



## Early Successional Habitat Development/Management (ACRE) Code 647 Montana Conservation Practice Specification

### GENERAL SPECIFICATION

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



### GENERAL DESIGN CRITERIA

Some type of periodic disturbance is often required to maintain plant community successional stages required for certain wildlife species.

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

Target species' habitat requirements will be considered, including nesting periods, habitat structural diversity, residual cover, seed/food production, etc. If management for a single target 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 calculations completed and cannot 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 PHEASANT "DIVERSIFIED UPLAND HABITAT UNIT" DEVELOPMENT

A Diversified Upland Habitat Unit (DUHU) is an area designed to optimize the amount and interspersion of critical pheasant habitat components. The minimum size for an effective DUHU is 80 acres unless an NRCS Biologist approves a smaller acreage based on the quality of surrounding habitat. DUHUs typically require a water delivery system and will include the following habitat components:

**Rooster Territory Cover** – Rooster display cover will be provided in upland units by: 1) mowing at least three sinuous, 12-15 foot wide patches in existing, moderately tall upland nest cover and a minimum distance of 80 feet long or by: 2) mowing sinuous strips (12-15 foot wide) on either side of a 50-foot central strip of dense, moderately tall cover running through the center of the DUHU on its long axis (see example on Job Sheet MT647-JS2 (pg 1)). The mowed areas or "display strips" provide open crowing territories for roosters adjacent to dense cover. Mow the rooster territory cover strips in late fall, after dormancy.

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Nesting Cover – Most of the DUHU is composed of nest cover, which provides overhead screening from aerial predators and is dense enough at the ground level for lateral concealment of nests. A typical introduced nest cover mixture includes pubescent wheatgrass and tall wheatgrass with alfalfa and yellow sweetclover. A mixture of basin wildrye and western wheatgrass with blue flax is an example of native nest cover.

Brood Foraging Strips – These are 50-75 foot wide, linear strips of cover ideally located along each long edge of the DUHU. Brood cover strips consist of an irrigation ditch with minimum side slopes of 10:1. Low berms must be constructed at the outside edges to allow for flooding if the topography is very flat. The foraging strips are disked in the fall to prepare the site for annual broad-leaved forbs that will germinate in the spring. Naturalized broadleaves are utilized; the strips are not planted. Water is applied in the spring (about May 15) and held for five to ten days to saturate the soil. Once fully saturated, the water is drawn down and is retained in deeper pools located in the ditch bottom. Subsequent flash irrigations keep the soil continuously moist at least until mid-summer (August 1 minimum). A combination of moist soil and broadleaf weeds provides a source of insects which are critical in the diet of pheasant chicks during the first few weeks after hatching. The bottom of the ditch is kept flooded throughout the summer to provide a water source for pheasants and other wildlife and to keep soil moisture levels high. **NOTE: It is imperative to keep the soil continuously moist in order to maintain the arthropod (insect) populations.**

Winter cover – Cattails, tall grass and woody cover provide shelter from inclement weather. Winter cover ideally should be located on the DUHU. If this is not possible, winter cover must be no farther than one-quarter mile from the DUHU.

Noxious Weed Concerns – The disturbed soil within the brood foraging strips may provide opportunity for noxious weed establishment. Canada thistle is the most common weed that will be problematic. Use appropriate herbicides, applied strictly to label directions, to control spread of this and other weeds considered noxious. Do not establish DUHUs in areas where noxious weeds such as leafy spurge have not been fully controlled.

See Job Sheet MT647-JS2 (pg 1) for a diagram of a DUHU.

**NOTE: Contracting and installation of DUHUs requires approval from an NRCS Biologist. There must be an existing local pheasant population prior to establishing a DUHU.**

Reference: See “Diversified Uplands Management for California Pheasants” by Chester M. Hart and Edward Smith, 2002, available from each Area Biologist.

### CRITERIA FOR GRASSLAND, SHRUBLAND, and EMERGENT WETLAND VEGETATION MANAGEMENT

Apply this component to develop and maintain grassland/forb/legume habitats. Disking is 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 plant communities to maintain needed successional stages. See FOTG, Section IV, Practice Standards and Specifications, Upland Wildlife Habitat Management (Code 645) and Wetland Wildlife Habitat Management (Code 644). **Mechanical disturbance should not be done during the primary nesting season - April 15–August 1** - in order to protect ground nesting wildlife.

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.

<b>CRITERIA FOR GRASSLAND, SHRUBLAND, and EMERGENT WETLAND VEGETATION MANAGEMENT CONTINUED</b>
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1. Mechanical: CONTINUED

- A. MOWING: Where possible, manage no more than 20% of the stand in any given year in 5-year increments to maintain adequate nesting cover. Rotate mowed areas across the field. Mowing should accomplish two goals:

- Removal of stand residual vegetative cover
- Removal of built-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 re-growth prior to first frost. Mowing is the most desirable method when minimal soil disturbance is required.

- B. DISKING: Where possible, manage no more than 20% of the stand in any given year in 5-year increments to maintain adequate nesting cover. Disking depth should not exceed two to four inches. A minimum of 30% residue will remain on the soil surface for erosion protection. Rotate the disked areas across the field. The amount of disturbance will vary according to the type of disk used. Disturbance should minimize plant mortality but should reduce litter and residual vegetative cover. Disk prior to September 1 to minimize damage to legumes and allow for re-growth prior to first frost.

Disking should not be prescribed for areas:

- with concentrated flows such as waterways;
- subject to wind erosion; sands and sandy soils;
- with slopes greater than 15%; consider disking on the contour for 9%-15% slopes;
- with a high risk of noxious weed colonization or with existing noxious weeds;
- during periods of low soil moisture conditions.

See FOTG, Section IV, Practice Standards and Specifications, Wetland Wildlife Habitat Management (Code 644), for cattail management techniques.

- C. HEAVY HARROW: Where possible, manage no more than 20% of the stand in any given year in 5-year increments to maintain adequate nesting cover. 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 causing residual vegetation to breakdown easier.

More than one pass may be required to break down residue. The second harrow operation should be at a 90° 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 re-growth prior to first frost.

2. Prescribed Grazing: Domestic livestock may be used to manipulate plant succession and to reduce residual cover and litter depth. Prescribed grazing can be beneficial for maintaining the quality of herbaceous cover and controlling brush when done in accordance with a prescribed grazing plan, which has wildlife habitat as the primary objective. Duration, animal density, intensity, frequency, and season of grazing should be considered when developing the prescribed grazing plan.

Refer FOTG, Section IV, Practice Standards and Specifications, Prescribed Grazing (Code 528).

2. Prescribed Grazing: CONTINUED

Consider the following when using prescribed grazing to manipulate herbaceous cover:

- Duration: In general, shorter grazing periods are preferred.
- Animal Density: Animal density should not be less than ten animals/acre.
- Intensity: Animal daily intake requirements must be met.
- Frequency: Frequency should generally not exceed once during the growing season in 5-year increments. More frequent grazing may be necessary depending upon target species.
- Season of Use: Dependent on targeted species. For example, to have a negative impact on Kentucky bluegrass, early spring grazing is required.
- Use of temporary fence to concentrate grazing impacts and/or avoid impacts to shrubs and trees.

3. 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 five years.
- The entire field may be burned in one year if undisturbed nesting cover is available nearby. 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 can only be done under an approved burn plan prepared by qualified personnel. Refer to FOTG, Section IV, Practice Standards and Specifications, Prescribed Burning (Code 338) for more information, including restrictions.
- Prescribed burns are to be conducted at the necessary time to manipulate targeted plant species. Avoid burning during the primary nesting season, when possible. 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 re-growth prior to first frost. However, burning after September 1 may be needed to manage for warm season native grasses.

4. 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 care in application are required in the use of chemicals 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 recommendations and precautions.

See FOTG, Section IV, Practice Standards and Specifications, Pest Management (Code 595) and Upland Wildlife Habitat Management (Code 645), General Specification Planning/Implementation Guide for further guidance—particularly the section entitled, “Ring-Necked Pheasant.”

**CRITERIA FOR FOREST MANAGEMENT**

A variety of forest harvest methods, thinning, grazing, and prescribed fire are available to create and/or maintain desired plant community successional stages. See FOTG, Section IV, Practice Standard Upland Wildlife Habitat Management (Code 645), General Specification and Planning/Implementation Guide for more information.

**POTENTIALLY APPLICABLE PRACTICES**

Brush Management	(Code 314)	Prescribed Burning	(Code 338)
Conservation Cover	(Code 327)	Prescribed Grazing	(Code 528)
Fence	(Code 382)	Structure for Water Control	(Code 587)
Forage and Biomass Planting	(Code 512)	Upland Wildlife Habitat Management	(Code 645)
Integrated Pest Management	(Code 595)	Wetland Wildlife Habitat Management	(Code 644)

See FOTG, Section IV, Practice Standards and Specifications, Upland Wildlife Habitat Management (Code 645), General Specification and Planning/Implementation Guide for further guidance—particularly the following sections entitled, “Merriam’s Turkey,” “Ruffed Grouse,” “Blue Grouse,” “Pheasant,” and “Non-Game Wildlife.”

**ADDITIONAL SPECIFICATIONS AND NOTES**

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