NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT

(Ac.)

CODE 647

DEFINITION

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

PURPOSE

Increase plant community diversity to provide habitat for early successional species.

CONDITIONS WHERE PRACTICE APPLIES

On land that is suitable for the desired kinds of wildlife and plant species.

CRITERIA

General Criteria Applicable to all Purposes

This conservation practice shall be planned in order to remove or reduce limiting factor(s) observed in a natural resources inventory.

Control of regulated noxious weeds and invasive plants shall be specified for the planning area.

Specifications shall produce plant density, vertical and horizontal structure and diversity that support the specie(s) of concern to the client.

Apply this practice at a frequency that maintains the desired habitat condition throughout the area the practice is planned. Specify management rotations that maintain habitat in desirable amounts and arrangement in the planning area.

Where needed to identify the habitat management area, install 1-inch by 5-foot (or larger) pipes, driven at least 1-foot into the soil to identify habitat boundaries, and provide “aiming sticks” for equipment operators.

The habitat must not be planned where turn rows, roads, or storage areas are needed.

After establishment, equipment travel and manipulation of habitat during the nesting season (April 15- September 15) shall be limited to actions needed to control woody or invasive vegetation.

Criteria for Establishing Plants that Provide Shelter, Food, or Enable Movement

Establishment of vegetation may be specified when habitat evaluation results indicate that natural cover or food is inadequate and the following criteria are satisfied.

Arrange plantings to maximize their utility to wildlife.

Prioritize use of native species, regional/local eco-types, and source identified releases. Use of introduced/exotic species is discouraged.

Specify use of high quality and adapted species that produce desirable habitat conditions.

Specification of viable, adapted wild collected native seed is authorized, provided that the plants are successfully established.

Site preparation, planting dates, and planting methods shall optimize vegetation survival and growth.

Natural Vegetation

Establishment of or preservation of naturally occurring grass, forbs, shrubs or forest stands may be specified when they will meet the client’s objective.

Grasses or Forbs

Grass and forb establishment may be specified utilizing site adapted plant materials and seeding rates as indicated in Appendix 1, *Planting Perennial Grasses & Wildflowers for Habitat* (attached).

Continued on next page.

Food Plots & Temporary Cover

Food plots and temporary cover by themselves do not satisfy the criteria of this practice.

Food plots are seldom needed to correct a lack of wildlife shelter or food on land that is managed to meet or exceed the minimum WHEP value. However, food plots may address client objectives for attracting and concentrating wildlife for their use and enjoyment.

Food plots may be incorporated as components of early succession habitat management plans utilizing site adapted plant materials and seeding rates as indicated in Appendix 2, *Planting Food Plots & Temporary Cover for Habitat* (attached).

Criteria for Establishing Structures that Provides Shelter, Food, or Enable Movement

Installation of the following structures may be specified when natural cover or food are inadequate.

Nest Structures

Utilize specifications for materials, size requirements, installation location(s) and predator guard(s) for desired nesting wildlife provided by a NRCS, North Carolina Wildlife Resources Commission, or U.S. Fish & Wildlife biologist.

Brush and Rock Piles

If possible, brush piles should be by-products of other land management activities such as forest harvest, land clearing, and firewood cutting.

Locate a brush or rock piles within a forest or within 10 feet of a forest edge, hedge, farm path, woods road, stream, or marsh.

Separate adjacent brush or rock piles by at least 100 feet.

Limit brush or rock pile density to 8 per acre.

Build a base at least 6-inches tall using cull logs, old fence posts, or piles of stumps or rocks. Arrange the base materials so 4-10” gaps remain between items in the base.

Addition of sections of plastic pipe or clay drain tile in the base of the pile may enhance the pile’s utility to burrowing animals

Place tree tops, old Christmas trees, limbs, stumps, or rocks on top of the base to create a mound covering the base.

Finished piles shall be at least 4-feet high and 8-feet in diameter.

Criteria for Managing Vegetation to Sustain Desirable Habitat Conditions Over Time

Specify one or more of the following management actions in a rotation that maintains habitat in desirable amounts and arrangement in the planning area.

The normal interval between any early succession habitat management actions is 12 to 36 months.

Burning

Utilize the NRCS-NC Prescribed Burning (338) practice to control advance of succession in fields and forest understory.

Disking

Utilize a disc, drag or equivalent implement to chop up plant residue and scarify the soil surface to a depth less than 5-inches.

Disking in October through December typically encourages reproduction of partridge pea and ragweed. Disking later than Thanksgiving may encourage growth of annual grasses and blackberry.

Run the implement perpendicular to the land slope to the greatest extent possible.

Attempt to leave at least 30% of ground covered by plant residue.

Alternate strips of disked and un-disked land reduce soil erosion by breaking slope length and provide interspersion of different habitat resources. Strips shall be at least 30 feet wide.

Avoid disking slopes greater than 7% and locations where concentrated flow will cause gully formation.

Herbicide

Specify application of an appropriate herbicide according to the product label’s directions for controlling introduced grasses, invasive species or woody vegetation as soon as they are observed.

Time the application to ensure the stage of plant growth maximizes control results.

Summer Treatment Needed for:
Bahiagrass, Bermudagrass, Dallisgrass, Johnsongrass, Multiflora rose and Sericea lespedeza

Fall Treatment Needed for:
Tall fescue and Orchardgrass

Grazing

Utilize grazing to control growth of woody plants that cannot be controlled using other means.

When grazing will occur, use NRCS NC Prescribed Grazing (528) to plan for stocking levels and grazing rotations that adequately protect desirable habitat conditions.

Mowing

Utilize a mower to:

- control pest plants that cannot be controlled using other means
- release new habitat plantings from competition with unwanted vegetation
- maintain vigor and palatability of plants growing in food plots, such as white clover

Baling hay from the habitat area may be specified when accumulation of thatch would cause unacceptable smothering of desirable vegetation.

CONSIDERATIONS

Raccoon depredation on bird nests is most likely to occur in early succession habitat located next to swamp forests and hardwood stream buffers.

Bird nesting success is higher in early succession habitat established on landscapes dominated by agriculture, than on landscapes dominated by forestry.

Vegetative manipulation to maximize plant and animal diversity can be accomplished by disturbance practices including: selected herbicide techniques, brush management, prescribed burning, light disking, mowing, prescribed grazing, forest thinning, or a combination of those actions.

Design and install the treatment layout to best facilitate operation of all the machinery. Whenever possible, lay out management actions in patches (or strips) with size that allows full width passes by the farm implements available to the client.

PLANS AND SPECIFICATIONS

Specifications for applying this practice shall be prepared for each site and recorded using approved specification sheets, job sheets, technical notes, and narrative statements in the conservation plan (including references to plans prepared by other agencies or consultants), or other acceptable documentation.

Minimum documentation shall include:

A narrative or job sheet indicating:

a. the practice's intended purpose,
b. site preparation and planting method(s); and, equipment to be used,
c. site specific needs for soil amendments, cultural, pest management or other practices,
d. plant material to be planted,
e. plant spacing and arrangement,
f. operation and maintenance instructions
g. location and timing of needed management actions
h. requirement to compliance with all federal, state and local laws.

A map indicating location:

a. where early succession habitat will be established,
b. how rotational management will be laid out, and
c. sensitive resource areas that need special care during site preparation activities.

OPERATION AND MAINTENANCE

Operation and maintenance of this practice shall be planned for at least 36 consecutive months.

The following actions shall be carried out to ensure that this practice functions as intended. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

- Inspect plantings for mortality during their first growing season. Re-plant areas where survival is less than 50% of the intended plant density.
- Protect the habitat from herbicide damage, especially from adjacent cropland. Use directed sprays and management strategies to control drift as specified in NRCS NC practice Pest Management (595).
- Livestock access to the habitat shall be controlled to ensure no damage to soil, water or plants occurs in the habitat.

- Inspect the habitat and repair damage from
- Pest Management (595) practice if pesticide use is specified.

Any harvest or management of forest products must not compromise the practice's ability to address the specified purpose(s).

REFERENCES

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Hamrick, R.G., and J.P. Carroll. 2002. Response of northern bobwhite populations to agricultural habitat management in south Georgia. Proceedings of the 9th Annual Conference of the Wildlife Society 9:129.

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pest infestations and erosion. Use NRCS NC

Appendix 1-
Planting Perennial Grasses & Wildflowers for Habitat

Native Warm Season Grasses	Seeding Rate (Lbs. Pure Live Seed/ac)[1]	Planting Date
'*Atlantic*' Coastal panicgrass	6	April-June
Big bluestem	8	April-June
Broomsedge (*Andropogon*)	8	April-June
Deertongue (*Dichanthelium spp.*)	6	April-June
Eastern gamagrass	10	April-June
Indiangrass	8	April-June
Little bluestem	7	April-June
Purple top	8	April-June
Sideoats grama	6	April-June
Switchgrass	5	April-June

[1]All seeding rates are for a single-species planting. When planting mixtures, the seeding rate for each species included is to be reduced in proportion to the number of species in the mix, the composition preferred and the growth form and desired structure of the resulting stand. Seeding rates are given for broadcast plantings. Drilled plantings may require less seed.

Native Wildflowers	Seeding Rate (Ozs. Pure Live Seed/ac)[1]	Planting Date
Aster (*Aster spp*.)	1 oz.	August-October
Black-eyed susan (*Rudbeckia spp*.)	1 oz.	July-September
Coneflower (*Echinacea spp*.)	4 oz.	June-August
Coreopsis (*Coreopsis spp*.)	1 oz.	June-August
Goldenrod (*Solidago spp*.)	1 oz.	August-October
Ironweed (*Vernonia spp*.)	1 oz.	July-September
Milkweed (*Asclepias spp*.)	3 oz.	June-August
Perennial sunflower (*Helianthus spp*.)	3 oz.	July-September
Tickclover (*Desmodium spp*.)	3 oz.	July-September

[1]Native wildflowers are only planted to enrich diversity of native grass cover. This practice and these seeding rates are inappropriate for landscaping plantings. The full seeding rate shall be specified for each species in a seed mix, regardless of how many species are in the mix. Seeding rates are given for broadcast plantings. Drilled plantings may require less seed.

Appendix 2-
Planting Food Plots & Temporary Cover for Habitat

Plants[1]	Seeding Rate (lbs/ac)[2]	Planting Date
Cool-Season Legumes[3]		
Alsike clover (perennial)	10	Sept 1 – Oct 1
Arrowleaf clover (annual)	10	Aug 15 – Oct 1
Ball clover (annual)	5	Aug 15 – Oct 1
Berseem clover (annual)	20	Aug 15 – Oct 1
Crimson clover (annual)	25	Aug 15 – Oct 1
Ladino white clover (perennial)	8	Sept 1 – Oct 1; Feb 15 – Apr 1
Red clover (biennial)	15	Sept 1 – Oct 1; Feb 15 – Apr 1
Rose clover (annual)	20	Aug 15 – Oct 1
Subterranean clover (annual)	15	Aug 15 – Oct 1
White-dutch clover (perennial)	6	Sept 1 – Oct 1; Feb 15 – Apr 1
Sweetclover, yellow or white (biennial)	20	Sept 1 – Oct 1; Feb 20 – Apr 1
Alfalfa (perennial)	20	Aug 15 – Sept 15; Mar 1 – May 1
Austrian winter peas (annual)	50	Aug 15 – Oct 1
Birdsfoot trefoil (perennial)	10	Aug 15 – Oct 1; Feb 20 – Apr 1
Annual Cool-Season Grasses		
Oats	100	Sept 1 – Oct 15; Feb 15 – Mar 15
Rye	100	Sept 1 – Oct 15
Triticale	100	Sept 1 – Oct 15
Wheat	100	Aug 15 – Oct 15
Annual Warm-Season Legumes[3]		
Alyceclover	20	Apr 1 – June 1
American jointvetch	15	Apr 1 – June 1
Catjang cowpeas	30	Apr 1 – June 15
Iron-clay cowpeas	75	May 1 – June 15
Lablab	20	May 1 – June 15
Soybeans	85 60	May 1 – June 15
Re-seeding soybeans	40	May 1 – June 15
Kobe and Korean lespedeza	30	Feb 15 – Mar 15
Partridge pea	15	Mar 1 – June 1

[1]Most commercial mixes are comprised of three or more of the species (or varieties) included in this chart.

[2]All seeding rates are for a single-species planting. When planting mixtures, the seeding rate for each species included is to be reduced in proportion to the number of species in the mix, the composition preferred and the growth form and desired structure of the resulting stand. Seeding rates are given for broadcast plantings. Drilled plantings may require less seed.

[3]All legume seed should be inoculated with species-specific inoculant prior to planting, unless the seed was purchased pre-inoculated.

Annual, Non-native Warm-Season Grasses

Corn	13	Apr 1 – May 15
Grain sorghum (milo)	10	Apr 15 – June 15
Egyptian wheat	15	Apr 15 – June 15
Browntop millet	30	Apr 15 – June 15
German (foxtail) millet	25	Apr 15 – June 15
Japanese millet	25	May 1 – Aug 31
Pearl millet	30	Apr 15 – June 15
Dove proso millet	35	Apr 15 – June 15
White proso millet	35	Apr 15 – June 15

Other Plantings

Buckwheat (warm season)	40	Apr 15 – June 1
Chicory (perennial; cool season)	10	Apr 1 – May 15
Chufa (warm season)	50	Apr 15 – June 15
Rape (cool season)	8	Mar 1 – May 15; Aug 15 – Oct 1
Sesame (warm season)	12	Apr 15 – June 1
Sunflower (warm season)	25	Apr 15 – May 15
Turnips (cool season)	8	Mar 1 – May 15; Aug 15 – Oct 1