

**NATURAL RESOURCES CONSERVATION SERVICE**

**CONSERVATION PRACTICE STANDARD**

**WETLAND WILDLIFE HABITAT MANAGEMENT**

(Ac.)

**Code 644**

**DEFINITION**

Retaining, developing or managing wetland habitat for wetland wildlife.

**PURPOSE**

To maintain, develop, or improve wetland habitat for waterfowl, shorebirds, furbearers, or other wetland dependent or associated flora and fauna.

**CONDITIONS WHERE PRACTICE APPLIES**

On or adjacent to wetlands, rivers, lakes and other water bodies where wetland associated wildlife habitat can be managed. This practice applies to natural wetlands and/or water bodies as well as wetlands that may have been previously restored (657), enhanced (659), and created (658).

This practice does not apply to managing ponds, streams or other areas for fish habitat. Refer to conservation practice Standard (399) Fishpond Management or (395) Stream Habitat Improvement and Management.

**CRITERIA**

**General Criteria Applicable to All Purposes**

The Tennessee Wildlife Habitat Evaluation Procedure (WHEP)(Section IV, FOTG Tools) for wetlands will be used to determine habitat limiting factors.

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

Application of this 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.

The following elements shall be addressed when assessing existing and planned wetland wildlife habitat. Not all elements may apply to every wetland type.

**Food** – types of food, quantity, quality, distribution and seasonal availability;

**Cover** – types of cover (nesting and roosting, brood rearing, travel corridors, escape cover and winter protection) quantity, quality and distribution;

**Water** – quantity, quality, accessibility, seasonal availability and depth;

**Interspersion and Connectivity** – distance and connection to food sources, cover and water.

Many wetland wildlife species have specific terrestrial habitat requirements. Evaluate adjacent areas to provide buffers as well as core habitat needs. Buffer widths will vary with the intended goals and objectives as well as the habitat requirements of individual species of wildlife. Component practices that could be required include but are not limited to:

- Access Control (472)
- Early Successional Habitat Management and Development (647)
- Filter Strip (393)
- Herbaceous Weed Control (315)
- Riparian Forest Buffer (391)
- Riparian Herbaceous Cover (390)

Conservation practice standards are reviewed periodically and updated if needed. To obtain the current version of this standard, contact your Natural Resources Conservation Service [State Office](#) or visit the [Field Office Technical Guide](#).

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- Shallow Water Development and Management (646)
- Tree/Shrub Establishment (612)
- Tree/Shrub Site Preparation (490)
- Upland Wildlife Habitat Management (645)
- Water Control Structure (587)
- Wetland Creation (658)
- Wetland Enhancement (659)
- Wetland Restoration (657)

Wetland types and landscapes vary significantly throughout the state. Management objectives should be consistent with the localized natural landscape and ecosystem.

Use native plants wherever possible.

Clean or do not use this standard on sites containing hazardous waste.

Control invasive plant species and federally/state listed noxious and nuisance species on the site.

All activities in water bodies shall be in accordance with any federal, state and local regulations. These regulations may significantly limit management activities in or adjacent to wetlands and other aquatic sites. If permits are required they will be obtained prior to implementation of this practice. The landowner shall obtain all necessary local, state, and federal permits that apply.

#### **Criteria Applicable to Forested Wetlands**

For this standard, forested wetlands include (1) bottomland hardwoods and hardwood flats classified as "palustrine forested" under the Cowardin classification system; and (2) greentree reservoirs.

Manage forested wetlands for wildlife by meeting the following minimum levels of habitat quality:

1. Timber management practices including thinning, timber stand improvement, and clearcutting shall conform to the wildlife criteria of the NRCS Forest Stand Improvement practice standard (Code 666).
2. Hardwood thinning shall not occur more frequently than once every five years.

3. Where hard-mast trees are present, tree thinning operations shall ensure that a minimum component of mast-producing trees remains after harvest. The post-harvest percentage by species and volume should approximate or exceed the pre-harvest percentage.
4. A minimum score of 0.5 on the "Habitat Evaluation Procedure-Wetlands" shall be applicable following tree or shrub removal.
5. Artificially impound greentree reservoirs only during the tree dormancy period of December 1 to March 1 no more frequently than four years out of five to maintain tree growth and vigor.
6. Water Control Structures (578) shall have the capacity to drain greentree reservoirs within seven days following a ten-year storm event to protect from artificially long flood duration during the growing season.
7. Limit tree removal along stream corridors to protect travel lanes and stream wildlife.

Exclude livestock from forested wetlands.

#### **Criteria Applicable to Non-Forested Wetlands**

For this standard, non-forested wetlands include: (1) areas classified as "palustrine emergent" (marshes and wet meadows) and "scrub-shrub" (bogs and shrub swamps) wetlands under the Cowardin classification system; (2) moist soil management areas; (3) beaver ponds; and (4) fringe wetlands (shoreline areas of ponds and lakes).

1. Planned water level manipulations and water depths within shallow water wetlands shall be consistent with the NRCS Shallow Water Development and Management (646) practice standard.
2. Make available a minimum of one acre of exposed mudflat or shallow water habitat due to summer drawdown of fringe wetlands or beaver ponds.
3. Do not artificially dewater beaver ponds before July 1. Maintain at least 50 percent of the beaver pond undrained to maintain habitat for aquatic species.

4. Control woody invasion by mechanical or chemical methods that can achieve desired results with the least environmental impact.
5. When controlling woody invasion, limit canopy removal to 25-50 percent per year outside of known breeding periods of reptiles and amphibians (e.g., bog turtle).

Limit grazing of wetland areas (i.e., farmed wetland pastures) to one grazing period annually, as prescribed in a grazing plan, in a manner that maintains nesting habitat and allows for adequate re-growth. Limit haying or mowing on non-forested wetland areas to no more than one cutting annually between August 15 and October 1 to protect nesting habitat, allow fall re-growth, and maintain the desired plant succession stage.

**Additional Criteria for the Introduction of Woody Debris, Detritus and Cover**

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

Logs and tree limbs greater than 3 inches in diameter may be placed in planned or existing pool areas. Where appropriate and where there is a risk of floating, secure woody debris to existing trees or logs of similar size and density and/or buried to a depth of at least 2 feet. Woody debris may also be secured by burying one-third of its length below ground. Trees that need to be removed for other restoration practices or trees with low wildlife value on the site may be used for this purpose.

Considerations

Consider effects management will have on disease vectors such as mosquitoes.

Consider effects on downstream flows or aquifers that would affect other water uses or users.

Consider effects on fish and wildlife habitats associated with the practice.

Consider effects of movement of dissolved substances on ground water and downstream surface waters.

Consider the effects of water level draw downs on turtle mortality.

Consider removing low quality hardwoods, such as maple and elm, in a greentree reservoir to maximize mast-producing trees, including oaks, tupelo, and blackgum. Thinning to 75 percent canopy closure will provide better crown development and increased mast production.

Plan greentree reservoirs with flooding regimes consistent with the natural flood regimes of the area. Flood and dewater sites slowly to extend habitat conditions and avoid flushing nutrients and sediments.

Consider the use of a Clemson leveler with riser or three-log drain through a beaver dam over manual breaks in the dam to provide more practical water management.

When determining which species to plant, consider microtopography and variations in hydrology levels.

Consider sowing waterfowl food plants on exposed mudflats of fringe wetlands and beaver ponds. Consult *A Guide to Successful Wildlife Food Plots, Blending Science with Common Sense*, University of Tennessee Extension PB 1769. If possible, avoid flooding in fall until plants produce seed.

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

Consider buffer practices, such as Filter Strip (393) or Field Border (386), on adjacent uplands to protect wetland habitat from sediment or contaminants and provide ecosystem integrity. Require terrestrial buffers at least 50 feet wide if reptile and amphibian habitat is a primary resource concern.

Consider effects of management on non-target fish and wildlife species and threatened and endangered species.

Consider effects of livestock grazing on runoff, infiltration, and wetland vegetation. For mountain bogs, consider only light to moderate winter grazing.

Adding artificial nesting structures that are appropriate for the region can increase animal use of these areas. Consider using artificial nesting structures designed for targeted species, when nesting habitat is lacking. See *Woodworking for Wildlife in Tennessee* by Tennessee Wildlife Resources Agency.

Consider the impact of elevated wildlife uses on adjacent lands (e.g., crop depredation).

Consider effect of volumes and rates of runoff, infiltration, evaporation, and transpiration on the water budget.

Consider the nutrient and pesticide tolerance of the planned species where known nutrient and pesticide contamination exists.

Consider effects on temperature of water resources to prevent undesired effects on aquatic and wildlife communities.

Soil disturbance associated with the installation of this practice may increase the potential of invasion by unwanted species.

For discharge wetlands, consider underground upslope water and/or groundwater source availability.

The improved habitat that results from the installation of this practice may lead to increased crop depredation by wildlife on adjacent cropland.

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

## PLANS AND SPECIFICATIONS

Prepare plans and specifications in accordance with this standard that contain sufficient detail concerning management of water levels and/or vegetation to ensure successful implementation. Information may be recorded using approved job sheets, customized narratives, written documentation in the conservation plan, or other suitable method.

Plans shall include the following as appropriate:

- goals and objectives including targeted species;
- site plan map with food sources, wetland type(s) and any important wetland resources identified;
- habitat requirements and/or habitat limiting factors for selected species;
- baseline and target plant communities and means of establishment;

- planting rates, species, planting dates and locations of supplemental food plots (if applicable);
- required depth of water during the different seasons;
- types and sizes of structures required;
- any required permits or compatible use documentation including CPA-52 or similar environmental evaluation documentation.

## OPERATION AND MAINTENANCE

A plan for operation and maintenance at a minimum should include monitoring and management of structural and vegetative measures.

Haying and livestock grazing plans, if haying or livestock grazing is used as a needed wildlife management tool, will be developed to allow the establishment, development and management of wetland and associated upland vegetation for the intended wetland and/or wildlife purpose.

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

Added water depth and duration may be used as a method to control unwanted vegetation (e.g., reed canary grass).

## GLOSSARY

1. Greentree Reservoir – A forested wetland that has been artificially impounded during winter months for waterfowl.
2. Moist Soil Management Area – A seasonally flooded impoundment consisting of native herbaceous vegetation.

## REFERENCES

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