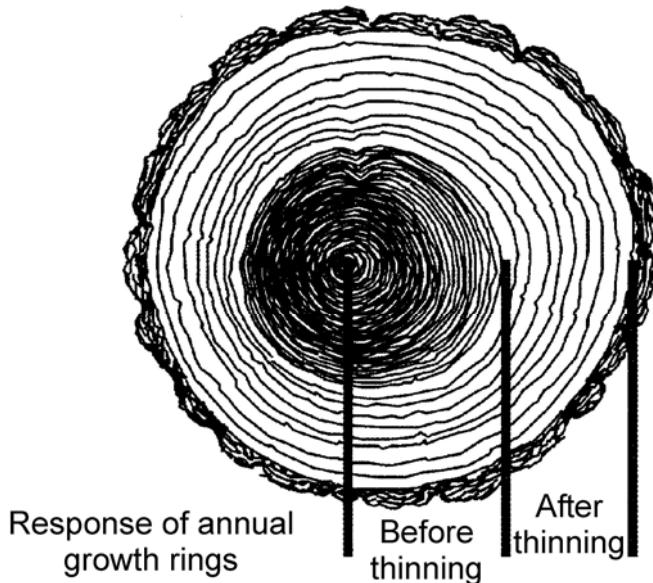


# Hardwood Crop Tree Release

HCTR030204

**PURPOSE:** Crop tree release (CTR) is the deadening of selected trees in younger, overstocked forests to create a faster-growing, healthier forest with a greater number of desirable crop trees and a shortened harvest rotation.

**SITE SELECTION:** Most hardwood forests benefit from CTR but the greatest benefit is on more productive sites where measurable growth occurs and returns on investment are realized more quickly. Sites with deep, fertile and moist soils, sites protected from hot and dry southwest winds, and sites where hardwood trees typically reach 70 - 75 feet in height within 50 years are the best choices. These sites are often found along rivers, creeks and drainages, on north and east-facing slopes, and in coves and ravines.



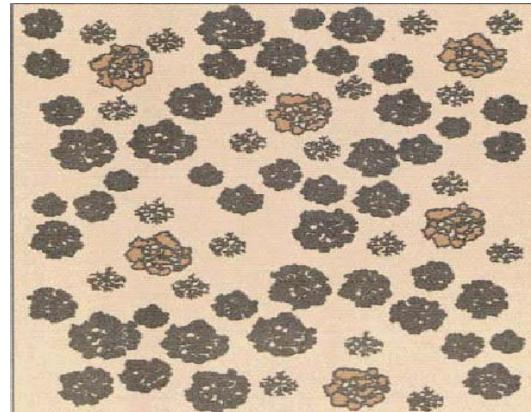
**STAND SELECTION:** Be certain the selected site has desirable trees present. Mismanagement may have harvested the highest quality trees, leaving only undesirable species with low market value or poor form to grow. CTR is not recommended in these areas. Instead, regenerate the stand.

White and red oaks have traditionally commanded the highest price and should take top priority. Managing for a diversity of tree species will prepare the land for uncertain future timber markets and offer diversity in wildlife food sources, particularly for smaller non-game species.

**EQUIPMENT:** A variety of tools such as hatchets, axes, hypo-hatchets, and tree stump injectors are used to conduct CTR, usually in combination with a systemic herbicide applied to the cut surface. Some herbicides are applied directly to the base of thin-barked trees for deadening, while others require the bark and cambium to be severed and herbicide applied to the open cut. Sources of hand tools may be obtained from a forestry equipment supplier.

The chainsaw is an effective and efficient method of CTR. A lightweight but powerful saw complete with safety features and a 14 to 16-inch bar is sufficient. Ear and eye protection, leg chaps, gloves and steel toe boots are recommended.

**SELECTING CROP TREES:** Locate crop trees with good future growth potential. Identify trees needing release, not trees needing to be deadened. The objective is 36 crop trees per acre. This equates to crop trees with an average spacing of 35 feet.



Sunlight is the leading limiting factor of tree growth. Deaden unwanted trees whose crowns are touching the crown of a crop tree creates room for expansion. When selecting crop trees look for:

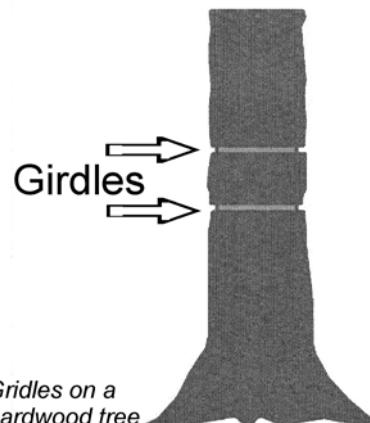
- potential for further tree development
- relatively straight and with few forks or knots
- average age between 15-30 years old
- dominant or codominant trees
- leave more trees along the creeks and streams



Crop Tree      Deadened Tree

**CHEMICAL INJECTION CONTROL METHOD:** Inject all unwanted trees larger than 2 inches in diameter with chemical herbicides unless a forester instructs otherwise. Injection of trees 2 inches or less in diameter is usually not economically practical. If many exist, prescribed burning may be an alternative control mechanism.

**GIRDLE CONTROL METHOD:** Another method to deaden unwanted trees is to cut a complete girdle (ring) in the bark around the tree at a comfortable height (usually around three feet). Cut another girdle at least 6 inches above or below the first one. Each girdle should cut completely through the bark and into the live wood at least 3/4 inch. Make sure each girdle meets at both ends so vascular flow of water is completely severed. Use proper safety procedures, as outlined in your saw safety manual.



**WILDLIFE BENEFITS:** Trees may take up to a year to die, but once dead, limbs fall off creating snags. Standing dead trees provide food and sites for nesting, roosting, denning and perching for many species. Increased sunlight in the stand allows crowns of crop trees to expand, increasing mast production and further benefiting wildlife. Where possible, leave up to five large “snag” trees per acre for wildlife.

SOURCE: Agricultural Extension Service, The University of Tennessee, SP-559.



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