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.

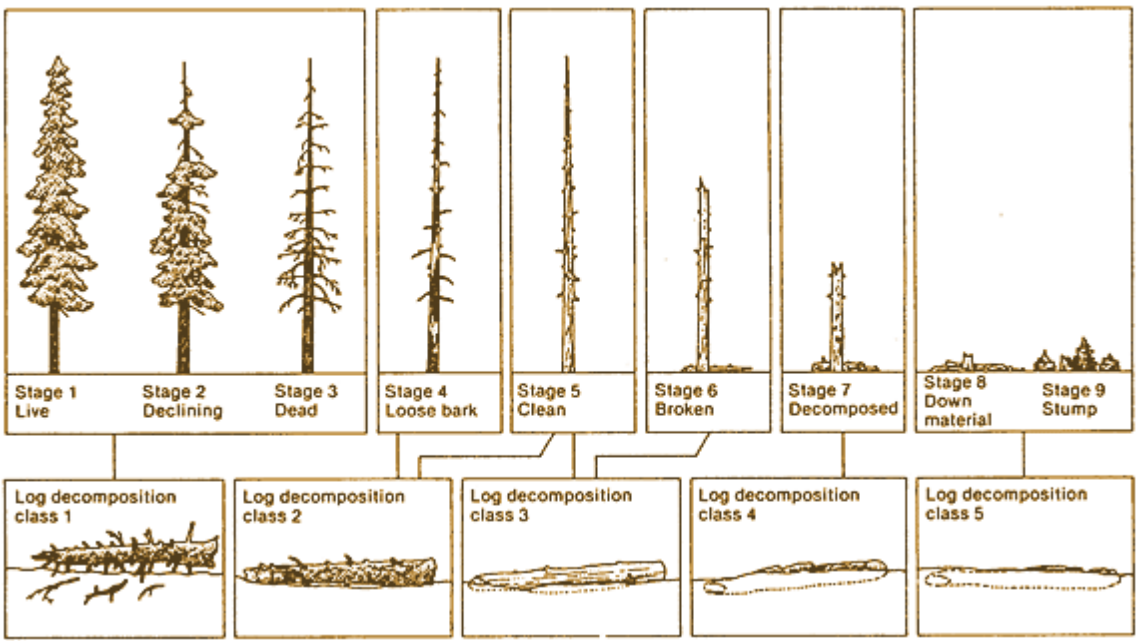
Land Use Applicability
Forestland

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

NH State Supplement
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NH Target Species for conifer tree release is are:

Balsam Fir	***Abies balsamea***
Eastern White Pine	***Pinus strobus***
Red Spruce	***Picea rubens***