

## Restoration and Management of Declining Habitats (Acre) 643

### DEFINITION

Restoring and conserving rare or declining native vegetative communities and associated wildlife species to conserve biodiversity.

NOTE: The Natural Resources Conservation Service (NRCS) uses the term “wildlife” to include all animals, terrestrial and aquatic.

### PURPOSES

Provide habitat for rare and declining wildlife species.

### CONDITIONS WHERE PRACTICE APPLIES

On any landscape which once supported or currently supports the habitat to be restored or managed.

The declining habitats identified below are those referenced for Michigan as critically endangered, endangered, or threatened ecosystems. Michigan has a number of habitats which are in decline. Following are three declining habitats and the locations where they can be restored. As restoration techniques are developed, more habitats will be added to this standard.

**Tallgrass Prairie** - On areas that once supported tallgrass prairies in the state, based on Circa 1800 vegetation maps, or other supported documentation.

**Oak Savanna** - On areas that once supported savannas, based on Circa 1800 vegetation maps, or other supported documentation. Savannas typically occurred on prairie and transition soils.

**Red Pine and White Pine Forests** - On areas that once supported native stands of red and white pine, based on Circa 1800 vegetation maps, or other supported documentation.

### CRITERIA

#### General Criteria Applicable To All Purposes

- Methods used will be designed to protect the soil resource from erosion and compaction.
- Vegetative manipulations to restore plant and/or animal diversity can be accomplished by prescribed burning or mechanical, biological, or chemical methods (including grazing or haying), or a combination of the four.
- Management measures must be provided to control invasive plant species. Refer to Section I of the Field Office Technical Guide (FOTG).
- To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds will be done on a “spot treatment” basis to protect forbs and legumes that benefit native pollinators and other wildlife.
- Management and maintenance activities will generally be restricted to the period defined in the Grassland Activity Dates in the Ecological Specifications of the FOTG.
- Mowing may be needed during the establishment period to control weeds.
- Rotate periodic planned management or other treatments throughout the restored or managed area.
- Where feasible, prescribed burning will be utilized instead of mowing or grazing. Refer to Michigan Standard 338 - Prescribed Burning. Burns will be conducted according to a prescribed burn plan.
- Native species seeded or planted will be adapted to the soil-site conditions.
- Seeding and planting rates will be adequate to accomplish the planned purpose.
- Only high quality and ecologically adapted native plant materials will be used.

- Planting dates, and care in handling and planting of the plant material will ensure that the established vegetation will 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.

#### **Criteria For Tallgrass Prairie Restoration**

Refer to the Conservation Management Sheet “Tallgrass Prairie Restoration.”

#### **Criteria For Oak Savannah Restoration**

Refer to the Conservation Management Sheet “Oak Savannah Restoration.”

#### **Criteria For Red And White Pine Restoration**

Apply this practice to sites where the soils and climate are suitable for growing red pine (*Pinus resinosa*) and white pine (*Pinus strobus*). Sites will be located within the historic range. Refer to page 41 of “Michigan Trees” by Barnes and Wager.

1. Restoration Design:
  - A. Each planting site shall contain a mixture of primary and secondary species as follows:
    - Primary Species: both red pine and white pine. The white pine should be planted 5 to 10 years after the red pine and secondary species are planted.
    - Secondary Species: three native hardwood tree species and one native shrub species suited to the ecoregion and site conditions.

Note: where desired, an understory native conifer may be substituted for one of the hardwood species.
  - B. Where practical, the planting patterns should be altered to reflect the random nature of a natural forest stand. Rows of single species should be avoided.

- C. Planting stock shall consist of Michigan ecotype red pine and white pine, from known and documented seed sources.
  - D. Planting stock for native hardwood trees and shrubs will be adapted to the site conditions.
2. Planting Rate: Plantings should establish a combined total of 500 red and white pine per acre, and 100 to 300 hardwood trees and shrubs per acre.
  3. Planting Dates: Planting of all bare root stock will be done in accordance with Michigan Standard 612 - Tree/Shrub Establishment. Planting of container stock may occur after June 1, provided soil moisture conditions are adequate. Plant the white pine 5 to 10 years after planting the other species.
  4. Site Preparation and Maintenance: Refer to Michigan Standard 612 - Tree /Shrub Establishment.

#### **CONSIDERATIONS**

In many cases, threatened and endangered species or species of concern will benefit from conservation of declining habitats. Consider the impacts upon both state and federally listed threatened and endangered species. Use the Natural Features Database as the first level of review. Any potential impacts to threatened and endangered species, both positive and negative, will need to be reviewed with the appropriate federal or state agency.

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.

Protect all woody planting during establishment from damage by rodents, fire, deer, weed, and insect pests by use of fire breaks, herbicides, fencing, tree shelters, weed barriers, rodenticides, repellents, and other means as necessary.

Haying, grazing, and tree harvest will be planned and managed as necessary to achieve and maintain the intended purpose of managing wildlife habitat.

All habitat manipulations will be planned and managed according to soil capabilities, and recommendations for management will avoid excessive soil loss.

Consider the potential impact of this practice on cultural resources. Follow Michigan policy on cultural resources.

### **PLANS AND SPECIFICATIONS**

Plans and specifications for establishment and maintenance of this practice shall be prepared for each habitat type. Plans and specifications shall be recorded using approved specification sheets, job sheets, and narrative statements in the conservation plan or other acceptable documents. Plans and specifications shall be developed for the specific field site to meet the objectives of the landowner. As a minimum, specifications will include the objective of the practice, inventory evaluation, location map, permit requirements, survey notes, design records, construction specifications, vegetative requirements, and construction inspection records.

For prairie and oak savanna restoration, site specific plans and specifications shall be developed based on this standard.

For red and white pine restoration, site-specific plans and specifications shall be developed based on Michigan Standard 612 - Tree /Shrub Establishment, following the Additional Criteria for Wildlife Habitat section.

### **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 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.

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

Follow-up habitat assessments shall be performed on a regular basis to monitor progress of planned activities.

### **REFERENCES**

Barnes, Burton; Wagner, Warren Jr., 1989. "Michigan Trees: A Guide to the Trees of Michigan and the Great Lakes Region," University of Michigan Press.

Chapman, K.; White, M.A.; Huffman, M.R.; Faber-Langendoen, D., 1993. Ecology and stewardship guidelines for oak barrens landscapes in the upper Midwest. In: Proceedings of the Midwest Oak Savanna Conference.

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 Interior, National Biological Service, Biological Report 28.

Nuzzo, V., 1986. Extent and status of Midwest oak savanna: pre-settlement and 1985. *Natural Areas Journal* 6(2):6-36.

Packard, S; Mutel, C.F. (editors), 1997. *The Tallgrass Restoration Handbook: for prairies, savannas, and woodlands.* Island Press. 463 pp.