CONSERVATION PRACTICE SPECIFICATION

Early Successional Habitat Development/Management - 647

Early Successional Habitat Development/Management - 647 shall be planned and installed in accordance with the NRCS Standard detailed in the Field Office Technical Guide (FOTG) – Section IV – Conservation Practices. This document provides additional parameters, recommendations, references, and requirements for developing site-specific plans for this practice.

GENERAL DESIGN CRITERIA

Early Successional Habitat Management is used to increase plant community diversity, provide wildlife or aquatic habitat for early successional species, and to provide habitat for declining species reliant on these types of habitats. The design criterion for these purposes has been incorporated into the specific habitats listed below.

Specific species habitat requirements will be considered, including nesting periods, habitat structural diversity, residual cover, seed/food production, etc. If management for a specific species is not planned, consideration should be given to management impacts for species at risk, such as grassland nesting passerine birds, and threatened, endangered, or candidate species.

Soil erosion and water quality will be addressed. Management practices with the potential for increasing soil erosion will have wind and water erosion calculation completed and shall not exceed tolerable soil loss limits. Soil loss calculations are not required when management practices are within the listed parameters for each criterion. Water quality impairment will be avoided.

CRITERIA FOR GRASSLAND MANAGEMENT

Apply this component to develop and maintain grassland/forb/legume habitats. Annual mechanical disturbance or disturbance of entire stands is discouraged since it greatly increases nesting bird mortality and reduces residual cover available for the following nesting season. Where possible, apply disturbance practices on 20% of the area in a given year in 4 - 5 year increments to maintain adequate nesting cover. Disking and interseeding are not applicable to native prairie (rangeland) habitats. This practice improves habitat for certain target species such as sharp-tailed grouse, waterfowl, pheasants, and other grassland nesting birds by increasing plant vigor and species diversity. Areas may be developed or maintained by one or a combination of the following methods:

1. Mechanical: Used alone or in combination with other techniques, mechanical methods can successfully manipulate successional stages of habitat. See practice standard 645 - Upland Wildlife Habitat Management. All conservation practices are located in FOTG – Section IV – Conservation Practices. Mechanical disturbance should not be done during the primary nesting season, April 15 - August 1, in order to protect ground nesting wildlife.

A. Mowing: Mowing needs to accomplish two goals:

- Removal of standing residual vegetative cover
- Removal of build-up litter

Mowing will include removal of vegetation and litter in order to provide sunlight to the soil surface. Use of a rake is recommended. Mow prior to September 1, to allow for regrowth prior to first frost.

B. Disking: Disking depth should not exceed 2 - 4". A minimum of 30% residue cover will remain on the soil surface for erosion protection. Consider disking on the contour for 9% - 15% slopes in alternating strips during alternating years. The amount of disturbance will vary according to the type of disk used. Plant mortality from disking should be minimal, but should reduce litter and residual vegetative cover. Disk prior to September 1 to minimize damage to legumes and allow for regrowth prior to first frost.

Disking should not be prescribed for areas:

- with concentrated flows such as waterways
- subject to severe wind erosion, i.e., sands and sandy soils
- with slopes greater than15%
- with a high risk of noxious weed colonization
- during periods of low soil moisture conditions

C. Heavy Harrow: Where possible, manage no more than 20% of the stand in any given year in 4 - 5 year increments to maintain adequate nesting cover. A heavy harrow set aggressively will break down residue, providing sunlight to the soil surface. Type of harrow, climatic conditions, and number of passes will impact the success of this treatment. Lower relative humidity is desirable for increasing residual vegetation breakdown.

More than one pass may be required to break down residue. The second harrow operation should be at a 90 degree angle from the first operation. Since soil disturbance with a heavy harrow will be minimal, harrowing is an acceptable option over disking on slopes greater than 9% and when noxious weed colonization is a concern. Harrowing should be completed by September 1 to allow for regrowth prior to first frost.

2. Interseeding: Consider interseeding when the legume or forb component is missing or comprises less than 10% of the herbaceous cover. In order for interseeded legumes or forbs to be competitive some type of seedbed preparation, such as mowing, disking, prescribed burning, or chemical burn-down, will be needed to reduce residue cover and provide adequate soil-seed contact.

Follow guidelines outlined in Herbaceous Vegetation Establishment Guide located in FOTG – Section I – Reference Subjects for seeding dates, rates, and species/site adaptability. Contact your local NRCS office for further details on interseeding.

Consider interseeding 20% of the field in a given year if possible. However, the entire field may be interseeded at one time to provide increased plant diversity on the entire field in a shorter period of time. Interseeding should be completed prior to or begun after the primary nesting season. Refer to Herbaceous Vegetation Establishment Guide for optimum planting date for legumes and forbs.

3. Prescribed Grazing: Domestic livestock may be used to manipulate plant succession, reduce residual cover and litter depth. Prescribed grazing can be beneficial to maintaining the quality of herbaceous cover and controlling brush when done in accordance with a prescribed grazing plan with wildlife habitat as the primary objective. Refer to practice standard 528 - Prescribed Grazing. Duration, animal density, intensity, frequency, and season of grazing should be considered when developing the prescribed grazing plan to manipulate herbaceous cover:
    - Duration: In general, shorter grazing periods are preferred
    - Animal density: Animal density should not be less than 10 animal units/ac.
    - Intensity: Animal daily intake requirements must be met
    - Frequency: Frequency should not exceed once during the growing season in 4 - 5 year increments; more frequent grazing may be necessary dependent upon target species.
    - Season of use - dependent on targeted species: to have a negative impact on Kentucky bluegrass early spring grazing is required.

4. Prescribed Burning: Excess litter can be removed with prescribed burning. Prescribed burning can allow for germination of seed-bearing annuals, increase plant species diversity, and control unwanted woody vegetation.
    - Frequency of burning should generally not exceed once every 4 - 5 years
    - The entire field may be burned in one year; however, limit size of burn to 160 acres to allow for areas with residual cover for grassland nesting birds.
    - Fall burns and early spring burns tend to favor forbs
    - Late spring burns provide maximum stimulus to warm-season plants and work well to control cool-season grasses and brush
    - Burning shall only be done under an approved burn plan prepared by qualified personnel (see practice standard 338 - Prescribed Burning for more information, including restrictions)
    - Prescribed burns are to be conducted at the necessary time to manipulate targeted species. Avoid burning during the primary nesting season (April 15 – August 1). However, prescribed burns may be conducted during the primary nesting season, if needed, to manipulate targeted plant species. Avoid burning after September 1, to allow for regrowth prior to first frost. Burning after September 1 may be needed to manage for warm-season native grasses.

5. Chemicals: 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 application are required to improve existing habitat. Selection of a product shall be based on several factors, including:
    - product effectiveness
    - non-target species impacts
    - toxicological risks
    - off-site movements of chemicals
    - chemicals are to be applied only for the uses listed on the container label. Follow all directions and precautions. See practice standard 595 - Pest Management for recommendations and precautions.

Criteria for Forest Management (aspen management):

Where dense stands of early seral woody vegetation are lacking, use clear cutting to create dense stands of saplings and shrubs. These plants supply food in the form of buds, catkins, hips, and berries, as well as cover. The ideal is shrub cover with a density of 2,800 to 9,700 stems per acre or deciduous tree sapling density with a density of 20,000 to 40,000 stems per acre the first year after treatment. Preferred canopy height is 22 to 32 feet. Intersperse these blocks throughout the forest management unit at a spacing of 440 to 480 feet to optimize ruffed grouse habitat. A forest undisturbed for 30+ years declines in value for ruffed grouse, as plant community succession progresses and age diversity is lost. Up to 1/4 of the acreage can be clear-cut every 10 years to maintain a mosaic of age classes. On old (over 50 - 60 years) stands of aspen, clear-cut 1/3 to 1/2 of the acres in small blocks every 5 years to spread the harvest over as long a time as the age and condition of the forest will allow. If the stand is over 60 years old and in poor condition, clear-cut the entire tract leaving scattered blocks or strips uncut for wildlife cover. In these cases, ruffed grouse life requests will need to be met in adjacent forests. Use conservation practice 666 - Forest Stand Improvement to renovate existing aspen stands for ruffed grouse habitat.

The most effective method of rejuvenating decadent aspen stands appears to be bulldozing or logging old trees to stimulate regeneration

Operation and Maintenance

Since this is a maintenance practice, O&M is not applicable.

CHECK OUT AND DOCUMENTATION

Traverse the treated area in a loop pattern and examine representative points. A minimum of four points and at least one point for every forty acres should be examined. Use Form ND-CPA-647 to record pre-treatment conditions, facilitating practices planned, planned treatment methods, post-treatment results, relevant notes, and any recommended follow-up treatment or field visit dates. This form can be found in FOTG – Section IV – Forms. On a map or sketch of the field, record locations of field points checked.