** Diameter at Breast Height - The diameter of a tree when measured at a point 4½ feet above the average ground surface. This is the standard measure used in forestry to estimate tree diameter.

**Hardwood:** A general category to describe trees with broad, flat, or scalloped leaves. Hardwood trees have their seed contained within a nut, fruit, berry or other outer casing. Most hardwoods are deciduous, meaning they drop their leaves each year, but some hardwoods are evergreen, such as holly and magnolia. The actual hardness of the wood varies widely from species to species.

**High-grading:** High-grading is a tree removal practice in which only the best quality, most valuable timber trees are removed, often without any thought put into regenerating new tree seedlings or effort to remove the remaining poor quality and suppressed understory trees. High-grading usually does not result in a sustainable renewal or re-growth of high quality timber trees in the next cycle.

**Improvement Cut:** A type of thinning or intermediate tree cutting to improve the health, vigor or quality of a stand of trees. This term is usually used when managing hardwood timber.

**Intolerant Trees:** Species of trees that require full exposure, or nearly full exposure, to sunlight in order to regenerate and grow.

**Log Rule or Log Scale:** A table of estimated volume or product yield from logs or trees that is based upon a mathematical formula. Three log rules have been used in North Carolina: Doyle, International- $\frac{1}{4}$ , and Scribner. Each log rule has advantages and limitations. Doyle has been used for hardwood logs; International- $\frac{1}{4}$  best estimates mill output but is less frequently used; while Scribner has been used for pine logs. Estimating the volume by log rule is a traditional, quick and easy method of volume estimation, but can be difficult to compare different estimates from multiple buyers. Most mills now purchase logs or trees based on weight measurements (tons).

**Mast:** Another term for the fruit, nut or berry produced by a tree that can be used as a food source by birds and wildlife.

**MBF:** Abbreviation for 1,000 Board Feet. The MBF is standard for volume estimates when using Board Foot measure or Log Scale. A typical tractor-trailer log truck may hold from 3 to 5 MBF, depending on the size and length of the logs on board.

**Merchantable:** Term used to describe some aspect of how valuable a tree or log is. A non-merchantable tree or log has no financial value. The merchantable height of a tree describes the maximum height at which point the tree is usable for lumber, pulpwood or other forest product, and is usually defined at a set diameter limit such as "a 6-inch top" for certain types of sawlogs.

**Mixed Stand:** A stand of trees where less than 80 percent of the trees in the overstory canopy are of a single species.

**Natural Stand:** A stand of trees that regenerated naturally by seedfall or stump sprouts.

**Nutrients:** Basic earth elements within the soil that are needed for plant growth. Primary nutrients for plants are nitrogen (N), phosphorous (P), and potassium (K). Fertilizer can be added to supplement nutrient deficiencies.

**OSB - Oriented Strand Board:** A wood panel product that is manufactured by orienting and gluing flakes or thin chips of wood to create a structural panel similar to plywood. OSB usually is made from small to medium sized trees, or larger trees that do not meet quality specification as a sawlog or plylog. Either pine or hardwood can be used to make OSB. OSB is also known as flakeboard.

**Overstory:** The highest layer of tree canopy within a stand of trees.

**Pallet wood:** A log or tree used to manufacture wood pallets. These trees generally are of intermediate size and stumpage value.

**Plylog or Peeler Log:** A log or tree that is large enough and of suitable quality to manufacture veneer sheets or plywood. Each mill has different specifications (spec's), but generally the log or tree must be straight, relatively free from knots and have sound wood. Larger diameters are almost always more valuable. These logs generally command about the same or somewhat higher stumpage value than sawlogs, depending widely upon local markets.

**Pole:**

- (1) **Silviculture definition:** A tree that is larger than sapling size, but not yet of a merchantable timber size.
- (2) **Timber product definition:** A tree that has a specific taper, straightness, diameter and overall form that makes it suitable for harvest and processing to become a utility line pole. Only pine trees are considered and used for utility line poles in the South. Poles can often command a relatively higher stumpage value, depending on local timber markets.

**Pulpwood:** A tree or log used to manufacture paper, absorbent pulp, cardboard, fiberboard and other wood fiber-based products. Generally these trees are the lowest-value product in a stand of trees.

**Pure Stand:** A stand of trees where 80 percent or more of the trees in the overstory canopy are of a single species.

**Reforestation:** A specific method of regenerating a forest by the planting of individual tree seedlings or seeding over an area.

**Reproduction:** Young trees which can grow to become the primary component of the next stand of trees.

**Rotation:** The length of time to grow a stand of trees to achieve a specific product type or tree size.

**Residual Stand:** The crop trees or cull trees left standing after a cutting.

**Sapling:** A small diameter and usually short tree. Saplings may not always be younger than the taller, larger trees in the overstory.

**Sawlog or Sawtimber:** A log or tree that is large enough and of suitable quality to be sawn into lumber. Each sawmill has different specifications (spec's), but generally the log or tree must be straight, relatively free from knots, and have sound wood. Larger diameters are almost always more valuable. Sawlogs are generally the next higher grade of product above CNS.

**Selective Harvest or Cutting:** Periodic removal of individual or small clusters of trees within a larger stand.

**Silviculture:** The art, science and practice of establishing, cultivating and tending to the forest.

**Site Index (SI):** A relative measure of a site's productivity potential based upon tree height at a specific base-age, usually 25 or 50 years. A site that has a SI of 85 at age 25 is more productive than another site that has a SI of 70 at age 25.

**Site Preparation (site prep):** Preparing an area of land for reforestation. Site prep methods are categorized as mechanical (using tractors, plows and disks) or chemical (using herbicides). Prescribed burning is also used in some cases for site prep.

**Slash:** Term used to describe residual tree tops, limbs, branches, log-butts and other unusable woody debris leftover from logging. A regional term 'laps' is used in some areas to describe the leftover limbs and branches.

**Softwood:** A general category to describe trees with needles or scale-like leaflets. Softwood trees have their seed contained within a cone that releases the seed. Most softwoods are evergreen, meaning they retain green, living foliage throughout the year, but some softwoods are deciduous such as cypress. The actual hardness of the wood varies widely from species to species.

**Species:** A biological group of similar plants or animals with common characteristics that are capable of interbreeding. For example, Loblolly pine is a different species from Longleaf pine, and Southern Red oak is a different species from White oak.

**Stand:** A manageable group of trees that occupies a specific area and often is of uniform age, species and condition.

**Stocking:** A relative number of trees or volume per acre. Descriptors are added to further define a stand of trees, such as overstocked, understocked, or well-stocked. A 5-year old pine stand in excess of 1,000 trees/acre is overstocked and warrants management action.

**Stumpage:** Slang term that describes the dollar value of standing timber. When selling timber, you will be quoted a 'stumpage price' that the buyer will pay you for each product class and/or species of timber as it exists un-cut on the stump.

**Sustained Yield:** Management of a forest to produce relatively consistent quantities of wood product, revenue dollars, or some other measurable result over a long period of time.

**Thinning:** An intermediate harvest in a stand of trees that reduces the stocking level of the stand. Thinning should remove the poorly formed and suppressed trees, thereby allowing the more vigorous and healthy trees more room to grow to maturity. A thinning conducted when the trees are not yet merchantable is called a 'precommercial thinning.'

**Tolerant Trees:** Species of trees that have the ability to regenerate and grow within the shade of other trees. In North Carolina, most tolerant trees are hardwoods, although hemlock is a commonly found tolerant softwood in western North Carolina.

**TSI - Tree Stand Improvement or FSI - Forest Stand Improvement:** Actions taken to improve the health, quality and vigor of a stand of trees. Examples may include improvement cutting; prescribed burning; crop tree release; control of competition or other silvicultural practices as warranted by the site conditions and owner's goals.

**Understory:** The sub-layer of tree canopy that exists beneath the overstory. Typically, tree species that grow in the understory are not high quality timber species, but can provide wildlife, aesthetic and ecological benefits.



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