

Natural Resources Conservation Service
Conservation Practice Standard

EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT
Code 647 (Acre)

DEFINITION

Manage early plant succession to benefit desired wildlife or natural communities.

PURPOSES

- Increase plant community diversity.
- Provide wildlife or aquatic habitat for early successional species.
- Provide habitat for declining species.

CONDITION WHERE PRACTICE APPLIES

On all lands that are suitable for the kinds of wildlife and plant species that are desired.

CRITERIA

General criteria applicable to all purposes

Early successional habitats may benefit a variety of species. In order to carry out this practice effectively, a knowledge of the desired species' habitat needs is necessary. The species' habitat needs shall be used in selecting the desired community and management techniques.

Early successional management will be designed to achieve the desired plant community in density, vertical and horizontal structure, and plant species diversity.

Methods used will be designed to maintain soil erosion and soil condition quality criteria.

Vegetative manipulation to maximize plant and animal diversity can be accomplished by disturbance practices including; prescribed burning, light disking, mowing, grazing, herbicide treatment, mechanical removal or a combination of the above.

This practice should be applied periodically to maintain the desired early successional plant community.

Native regionally adapted plant materials will be used whenever possible, but introduced species may be appropriate depending upon objectives.

Measures must be provided to control severe outbreaks of noxious weeds and other invasive species in order to comply with state noxious weed laws.

Criteria applicable to grasslands

Grassland communities will be managed to achieve the proper mix of grass, forb and bare soil cover for the targeted wildlife species or community.

Management practices and activities are not to disturb cover during the primary nesting period for grassland species which is March 1 to July 15. Exceptions will be allowed for limited activity when necessary to maintain the health of the plant community. If carried out during the primary nesting season, limits will be placed on the timing and extent of the practice. Mowing may be needed during the plant establishment period to control weeds.

To benefit insect food sources for grassland nesting birds, spraying or other control of noxious weeds will be done on a "spot" basis to protect forbs and legumes that benefit native pollinators and other wildlife.

One or more of the following methods are to be used:

1. Light Disking

Light disking of existing stands will increase the amount of bare ground, encourage annuals (foxtails, ragweeds, smartweeds), provide a diverse plant community and possibly increase invertebrate production.

- Disk strips to leave approximately 40-50% bare soil after disking. Disking should go 2-4" deep.
- Strips shall be no wider than 50 feet. Alternate these with undisturbed strips 3-4 times as wide as the disturbed areas.
- Strips should be done on the contour or across the slope. Leave a filter strip adjacent to water bodies. See practice standard Filter Strip (393) for guidance.
- Rotate the location of the strips across the field.
- Disking in late summer (August 1 to September 15) may give the best results if it does not present an erosion hazard.

2. Mowing

Annual mowing or mowing of entire stands is discouraged since it greatly decreases plant diversity and reduces residual plant cover. Mowing may be used to control woody vegetation or stress warm season grasses. Other practices usually will provide more effective means of providing better plant species and structural diversity.

- If mowing is used, no more than 1/3 of the field should be mowed in any growing season.
- Rotate mowing on a 4-5 year rotation across the field.
- Strips 20-40 feet wide may be mowed. Alternate these with unmowed areas at least 100 feet wide.
- Mowing residues shall be shredded and well distributed to prevent excess litter accumulation.

- Cool season grasses should be mowed no lower than 6 inches. Warm season grasses should be mowed no lower than 10 inches. However, mowing warm season grasses below 6 inches may be used to stress the plants and allow increased forb production.

3. Prescribed haying

Similar to mowing, haying of areas on a regular basis is not preferred because of negative impacts on the plant community for wildlife cover. Haying may be beneficial if the removal of excess plant material is desired.

- If haying is used, no more than 1/3 of the field should be cut in any growing season.
- Rotate haying on a 4-5 year rotation across the field.
- Strips 20-40 feet wide may be cut. Alternate these with uncut areas at least 100 feet wide.
- Cutting heights shall be determined by the positive effect they would have on desirable species and the extent to which they control undesirable species.

4. Spraying

Selected herbicides can be used to effectively manipulate plant succession, control brush, reduce plant competition, control exotic weeds and improve habitat diversity.

- Careful planning and care in application are required in the use of herbicides to improve existing habitat. Selection of products shall be based on several factors, including: product effectiveness, non-target species impacts, toxicological risks and off-site movement of chemicals.
- Herbicides are only to be applied for the uses on the product label. Follow all directions and precautions. See practice standard Pest Management (595) for recommendations and precautions.
- If strip spraying, treated strips shall be no wider than 50 feet. Alternate these with unsprayed areas 3-4 times as wide as the treated area.
- Rotate treated areas across the field.
- Leave a filter strip adjacent to water bodies. See practice standard Filter Strip (393) for guidance.

5. Prescribed burning

Burning may be used to reduce litter and increase the amount of bare soil. Burning can stimulate germination, control unwanted woody or herbaceous species and increase plant diversity.

- Prescribed burning can only be carried out under an approved burn plan prepared by qualified personnel. See practice standard Prescribed Burning (338) for guidance and restrictions.
- Burning should be used on a 3-5 year rotation, as needed.

- If burning during the primary nesting season, no more than 50% of the field should be burned in one season.
- To favor forbs, fall to early spring burns are the best. Late spring burns provide maximum stimulation to warm season grasses and best control for cool season grasses and brush.

6. Prescribed grazing

Domestic livestock may be used to manipulate plant succession and structural diversity. This manipulation may be beneficial to maintaining the quality of herbaceous cover and controlling brush when done in accordance with a prescribed grazing plan with one of this practice's purposes as the primary objective.

- Careful management is required to assure that the site is not over-grazed.
- This technique is only to be used when the land user fully understands the grazing system and is capable of managing the system.
- A grazing plan should be developed at a "light grazing intensity". See practice standard Prescribed Grazing (528) for guidance on plan development.
- If prescribed grazing is used during the primary nesting season for grassland birds, no more than 50% of the grassland shall be impacted during any one growing season.

7. Interseeding

If natural regeneration is not expected to provide the desired plant species, interplanting may be necessary. Generally, interseeding into established stands is difficult and should be undertaken only if one of the above disturbance methods is used as well. Seeding techniques and species selection will be in accordance with practice standard Conservation Cover (327) and FOTG Appendix A.

8. Brush removal

In some cases, woody plant growth has advanced beyond the stage where mowing, burning or herbicide treatment will effectively control it. Removal of woody brush or trees may be necessary when the amount of cover exceeds the desired amount for the targeted species or it is creating too much shade for a desired early successional plant community.

- Only the amount of woody cover needed to create the desired habitat shall be removed. Leave any remaining woody cover in blocks or scatter stems as preferred by the desired species.
- See practice standard Brush Management (314) for guidance on techniques and planning considerations.

Criteria applicable to woodlands

Woodlands communities will be managed to achieve the proper mix of herbaceous, shrub and tree cover for the targeted wildlife species or community. Some woodland wildlife species prefer areas of relatively

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short or sparse woody growth while others may prefer the dense cover provided by thickets. Early successional habitat in woodlands may be created either on the edge of the woodland or within its interior.

1. Woodland edges

Transitional edges along woodlands may be developed by manipulating early successional species in the edge of existing woods or in the fields adjacent to existing woods. These edges benefit a variety of species by providing more sun, lower plant heights, singing grounds and abundant plant and animal food sources.

- Woodland edges shall be 30 to 50 feet wide. The width may be obtained from the woodland, the open area next to it or a combination of these.
- Edges within the woodlands shall be created by removing or killing all woody vegetation greater than 2 inches diameter breast height and/or woody vegetation greater than 12 feet tall.
- Woody vegetation shall be controlled by using one or more of the following methods: handcutting, shearing, hydro-axe, disking, broadcast spraying, spot spraying, basal spraying, cut-stem treatments or other approved techniques.
- The removal of woody vegetation that may serve as endangered Indiana Bat (*Myotis sodalis*) roosting or nursery sites shall not occur between April 1 and July 30.
- Desirable fruit bearing shrubs and small trees shall be maintained
- Edges established within open areas adjacent to woods shall be managed to allow natural revegetation of desirable small trees, shrubs, brambles, grasses and forbs. If needed, desirable tree or shrub species may be planted in this area. See practice standard Tree/Shrub Establishment (612) and Ohio FOTG Section IV Appendix B for guidance and methods.
- The area shall be retreated every 5-10 years or as needed to maintain the desired cover.

2. Woodland openings

Openings may be developed within woodlands to increase the amount of edge or early successional habitat within woodlands. These openings benefit a variety of species by providing more sun, lower plant heights, singing grounds and abundant plant and animal food sources.

- The removal of woody vegetation that may serve as endangered Indiana Bat (*Myotis sodalis*) roosting or nursery sites shall not occur between April 1 and July 30.
- Opening sizes will be based on the needs of the desired wildlife species. Generally opening should be 0.5 to 10 acres in size; 1 to 3 acres in size is typically desired.
- Isolated woodlands smaller than 40 acres generally will not benefit from the creation openings.
- Avoid negative impacts to area sensitive interior nesting bird species due to fragmenting large woodlands with openings. In woodland sites larger than 250 acres, openings shall be no larger than 1 acre; if possible they should be near the outer edge to minimize impacts.

- A number of scattered openings are more beneficial than a single large opening of comparable size.
- Openings within the woodlands shall be created by removing or killing all woody vegetation greater than 2 inches diameter breast height and/or woody vegetation greater than 12 feet tall.
- Woody vegetation shall be controlled by using one or more of the following methods: handcutting, shearing, hydro-axe, disking, broadcast spraying, spot spraying, basal spraying, cut-stem treatments or other approved techniques.
- Desirable fruit bearing shrubs and small trees shall be maintained.
- The area shall be retreated every 5-10 years or as needed to maintain the desired cover.
- As an alternative to natural revegetation of the site, the area may be planted using an appropriate mix of herbaceous and/or woody species. Use practice standards Conservation Cover (327) and Tree/Shrub Establishment (612) as well as Appendices A and B from the Ohio FOTG.

CONSIDERATIONS

General

- All habitat manipulations will be planned and managed according to soil capabilities. Recommendations for management will avoid excessive soil loss.
- Early successional treatments should be rotated throughout the managed area.
- Although rotation or partial treatment is preferred, consider treating entire fields if they are less than 20 acres.
- Strips are generally recommended to spread the treatment and reduce potential impacts to wildlife, consider block treatments if the targeted wildlife species would benefit from this.
- Treatment shall be planned whenever the succession has gone past the desired stages
- Consider seeking the assistance of a NRCS biologist, Ohio Division of Wildlife biologist, U. S. Fish and Wildlife Service biologists or other recognized authority when planning this practice.
- Managing for early successional plant communities is beneficial if not essential for less mobile animal species. The less mobile the species, the more important to provide all the habitat requirements in a small area.
- Design and install the treatment layout to best facilitate operation of all machinery used on the strips or to make easily controlled burning boundaries. Whenever possible, lay out strips to have some multiple or full width passes by all farm implements.
- This practice may be used to promote the conservation of declining species, including threatened and endangered (plant, wildlife or aquatic) species.

Grasslands

- Consider delaying management practices until after August 15 to reduce the chance of harming fledgling birds and young wildlife.
- Consider planting disked or sprayed areas to an annual grain or grain mix. See practice standard Upland Wildlife Habitat Management (645) for food plot recommendations.
- Consider mowing from the center of the field outward to allow wildlife the opportunity to seek cover in adjacent areas.
- Consider the construction of brush piles from woody material removed as part of this practice.

Woodlands

- When developing woodland edges, consider the use of applying practice standard Upland Wildlife Habitat Management (645) to adjacent land to create additional habitat.
- Consider the construction of brush piles from woody material removed as part of this practice.
- Consider the use of forest edge creation to minimize abrupt habitat transitions and to increase aesthetic appeal of sites.

PLANS AND SPECIFICATIONS

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan or other acceptable documentation. Specifications shall list the early successional species and life history stage for which the habitat is being managed.

These documents are to specify the requirements for installing the practice, such as the kind, amount, or quality of materials used; or the timing or sequence of installation activities.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and the criteria for its design.

The following actions shall be carried out to ensure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation) such as disking, spraying, mowing or burning and repair and upkeep of the practice (maintenance) such as replacement of vegetative component as needed.

The practice will be inspected periodically and restored, as needed, to maintain the stated purpose.

Spraying or mowing of noxious plants shall be done on a "spot" basis in order to protect forbs used by native pollinators and other wildlife as well as to minimize risk to wildlife.

Any use of fertilizers, pesticides and other chemicals to assure early successional management shall not compromise the intended purpose.

REFERENCES

Herkert, James R. et al. 1993, *Habitat establishment, enhancement and management for forest and grassland birds in Illinois*. Division of Natural Heritage, Illinois Department of Conservation. 20 pp.

Michigan Department of Natural Resources. 1999. *Managing Michigan's wildlife: A landowner's guide*.

Ohio Division of Wildlife. 2002. *Old field habitat management for wildlife*.

Ohio Division of Wildlife. 2002. *Woodland habitat management for wildlife*.