Natural Resources Conservation Service

CONSERVATION PRACTICE STANDARD

# UPLAND WILDLIFE HABITAT MANAGEMENT

CODE 645

(ac)



## DEFINITION

Provide and manage upland habitats and connectivity within the landscape for wildlife.

## PURPOSE

This practice is used to accomplish the following purpose:

- Treating upland wildlife habitat concerns identified during the conservation planning process that enable movement, or provide shelter, cover, and food in proper amounts, locations and times to sustain wild animals that inhabit uplands during a portion of their life cycle

## CONDITIONS WHERE PRACTICE APPLIES

- Land where decision-maker has identified an objective for conserving a wild animal species, guild, suite, or ecosystem.
- Land within the range of targeted wildlife species which is capable of supporting the desired habitat.

## CRITERIA

**General Criteria Applicable to All Purposes**

The Illinois Wildlife Habitat Evaluation or species-specific habitat model, approved by the NRCS state office, shall be used to identify habitat-limiting factors in the planning area.

Application of the practice shall remove or reduce limiting factor(s) in their order of significance, as indicated by results of the habitat evaluation.

Application of the practice alone, or in combination with other supporting and facilitating practices, shall result in a conservation system that will enable the planning area to meet or exceed the minimum quality criteria for wildlife habitat established in Section III of the FOTG.

Plant material specifications shall include only high quality and adapted species.

Native plant materials will be used whenever possible. The use of native species will reduce problems associated with non-adapted and invasive plants.

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

If grazing is used as a management tool, then PRESCRIBED GRAZING (528) must accompany the practice.

Equipment travel, grazing, haying and other disturbance to habitat shall be restricted during critical periods such as nesting. Exceptions may be made during the period of vegetation establishment and for

management activities to maintain the health of the plant community and to control noxious and invasive weeds.

Techniques for control of regulated noxious weeds and other invasive plants shall be specified.

Biological control of undesirable plant species and pests (e.g., using predator or parasitic species) shall be implemented where available and feasible.

Any habitat management technique used will ensure soil loss is within tolerable limits (T).

Protect forbs and legumes that benefit native pollinators and other wildlife and provide insect food sources for grassland nesting birds. A diversity of forbs and other plants with showy flowers is desirable in all plant communities for the benefit of native pollinators. Spraying or other control of noxious weeds shall be done on a “spot” basis, where possible.

**Additional Criteria to Provide SpecificCover Types for the Desired WildlifeSpecies**

**CROPLAND**

The Illinois Wildlife Habitat Evaluation should be consulted for minimum criteria for cropland recommendations for wildlife.

CONSERVATION CROPPING SEQUENCE (328), CONTOUR BUFFER STRIPS (332), STRIP CROPPING (585), and CONSERVATION TILLAGE (329), can provide positive habitat values. Use of a diversified crop rotation and reduced tillage, especially no tillage after harvest until spring, will benefit wildlife.

The introduction of cover types and plant diversity increase the habitat values of cropland. FIELD BORDER (386) and GRASSED WATERWAYS (412) can introduce a valuable grassland component into cropfield situations when beneficial species and management are used. See Field Border Wildlife Job Sheet (386w) and Grassed Waterways Wildlife Job Sheet (412w) for more information. Native plants are encouraged since they are well-adapted to sites, less invasive, and likely to provide quality habitat with less long-term maintenance.

RIPARIAN FOREST BUFFER (391) AND HEDEGROW PLANTING (422) practices placed in or adjacent to cropland can increase the cropland value for wildlife by adding a tree and shrub component, where appropriate.

Maintain existing cover within or adjacent to cropland such as grown up fence rows, thickets, idle grassland, old fields and woody draws.

Reduced/eliminated chemical use will allow significant growth of annual plants, thus enhancing the cropfield values for wildlife.

**GRASSES, LEGUMES AND FORBS Development**

High quality nest and brood cover for grassland species of wildlife are critically needed cover types for upland wildlife in Illinois. Native plants and communities are encouraged since they are well-adapted to sites, less invasive, and likely to provide quality habitat with less long-term maintenance.

However, due to cost, availability, and landscape position, native plants may not be feasible in all situations.

CONSERVATION COVER (327) or RESTORATION and MANAGEMENT of DECLINING HABITATS (643) will be used to develop grassland cover for wildlife. Seeding mixes for wildlife will contain at least 3 species with at least one species that is a legume.

Eradication of introduced invasive plant species is recommended to provide suitable conditions for grassland development.

Interseeding of legumes and forbs into existing grass stands can provide a needed food source and add plant diversity to attract beneficial insect populations. CONSERVATION COVER (327) will be used for appropriate seeding mixtures/techniques for the reestablishment of legumes into existing grass stands.

**Management**
Used alone or in combination with other techniques, mechanical methods can successfully manipulate successional stages of habitat. See EARLY SUCCESSIONAL HABITAT DEVELOPMENT/MANAGEMENT (647) and RESTORATION and MANAGEMENT of DECLINING HABITATS (643) for additional information.

**Strip Disking**
Strip disking (2-4" deep leaving at least 50% bare soil) of existing stands (greater than 4 years old) may be necessary to increase the amount of open ground and encourage a diverse plant community of annual and perennial plants. Disk between October 1 and April 15. Alternate disked strips 75' wide or less, with buffer strips at least 2 times the disked width, across the field on contour/cross- slope. Rotate disked and undisked strips on a 3 year or longer rotation. Disking shall be done within tolerable soil loss limits. Use Strip Disking Job Sheet 647A for planning site specific strip disking applications.

**Mowing**
Annual mowing or mowing of entire stands isdiscouraged since mowing greatly decreasesplant diversity and reduces residual coveravailable for the following nesting season. If mowing is necessary to maintain legumes, reduce and control noxious weeds and woody plants, two options are available:

1. Mow once, using a rotary or flail mower, during August. Most ground nesting wildlife will have completed their nesting cycle yet there is still growing season remaining to allow residual growth. Mow no more than one-third of the field every year alternating mowed and unmowed strips at least 30 feet wide or wider. Rotate mowed strips across the field every year. Mow cool season grasses no shorter than 6 inches. Native warm season grasses should be mowed no shorter than 8 inches.
2. A second option for mowing would be strip mowing in the spring. Mowing should be done March 15 to April 15 to encourage vegetative diversity without greatly impacting ground nesting activities or loss of fall food plants. Mow at least 6 inches high and no more than one-third of the field every year. Rotate mowed strips across the field every year.

If mowing is used as a habitat management practice, residues will be thoroughly shredded to prevent excess litter accumulation.

**Prescribed Grazing**
Use PRESCRIBED GRAZING (528) to manipulate plant succession, reduce ground litter, and provide dusting areas. Livestock can be beneficial to maintaining the quality of herbaceous cover and controlling invasive plants when managed in accordance with a grazing plan with wildlife habitat management as the primary objective. The grazing technique requires careful management to prevent overgrazing. Timing of haying and grazing will avoid peak periods of wildlife nesting and allow the establishment, development, and management of vegetation for the intended purpose. When possible, rotational grazing should be utilized to benefit wildlife during rest periods.

**Prescribed Burning**
Use PRESCRIBED BURNING (338) to remove excess litter, which can reduce the quality of wildlife habitat. Controlled fire can allow germination of seed bearing annuals, increase plant species diversity, control unwanted woody cover, and open up the stand for movement of small animals and birds. Burn no more than one third of the grassland acres in an area, in any one year. However, exceptions can be made to burn up to 50 percent of an area in cases of small fields and when weather conditions have prevented burning in previous years. Consider the effect of the timing of the burn on wildlife species using the grassland.

**Herbicide Treatment**
Use selected herbicides to manipulate plant succession 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 should be based on several factors including product effectiveness, non-target species impacts, toxicological risks, and off-site movement of chemicals. See Conservation Planning Standard PEST MANAGEMENT (595) and Job Sheet 647B Herbicide Application for Plant Succession Management for recommendations and precautions.

**WOODLAND AND SHRUBLAND**

**Development**
Species recommendations will be based on landowner objectives and site potential. Planting trees and shrubs has the potential of adversely affecting non-target species. Careful consideration must be given when planting trees and taller shrubs in historic prairie region of the state. Soils and site potential should guide the plant species selected. See RESTORATION AND MANAGEMENT OF DECLINING HABITATS (643) for more information.

Woody plantings will follow the criteria and guidelines in HEDGEROW PLANTING (422), TREE/SHRUB ESTABLISHMENT (612), WINDBREAK/SHELTERBELT ESTABLISHMENT (380). These standards provide guidelines for clump and block plantings and reinforcement of existing woody cover.

Where dense woody cover is lacking, but necessary to meet species objectives, areas(s) comprising native shrubs can be established. Plant clumps of native shrubs, 1,500 square feet to ¼ acre in size, for each 5 to 40 acres of habitat that lacks woody cover. See Quail Covey Headquarters Job Sheet 645B for more information and specifications.

**Management**
Manipulation of woody tree and shrub stands to achieve early successional plant composition encourages re-growth and regeneration (suckering) of palatable and nutritious vegetation beneficial to large mammals. Browse management also increases plant diversity, which supports a variety of other species. Browse management can be accomplished by mechanical (shearing, hand-cutting, mowing, etc), or prescribed burning.

Encourage old growth trees (greater than 80 years or 16 inches diameter breast height (dbh) by deferring timber activities to maximize wildlife values on at least 10 percent of the forested area.

**Forest Stand Improvement**
Removal of competition will provide sunlight and growing space necessary for full crown development of the target species. FOREST STAND IMPROVEMENT (666) will be used for recommendations on thinning extent and techniques.

Preserve and create through Forest Stand Improvement, den trees (trees with cavities large enough to shelter wildlife) and snags (standing dead trees and limbs) which serve many purposes for forest wildlife species. For upland interior forested areas, leave at least 6 snags and 7 den trees per acre. Ideally, leaving 1 den tree greater than 20 inches dbh, 4 snags and 4 den trees in the 10 - 20 inches dbh range, and 2 snag trees and 2 den trees less than 10 inches dbh per acre in order to provide an optimal mix. Floodplain forest areas should have even more, with optimum levels of 12 snags and 25 den trees per acre.

Maintain non-invasive native vines to the maximum extent possible. Leave at least 4 - 6 live native vines per acre on trees. Leave vines on den trees and trees that are not considered crop trees for other purposes.

**Livestock Exclusion and Acces Control**
Livestock shall be excluded from woodland when forest succession is reliant upon natural regeneration of seedlings. Conservation practice standard USE EXCLUSION (472) can be used to prevent improper use

of wooded areas by livestock. To improve woodland edge habitat and adjacent grassland habitat, install the fence with at least a 30 foot setback from the woodland edge.

**Woodland Edge Feathering**
Edge feathering can be used to create a transitional habitat zone of shrubs, vines and herbaceous vegetation between cropland or grassland and the overstory canopy along a woodland edge. There are three methods to feather the edge of woodland.

1. **Thin overstory trees in the first 60 to 90 feet of the woodland edge.** The regrowth and sprouting that result will provide benefits for 5 to 10 years. Invasive species (e.g., bush honeysuckle and multiflora rose) must be controlled before the overstory is thinned.
2. **Create a feathered edge along woodland by planting shrubs and grasses in the open field along the woodland edge.** Plant at least 2 rows of shrubs along the woodland edge and a field border along the cropland edge to make up a zone at least 30 feet wide.
3. **Natural regeneration**. Shrubs, brambles and vines may be used where seedlings are present and cessation of mowing or cultivation will allow desired vegetation to grow. Where invasive species are present (e.g., bush honeysuckle and multiflora rose) plant desired species rather than allowing natural regeneration.

To maintain maximum values of the feathered edge, the area should be re-treated when more than 50 percent of vegetation in the transitional zone exceeds a height of 15 feet. See Woodland Edge Feathering Job Sheet 645D for more information and specifications.

**WILDLIFE CORRIDORS**
Corridors are established to connect isolated and fragmented habitat areas and increase the number of connections between habitats.Wildlife corridors are often planned as field borders, hedgerows, windbreaks, etc.

Wildlife corridors are developed by establishing a band of vegetation suitable for wildlife cover that connects one habitat area with another. When possible, vegetative composition of a corridor should be similar to the habitat areas that are being connected. See FIELD BORDER (386) and Field Border Wildlife Job Sheet (386w) for more information.

For species selection, see Biological Technical Note #22 Planning Tree and Shrub Plantings for Wildlife, and conservation practice standard 327 CONSERVATION COVER for plants that provide wildlife habitat and site requirements for each plant species.

The minimum width for a wildlife corridor is 30 feet to reduce excessive predation on wildlife using these edge habitats.

Root pruning can be used to prevent encroachment of woody material into cropfield edges. Root pruning is used to maintain crop yields adjacent to woody fencerows or woodland. Root pruning on a 3 - 5 year interval prevents crop yield reduction.

When corridors are established and managed for wildlife in an area that is grazed, the edge will be fenced to exclude livestock.

Herbaceous corridors should be treated to control woody vegetation. If mowing is used, mow only once in August. If mowing is used as a habitat management practice, residues will be thoroughly shredded to prevent excess litter accumulation.

**Additional Criteria to Provide Structures forNesting and Shelter for Desired WildlifeSpecies**
Artificial nest structures can provide nesting opportunities for cavity or roost nesting birds. Design, specifications, and construction shall be consistent with plans included in the IDNR “Wood Projects for Illinois Wildlife”, NRCS Fish and Wildlife Habitat Management Leaflet #20 *Artificial Nesting Structures at:* or other designs specified by a technical wildlife agency.

Brush piles of at least 10 - 15 feet in diameter and 6 - 8 feet high can be developed with the material left from forestry practices. Brush piles can provide shelter for many wildlife species from predators and severe weather. Rock piles can be built to benefit amphibians and reptiles. See Wildlife Brush Piles Job Sheet 645C for more information and specifications for constructing both brush piles and rock piles.

**Additional Criteria to Provide a Variety ofFoods for the Desired Wildlife Species**

Many wildlife species depend on and prefer native weed seeds and wild fruits for winter food. In many of Illinois' agricultural landscapes food plots may be unnecessary because waste grain and weed seeds are available to wildlife for food. However, additional high-quality food can be provided in the form of unharvested grain crops, green browse food plots or standing grain food plots.

Strips of unharvested grain can be left along the edges of adjacent other cover types. Strips should be at least 30 feet wide (12, 30 inch rows) and at least one-quarter acre in size

Food plots should be located on the least erosive areas of each field. Soil loss must be maintained within tolerable limits (T). Adequate vegetative cover must be developed and maintained to provide both wildlife and erosion control benefits. If food plots are relocated or discontinued, the site will be re- seeded after a year of fallow.

Plots may be located on slopes greater than 5 percent provided soil losses do not exceed tolerable limits (T). Plots planted on the contour are recommended.

The food plot should be adequately fertilized. Proper fertilization will help ensure successful establishment and growth of the food plot.

Weed control may not be required as some weeds such as foxtail and ragweed actually benefit wildlife by providing higher protein and greater number of seeds than domestic grains.

Food plots will be protected from livestock grazing.

Plantings shall be seeded at proper time to ensure maturity of food plants.

See Illinois Wildlife Food Plot Job Sheet 645A for additional information and specifications.

**Additional Criteria to Provide WaterRequirements for the Desired Kinds ofWildlife Species**

Water requirements for Illinois' upland wildlife species can be met with one year-round source of surface water within one-half mile of the habitat. To develop sources of water for wildlife, use the WATERING FACILITY (614) Standard or POND (378) Standard.

## CONSIDERATIONS

The practice may affect the target species as well as non-target species through mechanisms such as hunting, predation, disease transmission, nest parasitism, etc. Consider effects of the practice on species with declining populations.

Wildlife population control may be necessary to protect and maintain certain habitats, which is a responsibility of the landowner. State and federal regulations may apply to population control methods.

Undisturbed areas conserved at a sufficient extent during management activities may sustain disturbance-intolerant animals and plants.

Other conservation practices may be utilized in conjunction with the practice to create a wildlife management plan such as:

Conservation Cover (327) Early Succession Habitat

Development/Management (647)

Field Border (386)

Filter Strip (393)

Forage Harvest Management (511) Forest Stand Improvement (666) Hedgerow Planting (422)

Pasture & Hay Planting (512) Pond (378)

Prescribed Burning (338)

Prescribed Grazing (528)

Restoration and Management of Declining Habitats (643)

Riparian Forest Buffer (391) Riparian Herbaceous Cover (390) Tree/Shrub Establishment (612)

Use Exclusion (472)

Watering Facility (614)

Windbreak/Shelterbelt Establishment (380)

## PLANS AND SPECIFICATIONS

Plans and specifications for the practice shall be prepared by persons with adequate training in the fields of wildlife management, biology, or ecology.

Written specifications, schedules and maps shall be prepared for each planning area and each habitat type.

Specifications shall:

- Identify the amounts and kinds of habitat elements, locations and management actions necessary to achieve the client's management objectives.
- Describe the appropriate method, timing and intensity of management needed to produce the desired habitat conditions and sustain them over time.

Specifications shall be transmitted to clients using NRCS approved specifications sheets, job sheets, or customized narrative statements included in the conservation plan.

## OPERATION AND MAINTENANCE

The following actions shall be carried out to ensure that the practice functions as intended throughout its expected life:

- Evaluate habitat conditions on a regular basis in order to adapt the conservation plan and schedule of implementation.
- Annually inspect and repair structural or vegetative components of the practice.

## REFERENCES

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