NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS

(Acre)

CODE 643

DEFINITION

Restoring, conserving, and managing unique and diminishing native terrestrial and aquatic habitats.

PURPOSE

To return aquatic or terrestrial ecosystems to their original or usable and functioning condition and to improve biodiversity by providing and maintaining habitat for fish and wildlife species associated with the ecosystem.

CONDITIONS WHERE PRACTICE APPLIES

Sites or areas that once supported or currently support a unique, dwindling, or imperiled native plant and animal community.

CRITERIA

General Criteria

All necessary local, state, and federal permits shall be obtained by the landowner (or designee) prior to the restoration.

Methods used will be designed to protect the soil resource from erosion and compaction.

Invasive plant and animal species, and noxious weeds shall be controlled. When possible, control will be limited to that necessary to control undesirable species while still protecting habitat that benefit native pollinators and other fish and wildlife species that depend on the site for food, cover, and water.

Undisturbed areas shall be conserved on a sufficient extent of the area to sustain disturbance–intolerant species.

When planting is necessary, plant species and seeding rate specifications will be prepared to achieve desired habitat condition.

Only high quality and ecologically adapted plant materials will be used. When feasible, only local ecotypes will be used.

Site preparation, planting dates, methods, and plant material care and handling shall optimize vegetation survival and growth.

A pre-treatment habitat assessment of the targeted area will be used to document baseline conditions for comparison with post-treatment habitat conditions.

Goals or success criteria will be established using reference sites for guidance and comparison. Where no such reference site exists, use ecological site descriptions or historic data to establish restoration goals.

Use of fertilizers, pesticides and other chemicals shall not compromise the intended purpose of this practice.

Attempt to restore the site through management practices rather than planting, if plants characteristic of the ecological site are still present.

Management and restoration practices will not disturb designated nesting cover areas during the primary nesting period from April 1 through June 30.

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service State Office or visit the electronic Field Office Technical Guide.

Criteria Applicable to Native Prairie Sites

Use Ecological Site Descriptions to ensure that the climax plant community is native prairie dominated by grasses, forbs, legumes, and shubs, rather than woodland.

Evaluate the site to determine if habitat will be restored through management techniques or if planting/seeding will be required.

Prairie sites that have not been converted to other uses in the past will be restored through the use of management practices unless seeding/planting is determined to be necessary and approved by the NRCS State Grazing Lands Specialist.

Where management techniques will be used to restore prairie habitat, the following Oklahoma NRCS practices will be used alone or in combination to achieve the desired habitat conditions:

- Prescribed Burning (338) – Can be used to alter plant succession, control encroachment of undesirable herbaceous and woody species, improve health and vigor of desirable plants, reduce litter, and stimulate seed and seedling production. Refer to the standard for specific information on timing, frequency, and other techniques best suited for restoration efforts.
- Prescribed Grazing (528) – Can be used to improve health and vigor of plants, improve soil condition, alter plant succession in favor of desirable species, reduce litter, and stimulate seed production. Refer to the standard for specific information on grazing methods best suited for restoration goals.
- Brush Management (314) – Use biological, mechanical, or chemical methods to maintain the desired balance between herbaceous and woody species in the plant community, to remove noxious or invasive woody vegetation, to open the understory for increased production of desirable herbaceous plants, and to increase usable habitat for grassland birds and other wildlife. Brush should not be decreased below the percentage of woody species as described in the Ecological Site Description. In most situations the use of Individual Plant Treatment (IPT) would be the preferred method of treatment. Specific guidance on managing brush is provided in the practice standard.
- Use Exclusion (472) – Use this practice to exclude livestock or other activities and allow the plant community to recover. This practice can be used to improve health and vigor of plants that have been subject to excessive grazing or other disturbances. This practice may also be used as a pre-requisite to prescribed burning in order to produce an adequate fuel supply for burning.

Sites that have previously been converted to cropland, pastureland, or other land uses and no longer support characteristic native plants of the ecological site, will be planted or seeded according to the following guidance:

- All plantings will be in accordance with the Oklahoma NRCS Range Planting (550) standard or Oklahoma NRCS Tree/Shrub Establishment (612). Plantings will follow the tables contained in the Range Planting as well as the guidance below.
- Additionally, plantings or seedings made under this standard will contain no less than 8 grasses, at least 10 species of forbs or legumes and 1 shrub species where applicable in the mixture.

Criteria Applicable to Oak Savanna Sites

Use Ecological Site Descriptions to ensure that the site is transitional between prairie and woodland where climax vegetation is predominately an herbaceous mixture of grasses, forbs, and legumes with a scattered canopy of oak/hickory trees.

All of the criteria described above for restoring and managing Native Prairies (including the requirement that plantings and seedings will be based on restoring the plant community to the ecological site condition) will apply to restoration and management of savannah sites.

The following Oklahoma NRCS practices will be used as needed to achieve the habitat restoration and management goals under this standard:

- Range Planting (550), Tree/Shrub Establishment (612), Prescribed Burning (338), Prescribed Grazing (528), Brush Management (314), and Use Exclusion. (472).

Oak savannahs are characterized by limited tree diversity. Post oak will be the targeted management species and should be the dominant species on most sites. Where present, bur oak, blackjack oak and hickory will also be retained as a component of the stand and addressed in the restoration and management plan. Other desirable tree species such as American elm, hackberry, pecan, and persimmon can also comprise a small percentage of the stand where they would be found historically.

Refer to Ecological Site Descriptions where available and Table 1 of this standard for information on tree spacing, densities, and percent canopy cover of trees.

Criteria Applicable to Bottomland Hardwood Forests

Use Ecological Site Descriptions and soils information to ensure that the climax vegetation is predominately bottomland hardwood trees with an understory of shrubs and cool season herbaceous vegetation.

Restore original hydrology to the extent possible in order to support the desired plant community.

Determine if the site will be restored by tree planting, direct seeding, natural regeneration, or by management practices. Seed sources for hard mast producing trees are often insufficient to provide the desired stocking rates for natural regeneration and must be seeded or planted.

On sites where planting or seeding is required, a minimum of 3 tree species will be established including at least 2 species of hard mast producing trees.

Refer to the Oklahoma NRCS Tree/Shrub Establishment (612) standard for specific information on species selection, adaptability, spacing requirements, planting seasons, growth habits, and site preparation.

Refer to the Oklahoma NRCS Forest Stand Improvement (666) standard for guidance on managing an existing stand of bottomland hardwoods where thinning or removal of undesirable trees is required.

Supplemental practices to be used for restoring or maintaining bottomland forests include the following Oklahoma NRCS standards: Prescribed Burning (338), Prescribed Grazing (528), Brush Management (314), and Use Exclusion (472).

CONSIDERATIONS

Confer with biologists and range specialists from other agencies and organizations to develop guidelines and specifications for conserving declining habitats especially in areas where ecological site descriptions are currently unavailable.

Consider using this practice to enhance the habitat of threatened and endangered species.

Consider the size and location of the restored area as it relates to the home range and habitat requirements of desired wildlife species.

Consider including flowering plants in seed mixtures and tree/shrub plantings that are beneficial to pollinators.

PLANS AND SPECIFICATIONS

Prepare site-specific plans and specifications following appropriate related standards and specifications.

Site specific restoration plans and specifications shall be developed based on this standard. A plan includes information on the location and extent, vegetation establishment, management and maintenance requirements.

Specifications will include:

- Management methods needed to restore existing vegetation to the desired condition.
- Site preparation sufficient to establish and grow selected species.

- Species selection and seeding rates to accomplish the planned purpose. Planting dates, care, and handling of the seed and other plant materials to ensure that they have an acceptable rate of survival.

- Statement detailing species selection, sources, viability, and quality of seed and plant materials to be used.

OPERATION AND MAINTENANCE

A restoration project may require many years to achieve the biological diversity that approximates a native habitat. Proper management of the restored area is essential for the restoration to achieve and maintain the full potential of the site for the desired habitat type. As the vegetation matures, and goes through successional stages, changes in management practices including introduction of new species may be required to maintain and enhance the desired habitat type.

Vegetation management and maintenance activities will not be conducted on fields or portions of fields set aside for nesting habitat during the nesting season from April 1 through June 30.

Habitat conditions should be evaluated on a regular basis to adapt the conservation plan and schedule maintenance to ensure the desired habitat condition.

Management and maintenance activities should be rotated across the restoration area to mimic natural disturbance regimes.

REFERENCES

Cambridge University Press, New York, Second Edition, 695 pp. Barbour, M.G., and W. D. Billings (eds.). 2000. North American Terrestrial Vegetation.

Kuchler, A.W. 1964 Potential Natural Vegetation of the Conterminous United States. American Geography Society, Special Publication 36. 116 pp. 1975.

American Geography Society, Special Noss, R.F., E.T. Laroe III, and J.M. Scott. 1995. Endangered Ecosystems of the United States: A preliminary assessment of loss and degradation. Biological Report 28; National Biological Service. Washington D.C.

Table 1. Use for Guidance on Planting or Managing Trees on Oak Savannah Sites

Refer to Ecological Site Description (ESD) for information on the appropriate tree species and percentage of tree cover for the site. Use the following chart for guidance on reducing the level of tree stocking on existing oak dominated stands where the goal is to restore the open savannah condition (Law, Johnson, and Houf 1994).

Example: Where the ESD describes a tree canopy cover of 20 percent for the site and the average tree diameter (DBH) is 8 inches, the number of trees should be thinned to 40 trees per acre. Interpolations can be made where the tree canopy cover for the site is described as 5, 15, or some other percentage not specifically shown in the chart.

Average tree diameter (DBH) in inches (overstory trees only)	Trees per acre 10 % canopy)	Trees per acre (20 % canopy)	Trees per acre (30 % canopy)
4	55	105	160
6	40	60	80
8	20	40	60
10	15	25	40
12	10	20	30
14	7	15	20
16	5	11	16
18	4	8	13
20	3	7	11

NOTE: These numbers represent full crown development