Plant Enhancement Activity – PLT11 - Conifer Crop Tree Release

Enhancement Description
Conifer Crop Tree Release (CCTR) is a silvicultural technique used to enhance the growth, health and productivity of individual trees, while improving other resources such as wildlife habitat, recreation, timber value, and aesthetics.

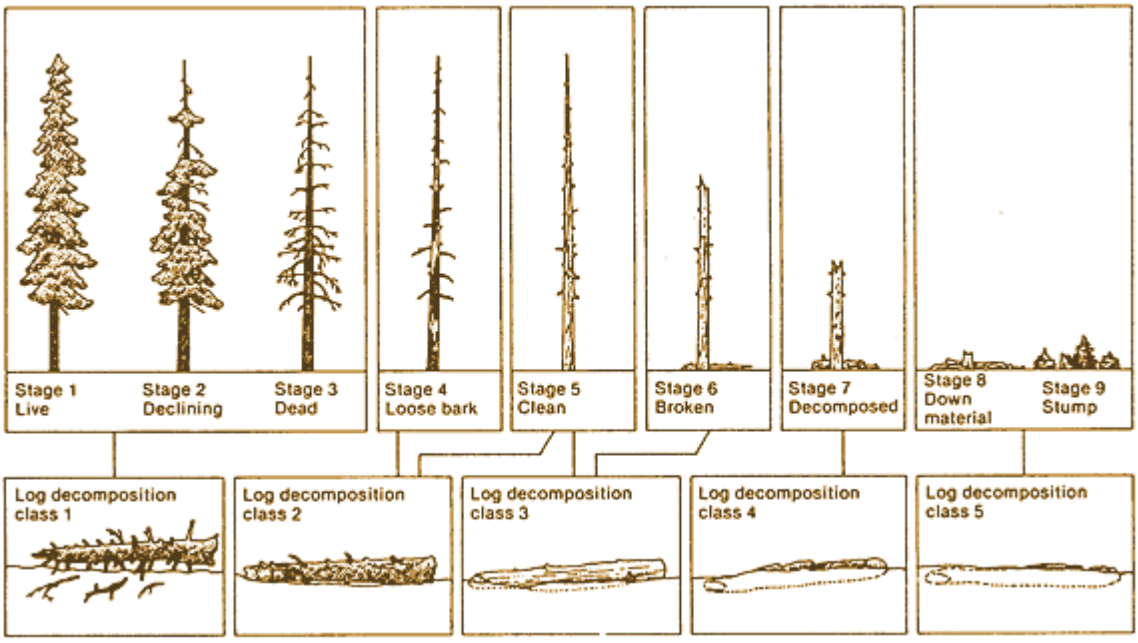
Land Use Applicability
Forestland

Benefits
Conifer Crop Tree Release is a practice that releases desirable crop trees by selectively cutting or killing less desirable, unmarketable and/or younger competing trees in overstocked forests. Additional benefits include an increase in ground cover, forage production, reduced wildfire hazard, improve ecological balance and wildlife habitat diversity at ground and canopy levels. This enhancement focuses on improvements in conifer forest. Identification of crop trees is based on selecting trees with good future growth potential. This includes cropped species, with good form (straightness) and grade (lack of defects). Crop tree crowns should be in the upper level of the forest canopy, and not suppressed by other tree crowns. Availability of sunlight is often the most limiting factor for tree growth. When crowns of adjacent trees touch each other, growth rate is reduced. Cutting for harvest or killing unwanted trees whose crowns are touching the crown of crop trees provides space for crown expansion.

Criteria

1. The CCTR enhancement is applied to:
    a. Young stands (trees that are too small for market) with average stand size diameters ranging from 4 to 8 inches (measured at 4.5 feet above the ground), stands too distant to markets
    b. Mature stands of trees with an overstocked understory.
2. Development of a CTR plan that:
    a. Prioritizes the most productive forest sites (e.g., site classes I-III) first and lower productive sites (e.g., site class IV and below) second
    b. Identifies the number of crop trees to be retained based upon site productivity and the corresponding spacing guide developed within each state for the existing tree specie.
    c. If more than one tree species are present, base spacing upon the most abundant tree specie. Suitable species will vary by state or region of the country.
    d. Incorporates the landowner's objectives for the forest
    e. Where possible, retain a mixture of tree species to reduce the potential of an epidemic event (e.g. insect outbreak) that may kill some/all trees.

3. Conifer crop tree release is achieved by:
    a. Identifying and marking crop trees from those trees to be removed. Selection is based on the impact of crowns touching the crop tree's crown on three or four sides
    b. Marked trees will be cut for harvest or killed using approved methods within in the state
    c. Trees that are below the crown of the crop tree or in-between and are not affecting the crown will be left to provide protection from wind damage, epicormic branching (unwanted branching on the lower bole), provide diversity for wildlife habitat, and are the next generation of commercial trees.
    d. All dead or almost dead trees (snags) shall be left standing (maximum of 4 per acre) to provide wildlife habitat, except were snags are a safety hazard (within 100 ft of any building, power line, road, etc.)
    e. Where pockets of dead trees occur most may be removed, except the 4 largest trees or large trees, >12" dbh and in wood decay classes 2-5 (see below), known as 'hard snags'. Leave large downed dead wood on the forest floor to benefit wildlife and for nutrient recycling and improved soil quality.



Snag and down wood decay classification system (Maser et al. 1979)

4. Created slash (left over tree tops and/or downed small trees) left on the forest floor shall comply with state forest laws or Best Management Practices (BMP's).

Documentation Requirements

1. Identify the objectives for the treatment, i.e. what trees will be retained for crop trees, how many trees per acre will be left, snags maintained/created.
2. Brief written documentation detailing the pre-treatment conditions and post- treatment conditions.
3. Representative digital images/photos of the area showing before and after treatment conditions, including snag retention.

United States Department of Agriculture
Natural Resources Conservation Service

IDAHO ADDENDUM 2011
Plant Enhancement Activity – PLT11 – Conifer Crop Tree Release

Additional guidance for CCTR:

Identification of Trees to Manage

There are two methods that can be used in order to identify conifer species that should be managed in treating pure or mixed species stands in order to achieve the objectives of the Conifer Crop Tree Release Enhancement (PLT11). The released trees are also referred to as retained trees which collectively comprise the residual stand. These trees are managed for future crop tree harvest. In soil survey terminology, species selected for a variety of management processes are called "trees to manage".

The two methods are:

1. Identify the tree species which are prioritized for crop trees from the NRCS soil survey. The Forest Productivity Table contains a column named "Trees to Manage". Major management species are listed for each identified forested soil in the survey area. The listed species are essentially the crop trees for those soils.

   Soil Survey data can be accessed at the Portland NRCS MO web site at: http://www.or.nrcs.usda.gov/pnw_soil/id_reports.html

2. Derive the Trees to Manage (crop trees) from the "Habitat Type(s)" [1] of the forested soils contained within the CSP management area(s). Newer soil surveys have identified a USFS Habitat Type classification for each forested soil series and phase.
   - Table 1 shows the Habitat Types and "Trees to Manage" for Northern Idaho using USFS Habitat Type grouping guidance[2].
   - Table 2 provides a grouping of Habitat Types and the corresponding "Trees to Manage" for the Central Idaho HT zone.

Additional Instructions for using this Enhancement:

Use the Idaho Standard "Forest Stand Improvement" (practice code 666) to plan and implement this enhancement. The Idaho standard for the practice can be accessed at: http://efotg.nrcs.usda.gov/references/public/ID/666.pdf

[1] Forest Habitat Type of Northern Idaho: A Second Approximation (Cooper and others, 1991) and Forest Habitat Types of Central Idaho (Steele and others, 1981).
[2] Report 09-08 v 1.0, 1997 USDA Forest Service, Northern Region

A site specific specification (or "job sheet") should be developed for each application of the practice and be included as part of the CCTR plan.

Table 1: Trees to Manage in the Habitat Types of Northern Idaho Zone

Habitat Types	**Group Name** (from USFS)	**Trees to manage** (if present in the stand)
PIPO/AGSP, PIPO/FEID ***and*** PSME/AGSP, PSME/FEID,	WARM and DRY	Ponderosa Pine (PP)
PIPO/SYAL, PIPO/PHMA ***and*** PSME/PHMA, PSME/VAGL, PSME/VACA,PSME/CAGE, PSME/SYAL, PSME/CARU, PSME/SPBE ***and*** ABGR/SPBE, ABGR/PHMA	MODERATELY WARM and DRY	Ponderosa pine in PIPO and PSME Habitat Types. PP, WL, DF and LPP (in frost pockets) in ABGR Habitat Types
ABGR/XETE, ABGR/VAGL, ABGR/LIBO, ABGR/CLUN (XETE phase)	MODERATELY WARM and MODERATELY DRY	
ABGR/ASCA, ABGR/CLUN (not XETE), ABGR/SETR	MODERATELY WARM and MOIST	WWP, WL, DF, PP, LPP(frost pockets)
THPL/CLUN, THPL/ASCA, THPL/GYDR ***and*** TSHE/GYDR, TSHE/CLUN, TSHE/ASCA	MODERATELY COOL and MOIST	WWP, WL, DF, WRC, ES and LPP (frost pockets)
Other Moist to Lower and Upper Subalpine forests are rare on NIPF lands.		

Table 2: Trees to Manage in the Habitat Types of Central Idaho

Habitat Types	**Group Name**	**Trees to manage** (if present in the stand)
PIPO/STOC, PIPO/AGSP, PIPO/FEID, PIPO/PUTR, PIPO/SYOR/ PIPO/SYAL ***and*** PSME/AGSP, PSME/FEID(FEID),PSME/CARU/(not PIPO), PSME/CAGE/(not PIPO), PSME/SPBE/(not PIPO), PSME/PHMA/(not PIPO), PSME/SYAL/(not PIPO)	Warm/Dry	Ponderosa Pine (PP)
PSME/SYOR, PSME/CAGE/(PIPO), PSME/CARU/(PIPO), PSME/SPBE/(PIPO), PSME/PHMA/(PIPO), PSME/SYAL/(PIPO)		PP, DF
ABGR/CARU, ABGR/SPBE, ABGR/ACGL, ABGR/LIBO/(LIBO)		PP, DF and LPP (frost pockets)
ABGR/CLUN, ABGR/LIBO/(VAGL), ABGR/VAGL, ABGR/VACA		DF, ES, WL, LPP
ABLA/ACGL		DF
ABLA/VAGL	Moist/Cold	DF, ES
Other more Moist/Cold forests are rare on NIPF lands.		

Key to conifer abbreviations:

Abbreviation:	*Common Name:*
PP	Ponderosa Pine
DF	Douglas-fir
GF	Grand fir
WL	Western Larch
WWP	Western White Pine
LPP	Lodgepole Pine
ES	Englemann Spruce
WRC	Western Red Cedar

This activity may NOT be used with the following enhancements: ANM19, ANM29, ANM30, PLT07

Potential duplicate practices: 666 – Forest stand improvement