

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**RESTORATION AND MANAGEMENT OF DECLINING HABITATS**

(Acre)  
CODE 643

**DEFINITION**

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

**PURPOSE**

Provide habitat for rare and declining species.

**CONDITIONS WHERE PRACTICE APPLIES**

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

In Illinois there are three recognized critically endangered, endangered or threatened ecosystems (Noss, et al, 1995). These declining habitats and where they can be restored are:

1. Native prairies of all types found in Illinois –Prairies of different types existed on prairie soils<sup>1</sup> in Illinois. In addition to soils, sites where prairies existed can be identified by the landscape position and remnant plant species, such as hill prairies and sand prairies.
2. Oak savanna – On areas that once supported savannas. Savannas typically occurred on prairie soils and intergrade soils<sup>1</sup> in the savanna region indicated in figure 1. Sites where savannas existed can be identified by the landscape position, soil type, remnant plant species and remnant

tree morphology that indicates the trees grew under savanna conditions.

3. Wetlands of all types – hydric soils statewide.

Also refer to local historical information and the original Public Land Survey notes for the type of pre-settlement vegetation that existed on a particular site.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Evaluate the site to determine if the habitat can be rehabilitated through vegetative manipulation of remnant vegetation, or if the site must be established (reconstructed) by planting, seeding, and/or structures as in the case of a recently cultivated field.

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

Vegetative manipulation to maximize plant and/or animal diversity can be accomplished by prescribed burning, mechanical, biological or chemical methods, or a combination of the four. Prescribed burning will be utilized instead of mowing where feasible.

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

Invasive species and noxious weeds shall be controlled. When possible, control will be done on a "spot" basis to protect native forbs

1- Prairie soils – soils developed under prairie vegetation and have thick dark surface (>10") and subsurface layers.

Intergrade soils – soils that developed under open-grown oak/hickory with a prairie vegetation understory and have a thin moderately dark surface (<10") with light subsurface layers.

Timber soils – soils developed under forest vegetation and have thin dark organic layer (~1") with light colored surface and subsurface layers.

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 [Field Office Technical Guide](#).

and legumes that benefit native pollinators and other wildlife.

Management practices and activities are not to disturb cover during the primary nesting period in Illinois. Exceptions could be granted for periodic burning or mowing during establishment or when necessary to maintain the health and/or vigor of the plant community.

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

Species will be adapted to soil-site conditions.

Species will be suitable for the planned purpose.

Seeding rates will be adequate to accomplish the planned purpose.

Planting dates, and care in handling and planting of the seed will ensure that planted materials have an acceptable rate of survival.

Site preparation shall be sufficient for establishment and growth of selected species.

Timing and use of equipment will be appropriate for the site and soil conditions.

Haying and grazing (if allowed) will be managed as necessary to achieve and maintain the intended purpose.

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

A pretreatment 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.

## CONSIDERATIONS

Confer with other agencies, organizations and local specialists experienced in restoration of the desired habitat type when developing site specific plans.

In selection and management of plant species, consider long term land use objectives and habitat needs of target wildlife species.

Consider rotating management/maintenance treatments throughout the managed area.

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

When determining the size and location of the restored area, consider the minimum habitat requirements of desired wildlife species, and other species of concern that may be benefited.

## PLANS AND SPECIFICATION

For wetland restorations, prepare site specific plans and specifications following the Illinois NRCS 657 Standard for Wetland Restoration.

For prairie and savanna restoration on cultivated sites or pastures with introduced species, prepare site-specific seeding and tree/shrub establishment plans and specifications using this standard and NRCS IL 643 Seeding Calculator and Job Sheet. The plan shall include information about the location and extent, vegetation establishment including species and seeding or planting rates, management and maintenance requirements.

For restoration of existing degraded habitats (sites that are not cultivated and still have some of the characteristic species of the pre-settlement habitat type), it is often best to attempt restoration through management techniques such as prescribed burning, brush control, and interseeding with desired species. Develop appropriate site-specific plans and specifications to:

- Remove exotic or aggressive trees, shrubs and herbaceous species (e.g. garlic mustard, glossy buckthorn).
- Remove excessive stocking of trees. For prairies, thin trees and shrubs to less than 10% canopy coverage with no trees over 12 feet high. For savannas, remove tree and shrub species that are not typical for the type of savanna being restored. Then thin remaining trees to 10 to 30% tree canopy cover if possible. Never leave more than 80% tree canopy cover.

- Collect appropriate grass and forb seed and sow in areas opened up as brush is removed.
- Burn one-third to one-half of the area every year on a rotating schedule.
- If species diversity does not increase to the desired level after several years, interseed or plant missing species into the existing stand.

For more information on restoring existing degraded prairies and savannas see: *The Tallgrass Restoration Handbook: For Prairies, Savannas, and Woodlands*, Edited by Stephen Packard and Cornelia Mutel.

## OPERATION AND MAINTENANCE

A restoration project may require many years to achieve the biological diversity that approximates a native habitat. In the case of a newly established savanna or wooded wetland, a very long time is required for the trees to mature. 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.

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 to mimic natural disturbance regimes.

**Management recommendations for prairie maintenance:** Prairie communities are best managed by the use of prescribed fire. During the establishment of the prairie, prescribed burning should be conducted every year if there is enough fuel to carry a fire, or mowed six inches or higher to control weed competition. After this period, prescribed burning can be conducted every three to five years. If possible, divide the area into smaller management units and burn part of the area each year. Prescribed burning shall take place

during the dormant season (late fall to early spring). If burning is not an option due to site restrictions, one third of the area may be mowed, 8 to 16 inches high, each year. Mowing after establishment will be done outside the nesting season. Spot mowing or spraying may be needed to control weed problems. Woody vegetation should be controlled and not allowed to shade out the prairie plants.

For more information on prescribed burning, see the NRCS Prescribed Burning Standard (338) and NRCS Ecological Sciences Technical Note No. 2 – Using Prescribed Fire on Illinois Grasslands.

**Management for oak savanna.** – Oak savannas are plant communities that developed and are maintained by fire. Follow the same prescribed burning recommendations above with the exception that small trees of remnant species (planted or volunteers) should be protected from fire until they reach a size resistant to fire, usually four to six inches in diameter at breast height.

## CITATIONS AND REFERENCES

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Noss, Reed F.; LaRoe III, Edward T.; Scott, Michael J. 1995. *Endangered Ecosystems of the United States: A Preliminary Assessment of Loss and Degradation.* U.S. Department of the Interior, National Biological Service, Biological Report 28. US Environmental Protection Agency. 1995. Midwest Oak

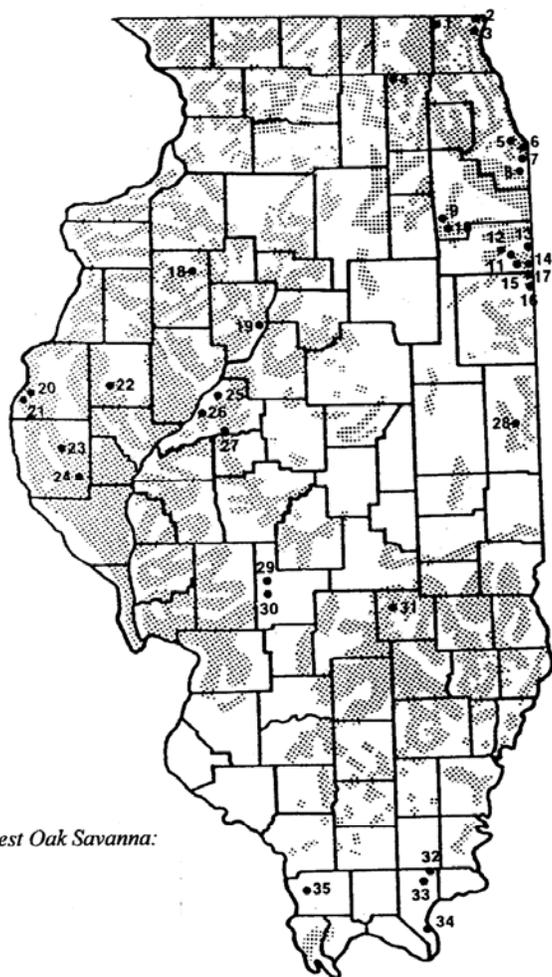
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**Figure 1**

**Potential Presettlement Oak Savanna Region in Illinois**



*Extent and Status of Midwest Oak Savanna: Presettlement and 1985*  
Nuzzo, Victoria A.  
Natural Areas Journal  
Vol. 6, No. 2 1986

Adapted From: Fehrenbacher, et al. (1984)  
Henson (1981)  
Kilburn (1959)  
Moran (1978)