



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: Air, Soil

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 material.

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.
- 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.



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- Use regeneration methods (e.g., shelterwood, seed-tree) that encourage 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.
- Maintain canopy cover to shade the forest floor and avoid hastening decomposition.
- 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 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.
 - 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, understand that this enhancement only includes the development of a new or updated Forest Management Plan (FMP) that may reflect a change in management objectives. If the forest stand needs a treatment, it will be planned separately after the FMP is completed.
- Prior to implementation, review NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) that contains information needed to meet criteria for this enhancement.
- Prior to implementation, develop an understanding of the management that is required to increase carbon storage appropriate for the resource setting to include the follow activities (Request NRCS technical assistance, as needed.):
 - Transition from even-aged to uneven-aged management.
 - Retaining dead wood, and selecting trees or clumps of trees that are intended to be permanently left on the site.
 - Use regeneration methods (e.g., shelterwood, seed-tree) that encourage 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.
 - Maintain canopy cover to shade the forest floor and avoid hastening decomposition.
- Prior to implementation, 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.)
- Prior to implementation, as a part of developing or updating a FMP, arrange to have a professional forester or wildlife specialist:
 - identify and map areas, selected trees, or clumps 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.



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- Prior to implementation, when stand treatment is needed, plan NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) with NRCS and a professional forester. All of the following implementation requirements apply to the application of treatment, which may occur in the future.
- Prior to implementation, recognize that other NRCS Conservation Practice Standards may be needed to apply this enhancement. These may include:
 - Road/Trial/Landing Closure and Treatment (Code 654)
 - Woody Residue Treatment (Code 384)
- Prior to implementation, acquire all necessary approvals and permits (i.e. local, state, or federal, as applicable).
- During implementation, follow state-approved Forestry Best Management Practices (BMPs) to protect streams, water quality, and minimize soil loss.
- During implementation, 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 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.
- During implementation, as needed, evaluate and review with NRCS any planned changes to verify they meet the enhancement criteria.
- After implementation, ensure that retained leave areas are properly protected.
- After implementation, update the FMP to document treatment acres, completion dates and methods, and document representative treatments with digital photos.
- After implementation, notify NRCS that the work has been completed and make treatment documentation available for NRCS review and certification.



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NRCS will:

- Prior to implementation, provide assistance with interpretation of a current or updated FMP for sites where this enhancement will be applied.
- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards (CPSs) as they relate to implementing this enhancement:
 - Forest Stand Improvement (Code 666).
 - Woody Residue Treatment (Code 384).
- As needed, prior to implementation, NRCS will provide technical assistance in:
 - 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.
- Prior to implementation, 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.
- During implementation, 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



**IOWA SUPPLEMENT TO
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Additional Criteria for Iowa

- This enhancement must be implemented following a Forest Management Plan developed and/or recently updated by an Iowa Department of Natural Resources (IDNR) Forester or certified TSP.
- No additional requirements beyond the Forest Management Plan and national supplement are required.