



# Hardwood Management Practices

*Improving Hardwood Forests with Proper Forest Management*

Forestry Topic 70

June 2023

## Getting Started

DOF foresters first conduct stand assessments using specialized tools to gather data, which is used to help inform landowner management options and decisions. In most cases, forest management falls into one of the development stages below.

Establishment Stage	Regeneration Stage	Tending Stage
<p>During the establishment stage, management focuses on helping new seedlings germinate and grow so they can become established and compete successfully into the canopy.</p> <p>Practices should be used in closed canopy, mature forests that lack desirable seedlings, especially oaks.</p> <hr/> <p><b>Prescribed Burning</b></p> <p>Improves oak seedling establishment and competition. May aid in preparing seedbed for germination of light, windblown seeds.</p> <p><b>Mid-Story Removal</b></p> <p>Removes trees from below the upper canopy to improve growth and competition of small oak seedlings and saplings.</p> <p><b>Competition Control</b></p> <p>Reduces number of non-native plants or excessive, dense native plants that inhibit early growth of desirable trees.</p> <p><b>Hardwood Afforestation</b></p> <p>Planting non-forestland with at least 50% hardwood trees. Planting must follow Virginia Hardwood Planting Guidelines.</p>	<p>During the regeneration stage, management focuses on removing the canopy, so the established seedlings grow and form a new forest.</p> <p>Practices should be used in mature forests when desirable regeneration is present or expected to start after harvesting.</p> <hr/> <p><b>Clearcut</b></p> <p>Removes all trees at once. Appropriate when sufficient advanced oak regeneration is present, or to regrow trees requiring full sunlight.</p> <p><b>Shelterwood</b></p> <p>Removes all trees in two stages, separated by several years. Helps seedlings develop that do best in partial shade.</p> <p><b>Periodic Partial Harvest</b></p> <p>Frequent harvesting of small areas to slowly give seedlings more sunlight.</p> <p><b>Competition Control</b></p> <p>Reduces number of non-native plants or excessive, dense native plants that inhibit growth and development of desirable trees.</p>	<p>During the tending stage, management focuses on fostering optimal forest development and guides species composition to achieve desired objectives.</p> <p>Practices should be used in young or middle-aged (8-50 years-old) forests after tree crowns touch each other to minimize future forest health problems and maximize benefits.</p> <hr/> <p><b>Timber Stand Improvement</b></p> <p>Control unwanted species in the forest to improve growth, adjust species composition, or reduce vine competition. Typically pre-commercial.</p> <p><b>Crop Tree Release</b></p> <p>Improve growth of select trees by controlling their competition.</p> <p><b>Thinning</b></p> <p>Commercial harvest to improve growth and vigor of existing trees.</p>

\* As part of DOF's hardwood initiative, landowners can take advantage of financial incentives for conducting many of these management practices.



For more information about services or programs in your area, contact your local DOF office:

**[www.DOF.Virginia.gov](http://www.DOF.Virginia.gov)**



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