



CONSERVATION ENHANCEMENT ACTIVITY

E666I

CONSERVATION STEWARDSHIP PROGRAM

Crop tree management for mast production

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest, Associated Ag Land, Farmstead

RESOURCE CONCERN: Plant, Animal

ENHANCEMENT LIFE SPAN: 10 Years

Enhancement Description

Forest stand improvement using crop tree management techniques to increase mast production.

Criteria

- States will apply general criteria from the NRCS National Conservation Practice Standard Forest Stand Improvement (Code 666) as listed below, and additional criteria as required by the NRCS State Office.
- Identify the number of mast crop trees to be developed based on site productivity and spacing guidelines for the mast tree species. See State guidelines.
- Crop tree crowns should be in the upper level of the forest canopy (dominant and/or codominant trees), and not suppressed by other tree crowns.
- Cut or kill all trees whose crowns touch the crown of the crop tree on four sides (three sides if adjacent to another crop tree), and leave additional space for large crown development of mast crop trees. Crop trees will have >15 feet of space on all treated sides.
- Retain a diversity of tree species to reduce the potential impact of an epidemic event (e.g. insect outbreak) that may kill some/all trees.

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- Trees that are below the crown of the crop tree or are not affecting crown development will be left to provide protection from wind damage, limit epicormic sprouting, and provide diversity for wildlife habitat.
- Trees removed that have marketable quality can be sold.
- All killed trees shall be left standing to provide wildlife habitat, except where snags will become a safety hazard (within 100 feet of a building, power line, road, etc.) or create a fire hazard. Snags that must be cut for safety reasons shall be left on site to become coarse woody debris on the forest floor (unless they create a fire hazard).
- As applicable, additional actions include:
 - Cutting damaging vines away from crop trees
 - Treatment of invasive plants that may be stressing crop trees
- Refer to criteria in NRCS Conservation Practice Standard Integrated Pest Management (Code 595) to assist with site-specific strategies for pest prevention, pest avoidance, pest monitoring, and pest suppression. Time tree felling to avoid buildup of insect or disease populations.
- Implement forest stand improvement activities in ways that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions. Protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation. For temporary access use NRCS Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.
- Use NRCS Conservation Practice Standard Access Road (Code 560), for more heavily used roads associated with forest stand improvement activities.
- Where slash and debris will be generated, use NRCS Conservation Practice Standard Woody Residue Treatment (Code 384) to appropriately treat slash and debris, as necessary, to assure that it will not present an unacceptable fire, safety, environmental, or pest hazard. Remaining woody material will be placed so that it does not interfere with the intended purpose or other management activities. Do not burn vegetative residues except where fire hazard or threats from diseases and insects are of concern or



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when other management objectives are best achieved through burning. When slash and other debris will be burned onsite use NRCS Conservation Practice Standard Prescribed Burning (Code 338).

- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.



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Documentation and Implementation Requirements

Participant will:

- Prior to implementation, identify the number of dominant and/or codominant mast producing crop trees to be developed based on site productivity and spacing guidance for mast trees, as required in state specific guidelines. (NRCS will provide technical assistance, as needed.)
- During implementation, release all crop trees on all sides by killing competing trees within 15 feet of the crop tree’s crown/canopy.
- During implementation, retain a diversity of tree species, cut damaging vines away from crop trees, and treat invasive plants that may stress crop trees.
- During implementation, leave all killed trees (unless removed as a merchantable product) standing to provide additional wildlife habitat, except where snags could become a safety hazard. Trees that must be cut for safety reasons will be left on site to become coarse woody debris on the forest floor.
- During implementation, protect the site from plant and animal pests, fire, and adverse impacts to the soil resource.

NRCS will:

- Prior to implementation, as needed, provide technical assistance in determining sites for enhancement implementation that meet specified criteria, including the number of crop trees per acre needed and the spacing of those trees.
- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement (as applicable for the site):
 - Forest Stand Improvement (Code 666)
 - Integrated Pest Management (Code 595)
 - Forest Trails and Landings (Code 655)
 - Access Road (Code 560)
 - Woody Residue Treatment (Code 384)
 - Prescribed Burning (Code 338)



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- During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation, document the number of crop trees per acre and average spacing and verify the post treatment stand conditions meet the specifications developed for the crop tree release activity.

NRCS Documentation Review:

I have reviewed all required participant documentation and have determined the participant has implemented the enhancement and all criteria requirements.

Participant Name _____ Contract Number _____

Total Amount Applied _____ Fiscal Year Completed _____

NRCS Technical Adequacy Signature Date



Oregon SUPPLEMENT TO
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Additional Documentation Requirements

- Refer to the forest management plan for guidance on applying this enhancement. If the FMP does not adequately address this enhancement, consult with your state or partner forester

Design Approvals & Acknowledgements:

| Design Approval | Date | Job Approval Authority |
|------------------------|-------------|-------------------------------|
| Designed by: | | |
| Approved by: | | |

Client's Acknowledgement Statement:

The client acknowledges:

- I have received a copy of the specification and understand the contents and requirements.
- It is my responsibility to obtain all necessary permits and/or rights and to comply with all ordinances and laws pertaining to the application of this practice.
- I will not begin installation of this practice until I have received appropriate approval to do so. I understand NRCS also has Federal and state laws to comply with that may take some time to address (e.g. cultural resources).

| Client's | Date |
|------------------|-------------|
| Signature | |

Certification Documentation:

| | |
|---|--|
| | Field Evaluation: Post-treatment inventory, measurements, notes, as-built, and supporting documentation (document completion in conservation plan), as required. |
| | Map(s): Including field numbers, fields treated, and units treated (may document on conservation plan map), as required. |
| | Photos or other supporting documentation (e.g., seed tags, soil tests, receipts, invoices, spray records, fertilizer records, etc.) |
| Brief Description of Work Accomplished (types of equipment used, date of application, extents and quantities installed, etc.) | |
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Certification Statement:

The employee certifies the implementation of this conservation practice:

- Meets the purpose, general criteria, and any required additional criteria as documented in the conservation practice standard and/or enhancement sheet.
- Meets the specifications contained herein and is complete.
- Conforms to my existing Job Approval Authority controlling factors and levels.

| Name | Date | Job Approval Authority |
|------|------|------------------------|
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| Field Level Certification – For multiple applications of this design. | | | | |
|--|------|---------|------------------|-----------|
| Land Unit/ Contract Item Number | Date | Unit(s) | Amount Installed | Certifier |
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