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).

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 state staff biologists and/or biologists from the U.S. Fish and Wildlife Service and the Kentucky Department of Fish and Wildlife Resources (KDFWR).

CRITERIA

A habitat evaluation or appraisal, approved by the NRCS state office, shall be used to identify habitat-limiting factors in the planning area. In lieu of the appraisal/evaluation procedure, a habitat management plan developed in conjunction with or by the Kentucky Department of Fish and Wildlife Resources (KDFWR) biologist or NRCS biologist shall meet this requirement.

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

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.

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

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

Native plants will be used wherever possible.

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.

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.

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.

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

Where habitat is lacking or less than optimum, provide the necessary element(s) in sufficient quantity and quality as needed to achieve management goals. 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.

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 by:

Managing 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.

Managing 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 Kentucky Department of Fish and Wildlife Resources (KDFWR).* Prescribed burning shall be performed in accordance with conservation practice Prescribed burning (338)

Many wetland wildlife species have specific terrestrial habitat requirements. Adjacent areas should be evaluated 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)
- 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)

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

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 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.

Water Control Structures

If waterfowl management is an objective, one of the following types of control structures may 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 requirements of suitable structure. Refer to Shallow Water Development and Management (646) for information regarding water level management and drawdown.

General Criteria for the Management of Supplemental Food for Waterfowl

Supplemental food area for waterfowl (or duck field) is usually an area 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 and/or flooding 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 conservation Practice Standard Structure for Water Control (587) for types of suitable structures.

Duck fields are usually planted to grain and seed crops. Areas to be planted should be drained in time for seeding by June 15 – July 15. Refer to Table 12 of the document entitled *Establishing Vegetative Practices in Kentucky* and utilize those species and rates listed for various grains (e.g. browntop or Japanese millets).

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

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, woody debris shall be secured 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.

Additional Criteria for Artificial Nesting Structures

Artificial nesting structures or platforms may be created and installed when it has been determined by a habitat appraisal method or

approved criteria that a limiting factor of habitat is cover or shelter for a particular wetland species.

Appropriate animal species that may require installation of nesting structures include:

- wood duck
- various cavity nesting wetland dependent bird species
- pollinating insects
- raptors
- Other species as identified by the NRCS state biologist or KDFWR biologists.

Any required artificial nesting structures shall be placed at the correct height, appropriate rates and appropriate habitat for the desired species.

Refer to the Fish and Wildlife Habitat Management Leaflet Number 20 entitled Artificial Nesting Structures; or the Kentucky Department of Fish and Wildlife Resources (KDFWR) publication "Habitat How To's for Nesting Structures" or as directed by KDFWR biologists for the species specific nest box dimensions, placement, and spacing.

Artificial nesting structures shall be constructed with well-seasoned wood and galvanized nails. Recommended woods include cypress, redwood, western cedar, and eastern hemlock. Structures shall not be painted or treated with a wood preservative and shall contain adequate drainage in the bottom and ventilation in the top and be-protected with a predator guard.

Artificial nesting structures for wood ducks should not exceed a maximum rate of one per five acres of planned pool area (1:5).

Prefabricated perch poles may be installed to provide perching sites for wildlife prior to tree maturity. Poles shall be installed according to manufacturer's recommendation. Perch poles may be installed at a maximum rate of one per ten acres of wetland restoration area (1:10).

Artificial nesting structures for upland wildlife species shall not be planned under this standard.

CONSIDERATIONS

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

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

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 including trees, shrubs, and forbs especially chosen to provide pollen and nectar for pollinators that use both uplands and wetlands. Snags may be protected or nest blocks for bees erected in management of wetland wildlife.

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

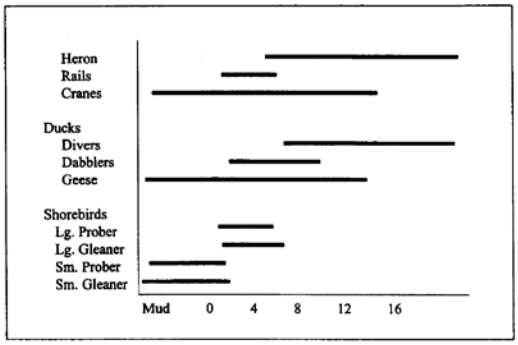

Figure 1. Foraging Depths (inches) for Waterbird Guilds. After NEDC Wetland Science Institute. USDA NRCS 1999.

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

Waterbird	Habitat Guild	Veg. Hgt.	Veg. Cover
Herons	Open Water	Short	Sparse/None
Bittems	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.)

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

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

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

Establishing vegetative buffers on surrounding uplands can reduce the delivery of sediment and soluble and sediment-attached contaminants 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 the 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.

Adding dead snags, tree trunks or logs can provide structure and cover for wildlife and serve as 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 different hydrology levels.

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

Water level draw-downs may increase the potential for turtle mortality (4).

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

Adding artificial nesting structures that are appropriate for the region can increase utilization of these areas. Consider the ability to maintain artificial structures and potential for depredation.

Locating this practice adjacent to existing wetlands and other water bodies will provide connectivity to these cover types.

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

Plans and specifications will be prepared in accordance with this standard and 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 specie(s);
- 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);
- any required permits or compatible use documentation including CPA-52 or similar environmental evaluation documentation.

Other component practices that may be required for establishment or maintenance of habitat shall have specifications developed under those conservation practices utilizing appropriate narratives, job sheets, etc such as:

- desired water levels and timing of management activities including water level manipulation;
- dike construction
- designs and specifications for water level control structures (if applicable);
- tree and shrub establishment plan (if applicable) including species, planting dates, amounts, spacing and location;
- removal or establishment of native or invasive vegetation

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.

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 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. If feasible management should occur outside the primary nesting May 15th – August 1st.

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 or invasive species.

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.

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