Forest Stand Improvement (666)
Mast Tree Release

NH Implementation Requirement ***NH-666***

Producer:		**Planner:**	
Address:		**County:**	
Farm Name:		**Date:**	
Contract/app:		**Farm/Tract:**	

Number (or #/acre) of mast trees to be released	
List of species targeted for mast tree release	
Site Specific Guidelines and Recommendations	

Plans Meet NRCS Standards and Specs

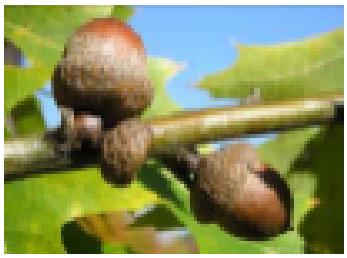
Planner Signature: Date:

Participant Agrees to the outlined plan:

Participant Signature: Date:

Scenario:

The primary purpose of release is wildlife habitat oriented. Use this form for 666-Forest Stand Improvement-which is an acre-based scenario (at least 20 trees per acre must be released --typical of Oak, for example).



Background and Purpose

A common forest management practice called **crop** or **mast** tree release can be used to improve the amount of mast or food that trees produce for wildlife. Mast is the seed and fruit produced by trees and shrubs and is critical food for many species of wildlife. For example, consider the importance of beech nuts to bears trying to fatten up for winter or of fall fruits to a wood thrush preparing for migration to Central America. The practice is relatively simple – select a healthy tree with good growth potential and cut or girdle/cut the trees that are competing with it. By lessening competition the tree grows a larger crown and produces more fruit or seed also.

Mast Tree Release Requirements Checklist

- ✓ Expose as much of the crown's surface area to sunlight as possible
- ✓ Productive sites with good soils
- ✓ Healthy trees with large crowns that are dominant or co-dominant (figure 1).
- ✓ Develop groups the same species
- ✓ Focus on trees 10-20” dbh (6” min).
- ✓ Space spacing should be at least 20-30 feet apart but not more that 100 ft
- ✓ For pole stands 4-9” dbh use FSI
- ✓ Avoid stands well stocked with straight saw timber trees- (Ash, Sugar Maple, Yellow Birch, Black Birch, Paper Birch, Oak, and White Pine)
- ✓ Remove canopy competition on 3-4 sides (see figure 2)
- ✓ Focus on oak, black cherry, hickory, apples, and disease free beech.
- ✓ Select areas where native understory shrubs will benefit.
- ✓ Select areas where hard wood regeneration especially of oak is a goal.
- ✓ Refrain from this practice if it will encourage invasive plants.
- ✓ Don’t cut cavity trees or snags, retain perch trees for raptors.
- ✓ Retain seed trees of other desired species, Pine, Yellow, Black, or White Birch, Sugar Maple, Red Spruce, Fir.
- ✓ Focus on Beech trees with claw marks and which are relatively free of beech bark disease.

Release Techniques and Guidelines

1. Look up into the canopy at the mast tree you want to release.

2. Identify undesired competing trees, those with crowns that are touching or within a couple feet of the mast tree’s crown. (Focus on cutting poor quality trees, crooked, diseased, or other trees with low commercial value).

3. Released mast trees should have at least 10-20 feet of open area around them at least on three sides. Clumps of two or three similar species are ok.

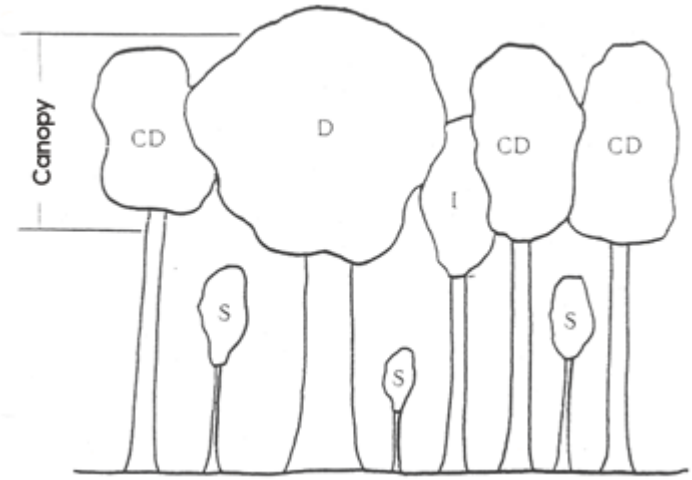


Fig. 1 - Crown Classes *(Maryland DNR Image)*

Dominant **(D)** – Trees receive full sunlight from above and some from the sides, crown extends above canopy

Co-dominant **(CD)** – Trees receive full sunlight from above and partial sunlight from the sides, forms the general level of the canopy crown cover

Intermediate **(I)** – Shorter than D and CD, little direct sunlight from above and usually none from the sides

Suppressed **(S)** –Crowns entirely below canopy, little to no direct sunlight

Above: Focus on cutting Dominant and Co-dominant species > 12” dbh to release mast. Suppressed and Intermediate species should be cut if regeneration of different species is a goal or to improve shrub mast production.

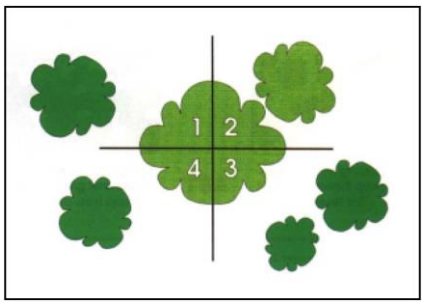
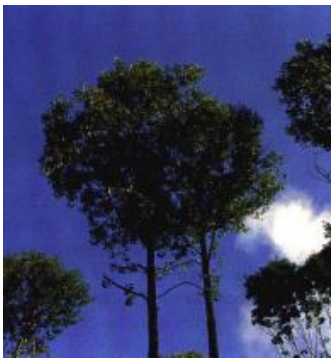


Figure 2 left shows the mast tree with four quadrants drawn, where the only competition is in quadrant two. This tree is released on "three sides" and does not need further release. (Image *USFS Crop Tree Management in Eastern Hardwoods).*



Left – Dual crown of mast trees that was released on all four sides (2 crowns treated as one)
Right – Mast tree which is released on two sides and needs at least one of the co-dominant competing trees removed.
- USFS

American Beech

- ✓ Beechnuts provide high amount of fat and protein for wildlife, even surpassing some oak species in protein.
- ✓ Black bears thrive on beechnuts and climb trees with significant mast. Current and old claw marks can be found on these vs non-mast trees.
- ✓ Identify beech bark disease resistant trees (smooth bark or bear scars).
- ✓ Prioritize stands with claw mark scars.
- ✓ Release beech on 3 sides (not south).
- ✓ Target 6-8" dbh or greater.
- ✓ For more info see: **'VT ANR Management Guidelines for Optiming Mast Yields in Beech Mast Producation Areas'**

Certification Statement: I certify that implementation of this conservation practice is complete, meets criteria for the stated purpose(s), and meets the NRCS conservation practice standard and specifications.

◯ Yes ◯ No

Planner Signature: Date:

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