

NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE SPECIFICATION

TREE/SHRUB PRUNING

(Acre)

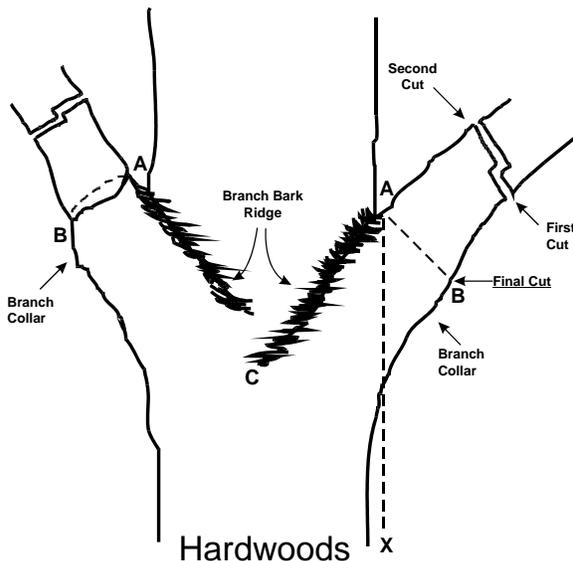
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HOW TO PRUNE LIMBS OFF OF TREES

Prune trees according to the following steps:

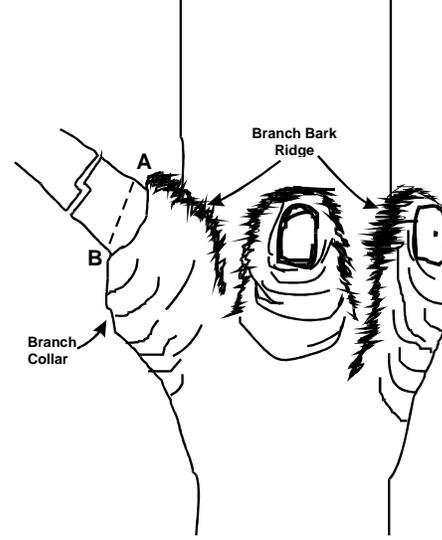
1. Locate the branch bark ridge
2. Find **A** (outside edge of branch bark ridge).
3. Find **B** (swelling where branch meets branch collar. If **B** is difficult to determine drop a line from **A**: the angle **XAC** is equal to the angle **XAB** (see figure 1). Stub the branch to be pruned using a first cut from below and a second cut from above.
4. Make the final cut on line **AB**.
5. Do not cut behind the branch bark ridge.
6. Do not leave stubs.
7. Do not cut into the branch collar.

Timing of shearing, branch removal and corrective pruning of high value tree species will be described to accomplish the intended purpose.



Hardwoods

Figure 1. — Hardwood pruning



Conifers

Figure 2. — Conifer pruning

GUIDELINE FOR PRUNING TREE LIMBS

1. Make smooth cuts
2. Never cut the branch collar
3. Never leave protruding stubs
4. Precut large, heavy branches to prevent splitting or peeling of bark
5. Lower large branches with ropes or machinery
6. Never use climbing spurs in pruning operations.
7. When working with diseased plants, disinfect pruning tools with 70% denatured alcohol or household bleach after each cut and between trees.

The timing of pruning should consider the nesting and breeding requirements of arboreal species.

FOREST STAND TREATMENT Quality Improvement Pruning

Select only the highest quality, most vigorous trees in a stand. Typical pruning will only target the final crop trees in any silvicultural system. The number may range for 75 trees per acre in high productive sites to 125 trees per acre in northern boreal forest.

1. Never remove more than 50% of the live crown
2. Only prune trees that are "free to grow" often done immediately after a thinning operation.
3. When trees are young/small, thin in lifts. A typical first lift is from 0 to 8 feet. Followed by a second lift to 13 feet and a final lift up to 17 feet. Some pruning can be done to a 13 feet or a 17ft lift in a single exercise provided that there is ample live crown.
4. Avoid exposing large amounts of bark to direct sun as this will encourage epicormic branching, sun scald or winter frost cracks.

WILDLIFE TREATMENT Understory Vegetation Development

Increasing sunlight on the ground around trees can greatly enhance understory plant development. Especially where trees are growing on micro topography pedestals.

Select only trees that have existing desirable understory plants, that are in areas with low to moderate stocking.

Prune trees to a maximum of 13 feet while maintaining a 50% live crown ratio.

Avoid having heavy accumulation of branches at the base of the tree and remove them if the accumulation hamper understory plant growth.

BASIC FRUIT TREE PRUNINGⁱ

Pruning is probably the most important task in the orchard and often the most misunderstood.

Cut too much and you get several feet of growth each year and little fruit to show for your efforts. Prune too little or not at all and you can end up with stunted trees that produce small fruit and inconsistent crops. By understanding a few of the basic concepts of fruit tree growth, you can understand why trees perform the way they do.

Apples/pears/cherries/plums produce their best fruit on 2-3 year old wood.

The reason for annual pruning is to keep the appropriate age wood in the tree, i.e. 2-3-year wood in most fruit trees.

Plant hormones are produced in the bud at the tip of each branch. These hormones suppress the growth of buds below the tip and their affects can be manipulated by pruning and branch bending. The influence of these hormones is greatest on vertical shoots and least on flat limbs. Spreading branches down near horizontal promotes new shoot development and initiates fruit buds.

PRUNING YOUNG FRUIT TREES:

Severe pruning of young trees will slow their fruit development. Light pruning coupled with branch spreading will produce fruit in 2-3 years. Heavy pruning will delay fruiting for several years

Concentrate on developing 3-5 main branches starting at 24" above the ground. These should be well spaced around the trunk to fill all sides of the tree. Spread these to at least a 45° angle.

This will promote development of side branches and fruiting wood. Wooden or plastic sticks, string, weights or whatever can be used for this. Leave these spreaders in for one growing season.

Strive for seasonal growth to be around 18-30" for the first three years. Make sure the largest diameter branches are in the lower parts of the tree. This will produce the desired Christmas

tree shape. Big, strong branches, which compete with the main leader, should be removed completely. · Wait to prune young trees until late March. This should get them past the worst of the winter cold. · When you get the first fruit, thin it out judiciously to avoid overloading the trees. For apples, and pears, thin to one fruit every six inches.

PRUNING MATURE FRUIT TREES:

First examine the tree for past growth. Ten inches of annual extension growth is ideal (measure from the tip of the main branches down to where the first "ring" which encircles the branch).

Also, think about the crop from last year. Prune harder when following a heavy crop and prune lighter after a small or non-existent crop.

Strive to develop a Christmas Tree shape. Remove limbs in the top of the tree completely that are more than half the diameter of the main trunk or leader.

Cut out dead and diseased wood completely.

If two limbs compete for the same space, remove one completely, don't stub them both.

Do not stub-off upright vigorous branches. Either leave them alone or remove completely.

Prune drooping branches back to an upward pointing branch, preferably at a 45° above horizontal.

Try not to prune more than 25% of the total volume of branches at one time. Regrowth can often be tremendous and difficult to control. The exception to this is on trees that are stunted with little or no new growth. In these cases, severe pruning can give trees a needed "wake-up" call. It is best to prune moderately every year than severely every few years.

Try to finish your pruning before growth starts.

PRUNING CHRISTMAS TREES (SHEARING)²

Shearing is the most important cultural practice involved in growing quality Christmas trees.

Of all the practices that can be employed by a grower, shearing probably gives the greatest return for labor invested. Consumers demand a dense, well-shaped tree with relatively uniform taper.

The practice of shearing involves controlling growth in height and width by cutting off the tip of the leading shoot (leader or terminal) and the ends of the lateral branches to develop the desired conical shape.

The purposes of shearing are:

- 1) To control tree height and width and develop desired taper and shape;
- 2) To stimulate increased numbers of buds and bud development, thus increasing the number of branches and foliage density (pines)
- 3) To correct branch deformities and insect and disease damage and to remove competing multiple leaders.

Trees are sheared to the shape of an inverted ice cream cone with a wide base and a uniform taper to the tip of the tree. "Taper" means the relationship of the width of the tree to its height and is determined by dividing the width of the tree at its base by tree height and multiplying the result by 100. The ideal tree shape is about two-thirds as wide as it is high, or a 66-2/3 percent taper. A tree 6 feet tall and 4 feet wide at the base has this percentage taper, (66-2/3%).

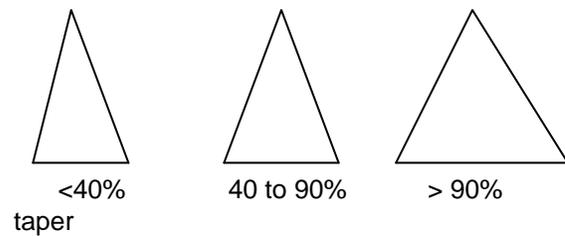


Fig. 3: Diagram showing relative taper of Christmas trees. L. to R., candlestick, preferred and flaring.

Flaring: more than 90 percent taper

Normal: 40 to 90 percent taper

**Alaska, NRCS
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Candlestick: less than 40 percent taper

Pines are usually grown with a taper in the range of 60 to 90 percent, while for the spruces and firs, it is usually from 40 to 70 percent.

The market determines the amount of taper. Some buyers prefer "fat" trees while others prefer a more normal taper. Shearing controls the taper.

After planting, seedlings or transplants usually undergo a slow-growing initial establishment period of one to three or more years. During this time, root systems are developing and adjusting to their new environment, and terminal elongation is usually less than 12 inches. During the second or third year in the field, pine leaders normally start to grow more rapidly. Shearing should be initiated at this time. If it is not, excessively long internodes ("goosenecks- long distances between annual branch whorls") will develop. The combination of "goosenecks" and varying length laterals give trees an open, irregular appearance not representative of a quality Christmas tree.

Spruces and firs go through a process called "planting check." Terminal growth elongation usually resumes more slowly after planting. Shearing on spruces and firs may have to be delayed until the fourth or fifth year in the field unless good grass and weed control practices are initiated and maintained. These time periods are guidelines only!

Once terminal elongation exceeds 10 to 12 inches, shearing must be started and continued every year, if necessary, until the trees are harvested as quality trees.

References

1 Rick Reisinger, Cornell Orchards Manager, organized this information for a Cornell Cooperative Extension Service

2 Ohio, Maine and Rhode Island Christmas Tree Manual Excerpts
