



# Pruning White Pine: A Reference Guide for Foresters

Maine Forest Service, DEPARTMENT OF AGRICULTURE, CONSERVATION & FORESTRY,  
22 State House Station, Augusta, ME 04333

**Pruning** is removing branches of a standing tree flush with the outside of the branch collar. When pruning is done to increase income, trees that will grow to sawtimber size and quality are pruned.

## Why prune?

White pine can be pruned to improve the health and appearance of a tree, or to increase its commercial value. Pruning of trees destined for a lumber or veneer mill can be very profitable. It improves value by:

- Increasing production of high grade clear wood.
- Reducing stem taper.
- Reducing damage potential from disease agents such as white pine blister rust.

## When to Prune

It is best to begin pruning white pine when the tree is young and the branches are small. This allows the most clear lumber to grow on the bole, since knots form as each year's new growth surrounds a living or dead branch. Also, it is easier, more efficient and healthier for the tree to prune small branches regularly than to prune large limbs. Usually the tree should be pruned after it is at least 4 inches at DBH. Pruning operations may be repeated regularly until the lower 17' to 25' of the bole (higher on very productive trees) has been pruned. Never remove more than 1/3 of the live crown.

## Economic Benefits of Pruning

The commercial value of crop trees can be greatly increased by pruning—studies have shown that stumpage values can be increased 20 to 25%. It is generally not profitable to prune trees that will be removed in intermediate thinnings. The following table shows the ratio of clear and knotty lumber per 1,000 board feet grown on trees pruned at different diameters.\*

Diameter of Knotty Core	Board Feet of Clear Lumber	Board Feet of Knotty Lumber
3 inch	920	80
4 inch	835	165
5 inch	750	250
6 inch	660	340
7 inch	595	405
UNPRUNED	NONE	1000

\* Measured on logs 12" in diameter at the small end and 14' long. Harvard Forest Bulletin, "Pruning for Profit as Applied to Eastern White Pine." Other studies on small samples of white pine in Maine found, after adjusting for taxes and inflation, 13.5% and 13.65% increases in value of pruned as compared to unpruned trees.

## How to Prune

### Record Keeping

- **Make sure you or the landowner keep good records of which trees are pruned and when they are pruned.**
  - Pruning records will alert the mill to your pruned logs' value. Logs that look the same on the outside may have significantly different worth. Logs with more years of post-pruned growth have more clear lumber and higher value.
  - Remind the landowner that notarized records can be entered into the local registry of deeds miscellaneous book. Records are less apt to get lost and they might be a valuable record for landowners or heirs.
  - Not every mill will recognize the extra value of previously pruned pines. It is important for you and the landowner to search out those pine mills that do pay extra for these trees, and to check with these mills before the harvest to find out what they need for records. Sometimes mills will send out a

representative before the harvest to check on the condition of these trees.

### Tree Selection

- **Marking** trees to be pruned before pruning will save time and labor costs.
- **Prune only dominant trees with healthy crowns that receive direct sunlight on their tops and at least partial sunlight on their sides.**
- Trees to be pruned **must** be released from competition before, or at the time they are pruned. If this is not done, many pruned potential crop trees will end up as intermediate or suppressed trees that will be thinned out of the stand before they have a chance to grow enough clear wood to justify the work of pruning. **One of the criteria for choosing trees to be pruned should be picking only trees that are planned to remain growing in the stand for at least another 20 years.**
- Prune only trees with straight, upright trunks, and no splits, forks, other defects, or branches larger than 2 inches in diameter within the first 9 to 17 feet of trunk.
- Trees to prune should be at least 4 inches at DBH and no more than 12 inches at DBH, although exceptionally thrifty, dominant, small limbed pines up to 16 inches could be done.
- Plan on pruning at least 100 trees future crop trees per acre (approximately 20' x 20' spacing) where species and stem conditions permit. To maintain stocking, where possible prune an additional 50 trees well distributed over an acre, for a total of 150 trees per acre.

### Pruning Method

- Ideally, crop trees should be pruned to a height of 17' (1- 16' log, and a 1' stump) or 25' (2- 12' logs and a 1' stump) where tree form and quality permit. Although 17' is ideal, pruning to lower levels (anywhere from 8' - 17') will still benefit future economic values. Additionally, landowners may have reasons for pruning for other non-economic reasons, including safety, recreation trail improvements, aesthetics, or just for the enjoyment of being outside and improving their woodlot.
- Do not prune more than one-third of the live crown at a time. Example: if the live crown is 15' high, do not prune more than 5' of live branches on the stem.

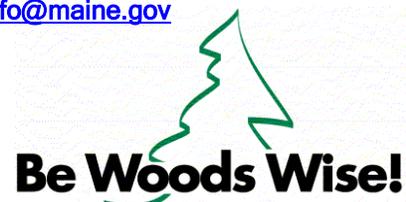
- When necessary, prune in several different operations or height increments to achieve the desired branch-free length.
- Dead and rubbing branches should be pruned.
- Pruning live branches near the ground on young white pine may decrease the incidence of blister rust. Low pruning and thinning of some pine species may also prevent snow damage.
- Trees should be released on at least three sides, with space to the nearest abutting crown of at least 5 feet.

### Pruning Equipment

- Never prune with an ax. Use a pruning saw. Small dead branches and branches within 6 feet of the ground are easily removed with a hand saw. A lightweight power saw in skilled hands is effective on lower branches, but care must be used to avoid damaging the tree. For safety, do not attempt to prune higher limbs with a power saw. Prune to the desired height with a pole pruning saw.
- Always use a hard hat and eye protection when pruning.
- For good equipment from a forestry supplier, a hand pruning saw may cost from \$20 - \$60; a pole pruner from \$35-\$200.

For more information, please contact:

**Maine Forest Service**  
DEPARTMENT OF AGRICULTURE,  
CONSERVATION & FORESTRY  
22 State House Station  
Augusta, ME 04333-0022  
(207) 287-2791  
[forestinfo@maine.gov](mailto:forestinfo@maine.gov)



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