

Woodland Management

Glossary of Forestry Terms

As with any profession, forestry has its own vocabulary. This fact sheet is designed to help the reader better understand some of the terminology associated with woodland management.

Agricultural Stabilization and Conservation Service (ASCS)—the branch of the U.S. Department of Agriculture (USDA) that administers cost-sharing programs for such forestry practices as tree planting and timber stand improvement.

all-aged stand—see uneven-aged stand.

Allegheny hardwood forest type—a portion of Maryland's northern hardwood forest in which black cherry, white ash, and red oak are the dominant species.

annual rings—see growth rings.

aspect—the compass direction toward which a slope faces.

association—a collection of plants with ecologically similar requirements, including one or more dominant species from which the group derives a definite character.

basal area (of a tree)—the cross-sectional area of the trunk 4½ feet above the ground; (per acre)—the sum of the basal areas of the trees on an acre; used as a measure of forest density.

Biltmore stick—a tool calibrated to measure the diameter of a tree at breast height. Biltmore sticks are calibrated with different scales depending on the user's arm length.

biological diversity or biodiversity—the variety of life in all its forms and all its levels of organization. Biodiversity refers to diversity of genetics, species, ecosystems, and landscapes.

blaze—to mark a tree, usually by painting or cutting the bark. Forest properties often are delineated by blazing trees along the boundary lines.

blowdown—see windthrow.

board foot—a unit for measuring wood volume in a tree, log, or board. A board foot is commonly 1 foot by 1 foot by 1 inch, but any shape containing 144 cubic inches of wood equals one board foot.

bole—the trunk of a tree.

breast height—4½ feet above ground level. See diameter at breast height.

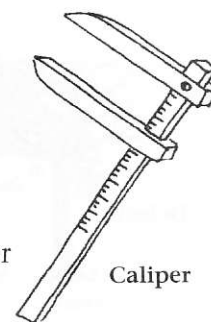
browse—parts of woody plants, including twigs, shoots, and leaves, eaten by forest animals.

buck—to cut trees into shorter lengths, such as logs or cordwood.

butt log—a log cut from the bole immediately above the stump.

caliper—a tool to measure the diameter of a tree.

canopy—the continuous cover formed by tree crowns in a forest.



carrying capacity—the maximum number of individuals of a wildlife species that an area can support during the most unfavorable time of the year.

clearcut—the harvest of all the trees in an area. Clearcutting is used to aid species whose seedlings require full sunlight to grow well.

clinometer—an instrument used to determine the height of a tree.

codominant tree—a tree that extends its crown into the canopy and receives direct sunlight from above but limited sunlight from the sides. One or more sides of a codominant tree are crowded by the crowns of dominant trees.

commercial clearcut—a harvest cut that removes all merchantable timber from an area.

commercial forestland—any area capable of producing 20 cubic feet of timber per acre per year that has not been protected from such use by law or statute.

commercial treatments—timber stand improvements, such as thinning, that generate income from the sale of the trees removed.

community—a collection of living organisms thriving in an organized system through which water, energy, and nutrients cycle.

conifer—any tree that produces seeds in cones. See softwood.

consulting forester—an independent professional who manages forests and markets forest products for private woodland owners. Consulting foresters do not have direct connections with firms that buy wood products, but are retained by woodland owners as their agents.

Cooperative Extension Service (CES)—the educational arm of the USDA that links university research to people who can benefit from it.

cord—a unit of wood cut for fuel that is equal to a stack 4 by 4 by 8 feet or 128 cubic feet. A cord is the legal measure of fuelwood volume in Maryland.

cordwood—small diameter or low quality wood suitable for firewood, pulp, or chips. Cordwood is not suitable for sawlogs.

critical area—land in Maryland that lies within 1,000 feet of the Chesapeake Bay and its tributaries and is subject to forestry and other land-use regulations.

crook—a tree defect characterized by a sharp bend in the main stem.

crop tree—a young tree of a desirable species with certain characteristics desired for timber value, water quality enhancement, or wildlife or esthetic uses.

crown—the uppermost branches and foliage of a tree.

crown classes—see codominant, dominant, intermediate, overtopped, and suppressed.

crown cover or crown closure—the percentage of a given area covered by tree crowns.

crown ratio or live-crown ratio—the ratio of the leaved portion of a tree's height to its total height.

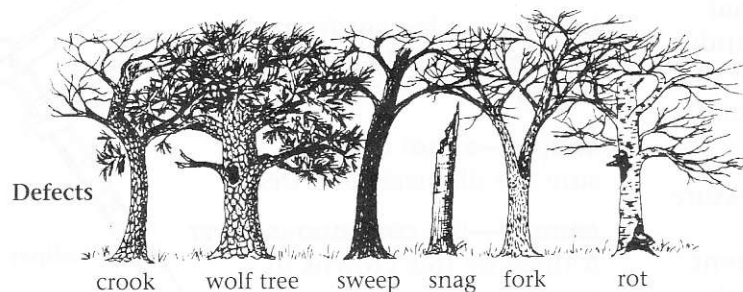
cruise—a forest survey used to obtain inventory information and develop a management plan.

cull—a sawtimber-size tree that has no timber value as a result of poor shape or damage from injury, insects, or disease.

cutting cycle—the period of time between major harvests in a stand.

deciduous—shedding or losing leaves annually; the opposite of evergreen. Trees such as maple, ash, cherry, and larch are deciduous.

defects—characteristics of an individual tree that reduce its quality and utility.



den tree—a tree with cavities suitable for birds or mammals to nest in.

diameter at breast height (dbh)—standard measurement of a tree's diameter, usually taken at 4½ feet above the ground.

diameter-limit sale—a timber sale in which all trees over a specified dbh may be cut. Diameter-limit sales often result in high grading.

dimension lumber—hardwood dimension lumber is processed to be used whole in the manufacture of furniture or other products. Softwood dimension lumber consists of boards more than 2 inches thick but less than 5 inches thick. This wood is used in construction and is sold as 2 by 4s, 4 by 8s, or 2 by 10s.

dominant trees—trees that extend above surrounding individuals and capture sunlight from above and around the crown.

ecology—the study of interactions between organisms and their environment.

ecosystem—organisms and the physical factors that make up their environment.

ecotone—a transition area between two distinct, but adjoining, communities.

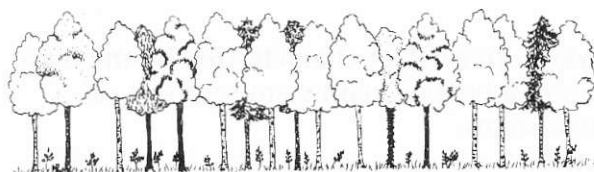
edge—the boundary between two ecological communities, for example, field and woodland. Edges provide valuable wildlife habitat. Consideration of an edge can reduce the impact of a timber harvest.

endangered species—any species or subspecies in immediate danger of becoming extinct throughout all or a significant portion of its range.

epicormic branching—branches that grow out of the main stem of a tree from buds produced under the bark. Severe epicormic branching increases knottiness and reduces lumber quality.



Epicormic branching



Even-aged stand

even-aged stand—a stand in which the age difference between the oldest and youngest trees is minimal, usually no greater than 10 to 20 years. Even-aged stands are perpetuated by cutting all the trees within a relatively short period of time.

evergreens—plants that retain foliage year round.

Extension forester—a Cooperative Extension Service professional who educates woodland owners on how they can effectively manage their forests.

felling—the cutting of standing trees.

forest—a biological community dominated by trees and other woody plants.

forest fragmentation—the subdivision of large natural landscapes into smaller, more isolated fragments. Fragmentation affects the viability of wildlife populations and ecosystems.

forest types—associations of tree species that have similar ecological requirements. Maryland forest types include Allegheny hardwood, loblolly-shortleaf, northern hardwood, oak-gum-cypress, oak-hickory, and oak-pine.

forested wetland—an area characterized by woody vegetation taller than 20 feet where soil is at least periodically saturated or covered by water.

forester—a degreed professional trained in forestry and forest management. In Maryland, all foresters must be registered with the State.

forestry—the science of tending woodlands.

Forestry Incentives Program (F.I.P.)—a Federal cost-sharing program that reimburses part of the costs landowners incur in completing certain forestry practices. The F.I.P. is administered by the ASCS.

fork—a tree defect characterized by the division of a bole or main stem into two or more stems.

frilling—a method of killing trees by inflicting a series of cuts around the bole and applying an herbicide to the wounds. Frilling or girdling can be used to reduce the density of a stand or to kill individual undesirable trees.

girdling—a method of killing trees by cutting through the stem, thus interrupting the flow of water and nutrients.

group selection—a process of harvesting patches of trees to open the forest canopy and encourage reproduction of uneven-aged stands.

growth rings—the layers of wood a tree adds each season; also called annual rings. These rings frequently are visible when a tree is cut and can be used to estimate its age and growth rate.

habitat—the ecosystem in which a plant or animal lives and obtains food and water.

hardwoods—a general term encompassing broadleaf, deciduous trees.

harvest—the cutting, felling, and gathering of forest timber.

herbaceous vegetation—low-growing, non-woody plants, including wildflowers and ferns, in a forest understory.

high grading—to remove all mature, good-quality trees from a stand and leave inferior species and individuals. High grading should be distinguished from uneven-aged management in which mature and immature trees are removed to aid regeneration.

hypsonometer—any of several tools or instruments designed to measure the height of trees. The clinometer is such a tool.

improvement cut—a weeding done in stands of pole-size or larger trees.

industrial forester—a professional employed by a wood-using industry, usually a sawmill, who purchases timber from private woodland owners. Many industrial foresters offer free forest management or marketing services to the landowners who sell timber to the forester's employer.

increment borer—an augerlike tool with a hollow bit designed to extract cores from tree stems for the determination of age and growth rate.

intermediate crown class—trees with crowns that extend into the canopy with dominant and codominant trees. These trees receive little direct sunlight from above and none from the sides. Crowns generally are small and crowded on all sides.

intermediate tolerance—a characteristic of certain tree species that allows them to survive, though not necessarily thrive, in relatively low light conditions.

intolerance—a characteristic of certain tree species that does not permit them to survive in the shade of other trees.

introduced species—a non-native species that was intentionally or unintentionally brought into an area by humans.

landing—a cleared area within a timber harvest where harvested logs are processed, piled, and loaded for transport to a sawmill or other facility.

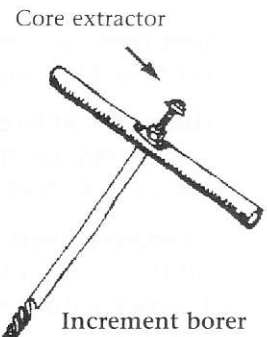
loblolly-shortleaf forest type—an association of tree species common to the southeastern United States that includes loblolly and shortleaf pines and oaks.

logger—an individual who harvests timber for a living.

log rule—a method for calculating wood volume in a tree or log by using its diameter and length. The international $\frac{1}{4}$ -inch rule is the legal rule in Maryland.

lopping—cutting tree tops to a maximum specified height above the ground after a tree is felled.

lump-sum sale—a timber sale in which an agreed-on price for marked standing trees is set before the wood is removed (as opposed to a unit sale).



marking timber—indicating by paint or other means which trees are to be cut or otherwise treated. It is advisable to mark trees to be harvested twice—once at eye level and once on the stump.

mast—nuts and seeds, such as acorns, beech-nuts, and chestnuts, of trees that serve as food for wildlife.

merchantable height—the point on a tree stem to which the stem is salable. Limits are: the point at which a sawlog tree is less than 8 inches in diameter, measured inside the bark (dib); the point at which a pulpwood tree is less than 4 inches dib; or the point on any tree where a defect is found that cannot be processed out.

niche—the physical and functional “address” of an organism within an ecosystem; or, where a living thing is found and what it does there.

nongame wildlife—wildlife species that are protected by state wildlife laws and cannot be hunted. Examples include songbirds, eagles, etc.

nonindustrial private forestland (NIPF)—forestland owned by a private individual, group, or corporation not involved in wood processing. Eighty-five percent of Maryland’s forests are in this category.

nontidal wetlands—wetlands not affected by ocean tides. Nontidal wetlands are subject to special regulations.

Northern hardwood forest type—an association of tree species common to the Northeastern United States that includes sugar maple, red maple, yellow birch, hemlock, and American beech.

oak-gum-cypress forest type—an association of tree species common to the bottom lands of the southeastern United States.

oak-hickory forest type—an association of tree species common to the Northeastern United States that includes oak, hickory, yellow poplar, and red maple.

oak-pine forest type—an association of tree species common to the southeastern United States that includes loblolly pine, Virginia pine, northern red oak, and white ash.

old-growth forest—a wooded area, usually greater than 200 years of age, that has never been altered or harvested by humans. An old-growth forest often has large individual trees, a multilayered crown canopy, and a significant accumulation of coarse woody debris including snags and fallen logs.

overmature—a quality exhibited by trees that have declined in growth rate because of old age and loss of vigor.

overstocked—the situation in which trees are so closely spaced that they compete for resources and do not reach full-grown potential.

overstory—the level of forest canopy that includes the crowns of dominant, codominant, and intermediate trees.

overtopped—the situation in which a tree cannot sufficiently extend its crown into the overstory and receive direct sunlight. Overtopped trees that lack shade tolerance lose vigor and die.

patch cut—a clearcut on a small area.

pole stand—a stand of trees whose average dbh is between 4 and 10 inches.

pole timber—trees 4 to 10 inches dbh.

precommercial operations—cutting in forest stands to remove wood too small to be marketed. Precommercial operations improve species composition and increase the quality, growth, and vigor of remaining trees.

precommercial treatments—forestry operations that require landowner investment, such as cleaning or weeding stands to remove trees that have little or no cash value. See commercial treatments.

prospectus—a document that describes the location of a property, indicates trees marked for cutting, and states that the timber will be sold in accordance with a suitable contract. A prospectus includes the number of trees marked, their diameter classes, and a volume estimate for each species.

pruning—the act of sawing or cutting branches from a living tree. In forest management, pruning is done to promote the growth of clear, valuable wood on the tree bole.

pulpwood—wood suitable for use in paper manufacturing.

regeneration—the process by which a forest is reseeded and renewed. Advanced regeneration refers to regeneration that is established before the existing forest stand is removed.

regeneration cut—a timber harvest designed to promote natural establishment of trees.

release—to remove overtopping trees that compete with understory or suppressed trees.

residual stand—the trees remaining intact following any cutting operation.

rot—a tree defect characterized by wood decay in a standing tree or log.

rotation—the number of years required to grow a stand to a desired size or maturity.

salvage cut—the removal of dead, damaged, or diseased trees to recover maximum value prior to deterioration.

sapling—a tree at least 4½ feet tall and up to 4 inches in diameter.

sapling stand—a stand of trees whose average dbh is between 1 and 4 inches.

sawlog—a log large enough to be sawed economically on a sawmill. Sawlogs are usually at least 8 inches in diameter at the small end.

sawlog tree—a tree at least 11 inches dbh and suitable for conversion to lumber. Sometimes, trees 11 to 14 inches dbh are called small sawlog trees, and trees larger than 18 inches dbh are called large sawlog trees.

sawtimber—trees from which sawlogs can be made.

sawtimber stand—a stand of trees whose average dbh is greater than 11 inches.

scale stick—a calibrated stick used to estimate wood volume in a log.

Soil Conservation Service (SCS)—the branch of the USDA that coordinates and implements soil conservation practices on private lands. The SCS can provide woodland owners with detailed information on his or her soil.

sealed-bid sale—a timber sale, usually offered through a consulting forester, in which buyers submit secret bids.

seed tree—a mature tree left uncut to provide seed for regeneration of a harvested stand.

seed-tree harvest—the felling of all the trees in an area except for a few desirable individuals that provide seed for the next forest.

selection harvest—the harvest of individual trees or small groups at regular intervals to maintain an uneven-aged forest. Selection harvests are used to manage species that do not need full sunlight to thrive.

service forester—a professional forester employed by the Maryland Department of Natural Resources Forest Service. Service foresters help private woodland owners develop and implement forest management plans. There is at least one service forester in each Maryland county.

shelterwood harvest—the harvest of all mature trees in an area in a series of two or more cuts, leaving enough trees of other sizes to provide shade and protection for forest seedlings.

silviculture—the art and science of growing forest trees.

site—the combination of biotic, climatic, topographic, and soil conditions of an area.

site index—a measure of the quality of a site based on the height of dominant trees at a specified age (usually 25 or 50 years), depending on the species.

site preparation—treatment of an area prior to reestablishment of a forest stand. Site preparation can include mechanical clearing, burning, or chemical (herbicide) vegetation control.

skidder—a rubber-tired machine with a cable winch or grapple used to drag logs out of the forest.

skidding—the act of moving trees from the site of felling to a leading area or landing. Tractors, horses, or specialized logging equipment can be used for skidding. Skidding methods vary in their impact on soils and the remaining stands.

slash—branches and other woody material left on a site after logging.

snag—a dead tree that is still standing. Snags provide important food and cover for a wide variety of wildlife species.

softwood—any tree in the gymnosperm group, including pines, hemlocks, larches, spruces, firs, and junipers. Softwoods often are called conifers although some, such as junipers and yews, do not produce cones.

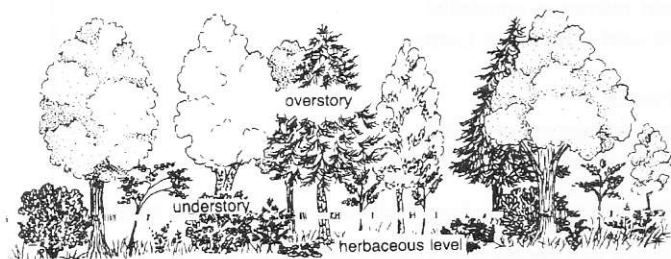
sprout—a tree growing from a cut stump or previously established root system.

stand—a group of forest trees of sufficiently uniform species composition, age, and condition to be considered a homogeneous unit for management purposes.

stand density—the quantity of trees per unit area, usually evaluated in terms of basal area or percent crown cover. See basal area, crown cover, and stocking.

stocking—the number and density of trees in a forest stand. Stands are often classified as understocked, well-stocked, or overstocked.

stratification—division of a forest, or any ecosystem, into separate layers of vegetation that provide distinct niches for wildlife. See canopy, understory, and herbaceous vegetation.



Forest stratification

stumpage—the value of standing trees in a forest.

stumpage price—the price paid for standing forest trees.

stump height—the distance from the ground to the top of a stump. Good logging practice dictates that stumps be as low as possible (preferably less than 12 inches) to reduce waste, to minimize visual impact on the logging site, and to promote resprouting of trees.

succession—the natural replacement of one plant (or animal) community by another over time in the absence of disturbance.

suppressed—a tree condition characterized by low growth rate and low vigor as a result of competition with overtopping trees. See overtopped.

sustained yield—an ideal forest management objective in which the volume of wood removed equals growth within the total forest.

sweep—a tree defect characterized by a gradual curve in the main stem.

thinning—a partial cut in an immature, overstocked stand of trees used to increase the stand's value growth by concentrating on individuals with the best potential.

threatened species—a species or subspecies whose population is so small or is declining so rapidly that it may become endangered in all or a significant portion of its range.

timber cruise—see cruise.

timber stand improvement (t.s.i.)—any practice that increases the value or rate of value growth in a stand of potential sawtimber trees. Pruning and thinning are considered t.s.i.

tolerance—a tree species' capacity to grow in shade.

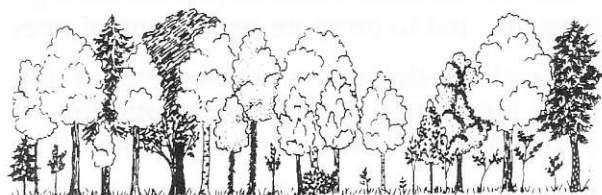
tree farm—a privately owned forest managed on a multiple use basis with timber production as an important management goal.

trim allowance—the extra 2 or 3 inches left on a bucked log to allow logs with end checks, pulls, or slanting buck cuts to be trimmed to standard lumber lengths.

understocked—a stand of trees so widely spaced that, even with full growth potential realized, crown closure will not occur.

understory—the level of forest vegetation beneath the canopy.

uneven-aged stand—a group of trees of a variety of ages and sizes growing on a uniform site; also called all-aged stand.



Uneven-aged stand

unit sale—a timber sale in which the buyer makes regular (weekly, monthly) payments based on mill receipts. Unit sales are useful when the amount of timber sold is so large that a preharvest, lump-sum payment would be prohibitive.

veneer log—a high quality log of a desirable species suitable for conversion to veneer. Veneer logs must be large, straight, of minimum taper, and free from defects.

virgin forest—an area of old-growth trees that never has been harvested by humans.

watershed—a region defined by patterns of stream drainage. A watershed includes all of the land that contributes water to a particular stream or river.

well-stocked—the situation in which a forest stand contains trees spaced widely enough to prevent competition yet closely enough to utilize the entire site.

wildlife habitat—the native environment of an animal. Habitats ideally provide all the elements needed for life and growth: food, water, cover, and space.

windthrow—a tree felled by wind. Windthrows, also known as blowdowns, are common among shallow-rooted species and in areas where cutting has reduced stand density.

wolf tree—a large older tree with a spreading crown and little or no timber value, but often great value for wildlife.

woodland—see forest.

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This fact sheet is part of a series on woodland management. If you would like information on additional topics in the series, contact your county Extension office.

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