



Pruning Your Forest Trees

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?

You might prune for safety, to improve the health or appearance of a tree, or to increase its commercial value. Proper pruning in a stand 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.
- ◆ Hastening maturity into healthy, high value trees.
- ◆ Reducing damage potential from disease agents such as white pine blister rust.

When to Prune

You may prune live or dead branches from conifers and dead branches from hardwoods at any time of the year. However, it is best to prune live branches on all species during their fall and winter dormancy. This is particularly true for hardwoods, as their wounds might exude excessive sap or become vulnerable to disease causing agents such as fungi. Even with conifers there are advantages to pruning during the cooler, less busy, more insect-free months of fall and winter, both for the trees and for those pruning.

It is best to begin pruning 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 3" or 4" diameter at 4.5' above the ground. 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 of the tree.

Economic Benefits of Pruning

The commercial value of your crop trees can be greatly increased by pruning—stumpage values can be increased 20 to 25%. This increase in value comes from trees that will be sawn for lumber or

other high quality products. 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.

The advice of a licensed forester can prove helpful with all phases of pruning your forest stands from selection of trees to the actual pruning.

How to Prune

Record Keeping

❖ **Keep good records of which trees are pruned and when they are pruned.**

- ◆ Your 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.
- ◆ Notarized records can be entered into the local registry of deeds miscellaneous book. There they will not get lost and they might be a valuable record for you or your heirs.

Tree Selection

- ❖ **Marking** trees to be pruned before pruning will save time and labor costs. You or your forester can mark the best species and trees to prune.
- ❖ Prune only trees with healthy crowns that receive direct sunlight on their tops and at least partial sunlight on their sides. **Where necessary, selected crop trees should be released by thinning around them prior to pruning.**
- ❖ Prune trees that are of a high-valued species, 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.
- ❖ On a commercial stand prune at least 100 trees per acre (approximately 20' x 20' spacing) where species and stem conditions permit. To maintain stocking prune an additional 50 trees well distributed over an acre, for a total of 150 trees per acre.

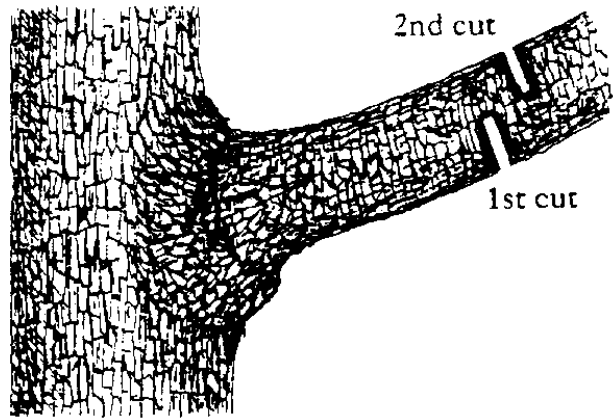
Pruning Method

- ❖ A forester can demonstrate proper pruning techniques (see illustration).
- ❖ 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.
- ❖ 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.
- ❖ Do not paint or treat the pruning cuts.

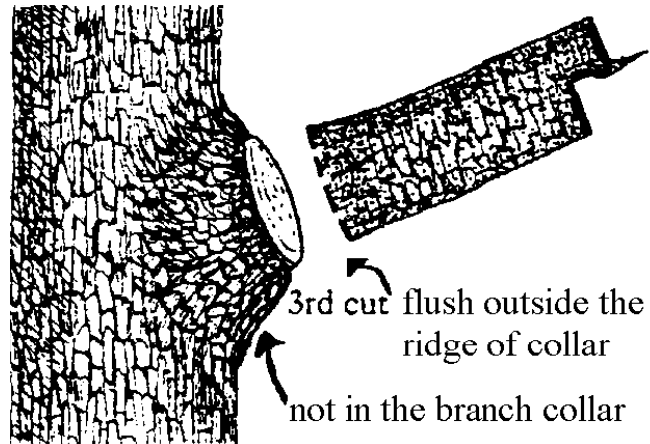
Pruning Equipment

- ❖ Never prune with an ax. Use a pruning saw or shears. Small dead branches 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.
- ❖ A Forester can advise you on sizes, types and sources of equipment. For good equipment from a forestry supplier, a hand pruning saw may cost from \$20 - \$60; a pole pruner from \$35-\$200; and pruning shears in the \$15-\$115 range.

Proper Pruning Method



First, make an undercut to prevent bark from tearing. Next, safely remove the branch; make your second cut farther from the stem than your first.



Last, cut flush with the outside ridge of the branch collar (ridge surrounding the union of the branch and the stem). Cut as close as possible without damaging the collar. Cutting into the branch collar injures the main stem of the tree and makes the stem-wood vulnerable to infection by fungi and other disease- or stain-causing organisms.

For more information, please contact:

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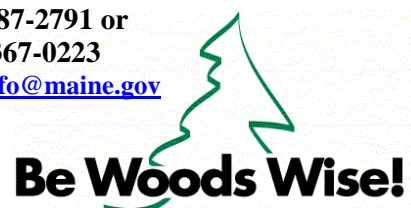
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