



**CONSERVATION ENHANCEMENT ACTIVITY**

**E666L**

**CONSERVATION STEWARDSHIP PROGRAM**

**Forest Stand Improvement to rehabilitate degraded hardwood stands**

**Conservation Practice 666: FOREST STAND IMPROVEMENT**

**APPLICABLE LAND USE: Forest**

**RESOURCE CONCERN: Plant, Animal**

**ENHANCEMENT LIFE SPAN: 10 Years**

**Enhancement Description**

Hardwood forestland has been subject to poor logging practices (“high-grading”) for decades. Without professional forestry assistance the best species and individual trees are removed, often before maturity (“diameter-limit cutting”), leaving the poorest species and individual trees to regenerate the stand. Reversing this process requires cutting or killing poor quality trees while retaining any desirable species that might still be present. A combination of 3 silvicultural methods are applied: crop tree release, group selection (all trees removed from an area 0.25 to 1.0 acre in size) and small clear-cuts (all trees removed from an area 1-3 acres in size).

**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 tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.). Some crop tree species will meet multiple objectives (oak, cherry, black walnut, tulip-poplar, pine, spruce).
- Crop trees will receive a crown-touching release: any undesirable trees touching a crop tree crown will be cut or killed.

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- Areas of 0.25 acre or more with no crop trees will be clear-cut, up to 3 acres in size.
- Forest stand improvement activities will be planned and applied in a manner to meet the habitat requirements for wildlife species of concern as determined by the state's NRCS Wildlife Habitation Evaluation Guide (WHEG) and will be managed to achieve or maintain a value of 0.75 or greater.
- Invasive species will be controlled before tree cutting begins or concurrently with the cut.
- 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.
- Treatment activities will be conducted during periods of the year that accommodate reproduction and other life-cycle requirements of the targeted wildlife and pollinator species.
- Retain a diversity of tree species, where possible, to reduce the potential impact of an epidemic event (e.g. insect outbreak) that may kill trees of some species.
- Trees removed that have marketable quality can be sold.
- Killed trees that do not interfere with tree regeneration shall be left standing to provide wildlife habitat, except where snags will become a safety hazard (within 100 ft. 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, cut damaging vines away from crop trees
- 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.

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- 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 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, work with professional forester to develop forest management plan documenting which of the three methods will be used (crop tree release, group selection, or clear cut) and in what stands they will be implemented.
- Prior to implementation, work with professional forester and/or NRCS to determine ways to implement the enhancement that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
- Prior to implementation, work with professional forester and/or NRCS to protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation.
- Prior to implementation, work with professional forester and/or NRCS if temporary access use NRCS Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.
- Prior to implementation, work with professional forester and/or NRCS to delineate areas to be treated on a map (s).
- Prior to implementation, work with professional forester and/or NRCS to complete an Implementation Requirements sheet for NRCS Conservation Practice Standard Forest Stand Improvement (Code 666). Depending on method(s) specified in the plan, address:
  - Identify tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.).
  - Identify areas of 0.25 to 1 acre in size that will have group selection.
  - Identify areas of 1-3 acres in size that will be clear cut.
  - Specify how undesirable trees and shrubs will be cut or killed.

Stand #	Treatment Option

- Invasive species will be treated prior to implementation or concurrently with the cut.



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- During implementation, notify NRCS of any planned changes to verify they meet the enhancement criteria.
- During implementation, verify that killed trees/snags that do not interfere with regeneration are left standing or cut and left on site (if safety hazard).
- During implementation, cut damaging vines away from crop trees.
- After implementation, notify NRCS that implementation has been completed.

**NRCS will:**

- Prior to implementation, provide and explain the following NRCS Conservation Practice Standards as they relate to implementing this enhancement.
  - Integrated Pest Management (Code 595)
  - Woody Residue Treatment (Code 384)
  - Prescribed Burning (Code 338)
  - Access Road (Code 560)
- Prior to Implementation, provide and explain, as needed, NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) and assist the participant in completing an Implementation Requirements sheet. Depending on method(s) specified in the plan address:
  - Identify tree species (crop trees) that meet objectives for the stand (timber, wildlife, visual quality, etc.).
  - Identify areas of 0.25 to 1 acre in size that will have group selection.
  - Identify areas of 1-3 acres in size that will be clear cut.
- Prior to implementation, assist landowner to determine ways to implement the enhancement that avoid or minimize soil erosion, compaction, rutting, and damage to remaining vegetation, and that maintain hydrologic conditions.
- Prior to implementation, assist landowner to protect site resources by selecting the method, felling direction and timing of tree felling, and heavy equipment operation. Provide and document with Participant on NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) Implementation requirements sheet.
- Prior to implementation, if temporary access is needed, provide participant with NRCS Conservation Practice Standard Forest Trails and Landings (Code 655), to protect soil and site resources from vehicle impacts.



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- Prior to implementation, as needed, provide assistance in delineating treatment area on a map(s).
- Prior to implementation, verify that invasive species have been treated or treating concurrently with cut.
- Prior to implementation, Wildlife Habitat Evaluation Guide (WHEG) or State equivalent must be completed. **Existing condition WHEG score:** \_\_\_\_\_ **Planned after implementation WHEG score:** \_\_\_\_\_
- During implementation, as needed, evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation, verify that killed trees/snags that do not interfere with regeneration are left standing or cut and left on site (if safety hazard).
- After implementation verify that damaging trees have been removed from crop trees.
- After implementation, Wildlife Habitat Evaluation Guide (WHEG) or State equivalent must be completed and have a value of 0.75 or greater. **After implementation WHEG score:** \_\_\_\_\_
- After Implementation, verify the enhancement was implemented according to the NRCS Conservation Practice Standard Forest Stand Improvement (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

**Design Approvals & Acknowledgements:**

<b>Design Approval</b>	<b>Date</b>	<b>Job Approval Authority</b>
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).

<b>Client's</b>	<b>Date</b>
<b>Signature</b>	

**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.)	

**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

<b>Field Level Certification</b> – For multiple applications of this design.				
Land Unit/ Contract Item Number	Date	Unit(s)	Amount Installed	Certifier