

Here's How to ... Prune Woodland Trees

By Mark Megalos and James McGraw

Pruning is the removal of live or dead branches from standing trees. Although branch shedding or self-pruning occurs naturally, landowners often have objectives that can be enhanced by artificial pruning. Thus, pruning woodland trees can benefit stands by improving timber value, appearance, and access and by removing dead and diseased branchwood.

Natural-target pruning is a proven technique for removing branches that avoids discolored or decaying wood associated with other pruning methods. This document describes when and how to natural-target prune young pines and hardwoods for timber production.

Getting Started: Equipment

Successful pruning begins with sharp tools. A pole saw allows for efficient pruning up to and beyond the first merchantable log. The teeth of these saws cut on the pull stroke, easily removing small limbs with a few strokes. Pole saws can be purchased in sectional lengths of 4–8 feet. A 4-foot pole saw is efficient for removing lower branches as well as limbs up to 8 feet in height. Pistol-grip pruning saws are useful for removing limbs within arm's reach. Hand and pole pruners, loppers, chainsaws, and carpenter's hand saws are inappropriate for this type of pruning. These often crush branchwood or leave jagged wounds that delay the closure of the cut. Always include eye, hand, and head protection as a part of your pruning equipment.

Choosing Crop Trees

The volume, quality, and value of woodland trees are enhanced through periodic thinnings, which concentrate growth onto the most merchantable, straightest, vigorous crop trees. As spacing between trees increases, branches persist longer and grow larger. Pruning, combined with thinning, can enhance the quality and value of your timber by concentrating knots into a small interior core of trunkwood. Since pruning can be one of the most expensive forest management practices, prune only those trees that will be retained in the stand at final harvest, not those to be removed during intermediate thinnings.

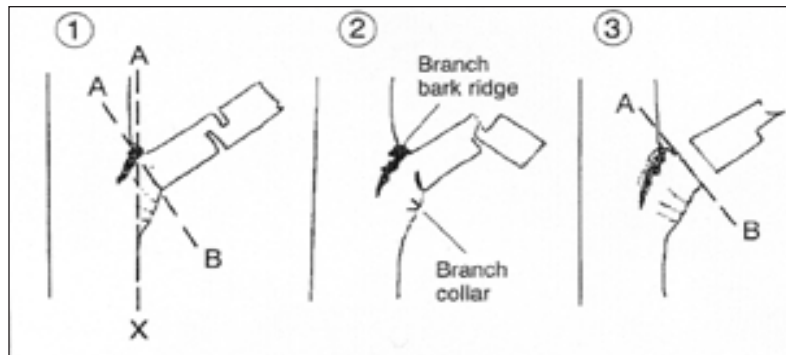
Start Early

Prune branches before they reach 1 1/2 inches in diameter to enhance wound closure and minimize knot size. Since the bottom log of a tree can contain as much as 1/3 to over 1/2 of the tree's merchantable volume, pruning is

typically restricted to the height of the first full log (17 feet). Prune early and frequently for best results. Prune in stages, removing only a few branches during each lift.

How Much Should I Prune?

Woodland pruning is a compromise of limiting cost,



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increasing timber value, and decreasing growth potential. Tree growth is directly related to the amount of leaf or needle area on the tree. Excessive pruning can affect tree growth significantly, decreasing growth by as much as one-half! Therefore, to maintain tree vigor, do not remove too much of the crown (portion of tree in leaves) during any one lift. In young trees, maintain two-thirds of the tree height with live branches. As trees develop, the portion in live crown can be decreased to one-half of the height of the tree.

The Kindest Cuts

Pruning must be done properly to be beneficial. Natural target pruning involves a cut immediately outside the branch collar, a swollen area at the base of the branch. Cutting outside the branch collar does not disturb trunkwood, thereby minimizing discoloration, decay, or other wood defects in the core portion of the tree.

As the old adage states, "routine pruning can be done anytime the saw is sharp." However, limit timber stand improvement pruning to the dormant season, when weather and working conditions are comfortable. Always avoid pruning during leaf-out when tree energy reserves are lowest. Also, avoid pruning during leaf-fall, when trees are recovering vital compounds from the foliage.

Does Pruning Pay?

Tree growth and subsequent closure of pruning wounds will vary greatly by site, stand age, species, genetics, and extent of pruning. To maximize the returns from pruning, prune while the stem is 4–6 inches in

diameter at the point of branch removal. Thin as needed to maintain vigorous growth on pruned crop trees. Remember, pruning is a long-term proposition, and returns may take 20 or more years to materialize. Profitable pruning assumes that costs will be offset by an increased stumpage value at harvest. Clear, defect-free logs have historically brought a higher stumpage price. Pruning can increase the percentage of clear wood in the first log, enabling a landowner to market more stumpage as higher-value plywood, grade, and veneer logs. Depending upon local market conditions, competition among buyers, and future demand, pruning is likely to be profitable for landowners who keep costs low and focus solely on crop trees on their best sites. Documenting the extent and cost of pruning also may help reduce future tax liability, because pruning costs may be deducted as a business expense or capitalized and added to the timber basis.

This article, originally titled, "Pruning Woodland Trees," was published by Mark Megalos, outreach associate, and James McGraw, extension forester, North Carolina Cooperative Extension Service. It is part of the extension's series of Woodland Owner Notes and can be found online at www.ces.ncsu.edu/nreos/forest/pdf/WON/won34.pdf.

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