

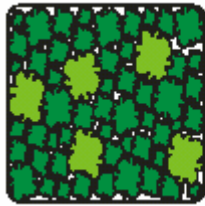


CROP TREE MANAGEMENT

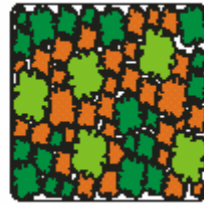
Getting the most from your forested land

Crop tree management (CTM) is a way to enhance your woodlot according to your interests. Whether you're interested in wildlife, timber or just improving the look of your land, you can use CTM to reach those goals. By removing trees that shade the most desirable trees, the crop trees are allowed to flourish. This usually means cutting trees from all four sides of the crop tree. Crop trees that are released on all four sides may grow three times the rate of trees that are not released.

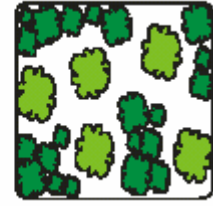
Which crop trees are chosen and how many are chosen per acre is up to the owner.



Select Crop Trees



Mark Competing trees



Remove Competing Trees

The Process

- 1) **Identify your goals.** Where are your interests? What vision do you have for your forestland? The answers to these questions will help you and your forester develop a management plan.

Landowner Goals - Example

1. Improve turkey habitat to increase opportunities for hunting.
2. Produce income from timber within next 20-25 yrs.

- 2) **Make a specific plan** for different parts of your woodlot. Some areas of your property may be better suited to meet your goals. Focus your efforts on the part of your property with the greatest potential to meet the use that you have in mind.

Specific Plan – Example

Area 1: Oak-hickory stand

1. Increase production of hard mast (acorns and nuts)
2. Provide roosting sites for turkey
3. Accelerate growth of potentially high-value trees

- 3) **List qualities for selecting.** Think about your goals as they relate to each specific area in your woodland. Ask yourself, what tree characteristics would best...
 - a) provide food or shelter for wildlife?
 - b) produce timber fastest?
 - c) improve forest aesthetics

Crop Tree Qualities - Example

1. Wildlife – Oak trees with large healthy crowns
2. Timber – Black Cherry with no dead branches in upper crown.

Possible criteria for selecting crop trees for Wildlife, Timber, Aesthetics, and Water Quality are listed in Table 1.

- 4) **Inventory crop trees.** Go into one part of your property at a time. With your list of tree criteria, count trees that meet those criteria. Remember, selection criteria may change from one area to another. The quality of available crop trees can vary from one place to another because differences in soil characteristics or history of use.

- 5) **Visualize the Process.** Go into the areas that you've identified for crop tree management and stake out a few 120' diameter circles. This circle is one-quarter acre. Select your crop trees in these plots and flag them with a band of brightly colored tape. Next, identify (with a contrasting color of tape) all the trees that need to be removed to fully expose the crown of the crop tree. Only the trees in direct competition with crop trees will be removed. By visualizing the proposed cut on a small scale, you can make adjustments in the number of crop trees released, or the selection criteria used. If possible, select crop trees in summer to assess crown health and select competitors in winter or spring to see which crowns compete.

- 6) **Decide How Many Crop Trees to Release.** The number of crop trees to release (fully clear from direct competition) depends on how many trees meet the selection criteria and how many you want to release. If you find 30 trees per acre that meet the selection criteria but feel that too many trees would be removed (based on your visualization plots in the previous step) then you must reduce the number of crop trees selected. Younger stands, where crop tree management has greater impact, tend to have more crop trees per acre.

- 7) **Decide which trees to cut.** To determine which trees must be removed to release a crop tree, simply look up into the crop tree crown and evaluate interference from neighboring crowns. A crop tree that has only one or two feet between its crown and a neighboring crown is not free to grow. If there is doubt about whether an adjacent tree is touching and competing, cut it. In the event of two crop trees occurring close together with adjoining crowns, it is acceptable to consider the two as one crown, and then fully release around the dual crown. Healthy crowns generally expand at the rate of a foot per year. Consequently 15 feet of space between crowns provides adequate release for about seven or eight years.

Table 1. Examples of Crop Tree Selection Criteria

WILDLIFE

- Crown is large, healthy, and in or above the main canopy.
- Mast-producing species (like acorns or nuts).
- Trees with dead branches and open cavities.
- Species variety is highly desirable.
- Expected longevity of 20+ years.

TIMBER

- Crown is large, healthy, and in or above the main canopy.
- High-value commercial species (Northern Red Oak, Black Cherry, Sugar Maple).
- High-quality tree with:
 - First 16' clear of branches and defects.
 - No sprouts on first 16' from the ground.
 - No lean, low forks, etc.
- Species well adapted to the site.
- Expected longevity of 20+ years.

AESTHETICS

- Select trees and species that are unique in appearance or character, produce attractive flowers and colorful foliage, and have attractive or unique bark.
- Visible from travel lanes, vantage points, etc.
- Expected longevity of 20+ years.

WATER QUALITY

- Crown is large, healthy, and in or above the main canopy.
- Species that are good nutrient accumulators (young, deciduous).
- Species tolerant to flooding (Red Maple, Sycamore, Birch, Tupelo, Swamp White Oak, Bur Oak)

Source: Crop Tree Management in Eastern Hardwoods – USDA Forest Service
http://www.fs.fed.us/na/morgantown/frm/perkey/ctm/ctm_index.html
 order from: USDA Forest Service, 180 Canfield Street, Morgantown, WV 26505