

**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, fur-bearers, 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). ***(Refer to West Virginia conservation practice standards (657) Wetland Restoration, (658) Wetland Creation or (659) Wetland Enhancement as appropriate.***

***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.***

***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.***

***A habitat evaluation or appraisal, approved by the NRCS state office, shall be used to identify habitat-limiting factors in the***

***planning area. West Virginia will utilize the USFWS Waterfowl Management Handbook.***

Application of this practice shall remove or reduce limiting factor(s) in their order of significance.

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

Identify wildlife 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 management objectives.

Native plants will be used wherever possible.

Sites containing hazardous waste will be cleaned prior to the installation of this practice.

Invasive plant species and federally/state listed noxious and nuisance species shall be controlled 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.***

***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***

**NRCS, NHCP  
August 2005**

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 [electronic Field Office Technical Guide](#).

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**of vegetative communities and aquatic habitat that benefit many species of wildlife including, waterfowl, mammals and non-game species.**

**Species management goals and objectives shall be identified.** For the desired species, identify the types, amount, and distribution of habitat elements and the management actions necessary to achieve the management objectives.

**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**
- **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 or conservation practice standard (646) Shallow Water Management for Waterfowl for information regarding 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:**

- **Filter Strip (393)**
- **Forest Site Preparation (490)**
- **Pond (378)**
- **Riparian Forest Buffer (391)**
- **Riparian Herbaceous Cover (390)**
- **Shallow Water Management (646)**
- **Tree/Shrub Establishment (612)**
- **Upland Wildlife Habitat Management (645)**
- **Use Exclusion (472)**
- **Wetland Restoration (657)**
- **Wetland Enhancement (659)**
- **Wetland Creation (658)**

**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 water body 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. Sites containing hazardous waste or suspected of containing hazardous waste will not be managed under this standard.***

Native plant materials 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 (587) Structure for Water Control for further information.***

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

***Consider using artificial nesting structures where appropriate.***

Consider effects on wetlands or water related resource fish and wildlife habitats that would be associated with the practice.

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

Consider establishing vegetative buffers on surrounding uplands to reduce sediment and soluble and sediment-attached substance carried by runoff and/or wind.

The nutrient and pesticide tolerance of the species planned should be considered where known nutrient and pesticide contamination exists.

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

Consider the effects of soil disturbance and probability of invasion by unwanted species

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

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

When determining which species to plant, consider microtopography and the different hydrology levels.

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

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

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

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

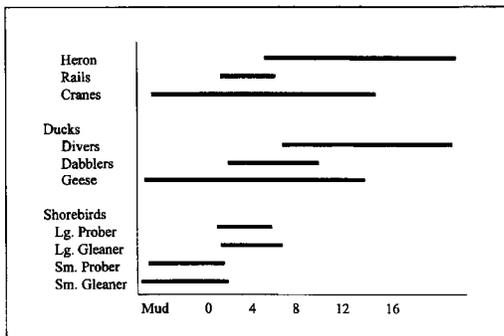


Figure 1. Foraging Depths (inches) for Waterbird Guilds. After NEDC Wetland Science Institute. USDA NRCS 1999.

**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 NEDC Wetland Science Institute. USDA NRCS 1999.)

## PLANS AND SPECIFICATIONS

Document how habitat needs will be provided for the desired kinds of wildlife:

- required depth of water during the different seasons;
- types and sizes of structures required;
- desired native plant species and the means of establishing and maintaining them.

Specific information may be provided using appropriate job sheets or written documentation in the conservation plan.

**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, customized narratives, 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 shall 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;*
- *tree and shrub establishment plan (if applicable) including species, planting dates, amounts, spacing and location;*
- *planting rates, species, planting dates and locations of supplemental food plots (if applicable); and*
- *any required permits including WVCPA-052 or similar environmental evaluation documentation.*

#### **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. At a minimum should include monitoring and management of structural and vegetative measures.*

If haying or livestock grazing is used as a needed wildlife management tool, plans 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 utilized as a method to control unwanted vegetation (e.g., reed canary grass).

*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; and*
- *any compatible uses (e.g. timber harvesting) and their acceptable times of implementation and intensity.*

#### **REFERENCES**

Payne, Neil F. 1992. Techniques for wildlife habitat management of wetlands. McGraw-Hill, Inc. 549 pp.

Helmets, D.L. 1992. Shorebird management manual. Western Hemisphere Shorebird Reserve Network, Manomet, MA 58 pp

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***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>

***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.***

***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 a minimum of 75% 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. Refer to WV Conservation Practice Standard Structure for Water Control (587).*

*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).*