

NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RESTORATION AND MANAGEMENT OF RARE OR DECLINING HABITATS

(Ac.)

CODE 643

This Standard is currently under revision and will be available by November 2006. For additional information, contact Mike Zeman, State Biologist, at mike.zeman@tn.usda.gov.

DEFINITION

Restoring and managing rare and declining habitats and their associated wildlife species to conserve biodiversity.

PURPOSE

To restore or protect and properly manage rare, endangered, or drastically declining terrestrial ecosystems.

CONDITIONS WHERE PRACTICE APPLIES

Sites that previously or currently support the rare or declining habitat targeted for restoration or management.

Rare or declining habitats in Tennessee addressed by this standard include:

1. Native Tallgrass Prairies – Historically applicable statewide.
2. Cedar (limestone) Glades/Barrens – Applicable to the inner Nashville Basin of the Interior Plateau. Characterized as shallow soils over limestone dominated by annual and perennial forbs, some annual grasses and small amounts of perennial grass, and ringed with thickets

of cedar and hardwoods.

3. Oak Savannas - Applicable from the Southern Appalachians west. Typically a transition area between tallgrass prairies and eastern deciduous forest. Characterized as having an oak dominated tree canopy from 10 up to 50 percent, with predominantly forb and native grass understory.
4. Barrens – Applicable to the Highland Rim areas of the Interior Plateau. Characterized as deep soils that developed under forest vegetation, but maintained as “treeless” and in native grasses dominated by little bluestem.
5. Southern Appalachian bogs – Applicable to the Blue Ridge Mountains.
6. Southern Appalachian Balds – Applicable to high mountain elevations dominated by herbaceous communities. Balds are typically on Federal lands.

GENERAL CRITERIA

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

Invasive species shall be controlled. When

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

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possible, control will be done on a “spot” basis to protect native forbs and grasses that benefit native pollinators and other wildlife.

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

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 and methods, and plant material care and handling shall optimize vegetation survival and growth.

A pre-treatment assessment of the targeted habitat will be documented to provide a baseline for comparison with post-treatment habitat assessment.

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

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

CRITERIA SPECIFIC TO NATIVE TALLGRASS PRAIRIES

Native prairie plantings will consist of at least three native grass species and two native forbs. A maximum of four pounds of pure live seed per acre of grass seed and two to five pounds of forb seed will be required for establishment purposes.

All existing non-native plants will be chemically eradicated by use of an approved

herbicide when natural regeneration or establishment of native grasses is planned.

CRITERIA SPECIFIC TO CEDAR (LIMESTONE) GLADES/BARRENS

Forbs must be the dominant seed in both species and seeding rate when establishing cedar glades by planting.

Forbs planted must be adapted to cedar glades/barrens.

Cedar tree encroachment must be eliminated within open glade areas. When cedar trees cannot be controlled by prescribed burning, they must be cut.

Livestock exclusion is required to prevent plant damage by consumption and trampling.

CRITERIA SPECIFIC TO OAK SAVANNAS

Establish hardwood species with thick bark that can withstand fire, i.e. white oak, post oak, bur oak, black oak, blackjack oak, persimmon, shagbark hickory, and mockernut hickory.

The conversion of existing wooded areas to this habitat type will require that less than 10 percent of the site remains in woody cover.

The establishment of the herbaceous plant community will include at least four native grasses and ten forb species.

Woody vegetation shall be established in a widely spaced pattern to a basal area of approximately 10 to 20 square feet per acre.

Tree planting shall consist of a minimum of two species planted at a density not to

exceed 25 seedlings per acre (approximately 32' x 32' spacing).

CRITERIA SPECIFIC TO SOUTHERN APPALACHIAN BOGS

All constructed drainage features shall be removed or altered to the degree required to restore either the historic or target hydrologic condition.

Tree and shrub canopy will be controlled to maintain open sunny areas. When restoring a bog by eliminating canopy closure, canopy removal shall be limited to less than 50 percent per year to avoid damaging herbaceous bog plants.

Non-native plants shall be controlled.

An adequate filter strip or riparian buffer will be established around the site to maintain satisfactory water quality.

Livestock exclusion is required to prevent plant damage by consumption and trampling.

CONSIDERATIONS

Confer with other agencies and organizations to develop guidelines and specifications for conserving declining habitats.

Vegetative manipulations to restore plant and/or animal diversity can be accomplished by prescribed burning or mechanical, biological or chemical methods, or a combination of the four. Typical specific treatments may include tree canopy thinning, prescribed burning, species introduction (planting), chemical control of undesirable plants, mowing, disking, and planned grazing. Livestock exclusion, however, should be considered for all

habitat types due to the difficulty of avoiding damage to the plant community.

Consider utilizing southern exposure slopes, well-drained soils, or drought-prone areas when establishing oak savannas.

Prescribed burns should be used as the primary management tool for maintaining prairies, barrens, and cedar glades. To control woody invasion, consider conducting burns at a frequency of one-two years.

To control woody succession with fire, consider conducting a burn just after spring bud break, or in early fall before leaf drop.

When establishing Barrens habitat, consider utilizing little bluestem as the major native grass species in the mixture.

In removing trees from a bog, consider girdling or tree injection instead of physical removal. This method will open the canopy with minimal impact to the site while providing additional snag habitat.

In considering bog restoration sites, locate remnant bog plant communities.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each habitat type. Specifications shall be recorded using approved specification sheets and job sheets. Narrative statements in the conservation plan or other acceptable documentation may provide supplemental information to the specifications and job sheets.

OPERATION AND MAINTENANCE

Haying, grazing, and other management activities will be planned and managed

(including exclusion) as necessary to achieve and maintain the intended purpose.

Vegetation management and maintenance activities shall not be conducted during the primary nesting season of April 15 to August 15, except when necessary to achieve the desired habitat condition.

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

For oak savannas, woody vegetation shall be maintained in a manner that prevents the site from exceeding 50 percent canopy cover.

For tallgrass prairies, woody invasion shall be controlled to the extent woody species do not constitute more than 10 percent of the plant community. Control of woody succession must occur on a significant portion of the site outside the primary nesting season of April 15 to August 15.

Management and maintenance activities should be rotated to mimic natural disturbance regimes.

Mowing to establish or maintain the habitat types addressed in this standard should not be the sole method of disturbance. Mowing alone can damage desirable native grasses and forbs and may not reduce the number of woody stem on the site.

Grazing as a means of controlling woody vegetation in bogs should be light to moderate, limited to winter only (to reduce bog turtle mortality) at a stocking rate not to exceed one animal unit per acre.

COMPLIMENTARY PRACTICES

- Fence

- Use Exclusion
- Prescribed Grazing
- Watering Facility
- Prescribed Burning
- Filter Strip
- Riparian Herbaceous Cover
- Pest Management
- Early Successional Habitat Development/Management
- Wetland Restoration

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