

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

WETLAND WILDLIFE HABITAT MANAGEMENT

(acre)

CODE 644

DEFINITION

Retaining, developing, or managing habitat for wetland wildlife.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

This management practice may be applied 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 water bodies as well as wetlands that may have been previously restored, enhanced or created (*see West Virginia conservation practice standards Wetland Restoration (657), Wetland Creation (658) or Wetland Enhancement (659) as appropriate.*

This practice does not apply to managing ponds, streams or other areas for fish habitat. (Refer to West Virginia Conservation Practice Standard Fishpond Management (Code 399).

When utilizing this standard NRCS staffs are encouraged to work closely with the NRCS biologist and/or biologists from the U.S. Fish and Wildlife Service and the West Virginia Division of Natural Resources.

CRITERIA

All activities in waterbodies 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.

Identify species management goals and objectives. For the desired species, identify the types, amount, and distribution of habitat elements and the management actions necessary to achieve the objectives.

Wetland types and landscapes vary significantly throughout the state. As most of the state is far removed from primary waterfowl migration routes the management objectives shall, to the extent possible, strive to create a diverse mixture of vegetative communities and aquatic habitat that benefit many species of wildlife including, waterfowl, mammals and non-game species.

Restoration, enhancement and management objectives shall be consistent with the localized natural landscape and ecosystem.

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

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- **Water – quantity, quality, accessibility, seasonal availability and depth**
- **Interspersion and Connectivity – distance and connection to food sources, cover and water.**

Refer to the USFWS Waterfowl Management Handbook at: <http://www.nwrc.usgs.gov/wdb/pub/wmh/priface.html> for information on habitat elements and management strategies for specific waterfowl. Contact the NRCS state staff biologist for more information on specific management guidelines for aquatic furbearers or other water dependent wildlife.

Where habitat is lacking or less than optimum, provide the necessary element(s) in sufficient quantity and quality as needed to achieve management goals. Refer to Appendix I of this standard for supplemental feeding of waterfowl for recreational purposes.

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

- **Shallow Water Management (646)**
- **Wetland Restoration (657)**
- **Wetland Enhancement (659)**
- **Wetland Creation (658)**
- **Upland Wildlife Habitat Management (645)**
- **Riparian Forest Buffer (391)**
- **Riparian Herbaceous Cover (390)**
- **Pond (378)**
- **Filter Strip (393)**
- **Tree/Shrub Establishment (612)**

Wetland wildlife habitat management shall consist of managing water and/or

vegetation patterns to provide the desired wetland habitat conditions. Periodically manipulate one or both of the following habitat components:

1. **Manage water levels to provide the surface water and soil saturation needed for wildlife food, cover, and/or reproduction. Water control structures, pumping and/or natural seasonal variation may be used to manage depths and duration of water needed by the desired species of wildlife.**
2. **Manage vegetation in or adjacent to water/wetland to provide the desired plant community for wildlife food and/or cover. Moist soil management, burning, disking, grazing, mowing, selective cutting and planting of annual food plots shall be used where appropriate. Note: Prescribed burning shall only be conducted in accordance with an approved prescribed burning plan developed in conjunction with the WV Division of Forestry and the WV Division of Natural Resources.**

If aquatic weed control is required, preference will be given to mechanical (including water level control) as opposed to chemical control whenever feasible. Noxious or invasive plants should be controlled to the extent possible.

All areas managed for wetland wildlife shall be, insofar as practical, protected from the adverse effects of agricultural activities. Livestock shall be excluded from the wetland or waterbody as well as any adjacent buffer and core terrestrial habitat components. However, grazing or mowing may be used once annually between July 15 and September 15 to maintain the desired vegetative successional stage for wildlife habitat. The site management plan shall include grazing and haying requirements and should be performed under a detailed prescribed grazing/haying management plan. Refer to WV Conservation Practice Standard Prescribed Grazing (528) or Forage Harvest Management (511) for more information.

Contamination of the habitat area by pesticides, herbicides and other chemicals and toxicants shall be avoided.

Native plants will be used where ever possible.

Water Control Structures

If waterfowl management is desired, one of the following types of control structures should be utilized which will permit drainage of at least 85% of the stored water and will automatically remove excess rainfall and maintain the normal water surface elevation:

- **A weir type structure equipped with removable flashboards.**
- **A horizontal pipe with riser equipped with flashboards.**
- **A riser equipped with a manually controlled gate, elbow or valve.**
- **Any device which permits controlled manipulation of the water level.**

Refer to Conservation Practice Standard Structure for Water Control (587) for further information.

CONSIDERATIONS

Consider the effects of movement of dissolved substances on groundwater and on downstream surface waters.

Consider the surrounding landscape and its effects and contributions to the overall integrity of the wetland system and habitat needs.

Consider effects of hazardous materials expected or known to occur on the site on wildlife or human use related to wildlife.

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

Consider effects of livestock grazing on runoff, infiltration, and wetland vegetation.

Figure 1 should be used as a guide to determining foraging depths in inches for waterfowl considerations.

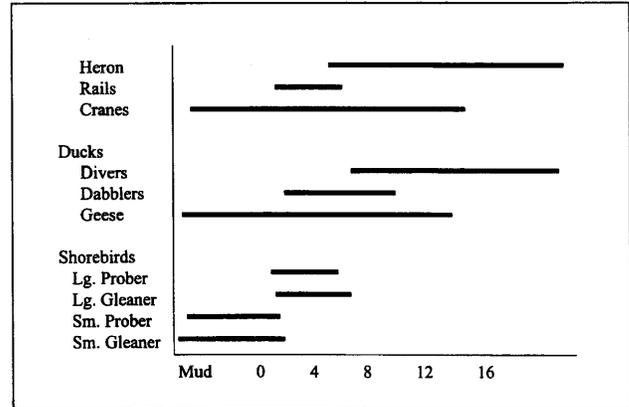


Figure 1. Foraging Depths (inches) for Waterbird Guilds. After NEDS Wetland Science Institute. USDA NRCS 1999.

Figure 2 should be used as a guide to determine the vegetative structure and height for various waterfowl guilds.

Waterbird	Habitat Guild	Veg. Hgt.	Veg. Cover
Hérons	Open Water	Short	Sparse/None
Bitterns	Open Water	Tall	Dense
Rails	Open Water/Mud	Tall	Dense
Cranes	Open Water/Mud/Upland	Short	Moderate/Sparse
Diving Ducks	Open Water	Short	Sparse
Dabbling Ducks	Open Water/Mud	Medium	Moderate/Dense
Geese	Open Water/Mud/Upland	Short	Moderate/Sparse
Shorebirds	Open Water/Mud	None/Short	Sparse/None

Figure 2. Vegetative Structure and Height for Waterbird Guilds. After NEDS Wetland Science Institute. USDA NRCS 1999.

Consider the feasibility and suitability of the site from a soil type and topographic feature perspective.

Consider other site conditions such as available water sources, quality and quantity, and existing vegetation.

Consider water level variation in relation to seasonal transpiration rates of the plant community, rates of runoff, infiltration and evaporation.

Consider effects of management on non-target fish and wildlife species and Threatened and Endangered Species.

Consider using artificial nesting structures where appropriate.

Consider adjacent and nearby waterbodies and wetlands that contribute to ecosystem complexity and diversity, decrease fragmentation and maximize the use of the site by associated wildlife.

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

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

Consider effects on movement of sediment and soluble and sediment-attached substances carried by runoff.

PLANS AND SPECIFICATIONS

Plans and specifications will be prepared in accordance with this standard. Plans and specifications shall contain sufficient detail concerning management of water levels and/or vegetation to ensure successful implementation of this practice.

Information shall be recorded using approved job sheets, written documentation in the conservation plan, or other appropriate material.

Developed plans and specifications shall be based on the habitat requirements for selected wetland wildlife species, or groups of species, as described in the USFWS Waterfowl Management Handbook or as specified by the state staff biologist.

NRCS staff are encouraged to work closely with the NRCS biologist and/or biologists from the U.S. Fish and Wildlife Service or West Virginia Division of Natural Resources in the development of site specific plans and specifications. Requirements for the operation and maintenance of this practice shall be incorporated into the site specifications.

At a minimum plans and specifications will include the following:

- **goals and objectives including targeted specie(s);**

- **site plan map with food sources, cover types and wetland resources identified;**
- **habitat requirements for selected species;**
- **desired water levels and timing of management activities;**
- **designs and specifications for water level control structures (if applicable);**
- **baseline and target plant communities and means of establishment/maintenance;**
- **tree and shrub establishment plan (if applicable) including species, planting dates, amounts, spacing and location; and**
- **planting rates, species, planting dates and locations of supplemental food plots (if applicable).**

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 this practice functions as intended throughout its 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).

Management and maintenance activities shall be conducted at times when there will be minimal disturbance to wildlife and their habitat.

The following activities will be addressed in the operation and maintenance plan:

- **inspection schedule of any embankments and water control structures for damage assessment;**
- **management needed to maintain vegetation, including control of unwanted vegetation;**

- ***if applicable, haying, mowing and livestock grazing plans will be developed so as to allow the management of wetland and associated upland vegetation for the intended purpose and intended vegetative state;***
- any biological control of undesirable plant species and pests (e.g., using predator or parasitic species) where available and feasible; ***and***
- ***any compatible uses (e.g. timber harvesting) and their acceptable times of implementation.***

REFERENCES

1. Fredrickson, L. H. and Frederic A. Reid, ***Waterfowl Management Handbook***, Gaylord Memorial Laboratory School of Forestry, Fisheries and Wildlife University of Missouri-Columbia Puxico, Missouri 63960 April 1988

<http://www.nwrc.usgs.gov/wdb/pub/wmh/foreword.html>

2. Fredrickson, L. H. and Frederic A. Reid, ***Preliminary Considerations for Manipulating Vegetation***. 13.4.9 Fish and Wildlife Leaflet 13, Waterfowl Management Handbook. U.S. Fish and Wildlife Service. Washington, DC 1988.

3. Fredrickson, L. H. and Frederic A. Reid., ***Waterfowl Use of Wetland Complexes***, 13.2.1 Fish and Wildlife Leaflet 13, Waterfowl Management Handbook. U.S. Fish and Wildlife Service. Washington D.C. 1988.

4. Kelly, J.R. Jr., M.K. Laubhan, F.A. Reid, J.S. Wortham, and L.H. Fredrickson. ***Options for Water-level Control in Developed Wetlands***. U.S. Fish and Wildlife Service. Washington, DC 1990.

5. USDA, NRCS Wetland Restoration and Enhancement – Northeast Freshwater Wetlands, Wetland Science Institute, January 1999.

* ***Bold italics indicate modifications of the National Standard by WV.***

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Appendix I

**General Criteria for the Management of
 Supplemental Food for Waterfowl (Duck
 Fields)**

A duck field is entirely surrounded by a dike or a combination of dike and diversion and has no drainage or runoff discharging into it. Refer to Wetland Enhancement (659), Wetland Creation (658), Wetland Restoration (657), Pond (378), Diversion (362) and Dike (356) as appropriate.

Water supply must be adequate to flood the field within 10 days and maintain the desired water level. The supply may be provided by pumping from a reservoir or stream.

The water surface shall be at least one acre in size. The impoundment will be designed so that at least 75% - 100% of the area has a depth of 18 inches or less.

The water control structure shall be adequate to manipulate water levels as desired (i.e. flashboard type structure).

The water control structure should be designed to automatically remove excess rainfall and maintain the desired water level when flooded. The bottom of the impoundment should be graded essentially level with a slight positive drainage to ensure rapid drying prior to planting.

Duck fields are planted to grain and seed crops. Areas to be planted should be drained in time for seeding by June 15 – July 15. The area should be broadcast planted or drilled at a rate of 25 lbs. of Japanese or browntop millet per acre. Lime and fertilizer should be applied as per West Virginia University soil test recommendations and prepare seedbed as described in Pasture and Hayland Planting (512).

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SAMPLE PRACTICE NARRATIVES

644- A - Wetland Wildlife Habitat Management:

The wetland will be managed to improve habitat for waterfowl and other aquatic wildlife by use of structural methods that enable water level manipulations, seasonal impoundments or enhance natural flooding regimes. Livestock will be excluded from the wetland and core habitat components unless otherwise directed by a grazing management plan. Vegetative communities will be maintained to achieve the intended habitat components. Refer to the attached structural specifications, jobsheets or management plan(s) as well as an operation and maintenance plan for additional information. Installation and implementation of this practice may be subject to approval by state and/or federal regulatory agencies. Any required permits should be obtained prior to implementation of this practice. Additional component practices may be required to fully implement this practice.

644 - B - Wetland Wildlife Habitat Management:

The wetland will be managed to improve habitat for waterfowl and other aquatic wildlife through manipulation of the plant community. Plants that provide food and cover will be maintained or established for waterfowl and other aquatic wildlife in the wetland and surrounding area(s). Livestock will be excluded from the wetland and core habitat components unless otherwise directed by a grazing management plan. Vegetative communities will be maintained to achieve the intended habitat components. Refer to the attached specifications, jobsheets or management plan as well as the operation and maintenance plan for additional information. Implementation of this practice may be subject

to approval by state and/or federal regulatory agencies. Any required permits should be obtained prior to implementation of this practice. Additional component practices may be required to fully implement this practice.

644- C - Wetland Wildlife Habitat Management:

The wetland will be managed to improve habitat for waterfowl and other aquatic wildlife through a combination of structural methods and manipulation of the plant community that enables water level manipulations, seasonal impoundments or enhancement of natural flooding regimes. Plants that provide food and cover will be maintained or established for waterfowl and other aquatic wildlife in the wetland and surrounding area(s). Livestock will be excluded from the wetland and core habitat components unless otherwise directed by a grazing management plan. Vegetative communities will be maintained to achieve the intended habitat components. Refer to the attached specifications, jobsheets or management plan(s) as well as an operation and maintenance plan for additional information. Installation and implementation of this practice may be subject to approval by state and/or federal regulatory agencies. Any required permits should be obtained prior to implementation of this practice. Additional component practices may be required to fully implement this practice.