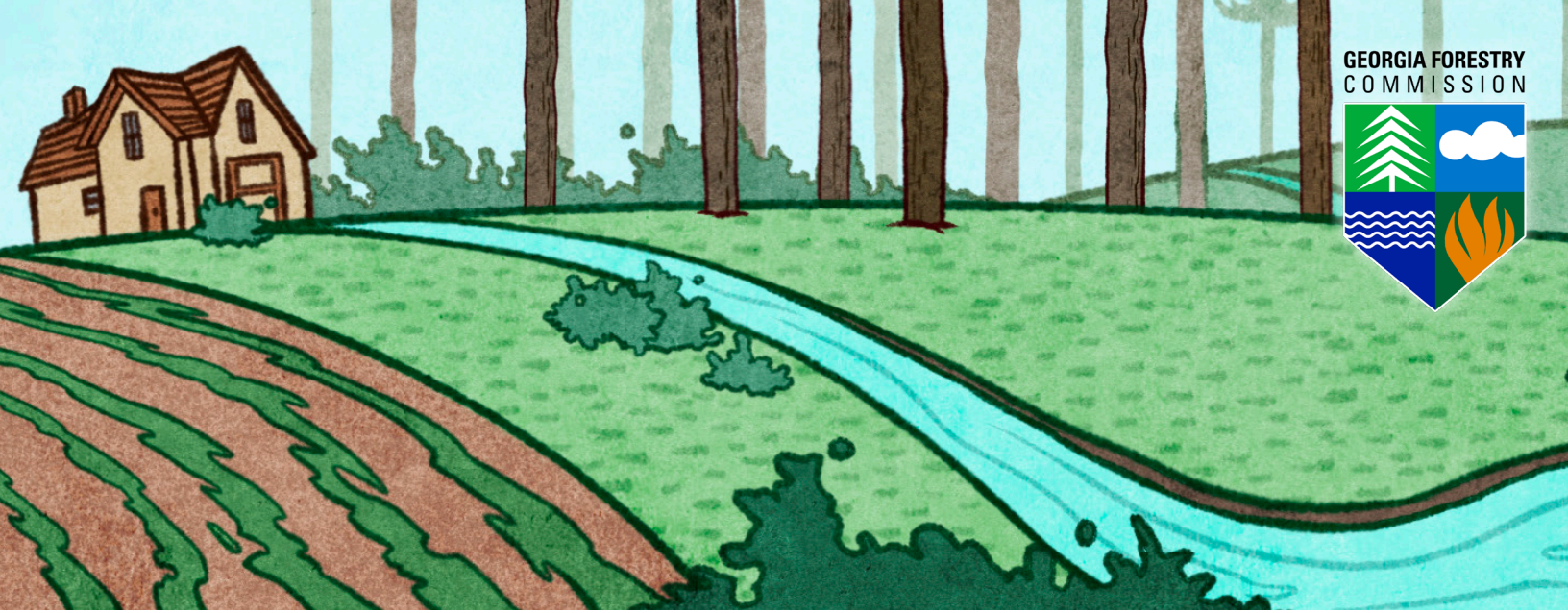


GEORGIA FORESTRY COMMISSION

GLOSSARY

Forestry & Wildlife Terms

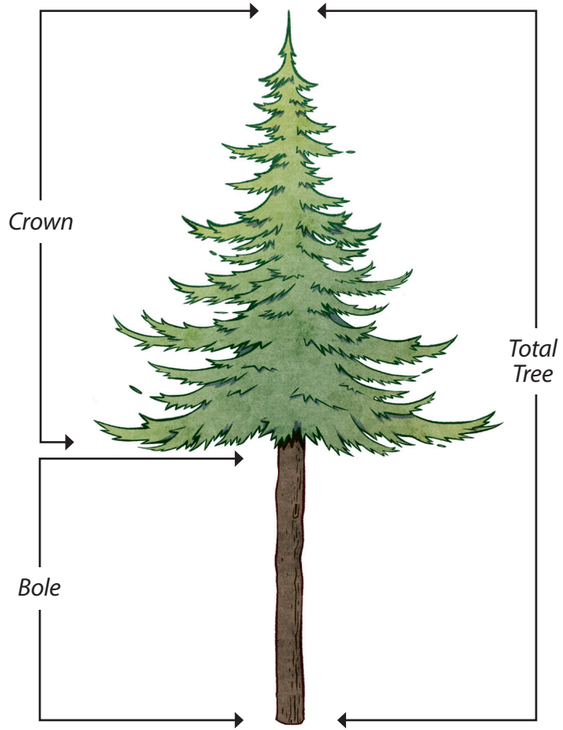
Special thanks for funding and support from the US Forest Service and Georgia Forestry Commission.

A Tree's Main Components

Bole: The main section of a tree (trunk).

Crown: The upper portion of a tree to include the trunk branches and leaves.

Live Crown Ratio: The length of live crown in relation to total tree height. Crown/total height.



Anatomy of a Stand *Stand Structure Terminology*

Canopy: The upper-leaved portion of trees and shrubs that intercept light.

Climax Community: Final stage in the ecological succession process.

Co-Dominant Trees: Trees that receive full sunlight from above and little on the sides.

Duff *(litter layer)*: Accumulation of leaves, branches, stems and vegetation which forms a layer of decay.

Ground Cover: Low-growing vegetation to include grasses, forbs, vines, and shrubs.

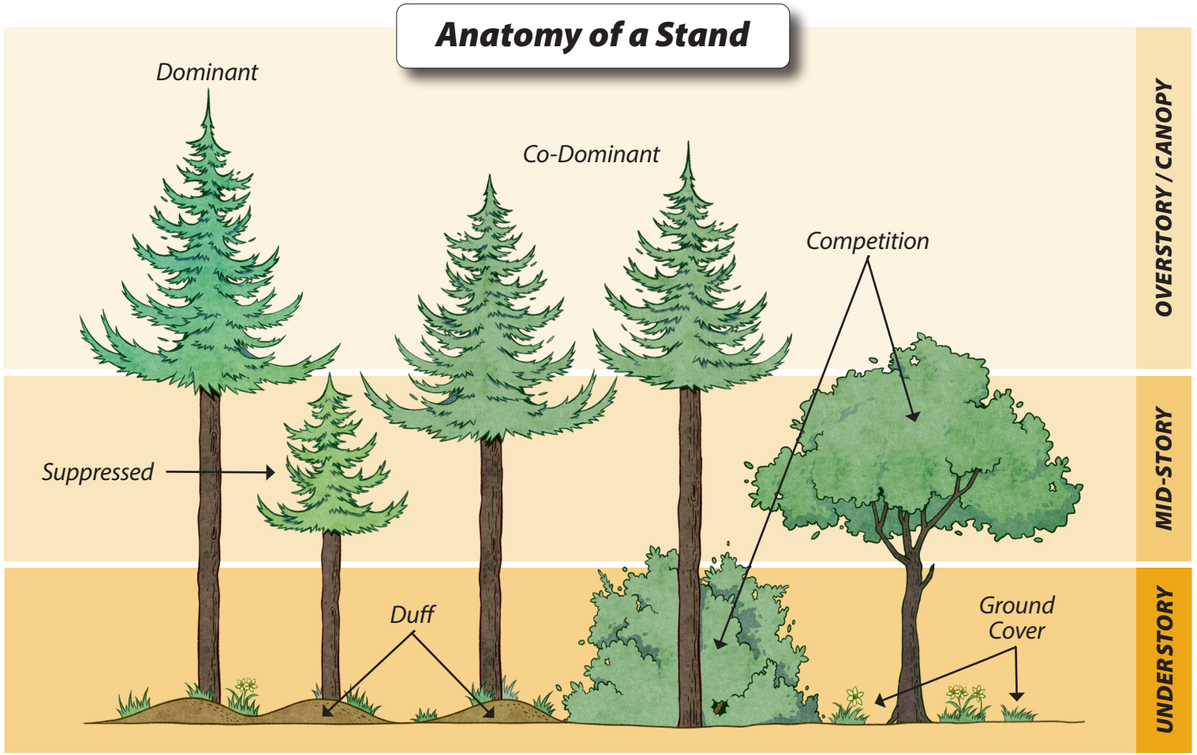
Mid-Story: The intermediate layer of a forest between the understory and the tree canopy.

Pioneer Species: Trees or plants which readily colonize an area immediately following a disturbance

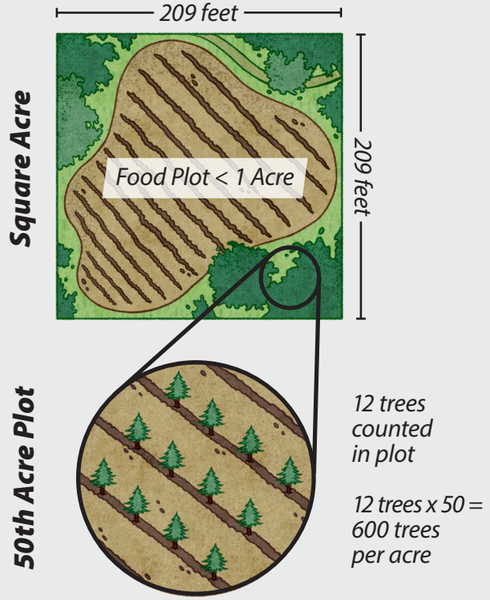
Stand Structure: The composition of trees, shrubs and forbs with consideration for age, density, resources, and other factors.

Succession: The natural change and progression of vegetative communities over time.

Suppressed: Trees that are under the canopy and receive little to no light.



Land Measurement *Common Areas & Distances in Forestry*



Acre: An area of land that measures 43,560 square feet or 10 square chains. A square acre would be 208.71 feet by 208.71 feet, and a circular acre would have a 117.75 foot radius.

Chain: Unit of measure commonly used in forestry equal to 66 feet (10 square chains = 1 acre).

Plot: Smaller subsect of area taken multiple times at random points as part of sampling process. Often used for seedling survival checks. Example: 1/50th acre plot.

Soils Are Important

Acidic soils: Soils with a pH value of 6.9 or less, which favor pine tree establishment rather than hardwoods.

Basic soils: Soils with a pH value between 7.1 and 14.0.

Fertility: The capacity for a soil to produce.

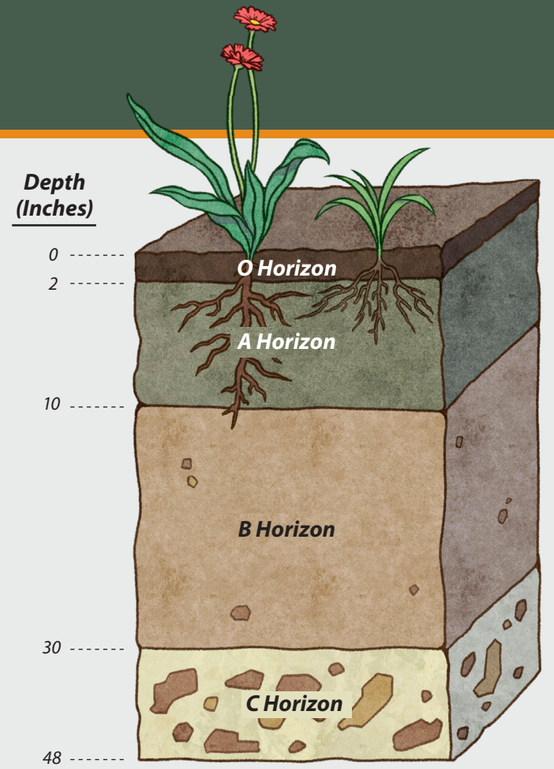
Horizon: Characteristics of layers of soil that vary throughout the profile or depth of the soil.

Nutrients: Substances found in the soil such as nitrogen, potassium, and phosphorus which supports plant growth. Substances which support life processes of organisms.

Soils Are Important!

Learn why: websoilsurvey.sc.egov.usda.gov

Soil Profile



*The **soil profile** is defined as a vertical section of the soil.*

O Horizon:
- Humus on the ground surface

A Horizon:
- Top soil
- Rich in organic matter, typically dark color
- Also called zone of **leaching**

B Horizon:
- Subsoil
- Also called zone of accumulation
- May contain soluble minerals such as calcite in arid climates (caliche)

C Horizon:
- Weathered bedrock (rotten rock)
- Bedrock lies below the soil profile

Water Quality *Concerns and Best Management Practices*

Best Management Practices (BMPs)**:** Management recommendations that minimize soil erosion and protect water quality during forestry operations.

Banks: The sides of a water-carrying channel.

Bed: Bottom of water channel.

Designated Wetlands: Wetland areas that are protected by the federal government. Also called jurisdictional wetlands.

Impoundment: Blocking of the natural drainage of an area to create an accumulation of water to support waterfowl management.

Intermittent stream: Well-defined channels that contain water only during certain times of the year.

Non-point pollution: Pollutants which cannot be traced back to one identifiable source but come from a broad area.

Perennial stream: A well-defined channel which contains water year round under normal climatic conditions.

Point-source pollution: Pollutants that can be linked to a specific source.

Risks to Forests

Wildfire: Fires which burn out of control and lack specific management objectives.

Beetles: *See next page for beetles that are harmful to trees.*

Fusiform Rust: Fungus that produces spindle-shaped growths on pines that are often orange. Rust can affect limbs or main bole. Once main bole is infected, mortality is imminent.

Pitch Canker: Ailment caused by fungus; has symptoms of weeping branch joints in pines, leading to eventual damage or mortality. Fungus enters pines through micro-tears in bark.

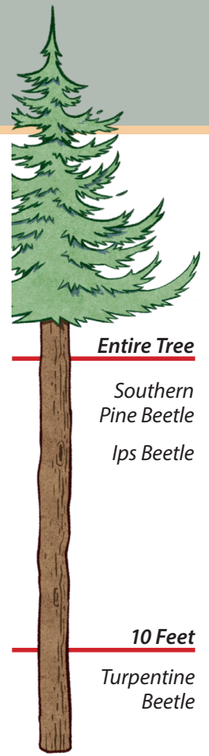
Girdling: The removal of the top bark layer and tissue below, which prevents resource movement from the top to the bottom of the plant. Will cause mortality.

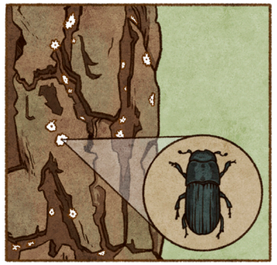
Invasive Species: Species that are not native and pose economic, social, or cultural threats. Typically spread rapidly and have a high presence.

Pales Weevil

Weevils: Typically causes issues in newly established stands by girdling young seedling roots and stems.

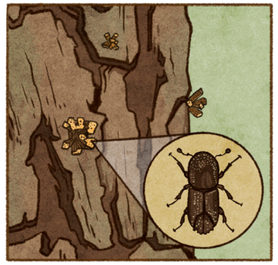
Beetles that are Harmful to Trees





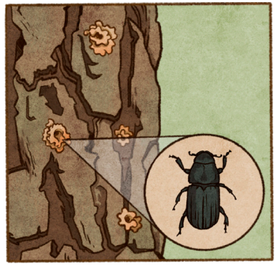
Southern Pine Beetle

- Entry holes in between bark plates
- Attacks entire bole
- Resin around holes; looks like popcorn
- Requires action



Ips Beetle

- Entry holes on top bark plates
- Attacks entire bole
- May require action



Turpentine Beetle

- Entry holes on top and between bark plates in first 10 feet of bole
- Large entry holes with lots of resin
- Chewing gum look
- May require action

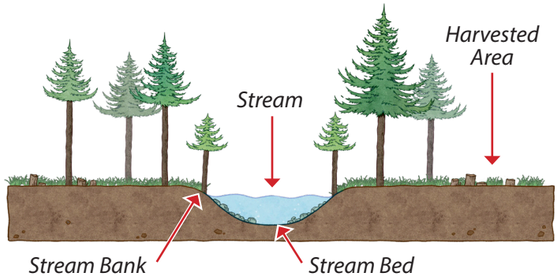
Risks to Forests *(continued)*

Pollutants: Foreign elements which enter water and/or air, sacrificing their physical integrity.

Riparian zone: Area adjacent to a body of water which is often affected by flooding.

Rutting: Impressions in the ground after soil has been compacted by heavy machinery.

Sediment: Soil particles that are suspended or deposited in a body of water (may also be considered as a source of pollution).



Streamside Management Zone (SMZ)**:** A strip along each side of a stream which is composed of tree and brush species that are left intact during harvesting operations. These areas serve to prevent/minimize erosion and sedimentation, maintain water quality, and improve wildlife habitat.

Objectives *It's all about what you want!*

Aesthetics: Appealing physical and mental benefits, such as natural beauty, that humans value within an environment.

Timber/Economics: Fiber and Pine Production are primary objective.

Wildlife: Wildlife and wildlife habitat improvement and creation.

Legacy: Long term management for future generations.

Soil, Air, & Water Quality: Management focused on conserving/protecting soil, air, and water quality.

Multiple Use: Land management philosophy for more than one purpose; typically a management scheme for timber, wildlife, recreation, air, and aesthetics. Most land managers have a multiple use objective.

Timber Harvest Terms *Felling and Selling*

Clear-Cutting: Method of total and complete timber harvest that removes all trees from a designated stand regardless of size, species, or quality.

Commercial: Action that results in a profit. For example, a commercial thinning operation would produce income for the landowner.

Deck: The site used to sort and load logs onto a transport vehicle. Also called a ramp, loading deck, landing, or brow.

Fell: To cut and/or remove standing trees or vegetation.

Form Class: Measure of straightness and quality in bole.

High-Grading: Harvesting practice which removes trees of higher commercial value and leaves a stand of poor quality trees of lesser value (depletes timber productivity).

Merchantable Timber: Trees managed for a particular product that may be sold for a profit.

Salvage Cut: Removal of dead or damaged timber immediately following a natural disturbance, before wood becomes un-merchantable.

Sanitation Cut: Removal of trees that are highly susceptible to damage by insects or disease.

Seed tree method: Harvesting all trees from a forest at once, except for a few scattered trees which will re-seed the site.

Product Class:
Products produced by trees. Dependent on diameter, quality, and height of tree.

*PRODUCT CLASS**	*Diameter*	*Tree Height*	*Form Class*
Pulpwood	5-9 inches	24-40 feet	Variable
Chip-n-saw	9-12 inches	24-40 feet	Straight
Sawtimber	12-20 inches	24-40 feet	Straight
Poles	10-24 inches	> 30 feet	Very Straight

** Product classes can vary by mill and by year. Use table as general reference.*

Selection Method: Periodic harvesting of individual or small groups of trees as a method of un-even aged management.

Skid (Skidding): The act of dragging felled logs to the loading area.

Skid Trails: Lanes created by dragging logs to loading areas.

Slash: Debris such as tree stems, tops, branches, or leaves left behind after a harvesting operation.

Residual: Standing trees or basal area remaining in a stand after a harvesting operation.

Single-Tree Selection: Harvesting individual trees as a method of un-even aged management that is commonly used on sensitive sites.

Thinning: The removal of trees to reduce stocking level and to focus site productivity on fewer and higher quality trees.

Timber Volume & Stocking

How to measure what you've got

Basal Area: The cross-sectional area of a tree, in square feet, measured at breast height. Used as a method of measuring density within of a stand of timber. ***See next page.***

Board Foot: Unit of wood that measures 1 foot by 1 foot by 1 inch (144 cubic inches); used to describe the volume of lumber that sawed logs will produce.

Cord: A measure of wood volume to include the wood, bark, and air space if stacked 4 feet high by 4 feet wide by 8 feet long (128 cubic feet).

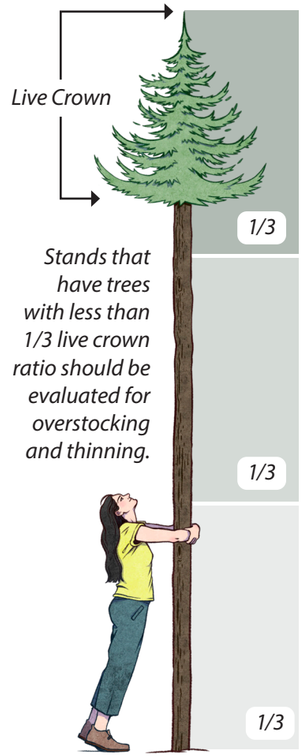
Diameter: The length of a straight line passing through the center of a circle to the outer edge. Tree diameter is typically measured at 4.5 feet above ground "diameter at breast height."

DBH: Diameter at Breast Height. The diameter of a standing tree measured at 4.5 feet above ground on the uphill side of the tree (roughly breast height).

Overstocked: A tree density which exceeds the point of optimal timber growth and/or reduces wildlife habitat suitability.

Stocking Density: Typically illustrated as the number of trees per acre and/or basal area per acre and is used to make specific management recommendations.

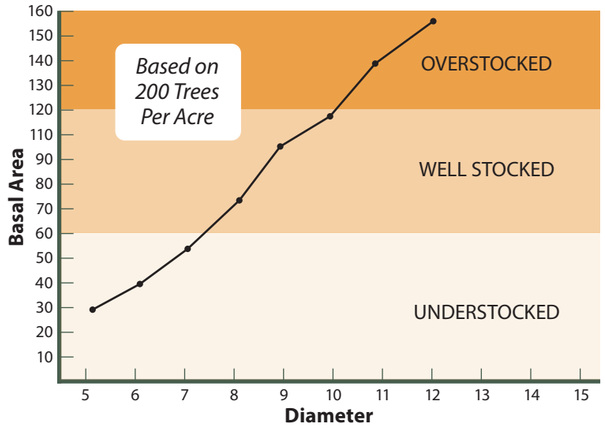
Ton: Commonly used to describe wood volume in weight. 2000 lbs.



Stands that have trees with less than 1/3 live crown ratio should be evaluated for overstocking and thinning.

*Example of **Basal Area** Calculation*

***Basal Area** changes based on the diameter of trees and the trees per acre. In this scenario trees/acre stays constant while diameter increases.*



Site Preparation *Before Planting After Harvest*

Bedding: A mechanical site preparation technique in which top soil is mounded into rows. Trees planted on top of the mounded rows will be well drained. Used typically in wet areas with poor drainage.

Chopping: Site preparation technique in which a large drum surrounded with sharp blades is pulled behind a machine to crush and cut slash, debris, and vegetation.

Disking: Disturbance of soil, plant, and organic matter by harrowing to improve/prepare area for planting; used to promote early successional habitat and control undesirable competition.

Hardpan: An area within the soil layer where soil is severely compacted; soil layer that prohibits plant/root growth.

Herbicide Application: Use of herbicides to reduce and kill herbaceous ground cover or competition before planting, typically performed in late summer early fall. Always read/follow all labels and typically consult contractor.

KG Blade: Blade mounted on the front of a crawler tractor that is used to clear brush and debris in preparation for planting trees.

Label: Clear and specific instructions from the manufacturer (often mandated by federal government) as to when, where, and how a product is to be used.

Piles: Mounds created by raking/pushing debris from harvest operation. Preferable to windrows.

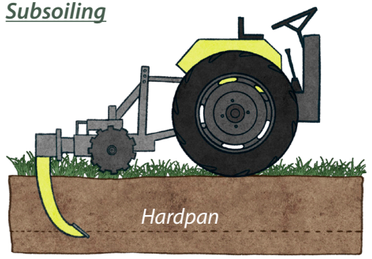
Shearing & Raking: Site preparation technique using a large cutting blade mounted on a tractor to shear trees and vegetation; a second tractor with a rake implement pushes debris into piles.

Subsoiling: Metal bar 18-24 inches is drug through ground behind tractor to break up hardpan and improve root development. Used in pastures or old fields.

Stumping: Removal of stumps before reforestation. Often needed in natural stands or for conversion of forestry to ag.

Windrow: Linear structures created by raking/pushing debris into long strips following a harvest operation.

Subsoiling



Stumping

Before Stumping

After Stumping

Piles

Debris on site can be piled and burned.

Reforestation *The establishment of trees on site*

Annual: A plant that grows, reproduces, and dies within one year.

Artificial Regeneration: Establishing a forest by planting or direct seeding.

Hand Planting: Using tools such as a hoedad or dibble bar planters to reforest by hand. Often used for containerized seedlings.

Reforestation: Restocking, regrowth, or revitalization of a forest through artificially planted seeds/seedlings or through natural regeneration. Actions which result in newly established trees.

Machine Planting: Use of a tree planter and tractor to mechanically put seedlings in the ground. Often used for bare root seedlings.

Natural Regeneration: Seedlings which originate from seeds or sprouts of existing "parent" trees on or near the site.

Tree shelters: A mechanism typically made of poly-ethylene, polypropylene, wire, etc. which serves to protect newly established trees from browsing by wildlife.

Tree Spacing / Planting Density: Number of trees per acre being established. ***See table at right for common spacing of southern pine establishment.***

Tree Spacing / Planting Density

Feet	Seedlings Per Acre
10x10	436
8x12	454
8x10	545
8x9	605
6x12	605
7x10	622
8x8	680
6x10	726
5x12	726
6x9	807
5x10	871

Land Cover Type *Current Cover & Land Delineation*

Aspect: The cardinal direction toward which a slope faces.

Critical Habitat: An area that provides food, water, air, shelter, and all other needs for survival to species that are protected under the Endangered Species Act.

Compartment: Areas that have similar site composition/features. Commonly used to divide large or diverse tracts into smaller units that facilitate certain management practices.

Corridor: A forested, brushy, or grass travel way where wildlife can easily/readily move from one patch of land to another.

Ecosystem: A community of interdependent and interacting organisms along with the physical environment.

Edge: An area where two different habitat types meet.

Food Plot: Areas established and planted to provide supplemental food for wildlife.

Habitat: An area in which organisms live and grow.

Hardwoods: Broadleaf tree species such as oak, elm, ash, and maple (does not imply that wood produced is "hard").

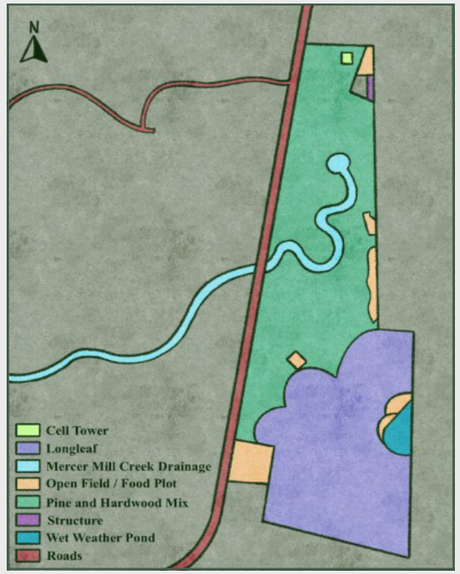
Matrix: A landscape which contains many different habitat types.

Land Cover Type *(continued)*

Perennial: A plant which lives for more than one growing season (resprouts from seeds or undergoes vegetative reproduction).

Softwoods: Evergreen, cone-bearing, trees with needles or scale-like leaves (examples: pines, spruces, firs, and cedars.)

Stand: An area of with similar characteristics such as age and species composition that is treated as a single management unit.



Sample Stand Map

Timber Stand Improvement (TSI)

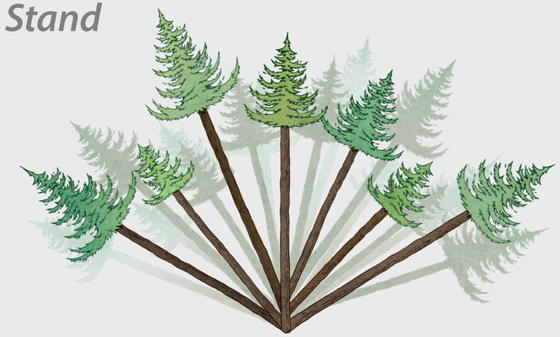
Improving the Quality of an Existing Stand

Pre-Commercial Thinning: Overstocked stands with trees less than six inches in diameter, in which some stems are removed to benefit the stand.

Prescribed Burning: The knowledgeable application of fire in a controlled manner to accomplish pre-determined and well-defined management objectives.

Release: The removal or deadening of trees, brush, or herbaceous vegetation to promote growth of remaining target species.

Silviculture: The establishment, maintenance, and harvesting of trees in a forest stand.



Overstocking or overabundance of young stems in a stand can cause growth to lag, invite disease, and contribute to sparse diversity in the understory plants. Pre-commercial thinning helps reduce stem count and improve health.

Wildlife Management Terms *Critters Galore*

Browse: Vegetative material that is consumed by wildlife.

Endangered Species: Species which has been listed as endangered.

Exclosure: A small, fenced-in area within a wildlife food plot that prevents animal access; serves as an indicator as to the extent that wildlife utilizes a food plot.

Food Plot: Areas established and planted to provide supplemental food for wildlife.

Game Species: Wildlife that is managed and hunted for recreation.

Non-Game Species: Wildlife species that are not hunted.

Supplemental Planting: Direct seeding or planting of seedlings as a desired wildlife food.

Snag: A standing dead tree which is often left, created, protected to serve as a habitat component for wildlife.

Scats: Wildlife fecal droppings.

Indigo Snake

Spiney Mussel

Woodpecker

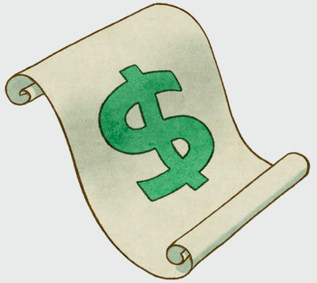
Agreements / Cost Share *Terms Related to General Agreements*

Cost Share: Financial assistance provided to landowners by a state or federal agency for specific management practices. Typically expressed as a percentage of the average implementation costs.

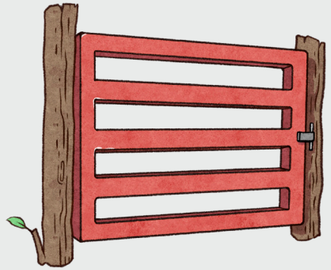
Easement: Granted permission for limited land use by a landowner to another party as an interest, right, or ability.

Harvest Contract: Contract laying out terms of harvest including prices, restricted areas, expectations, access, and more.

Lease: Written agreement between the landowner (leasor) and a land user (leasee). Grants permission to use the land for a specified purpose or activity.



Cost Share agreements can drastically improve return on your land and provide important funds for initial establishment.



Easement arrangements can help provide access through neighboring lands to perform operations on your property.

Your Resouces

OFFICE	CONTACT NAME	PHONE	EMAIL
NRCS – Natural Resource Conservation Service			
FSA – Farm Service Agency			
State Forestry Agency			
State DNR – Department of Natural Resources			

Your Resouces

SERVICE	CONTACT NAME	PHONE	EMAIL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