

# Stewardship Notes

Indiana Division of Forestry

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## Thinning Forest Plantations

You've agonized over controlling weeds and pruned for good tree form in your forest plantation for nearly a decade. While you may think the maintenance of your forest plantation has finally ended, think again! Without a program of thinning your forest plantation will not maintain rapid growth nor will it yield the optimum in timber volume at the end of its rotation.

### **WHY THINNING?**

Thinning removes surplus trees and concentrates the potential wood production of the stand on the selected crop trees. By thinning your plantation, you are essentially salvaging trees which would eventually die naturally. However, by thinning, you can control which trees survive.

When the average height of the trees in the forest plantation is greater than 10 feet, it is time to ask a professional forester about thinning. Crown closure, or when the crowns of the trees in the plantation begin to crowd each other, is another clue that the plantation requires thinning.

### **CROWN COMPETITION FACTOR**

Foresters base the rules for thinning plantations on the crown competition factor (CCF), a measure of competition that integrates tree size and the number of trees per acre. A plantation with a  $CCF = 100$  indicates that the sum of the tree crown areas equals the area of the plantation. A CCF less than 100 indicates an understocked plantation; a CCF greater than 100 indicates crowding. Your forester can determine the CCF of your plantation by measuring any two of the following: the average tree size in the plantation, the basal area of the plantation, and the number of trees per acre.

The number of trees per acre to thin from the plantation will depend on the CCF of the stand and the upper and lower CCF levels between which plantation stocking will be maintained. A rough guide to thinning pole-sized stands (trees ranging from 6-12 inches in diameter) indicates that after thinning, the spacing between crop trees (in feet) should roughly equal the product of the average crop tree's diameter at breast height (DBH) multiplied by two. In thinning, each crop tree usually benefits from the removal of at least one competing neighbor. While the determination of when to thin and how many trees to leave can be arrived at objectively via the CCF, the selection of the trees to leave must be a subjective, in-the-field determination.

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Thinning can be either commercial or pre-commercial. In pre-commercial thinning, the size of the trees removed precludes their sale. In commercial thinning, trees have reached sawtimber size (trees greater than 12" DBH) and can realize a profit. Thinning continues until the crop trees have reached maturity (greater than 18" DBH), at which time selective timber harvests may occur. After the first thinning, landowners can expect thinning every 10-15 years until the plantation reaches maturity.

Remember that the management of a forest plantation doesn't stop after planting and weed control. Ask your district forester about thinning your plantation, or contact the Indiana Division of Forestry.