



CONSERVATION ENHANCEMENT ACTIVITY

E666H

CONSERVATION STEWARDSHIP PROGRAM

Increase on-site carbon storage

CONSERVATION PRACTICE: 666 - Forest Stand Improvement

APPLICABLE LAND USE: Forest; Associated Ag Land; Farmstead

RESOURCE CONCERN: Soil, Air

ENHANCEMENT LIFE SPAN: 10 years

Enhancement Description

Use forest management techniques to maintain and increase on-site carbon storage. These include, but are not limited to, applying uneven-aged management, using longer rotations, retaining cavity/den trees, snags, and down woody debris, and protecting or increasing soil organic matter.

Criteria

- Apply all of the following activities:
 - Retain all snags and downed woody debris of 6" diameter or larger at the base.
 - Identify leave-trees or clumps of trees that will be retained on site throughout their life span. These would ideally be trees that also provide wildlife habitat (e.g., future cavity/den trees, species that develop loose bark at older ages, mast producers, etc.).
 - Close unneeded roads and limit off-road vehicular traffic to avoid displacing the forest litter layer.
- Apply at least one activity from among the following as appropriate for the site:
 - Transition from even-aged to uneven-aged management.
 - Use regeneration methods (e.g., group selection, shelterwood, seed-tree, expanding gap) that call for retention of mature trees during the period when advanced regeneration develops.
 - Adopt techniques for maintaining and/or improving soil quality, specifically retention or organic carbon.
 - Maintain canopy cover to shade the forest floor and avoid hastening decomposition.



CONSERVATION STEWARDSHIP PROGRAM

- During forest management activities, apply the following criteria:
 - Identify and retain preferred tree and understory species to achieve all planned purposes and landowner objectives.
 - Use available guidelines for species and species groups to determine spacing, density, size-class distribution, number of trees, and amount of understory species to be retained. Schedule treatments to maintain the stand, as much as possible, consistent with chosen regeneration method, in a fully stocked condition based on appropriate stocking guide.
 - Describe the current and desired future condition of each stand that will be treated. Include the species, cover type, and size-class distribution. Stocking will be described in terms of crop trees per acre, basal area per acre, trees per acre, between-tree spacing, or by any other appropriate and professionally accepted density or stocking protocol.
 - 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. Refer to Conservation Practice Standard Forest Trails and Landings (Code 655) and Road/Trail/Landing Closure and Treatment (Code 654).
 - The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States’ Forestry Best Management Practices for Water Quality.

Documentation and Implementation Requirements

Participant will:

- Prior to implementation:
 - develop a new or updated forest management plan (FMP) that may reflect a change in management objectives.
 - review NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) that contains information needed to meet criteria for this enhancement.
 - develop an understanding of the management that this is required to increase carbon storage appropriate for the resource setting to include the following activities:
 - implement forest management activities that begin a transition from even-aged to uneven-aged management.
 - retain dead wood and select trees or clumps of trees that are intended to be left on the site throughout their life span.
 - use regeneration methods (e.g., group selection, shelterwood, seed-tree, expanding gap) that require retention of mature trees during the period when advanced regeneration develops.
 - adopt techniques for maintaining and/or improving soil quality, specifically retention of organic carbon.



CONSERVATION STEWARDSHIP PROGRAM

- maintain canopy cover to shade the forest floor and avoid hastening decomposition.
 - For forest lands, work with professional forester to prepare or update a current FMP that includes activities required to implement this enhancement. NRCS State Office will determine if a FMP will be required for Associated Ag Land or Farmstead settings. (Request NRCS technical assistance, as needed.)
 - Arrange to have a professional forester or wildlife specialist, as part of developing or updating an FMP:
 - identify and map areas, selected trees, or groups of leave trees that can serve as wildlife habitat and that are intended to be left on site throughout their lifespan.
 - describe amounts and condition of standing snags and fallen woody debris with 6" or larger basal diameter.
 - identify and map trails or roads that can be planned for closure.
 - Recognize that other NRCS Conservation Practice Standards may be needed to apply this enhancement. These may include:
 - Forest Trails and Landings (Code 655)
 - Road/Trial/Landing Closure and Treatment (Code 654)
 - Woody Residue Treatment (Code 384)
 - Acquire all necessary approvals and permits (i.e., local, state, or federal, as applicable).
- During implementation:
- Follow FMP guidelines follow state-approved Forestry Best Management Practices (BMPs) to protect streams, water quality, and minimize soil loss.
 - Follow FMP guidelines, criteria in NRCS Conservation Practice Standard Forest Stand Improvement (Code 666), and in specifications provided by NRCS, to ensure that:
 - overstory tree and understory species are retained to achieve all planned purposes and landowner objectives.
 - establish required spacing, density, size-class distribution, number of trees, and amount of understory species to be retained.
 - schedule treatments to maintain the stand, as much as possible, consistent with the chosen forest regeneration method, in a fully stocked condition based on appropriate stocking guide.
 - avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
 - Evaluate and review with NRCS any planned changes to verify they meet the enhancement criteria, as needed.
- After implementation:
- Ensure that retained leave areas are properly protected.
 - Update the FMP to documentation treatment acres, completion dates and methods, and document representative treatments with digital photos.



- Notify NRCS that the work has been completed and make treatment documentation available for NRCS review and certification.

CONSERVATION STEWARDSHIP PROGRAM

NRCS will:

- Prior to implementation:
 - Provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement:
 - Forest Stand Improvement (Code 666)
 - Woody Residue Treatment (Code 384)
 - Provide technical assistance in, as needed:
 - Guiding the proper sequence and timing of planned FMP treatment activities to meet requirements to maintain and increase on-site carbon storage.
 - Preparing specifications for applying this enhancement for each site using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan, or other acceptable documentation.
 - Ensure that the participant has a current and complete FMP describing all treatment activities for the resource setting.

- During implementation:
 - Provide technical assistance if requested by the participant.
 - Evaluate any planned changes to verify they meet the enhancement criteria.

- After Implementation:
 - Verify the enhancement was implemented according to the NRCS Conservation Practice Standard Forest Stand Improvement Standard (Code 666) specifications and meets enhancement criteria.

NRCS Documentation Review:

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

Participant Name _____

Contract Number _____

Total Amount Applied _____

Fiscal Year Completed _____

NRCS Technical Adequacy Signature

Date



WASHINGTON SUPPLEMENT TO CONSERVATION ENHANCEMENT ACTIVITY

CONSERVATION STEWARDSHIP PROGRAM

E666H

Additional Criteria for Washington

- In addition to the criteria specified in the National job sheet E666H the following additional criteria apply in Washington:
 - Use Forestry Technical Note 10 Table 1 for even aged management system. Use Forestry Technical Note 10 Table 2 for more flexibility when establishing appropriate spacing of overstory conifer and hardwood tree species needed for uneven aged management systems, when transitioning to uneven aged management systems and when managing for other ecosystem services such as (but not limited to) carbon storage.
 - When using regeneration harvests: Seed tree method leaves from 8-20 seed (crop or leave) trees per acre, depending on the tree species and its average seed dispersal area and Shelterwood method leaves from 25-35 trees per acre depending on the amount of shade needed for that species to become established on the specific site. **Contact WA DNR for guidance on WA Forest Practices Rules.**
 - Use the Conservation Practice 384 Woody Residue Treatment Specification Guide (FOTG, Section IV), USFS forest residue photo series, or use some other professionally accepted protocol for estimating the amount of down wood on site and/or created by silvicultural activities. In fire prone areas (dry forests) keep down woody debris (forest slash) to 9 tons/acre or less. The 9 tons will be lopped and scattered and < 2' in height. The woody debris should be distributed across the site and break continuity in order to disrupt the spread of a fire. Woody debris amounts greater than 9 tons/acre will need to treated through piling, chipping, crushing or removal (See WAC 332-24-652). Focus the 9 tons of down woody debris in logs of 6" or greater diameter at the small end. In moist forests, additional down logs 6"+ diameter may be left outside of the Extreme Fire Hazard areas described in WAC 332-24-650.
 - Use the general criteria of NRCS Conservation Practice 654 Road/Trail/Landing Closure and Treatment (FOTG, Section 4) for guidance when closing un-needed



CONSERVATION STEWARDSHIP PROGRAM

roads. See Forestry Technical notes 29- Forest Roads Inventory and Risk Rating and Engineering Technical Note 10- Forest Road Contracting, Construction and Maintenance for Small Forest Woodland Owners (FOTG, Section 1) for additional guidance on inventorying and treating forest roads.

- Based on WebSoil Survey soil suitabilities and limitations, protect soils sensitive to rutting, compaction and erosion, by using machinery only when the soil is dry or frozen, vegetating the roads trails and landing, and/or managing water runoff. All work done on Forest roads will be in compliance with WA Forest Practices Regulations (See WAC 222-24 and guidelines in Board Manual Section III)
- Site suitability for plants can be found in WebSoil Survey in a couple of soils reports - Ecological Site Descriptions (ESD), Forest Productivity and Rangeland and Forest Vegetation Classification. Natural Heritage Program ecological sites or USFS plant associations may be substituted for ESDs, if ESDs are unavailable.

Additional Documentation Requirements for Washington

- In addition to the documentation requirements specified in the National job sheet E666H the following additional documentation requirements apply in Washington:
 - Document the quantity by stage of the retained snags and the quantity and decay class of the retained down wood.
 - Document current and post treatment forest residue/fuel loading. Also document which method was used for estimating the amount of forest residue.
 - Document all road closure and erosion control treatments.
 - Document WA Forest Practice Application class and required compliance.