



**Natural Resources Conservation Service**  
**CONSERVATION PRACTICE STANDARD**  
**WETLAND WILDLIFE HABITAT MANAGEMENT**

**CODE 644**

**(ac)**

**DEFINITION**

Retaining, developing, or managing, wetland habitat for wetland wildlife.

**PURPOSE**

This practice is used to accomplish the following purpose—

- To maintain, develop, or improve wetland habitat for waterfowl, shorebirds, fur-bearers, or other wetland dependent or associated flora and fauna

**CONDITIONS WHERE PRACTICE APPLIES**

This management practice may be applied on or adjacent to wetlands, ditches, rivers, ponds and other water bodies where habitat will be actively managed for nesting, feeding, resting, or protective buffers for wetland wildlife.

This practice does not apply to:

1. Preserving natural areas, such as tidal marshes, freshwater wetlands, rivers, streams, and riparian corridors, where no active management or periodic maintenance is planned;
2. Other conservation practices where habitat is developed or improved (e.g., tree planting), but no active habitat management or maintenance is planned after the practice is established.

**CRITERIA**

**General Criteria Applicable to All Purposes**

Wetland wildlife habitat management shall consist of managing water and/or vegetation to provide the type of wetland habitat that meets the client's objectives. For the desired species, identify the types, amount, and distribution of habitat elements and the management actions necessary to achieve the management objectives.

Where habitat is lacking or less than optimum, apply this practice alone or in combination with other supporting Delaware conservation practice standards to provide habitat for nesting, feeding, resting and/or protective cover, travel corridors, and water, as needed. Applicable standards include, but are not limited to, Conservation Cover (327), Pond (378), Riparian Herbaceous

Cover (390), Riparian Forest Buffer (391), Shallow Water Development and Management (646), Structure for Water Control (587), Tree/Shrub Establishment (612), and Wetland Restoration (657).

Habitat development and management shall be based on the results of a habitat appraisal. The appraisal shall be used to determine a quality rating or Habitat Suitability Index (HSI) for an individual field, land unit, or ecological community.

NRCS reviews and periodically updates conservation practice standards. To obtain the current version of this standard, contact your Natural Resources Conservation Service State office or visit the Field Office Technical Guide online by going to the NRCS website at <https://www.nrcs.usda.gov/> and type FOTG in the search field.

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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 towards optimum conditions.

Periodically manipulate one or both of the following habitat components:

1. Manage water to provide the surface water and soil saturation needed for wildlife food, cover, and/or reproduction. Water control structures and/or pumping shall be used to manage the depth and duration of water needed by the desired wildlife species;
2. Manage vegetation in or adjacent to the water to provide the desired plants for wildlife food and/or cover. Moist soil management, mowing, burning, disking, selective cutting, prescribed grazing, and planting of annual food plots shall be used as appropriate. Managing for native plant species shall be a priority when feasible. No plant listed by the state of Delaware as an invasive species shall be established. Artificial nest structures shall be provided when natural sites are insufficient for the desired species.

Contamination by pesticides, herbicides, and other chemicals shall be avoided. If weed control is necessary, preference shall be given to mechanical rather than chemical methods, whenever feasible. Frequent monitoring of the wetland and adjacent areas should minimize the need to control invasive plant species. Noxious weeds shall be controlled as required by state law. Invasive species and nuisance species shall be controlled to the extent feasible.

All areas managed for wetland 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 controlled or excluded as appropriate from wetlands, shallow water areas, ponds, ditches, and adjacent buffers.

Management and maintenance activities shall be conducted at times when there will be minimal disturbance of wildlife and their habitat, especially during the nesting season of the desired wildlife species. For Delaware, the primary nesting season is April 15 through August 15.

For additional information concerning specific design and management criteria for selected wildlife species, refer to fact sheets and other publications (see the References section of this standard), or contact the Delaware Private Lands Biologist for assistance.

*Note: Specific programs may dictate criteria in addition to, or more restrictive than, those specified in this standard. Federal, state, and local regulations may significantly limit management activities in, or adjacent to, wetlands and other aquatic areas. Permits or approvals from federal, state, or local government agencies may be needed before any work is performed.*

## **CONSIDERATIONS**

Consider the following habitat elements when assessing existing and planned wildlife habitat:

1. Food – Types of food, quantity, quality, distribution, and seasonal availability;
2. Cover – Types of cover (for nesting, brood rearing, resting, roosting, escape from predators, summer shade, winter protection, travel corridors), quantity, quality, and distribution;
3. Water – Quantity, quality, accessibility, and seasonal availability;
4. Interspersion and Connectedness – Distance and connections to food, cover, and water.

Assess site conditions including surrounding land uses, soils, residual herbicides or other contaminants (to the extent known), available water sources, and existing vegetation on the site and in adjacent areas, including any noxious weeds which may be present.

Consider the frequency and extent of management that will be needed to achieve the client's objectives. Wetland habitat management can range from intensive (e.g., involving periodic water level manipulation, with moist soil management and/or planting of annual food plots), to minimal (e.g., allowing natural precipitation and drying cycles to control the water level, with only occasional vegetation management to control undesirable plants).

Consider the proximity of other wetlands or water bodies that contribute to wetland system complexity and diversity, decrease habitat fragmentation, and may increase use of the site by wetland-associated wildlife.

Consider the positive and negative impacts that beaver, muskrat, geese, ducks, and other waterfowl 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. The improved habitat that results from the implementation of this practice may lead to increased crop depredation by wildlife on adjacent cropland.

Consider the effects of periodic management on plants and plant diversity, including the potential for invasion by undesirable and invasive species. Soil disturbance, if used with this practice, may increase the potential of invasion by unwanted species.

Consider the effects of management on non-targeted species, especially threatened and endangered species and other species of concern.

Consider the use of biological control methods in place of mechanical or chemical treatments to manage vegetation (e.g., services provided by grazers).

Consider adding dead snags, tree trunks, or logs to provide structure and cover for wildlife and serve as a carbon source for food chain support.

Consider the effects of management actions on compliance with federal and state hunting regulations (e.g., baiting).

Identify and evaluate any constraints such as economic feasibility, management options, and regulatory and program requirements.

## **PLANS AND SPECIFICATIONS**

Plans and specifications for this practice shall be prepared in accordance with the previously listed criteria. Plans and specifications shall contain sufficient detail to ensure successful implementation of this practice, and may be recorded in narrative form, on Implementation Requirements (IR) worksheets, or other approved forms.

At a minimum, develop plans and specifications based on the habitat requirements for individual wetland wildlife species or groups of species.

The appropriate fact sheet(s) and completed 644 IR worksheet can serve as the plan and specifications for this practice.

The following items shall be addressed, as appropriate:

1. Wetland wildlife species, or groups of species, for which habitat will be maintained, developed, or improved;
2. Required depth(s) and duration of surface water and soil saturation during the different seasons, if applicable. Note whether any water control structures and/or pumps will be needed, and describe the timing and water level control settings to meet the objectives of the project;

3. Desired vegetation types, plant species, and the methods of establishing and maintaining them.

## **SUPPORTING DATA AND DOCUMENTATION**

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

1. Extent of practice in acres, field number where the practice is located, and the location of the practice marked on the conservation plan map;
2. Assistance notes. The notes shall include dates of site visits, name or initials of the person who made the visit, specifics as to alternatives discussed, decisions made, and by whom;
3. Copy of the HSI rating (Habitat Evaluation Worksheet);
4. Completed IR worksheet, and copy of the appropriate fact sheet(s) or other specifications and management plans.

## **OPERATION AND MAINTENANCE**

An Operation and Management (O&M) plan shall be prepared and is the responsibility of the client to implement. The appropriate fact sheet(s) and IR worksheet may serve as the management plan, as well as supporting documentation, and shall be reviewed with and provided to the client.

At a minimum, the following components shall be addressed in the O&M plan, as applicable:

1. Inspect the management area periodically (at least annually) to determine whether the desired vegetation is present in suitable quantity, quality, and distribution to meet the objectives of the project;
2. Inspect all embankments and structures at least once per year and after every major storm. Promptly remove trash and obstructions, fix leaks, and make other repairs as needed;
3. Maintain buffers to reduce sedimentation and provide wildlife cover. On grassy buffers and embankments, spot mow or burn infrequently (not more than once every 2 to 3 years) if needed to reduce encroachment of trees and shrubs. To protect ground-nesting wildlife, do not mow or burn between April 15 and August 15;
4. Control noxious weeds and other invasive plants by spot treatment, using mechanical methods or approved herbicides. Control of noxious weeds is required by state law. Noxious weed control can be conducted during the primary nesting season (April 15 to August 15), but may require prior approval if the site is enrolled in a financial assistance program. Contact your local weed control specialist concerning recommendations for spot-treating the weed problem;
5. Deter colonization of undesirable plants (e.g., cocklebur, phragmites, cattails, red maple, sweetgum) by conducting regular site inspections and spot treatment (using mechanical methods or approved herbicides). If undesirable plants become established, disk 2 or 3 times by mid-summer, then immediately flood (if possible) until the following spring;
6. Nuisance animals such as beavers and muskrats may be removed in accordance with state game regulations. Geese can be discouraged by minimizing areas of open water and promoting the growth of tall vegetation in the wetland and buffer;
7. Avoid noisy activities, such as mowing or use of recreational vehicles, in or near the wetland when waterfowl are present. To the extent possible, do not allow livestock and other domestic animals to have uncontrolled access to the site;
8. Avoid the use of pesticides on the site to prevent harm to wildlife that use the wetland area;
9. Describe the acceptable uses (e.g., flash grazing, cropping, timber production, hunting, nature preserve, etc.) and time of year or frequency of use restrictions, if any. *Pay particular attention to program requirements as they relate to acceptable vs. restricted uses, and other management restrictions.*

**REFERENCES**

1. Martin, Alexander C., Herbert S. Zim, and Arnold L. Nelson. 195 *American Wildlife and Plants: A Guide to Wildlife Food Habits*. Dover Publications, New York. 500 pages.
2. Maryland Cooperative Extension. *Wildlife Management Fact Sheets*.  
<https://extension.umd.edu/tags/wildlife-management>
3. USDA, Natural Resources Conservation Service. *Conservation Practice Standards*. Delaware Field Office Technical Guide, Section IV.
4. USDA, Natural Resources Conservation Service. *Engineering Field Handbook, Chapter 6 "Structures," Chapter 11 "Ponds and Reservoirs," and Chapter 13 "Wetland Restoration, Enhancement or Creation."*
5. USDA, Natural Resources Conservation Service. *Fish and Wildlife Habitat Leaflets and Technical Notes*.  
<http://www.nrcs.usda.gov/wps/portal/nrcs/main/national/plantsanimals/fishwildlife/pub/>
6. U.S. Fish and Wildlife Service, Chesapeake Bay Field Office, with the Natural Science Center and Adkins Arboretum. 1995. *Native Plants for Wildlife Habitat*. Annapolis, MD.