

**NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD**

**EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT**

(Ac.)

CODE 647

**DEFINITION**

Manage plant succession to develop and maintain early successional habitat to benefit desired wildlife and/or natural communities.

**PURPOSE**

To provide habitat for species requiring early successional habitat for all or part of their life cycle.

**CONDITIONS WHERE PRACTICE APPLIES**

On all suitable lands for desired wildlife and plant species.

**CRITERIA**

**This conservation practice is exempt from receiving coverage under TDEC's (Tennessee Department of Environment and Conservation) ARAP permits as long as NRCS provides technical or financial assistance for this conservation practice. This exemption allows this conservation practice to be installed adjacent to streams and/or wetlands, and for the outlet of the structure to be placed down through the stream channel bank and into the closest edge of the stream channel. The TDEC ARAP exemption does not change the permitting requirements for the U.S. Army Corps of Engineers permits (404), the Tennessee Valley Authority (TVA) permits (26a – if located within the Tennessee River drainage area), or any permits that may be required by local units of government.**

**The exception to the TDEC ARAP exemption described in the previous paragraph is where the conservation practice is planned to impound the stream, place fill material in a wetland, provide drainage for a wetland, or directly impact a stream channel and/or a**

**wetland. If this conservation practice is planned on a stream or in a wetland, then it is no longer exempt from the ARAP process. If planned on a stream or in a wetland, these conservation practices are required to apply for and receive U.S. Army Corps of Engineers permits (404), TDEC permits (ARAP), TVA permits (26a – if located within the Tennessee River drainage area), and any permits that may be required by local units of government. All conditions listed within the permits shall be followed during the installation of the practice.**

Design management to achieve the desired plant community structure (e.g., density, vertical and horizontal cover) and plant species diversity.

Use regionally adapted plant materials where planting is needed.

Site preparation, planting dates, and planting methods shall optimize survival of plantings.

Planting noxious weeds and invasive species is prohibited.

Provide measures to control noxious weeds, invasive species, and soil erosion.

To benefit insect food sources for grassland nesting birds, target spraying or other control of noxious weeds through the use of spot spraying, mechanical or hand wick applicators, or other approved methods to protect grasses, forbs and legumes that benefit native pollinators and other wildlife.

When grazing is used as a management tool, develop a prescribed grazing plan to specifically meet the intent and objective(s) of this practice standard.

**Controlling Undesirable Species**

Use appropriate measures to control undesirable plants. Herbicide application, prescribed grazing,

prescribed burning, mowing, brush management, forest stand improvement techniques or a combination of these may be used.

Plant species that can be controlled may include: invasive species, undesirable species, or desirable species that have become too thick to provide the desired habitat condition. This practice also may be used to set-back succession and/or control more aggressive species in grass/forb/shrub stands, woodland, or forestland to increase plant diversity and/or improve habitat for target species.

Treat fields that contain 20% of a species not suitable for wildlife habitat (e.g., tall fescue, bermudagrass, bromegrasses, sericea lespedeza, or old-world bluestems). Allow the area treated to naturally regenerate when it is determined that a suitable seed bank exists to achieve the desired condition. If suitable seed bank is not present, plant the site according to the appropriate NRCS practice standard.

Herbicides may be used to control undesirable species on an entire field or in identified treatment units for desirable species management. If using chemical methods of control, follow NRCS conservation practice standards Brush Management (314), Herbaceous Weed Control (315) and/or Forest Stand Improvement (666).

Multiple treatments may be necessary to achieve the desired conditions. Areas should be scouted annually to treat undesirable plants as they recolonize an area.

### **Disking and Strip-Disking**

Disking (2-4" deep resulting in 30-70% bare ground) existing stands may be necessary to increase bare ground, promote an open structure at ground level, and encourage a diverse community of annual and perennial plants.

Areas shall be mowed, hayed, or burned just prior to disking.

Target wildlife species or acreage limits may support block disking when soil erosion is not a concern. Consult an NRCS biologist to determine which method best addresses the target species.

Disking shall occur between August 15<sup>th</sup> and March 31<sup>st</sup>. For optimal quail benefits, disk between October 1<sup>st</sup> and December 31<sup>st</sup>. Consider winter cover requirements when planning treatments.

Disking native grasses should only be done once the stand is well established or as recommended by an NRCS biologist.

### **Edge Feathering**

Edge feathering can be completed along any forest/woodland edge including logging roads, landings, or fields. Control invasive species, such as autumn olive, bush honeysuckle, privet, royal princess paulownia, tree-of-heaven multiflora rose, Japangrass, or Chinese silver grass prior to edge feathering; see NRCS Brush Management (314).

### **Forb Interseeding**

Native forb mixture seeding rates should follow the NRCS Conservation Cover (327) practice standard and associated job sheets and/or programmatic requirement sheets. Full rate mixtures may be cut in half. Interseeding shall follow disking, herbicide application or undesirable species control to ensure a suitable seed bed. Interseeding can follow prescribed burning but only when the grass stand is thin enough to allow forb establishment and prevent competition.

### **Hedgerow Renovation**

Hedgerows that are declining in vigor may need renovation to ensure they function as intended. For herbaceous hedgerows this may include mowing or cutting, or replanting. For woody hedgerows this may include thinning, pruning, planting gaps or replacement with new plants.

- Identify the species targeted for renovation.
- Renovations which could potentially disturb nesting, fawning or pollination must be completed between August 15<sup>th</sup> and March 31<sup>st</sup>.
- When removing dead or dying shrubs/trees, strategically leave some woody debris and cavity providing trees to enhance wildlife habitat.
- Use this opportunity to control invasive species.
- Limit extensive renovation events to one-third of a hedgerow's length or width, per year, to prevent sudden elimination of the practice's function.

### **Mowing**

Mowing is not an acceptable method for maintaining early successional habitat because it greatly decreases plant diversity, reduces residual cover available for the following nesting season, and leads to a deep thatch layer.

Mowing is only allowed in conjunction with other management methods/practices. Mowing is only allowed immediately prior to the application of the management method/practice and is limited to the acres on which the management method/practice is applied. Exception: mowing can be prescribed by NRCS biologist to control annual weeds or to set back succession.

**Native Grass and Forb Establishment** Establish native grass/forb communities through implementation of the Conservation Cover (327), Field Border (386), Riparian Herbaceous Cover (390) or Restoration and Management of Declining Habitats (643) practice standards, as applicable.

### **Prescribed Burning**

Use prescribed burning to enhance native plant communities, to maintain early successional stages for the targeted species, and to remove excess litter, which can reduce the quality of wildlife habitat. Prescribed fire promotes germination of seed-bearing annuals, increase species diversity, and controls undesirable woody cover.

Prescribed burning should occur outside the nesting season of April 1 through August 15th. However, burning may occur during this period with NRCS biologist approval when needed to restore suitable plant communities and structure for targeted wildlife species.

Prescribed burning must be planned and completed according to the NRCS Prescribed Burning (338) practice standard.

### **Prescribed Grazing**

Use prescribed grazing to maintain or achieve an early successional stage, reduce ground litter, and provide dusting areas. If used, it shall be completed according to the Prescribed Grazing (528) practice standard and the Prescribed Grazing section in the Upland Wildlife Habitat Management (645) practice standard.

### **Shrub Planting**

Shrub plantings, when needed to achieve the desired habitat condition, shall be planted

according to the NRCS Tree/Shrub Establishment (612) practice standard.

### **CONSIDERATIONS**

**This practice and/or associated practices may include placement of fill material, the clearing of trees, and/or the construction of ditches or subsurface drainage pipes in low lying and floodplain type situations. The placement of fill material, the clearing of trees, and/or the installation of new ditches or drainage tiles in areas that are potentially wetlands may be a violation of the Swampbuster portion of the Food Security Act, the Clean Water Act, and the Tennessee State Water Quality Control Act. All of these areas should be evaluated for wetland potential thoroughly prior to implementation of this practice and/or other associated practices.**

Accomplish vegetative manipulation to maximize plant and animal diversity by disturbance practices that include, but are not limited to: selected herbicide techniques, brush management, prescribed burning, disking, prescribed grazing, or a combination of these.

Apply this practice periodically to maintain the desired early successional plant community and rotate throughout the managed area.

Wildlife habitat purposes often require lighter seeding rates than specified to accomplish objectives.

Consider the potential for native vegetative to regenerate naturally without planting.

Managing for early successional plant communities is beneficial, if not essential, for less mobile species (e.g., northern bobwhite and cottontail rabbit). The less mobile the species, the more important to provide all habitat requirements in a small area.

For treatments facilitated by strips (disking and prescribed burning) design and install the treatment layout to best facilitate operation of farm machinery or to make easily controlled burning boundaries. Whenever possible, lay out strips or allow multiple widths of passes by farm implements needed to install strips.

The disturbance interval for maintaining early successional should be approximately 2-4 years to benefit most wildlife. In determining the actual disturbance interval, the wildlife species of concern, disturbance technique planned, soil

productivity, plant response, and timing of application must be considered.

Design and install the treatment layout to facilitate machinery operation, the use of natural firebreaks, and installation and maintenance of firebreaks when prescribed burning.

When prescribed grazing, consider setting aside a paddock near the center of the pasture and defer grazing until after the critical nest and brood rearing period. Many grassland birds require more than 40 days to fledge their young.

When selecting plants and designing management for this practice, consider the needs of pollinators and incorporate to the maximum extent practicable.

When disking, disk (on the contour to the extent possible) no more than 50% of the planned field treatment acres in any treatment year, unless the field is less than 4 acres. If the field is less than 4 acres, the entire field may be treated at the same time. Disked and non-disked portions will alternate in subsequent treatment years. Disking in strips is strongly recommended on slopes and other areas especially prone to erosion. When strip-disking is used, strips should be 20-60 feet wide, and undisked areas should be at least as wide as disked areas. When implementing strip-disking in thirds, disked areas shall be allowed to grow for two to three years so, within any field, a mosaic of vegetation exists (i.e., a third of the area 0-1 years old, a third of the area 1-2 years old, and a third of the area 2-3 years old).

While strip-disking in thirds provides the best results, strip-disking may also be completed in halves where 20 to 60 feet are disked with 20 to 60 feet left undisked in between the disked strips setting up a pattern of 1-and 2-year-old strips.

When edge feathering, the feathered edge should extend from 50' to 120' into the forest along the length of the forest edge. Below is a preferred method to feather the edge of forest/woodland:

- Thinning of over and mid story trees. The edge feathering will be divided into two zones; each zone will be approximately 50% of the total width.
- Zone A will be nearest the open edge. The area shall be thinned with approximately 75 percent of the canopy (both overstory and midstory) vegetation removed.

- Zone B will have approximately 50 percent canopy cover remaining after treatment.

## PLANS AND SPECIFICATIONS

Prepare written specifications, application schedules and maps for each site. Specifications shall identify the amounts and kinds of habitat elements, locations and management actions necessary to achieve management objectives.

Transmit specifications to clients using approved specification sheets, job sheets, and customized practice narratives or by other written documentation approved by NRCS.

## OPERATION AND MAINTENANCE

Carry out the following actions to ensure this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

Incorporate in the management plan occasional disturbance to ensure the intended purpose of this practice.

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

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