



CONSERVATION ENHANCEMENT ACTIVITY

E666K

CONSERVATION STEWARDSHIP PROGRAM

Creating structural diversity with patch openings

Conservation Practice 666: Forest Stand Improvement

APPLICABLE LAND USE: Forest, Associated Ag Land, Farmstead

RESOURCE CONCERN: Plants, Animals

PRACTICE LIFE SPAN: 10 Years

Enhancement Description:

Forest stand improvement that creates patch openings. Size, shape, and arrangement of patches will be based on natural features, and emulate patches that would result from natural disturbance regimes of wind or fire, varying geographically and by forest type, and by tree species desired from natural regeneration. The treatment will create diversity in stand composition and structure, increase pest resistance, and enhance wildlife food availability. Openings may provide regeneration sites and restore natural plant communities, and achieve or maintain a desired understory plant community for wildlife habitat. **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.

- Develop or update a forest management plan in consultation with NRCS personnel and a professional forester to direct the management of the property.
- This enhancement may be applied only to forested acres that have an “acceptable growing stock” level. For tree species with stocking charts, this is at least the B line, the lowest level of a fully stocked stand.
- The size of patches to be treated for wildlife can vary from 1 to 10 acres, be distributed throughout the forest and cannot total more than 30% of the acres meeting the “acceptable growing stock” level.
- Size of patches to be treated for degraded plant condition can vary from 1 to 10 acres, be distributed throughout the forest and cannot total more than 50 percent of the acres meeting the “acceptable growing stock” level.

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- Forested acres targeted for patch development must contain species for regeneration from the NRCS state list of suitable trees. Species on this list have the ability to regenerate from seed, sprouts, or other natural regeneration sources.
- Preferentially locate patch openings in areas that lack crop trees or wildlife trees, and where there is an aggregation of trees that are:
 - At high risk of mortality or failure (unless retained as a wildlife tree)
 - Of low crown vigor
 - Of poor stem form and quality
 - Less-desirable species.
- Trees removed during patch development having marketable quality can be sold.
- 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).
- Slash and cull trees must be managed if the material interferes with the production of wildlife food. The material may be managed as follows:
 - Windrowing or Wildlife piles
 - Chipping or Cutting for firewood
 - In appropriate stands, prescribed burning may be used.
- 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.
- Control measures may be used on undesirable competing vegetation, to favor the development of desirable vegetative communities on the site. Vegetation may be treated by chemical methods such as spraying or single stem treatments, or mechanical methods like a heavy duty brush cutter or similar equipment. Refer to criteria in NRCS Conservation Practice Standard Integrated Pest Management (Code 595).



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- For areas adjacent to patch openings, leave residual trees and shrubs that provide a diversity of wildlife food sources.
- 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.
- The enhancement will comply with all applicable federal, state, and local laws and regulations, and with States' Forestry Best Management Practices for Water Quality.
- If management of the remaining forest area (between patch openings) provides a conservation benefit, management can be accomplished at the same time as patch opening creation. Use applicable criteria from NRCS Conservation Practice Standard Forest Stand Improvement (Code 666) when managing the general forest area.



Documentation and Implementation Requirements:

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Participant will:

- Prior to implementation, work with NRCS or your forester to develop or update a forest management plan which will include management practices to address the documented resource concerns. (NRCS will provide technical assistance, as needed.)
- Prior to implementation, select areas for patch openings that contain species for regeneration from the NRCS state list of suitable trees that have the ability to regenerate from seed, sprouts, or other natural means. Document that the trees are present and vigorous enough to regenerate. (NRCS will provide technical assistance, as needed.)
- Prior to implementation, determine the resource concern, size, shape, location, and distribution of openings throughout the forest. The size of each opening ranges from 1-10 acres, and the total acreage in openings will be less than 30% of eligible forest acres based on stocking. Locate openings in areas that lack crop trees or wildlife trees and where there is an aggregation of trees that are:
 - At high risk of mortality or failure
 - Of low crown vigor
 - Of poor stem form or quality
 - Less-desirable species
- During implementation, manage slash and cull trees by windrowing, creating wildlife piles, chipping, cutting for firewood, and/or prescribed burning if appropriate.
- During implementation, protect the site from plant and animal pests, fire, and adverse impacts to the soil resource.
- After implementation, provide NRCS a map showing the location of patches and photos documenting that patch cuts were completed according to specifications.

NRCS will:

- Prior to implementation, verify the enhancement activity is planned for acres that meet the criteria within the enhancement guide sheet.
- Prior to implementation, provide technical assistance in:
 - Identifying size, shape, location, and distribution of openings, including percentage of the stand that will be in openings, to meet the criteria within the enhancement guide sheet.



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- Evaluating stocking and acceptable growing stock for both pre- and post-treatment stand conditions.
- Identifying desired species to be regenerated in the openings.
- Prior to implementation, provide and explain NRCS Conservation Practice Standards Forest Stand Improvement (Code 666), CPS Woody Residue Treatment (Code 384), CPS Prescribed Burning (Code 338), CPS Integrated Pest Management (Code 595), and CPS Forest Trails and Landings (Code 655) as they relate to implementing this enhancement.
- During implementation, evaluate any planned changes to verify they meet the enhancement criteria.
- After implementation, verify the planned patch openings were established to specifications developed for the site.

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.