

NATURAL RESOURCES CONSERVATION SERVICE
VIRGINIA CONSERVATION PRACTICE STANDARD
UPLAND WILDLIFE HABITAT MANAGEMENT

(Acre)

Code 645

DEFINITION

Creating, restoring, maintaining, or enhancing areas for food, cover, and water for upland wildlife and species which use upland habitat for a portion of their life cycle.

PURPOSES

- Provide a variety of food for the desired wildlife species through management of the biophysical community.
- Provide a variety of cover types for the desired wildlife species; examples include nesting, fawning, loafing, escape, travel corridors, and thermal (winter).
- Arrange habitat elements in proper amounts and locations to benefit desired species.
- Manage the wildlife habitat to achieve a viable wildlife population within the species home range.
- Provide water for the desired wildlife species.

CONDITIONS WHERE PRACTICE APPLIES

On all landscapes suitable for the development/management of the biophysical communities needed within the home range of the desired species.

CRITERIA

GENERAL CRITERIA APPLICABLE TO ALL PURPOSES

Upland wildlife habitat management shall consist primarily of managing vegetation to provide the quantity, quality, and distribution of upland habitat elements that will best meet the landusers' objectives.

Habitat development and management shall be based on a wildlife habitat appraisal or suitable habitat evaluation. The appraisal shall be used to determine a habitat rating or habitat suitability index (HSI) for either individual fields, land unit habitat type, or natural community. An overall evaluation for the entire property or operating unit may also be obtained.

Habitat Elements

The following habitat elements will be considered when assessing wildlife habitat. Not all elements may apply to every habitat type.

1. Food
 - a. Type and quality
 - b. Amount
 - c. Distribution and seasonal availability
2. Cover
 - a. Type – nesting, brood rearing, resting/roosting, protection/escape, and winter
 - b. Amount
 - c. Quality
 - d. Distribution

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

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3. Water

- a. Quality
- b. Quantity
- c. Accessibility
- d. Seasonal availability

Note: In Virginia, water availability is usually not a limiting factor.

4. Interspersion and Connectedness

- a. Food
- b. Cover
- c. Corridors to connect habitat elements

Development and Management of Wildlife Habitat

As indicated by the wildlife habitat evaluation (use WHIP Wildlife Habitat Appraisal Guides or equivalent), certain habitat elements may be weak or missing. For the desired species, identify the types, amount, and distribution of habitat elements and management actions necessary to achieve the management objectives.

The amount and types of habitat elements planned, their location and management shall be identified in a management plan.

The use of native plant materials shall be used whenever possible.

If an evaluation determines that the current habitat quality is less than 0.5 (on a scale of 0 to 1), recommendations shall be made to improve the existing habitat so that the planned (future) condition will have a quality rating of 0.5 or more.

If an evaluation determines that the current condition is equal to or greater than 0.5, recommendations shall be made to maintain the existing habitat in its present condition, or improve it toward optimum conditions.

Where habitat is lacking or less than optimum, provide nesting, feeding, resting, and/or protective cover, travel corridors, and water sources as needed, according to Virginia Conservation Practice Standards.

Vegetative manipulations to restore plant diversity and provide for wildlife habitat shall be accomplished by burning, light disking, herbiciding, selective cutting or thinning, haying or mowing, planting of perennial or annual food plots, or a

combination of these methods, as appropriate. Artificial nest structures shall be provided when natural sites are insufficient for the desired species.

Where feasible, prescribed burning shall be utilized instead of mowing.

All areas managed for upland wildlife habitat shall be protected, insofar as practicable, from the adverse effects of agricultural, commercial, and residential activities. Livestock and other domestic animals shall be managed or excluded as appropriate from designated habitat areas.

Management and maintenance activities shall be conducted at times when there will be minimal disturbance of wildlife and their habitat. For planning purposes, the period April 1 – August 15 will be considered the nesting season for most wildlife species in Virginia.

Note that *establishment* of plant communities often requires short-term manipulation or disturbance during the nesting season until plants are fully established. Nesting season restrictions don't apply during this establishment period. Other post-establishment, partial manipulations up to one third to ½ of the area in any one year may be occasionally needed in the nesting season to control invasive plants, etc. (e.g., burn in late spring to control woody plants).

The amount and kinds of habitat elements planned, their location and management shall be identified in a management plan.

This standard does not attempt to list all possible wildlife habitat development and management practices. Others may be recommended by an NRCS Biologist or other technical wildlife agency.

Haying can be conducted to maintain or improve vegetation structure and composition so as to improve the desired wildlife habitat. Be aware of program restriction on this practice.

Management measures shall be provided to control invasive species and noxious weeds, while avoiding or limiting impact to desirable species.

Noxious weeds shall be controlled as required by state law.

To protect forbs and legumes that benefit native pollinators and other wildlife and provide insect

food sources for grassland nesting birds, spraying or other control of noxious weeds shall be done on a “spot” basis or by using a selective herbicide.

All habitat management techniques will ensure that soil loss is within acceptable limits.

CRITERIA FOR ESTABLISHMENT OF UPLAND HABITAT

Permanent Herbaceous Vegetative Cover Establishment: Grasses, Legumes, Forbs

Native and introduced grass, legume, and forb mixtures beneficial to upland wildlife are indicated in the *Plant Establishment Guide for Virginia* by individual practice. Native plants and plant communities are encouraged since they are well-adapted to sites, less invasive, and likely to provide higher quality habitat without costly long term maintenance. However, due to cost, availability, and landscape position, native plants may not be feasible in all situations.

Establishment procedures are found in the *Plant Establishment Guide for Virginia* (Appendices B and C) and in the Virginia Conservation Practice Standard *Conservation Cover (Code 327)*.

Optimum size and height of herbaceous cover for nesting is dependent upon the species of concern. Generally, 10 inches or greater height is optimum although some grassland bird species prefer 4” - 6” height. In general, minimum nesting cover size of 2 acres for quail and rabbit is recommended; however, some wildlife species are area sensitive and may require larger blocks (25 or more acres) to provide suitable overall habitat needs. Minimum size is 1.0 acre.

Encourage blocks of herbaceous cover as opposed to linear plantings wherever possible. Optimum width of herbaceous cover is 300’ - 600’, with a minimum width of 100’. Where block plantings are not practical, such as around crop fields, establishment of herbaceous or mixed shrub and herbaceous field borders may be used. Minimum border width is 30 feet. See Virginia Conservation Practice Standard *Field Border (Code 382)*.

Locate herbaceous practices to increase the interspersed (mixing) of cover types. Locate adjacent to existing cover and food sources to maximize effectiveness. Protect seeding from mowing, burning, and grazing except as part of a management plan.

In addition to planting preferred species, management of existing vegetation or encouraging natural establishment of desired plants (e.g., disking, burning, herbicide, mowing) is often more cost efficient and effective for wildlife than planting. Use the *Plant Establishment Guide for Virginia*, (Appendix B and C), Virginia Conservation Practice Standards *Early Successional Habitat Development/Management (Code 647)* and *Restoration and Management of Declining Habitats (Code 643)* for criteria and guidance.

One simple effective practice for grassland/early successional animal species is to convert fescue (or other aggressive and/or low wildlife value species) to volunteer communities such as broomsedge – forbs. See the *Plant Establishment Guide for Virginia* for guidance.

Permanent Vegetative Cover Establishment – Trees and Shrubs

The decision to establish trees and/or shrubs will be in accordance with landowner objectives, based on a habitat evaluation or the target species requirements.

Planting trees and/or shrubs in blocks or strips has the potential to improve habitat for many wildlife species.

In most cases, the wider a woody area is the better it is for wildlife. Minimum width for general wildlife is 30 feet. Some woodland dependent species, including birds, require a minimum width of 300’ to successfully nest and avoid predators.

Woody plantings will follow the criteria and guidance in Virginia Conservation Practice Standards *Field Border (Code 386)*, *Hedgerow Planting (Code 422)*, or *Tree/Shrub Establishment (Code 612)*. Use the *Plant Establishment Guide for Virginia* for species selection and spacing criteria.

When planting larger areas in trees (e.g., to reduce forest fragmentation, or establish wildlife corridors) a mixture of native tree species alone will be adequate, since shrubs will volunteer on their own. However, adding shrubs at the initial tree planting will speed up the process and help establish a more complete plant community for wildlife. Scattered clumps of 25 mixed shrubs each within a larger tree planting is suitable.

Food Plots

A food plot is an annual or perennial planting to provide food for a variety of wildlife species.

Recommended food plot size is between 1-2 acres. Food plots will be a minimum 0.25 acre. In the absence of adequate winter cover, large block food plots (2-6 acres) may be planted to serve as both food and shelter.

Annual plantings should be rotated, where one half of the plot is planted each year while the unplanted half grows to annual forbs.

Refer to the *Plant Establishment Guide for Virginia* for food plot mixes.

A preferred alternative to planting annual food plots is to establish disk plots or strips and rotationally disk one half to one third of the area(s) each year. Adding a reseeding annual like partridge pea will increase food value. Periodic disking scarifies the seed and stimulates re-establishment.

Leaving 5 or more rows of standing crops (minimum 200' long) such as corn or soybeans is another method to provide annual food and cover.

If food plots are relocated or discontinued, the site will be reseeded based on this standard.

The planted food plot should be adequately fertilized and weeds controlled to avoid excessive competition. The presence of some weeds such as foxtail and ragweed benefit wildlife by providing cover and a high protein seed source. Disk plots normally do not require fertilization.

Food plots will be protected from livestock grazing.

CRITERIA FOR MANAGEMENT OF UPLAND HABITAT

Early Successional Vegetation Management

Many species of wildlife prosper at some stage of plant succession less than the climax condition. To achieve an early seral stage, an essential knowledge of local plant communities, their growth characteristics and species needs are required for providing effective wildlife habitat management.

Manipulation of vegetative successional stages typically occur on grassland, old field brushland, and forestland. Manipulation may occur by one or a

combination of the following methods: disking, haying, burning, chemical treatment, or mowing. Mowing is usually the least desirable method since it encourages thicker vegetative conditions. Refer to the *Plant Establishment Guide for Virginia* (Appendices B & C), and to Virginia Conservation Practice Standard *Early Successional Vegetation Management (Code 647)* for applicability and specifications.

Best results occur when one half to one third of the manipulation is applied rotationally each year.

Forestland Improvement

Apply this component to provide regeneration, maintenance, or conversion of non-merchantable timber and to manage forest and transition forest stands for wildlife benefits and stand diversity.

Preserve older forests over 100 years of age, or defer timber activities to create mature forests to maximize wildlife values.

Virginia Conservation Practice Standards *Use Exclusion (Code 472)* and *Fence (Code 382)* should be used to prevent habitat deterioration by livestock. Additional value can be added to existing forests and wood lots by extending fence lines into farm fields and establishing a field border next to the woods.

Identify and release important food producing (nuts, berries, and seeds) trees and shrubs which are shaded or bordered by less valuable trees.

Consider establishing woodland openings of 1-2 acres, to increase edge/early successional habitat. However, be aware that openings fragment larger wooded areas that are vital to many species. Daylighting (clearing 50 or more feet along road and establishing shrub/herbaceous vegetation) offers similar potential and concern.

Brush piles of 15' x 15' x 8' height can be constructed with the materials left from the forest stand improvement or opening development. Place the piles on the edge of the remaining woods.

For pine and many preferred hardwood (oak, etc.) stands, thinning at appropriate time

intervals allows sunlight to reach ground levels and encourage preferred wildlife plants. Periodic prescribed burning (every 2-4 years, rotationally applied) will further this effort, without harming tree growth.

Removal of undesirable competition will provide sunlight and growing space necessary for full crown development by the target species. This ensures additional food production and increased growth.

Preserve wildlife (den and snag) trees. Wildlife trees left after harvest serve many wildlife functions. The goal is to leave 2-3 snags per acre and 7-15 live trees > 6 in. dbh per acre as follows:

- 1-2 trees > 18" dbh/acre
- 2-5 trees > 12" dbh/acre
- 4-8 trees > 6" dbh/acre

Selective tree (uneven age) harvest, including shelterwood cuts is the preferred method for many wildlife species.

Management activities can be accomplished by one or a combination of the following methods: mechanical, chemical, or prescribed burning. Refer to Virginia Conservation Practice Standards *Forest Stand Improvement (Code 666)* and *Prescribed Burning (Code 338)*.

Cropland Management

Many conservation practices provide high quality habitat components in cropland. Introduction of cover and plant diversity generally add to increased habitat values for farm wildlife species. Practices such as residue management (minimum or no-till), various stripcropping practices, cover and green manure crops, conservation crop rotation generally provide good habitat for farm wildlife.

Most conservation practices, including grassed waterways and critical area planting, can be vital to farm wildlife, if wildlife friendly plants are used.

Retaining, protecting, and expanding existing woody areas, including farm woodlots, hedgerows, and fencerows, within farmland settings, improve wildlife habitat.

Artificial Structures

In most cases, proper management of vegetation will satisfy nesting and roosting needs. However, if

natural cavities are lacking, construct nest boxes and other artificial structures for cavity or other nesting species.

Design, specifications and construction shall be consistent with plans included in the Virginia Department of Game and Inland Fisheries publication, "Wildlife Plantings, Boxes, and Platforms".

Maintaining/Protecting Existing Special Habitats

Retain and buffer existing special areas such as springs, seeps, vernal pools, rock outcrops, shale barrens, sinkholes, and wetlands. These habitats often support rare and declining species. Leave or establish minimum 75' native plant buffers to protect these areas.

CONSIDERATIONS

The following items must be considered when managing an area for upland wildlife:

1. Purpose of the project, including identification of the wildlife species or groups of species to be supported and the habitat needs that can be met on the managed property.
2. Surrounding landscape and its relationship to the project location. Animal home range requirements often exceed the planned tract or farm limits. Note that wetlands and aquatic systems often help meet certain life cycle requirements for upland species.
3. Site conditions such as soils, available water sources, water quality and quantity, and existing vegetation.
4. The feasibility of providing food, cover, and water for the desired wildlife species at the appropriate time of year.
5. The positive and negative impacts that deer, groundhogs, and other upland wildlife may have on the successful management of the site as well as on surrounding areas. Also consider the potential for attracting nuisance wildlife into an area.

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6. The effects of management actions on compliance with federal and state hunting regulations (e.g., baiting).
7. Other constraints such as recurring costs, availability of equipment, access to the site, regulatory or cost-share program requirements, social effects, and visual aspects such as compatibility with the natural landscape.
8. Vegetative management will be directed towards habitat gains while maintaining the intent of protecting the soil resource.
9. Consider that manipulations of habitat may impact more than the desired kinds of wildlife. These possible effects shall be evaluated and taken into consideration during the planning process. For example, creating excessive edge or woodland openings can result in habitat fragmentation for some woodland species. Larger blocks of habitat are more beneficial to some songbirds and other wildlife.
10. This practice may be used to promote the conservation of declining species, including Threatened and Endangered (T & E) species. Follow the T & E species procedure found in Section I of the Virginia Field Office Technical Guide.
11. Linking fragmented habitats or cover types with corridors may greatly increase the use of an area by the species of concern. In general, the wider the corridor the more species will use it.

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site in accordance with previously listed criteria. They shall contain sufficient detail concerning management of habitat elements to ensure successful implementation of this practice.

The following is a list of the minimum data and documentation to be recorded in the case file:

1. Identify the wildlife species desired and the type of habitat to be managed. Provide the field location of the project and acres, and assistance notes. Also note the location of the managed habitat on the conservation plan map.

2. Management plan or completed copy of the appropriate Job Sheet(s) or practice instructions.

NRCS staff is encouraged to work closely with the NRCS, Virginia Department of Game and Inland Fisheries, U.S. Fish and Wildlife Service, or Virginia Division of Natural Heritage (rare or T&E species) biologists in developing site specific plans and specifications. These documents are to specify the requirements for installing the practice, such as the kind, amount, or quality of materials to be used, and/or the timing or sequence of installation activities.

OPERATION AND MAINTENANCE

An operation and maintenance plan shall be developed that is consistent with the purposes of this practice, its intended life, and the criteria for its design.

Actions will be carried out to ensure practices function as intended throughout their 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).

This practice will be inspected annually and restored or adjusted as needed, to maintain the stated purpose. Additional operation and maintenance requirements will be developed on a site-specific basis to assure performance of the practice as intended.

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

REFERENCES

1. NRCS, Virginia Field Office Technical Guide, Sections I and IV.
2. NRCS, *Plant Establishment Guide for Virginia*.
3. NRCS, WHIP Practice Instructions.
4. NRCS, WHIP – Wildlife Habitat Appraisal Guides – Virginia.

5. Virginia Department of Game and Inland Fisheries (VDGIF), Wildlife Plantings, Boxes, and Platforms.
6. VDGIF, Beyond the Food Patch: A Guide to Providing Bobwhite Quail Habitat.
7. VDGIF, Successful Wildlife Plantings.
8. VDGIF, Virginia's Bobwhite Quail.

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Approved Practice Narratives

(Acre)

CODE 645

645 D1 Upland Wildlife Habitat Management: Habitat will be improved and managed for upland wildlife species. Specifications, as well as an operation and maintenance plan will be provided.

645 D2 Upland Wildlife Habitat Management: Wildlife practices will be applied to improve habitat for upland wildlife species. Periodic management is required to retain the area in an optimal condition for selected animal species. Specifications, as well as an operation and maintenance plan, will be provided.

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