

Making Your Favorite Trees Bigger and Better

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Large-scale woodland management activities such as thinnings or plantings may not be possible in small woodlands. However, woodland owners can still do something to improve their favorite trees. Foresters and natural resource professionals call these favorite trees “crop trees”. Much like a crop of soybeans or corn, woodland owners will want to nurture these favorite trees and help them to continue to mature and grow to maintain or enhance the characteristics that make them special.

Choosing Crop Trees

Crop trees are determined by the landowner’s objective and can be selected for financial value, value to wild-



Although this crop tree was chosen for its future timber value, other crop trees can be selected for their wildlife, aesthetic, or sentimental values.

Jeff Stringer, UK Forestry Extension

Crop trees can be selected from the main canopy of young stands 10 to 15 years old that are sapling size, 2 to 6 inches in diameter, and at least 20 to 25 feet tall. Usually these stands are produced after a clearcut, a small harvested opening or potentially after a field has been left to regenerate. Crop trees can also be main canopy trees

in mature woodlands that are large enough to harvest. The number of crop trees in an acre also varies with the age of the woodlands. More mature stands with large trees will usually have fewer crop trees identified than younger stands.

life, aesthetics, or for a sentimental reason. Most crop trees should have the potential to be a main canopy tree with a well-developed crown. The exception might be understory trees that are favored for flowers or fruit. A white oak tree that produces abundant acorns could be selected as a crop tree to increase its growth and importance to wildlife. In contrast, a favored family tree might be selected to preserve sentimental value.

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Crown Touching Release

The crown touching release is the practice used to maintain and increase the growth of selected crop trees. Once crop trees are identified, three or four sides of the crop trees’ canopies can be released by removing their competitors. This release will give the crop trees increased growing space and allows for the tree to horizontally expand its crown into the newly opened areas. Expanded crowns develop more leaves, leading to faster growth, and potentially greater seed production. Typically, only remove or deaden trees that impact the crop tree’s crown. Trees that are overtopped or suppressed by a crop tree’s crown normally do not need to be removed and may even be beneficial to retain. These overtopped trees might provide shade on crop tree’s stem. That shade can prevent excess sunlight from triggering the development of new branches on the stem that degrade the financial value of mature trees.

Begin by flagging crop trees in one specific color and flag trees that may need to be removed with a different color. If two crop trees are right next to each other, just remove the trees around both crop trees and they can expand into the gaps together. Once trees are properly identified, begin the process of removing those trees marked for removal.



A crown touching release frees up selected crop trees. Note the trees in the understory are left alive because they do not affect the crop tree’s canopy growth.

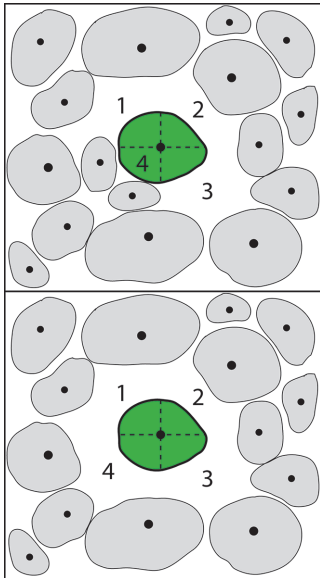
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Implementation

The crown touching release is completed by deadening or removing competing trees that have contact with a crop tree's crown. Four-sided removal (or full release) is recommended for fast growing trees such as



A three- or four-sided release frees up crop trees to expand their crowns and gain height and diameter.

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yellow-poplar and younger saplings or pole size trees. Three sided releases are adequate for mature or larger slow growing trees such as white oak and hickory. This will limit new branches on the stem while still achieving the greater growth rates from increased space.

One of the common methods for deadening trees during a crown touching release is through the use of a double girdle. This can be completed with a chainsaw or a small handheld hatchet. Cut two rings more than six inches apart that pierce the bark and penetrate the wood at least one inch deep. Girdles

should encircle the tree and meet at both ends. This will prevent the cambium from growing back and trees then surviving. A hatchet works well with small diameter trees; normally a chainsaw is needed with larger trees. Chainsaw safety is paramount, both in operation and protective gear (hearing, eyes, legs, and toes) and chainsaws should only be used after proper training. Some trees, if hollow or leaning, may burst upon girdling, so professional assistance may be needed.

Girdling retains the deadened tree standing and should only be conducted where safety concerns are minimal. Girdling slowly kills the tree and allows it to decay gradually, one limb falling at a time. However, girdled trees may fall quickly, especially in high wind, so safety near structures or recreational trails and areas should be considered (See Identifying Hazard Trees factsheet [FORFS 17-02]).

Removal of trees around crop trees also can be completed with herbicide. It can be cost-effective, but must be done safely and effectively to limit transmission of herbicide through root grafts to crop trees. Please review the herbicide usage factsheet for further information (Herbicides for Small Scale Forestry Operations [FORFS 99-09]) about equipment, proper and safe application methods, and applicable laws and regulations.

This factsheet provides an introduction to selecting and culturing crop trees. Releasing these trees allows for faster growth for increases in timber revenue and volume, greater acorn production for wildlife, or any other objective landowners might have. Please consult a forester or the references before conducting any tree removals. With a little planning and work, landowners can continue to help their woods mature and increase the special value or characteristics of favorite trees.



Double girdling with a chainsaw is the best way to implement a crop tree release. But only use a chainsaw if you're trained and comfortable using it!

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For More Information

Kentucky Division of Forestry:
<http://forestry.ky.gov>

University of Kentucky
Department of Forestry: <http://ukforestry.org>

References

Technical Guide to Crop Tree Release in Hardwood Forests. G. Miller, J. Stringer, and D. Mercker. University of Kentucky Department of Forestry Cooperative Extension. FOR-106. 24 p.

Helping your Preferred Trees Grow: Backyard Woods 8:27-29.