

**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).

**CRITERIA**

Habitat development and management, necessary to achieve the purpose(s), shall be based on use of the Illinois Wildlife Habitat Evaluation (Biology Technical Note 18) or individual species habitat models, depending upon the needs and objectives of the landowner. The evaluation is used to determine the limiting factor(s) for the target species and to evaluate the existing and planned condition of the wildlife habitat.

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

Practice application 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 species, identify the types, amount and distribution of habitat elements and the management actions necessary to achieve the management objectives.

Existing wetlands will be preserved and protected from manipulation or used in a manner that would reduce the functions (type or capacity) the wetlands provide.

Wetlands will not be developed by impounding perennial streams, or impounding intermittent streams with a watershed of more than 640 acres, or by building a structure more than 6 feet in height on intermittent streams. Where structures are being considered in an intermittent stream with less than 640 acres of watershed, the functions that the existing stream provides must be considered and the planned wetland development must not have an overall negative impact on the functions of the existing stream.

Native plants will be used wherever possible.

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

Invasive plant species and federally/state listed noxious and nuisance species shall be controlled on the site.

All disturbed areas not inundated with water for long durations, and not established to trees and shrubs, will be seeded to vegetation beneficial to the target species of wildlife.

Vegetation used will be adapted for use on the local soil/site conditions. Use Conservation Practice Standards TREE/SHRUB ESTABLISHMENT (612), CONSERVATION COVER (327) and RESTORATION AND MANAGEMENT OF DECLINING HABITATS (643) where applicable for species selection and seeding specifications unless the area is subject to frequent overflows or spillway protection is needed and then use the CRITICAL AREA PLANTING (342) standard.

Structures and management shall not increase flood impacts or create water seepage problems on other properties or adjacent non-wetland areas where saturation is not desired.

Wetlands will be protected from livestock damage. See Conservation Practice Standard ACCESS CONTROL (472).

### **CONSIDERATIONS**

Where amphibians are a priority, consider excluding fish from the wetlands.

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

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

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.

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

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

When determining which species of vegetation to plant, consider the microtopography of the site and plant tolerances to water depth and duration of inundation.

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

Evaluate potential negative impacts of artificial water draw-downs on fish, reptile and amphibian populations in the area.

Adding artificial nesting structures that are appropriate for the region can increase utilization of wetlands.

Connecting wetlands and water bodies will decrease habitat fragmentation and maximize use of the site by wetland-associated wildlife. However, when connecting wetlands to rivers and streams also consider the possible negative effects of damage from flooding and introduction of invasive plants and aquatic animals.

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

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

### **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.

#### Marsh Development

The developed area will be at least one acre. Larger areas that are properly developed and managed have the potential to attract and hold more water dependent wildlife species.

In general, at least 50 percent of the marsh should be designed to have water depths less than one foot in depth. Between 20 and 40 percent of the marsh should be designed to have water depths between one and three feet deep. The remainder of the marsh can be deeper areas or islands for loafing and nesting.

Vegetative re-establishment will be comprised of native species that occur on the wetland type being restored.

In soils where seedbanks of desirable species exist or natural succession of selected species will begin to occur in less than five years, then natural regeneration will be allowed for re-vegetation. Specific guidelines that consider soil, seed source, and species will be developed from recommendations by an IDNR or NRCS biologist. The topsoil from wetland excavated areas will be stock piled and redistributed to utilize plant seedbanks unless noxious or exotic species (e.g. reed canarygrass, purple loosestrife) are present.

If the site was predominantly herbaceous vegetation prior to modification and planting is necessary, then a minimum of two species adapted to the site will be planted. Use soils and site information to determine plants to use. Planting rates and species will be based on recommendations from IDNR or NRCS biologist. Herbaceous vegetation may also be established by placing soil containing seed or tubers at a minimum depth of 4 inches over 50 percent of the site to promote hemi-marsh conditions.

Irregular shaped, shallow borrow areas away from berms and structures should be used to intersperse open water and emergent cover.

Islands can provide loafing, resting and nesting sites that provide some predator protection. However, islands should not significantly replace open and shallow water habitat.

Islands should be one to four feet above water, have a top width of at least 6 feet and side slopes of at least 8:1 or flatter for one-fourth of the perimeter above water. Flatter side slopes should be in the area of the most wave action. Islands of oblong shape parallel with water flow are desired. Islands will be surrounded by water that is at least one to three feet deep during periods of low water, and where possible at least 200 feet from dry land, to deter predators from accessing nesting birds.

Where reptiles and amphibians are to be encouraged, place semi-submerged logs, stacked logs, rock piles or stumps in the water to provide critical basking areas.

A water management plan, when needed, will be developed to insure proper use of water level manipulation. An adequate water control structure is often desirable (but not required) to manipulate levels for vegetation succession and control. See Conservation Practice Standard SHALLOW WATER MANAGEMENT (646) Job Sheet and consult with a NRCS or IDNR Biologist for specific recommendations.

Green Tree Reservoir - Bottomland hardwood wetland units that are shallowly flooded during the trees' dormant season are called "Green Tree Reservoirs". The mast producing trees and invertebrates decomposing leaf litter attract feeding waterfowl when the unit is inundated with water.

Minimum size is one acre.

Flood bottomland hardwood areas on the average of no more than 10 inches during the tree's dormant season (after leaf drop in the fall and before trees bud out in the spring).

Tree stands for development must be at least 40-50% mature hard mast bearing tree species

that are adapted to inundation during the non-growing season (pin oak, swamp white oak, etc.).

An adequate water control structure is a necessity in Green Tree Reservoirs. Water must be off of the area by the time of bud development in early spring. The water control structure must be of sufficient size to pass normal summer flow of water through the ponded area and be able to drain the site within one week in case of heavy runoff event.

Design levees on the contour, with small enough impoundment units, so that the units can be flooded 2-10 inches over the majority of the area.

A water management plan will be developed to insure proper use of water level manipulation. Consult with a NRCS or IDNR Biologist for specific recommendations.

From year to year, vary flooding dates and depth and duration of water (within plant tolerance levels) to assure longevity and productivity of the trees. Exercise caution in depth and duration of flooding according to tree species present. Flooding every year may not be possible while maintaining a healthy stand.

Flood and dewater slowly (4-6 weeks) to coincide with dabbling duck migration during fall and spring.

Selective cutting can be used to release the more productive tree species and allow openings for use by wetland wildlife. See Conservation Practice Standard FOREST STAND IMPROVEMENT (666).

If tree planting is required use trees adapted to wet sites. Use a minimum of three species, two of which must be hard mast producing species. See Conservation Practice Standard TREE/SHRUB ESTABLISHMENT (612).

#### Cropfields/moist soil areas

Conservation Practice Standard SHALLOW WATER MANAGEMENT (646) will be used to

develop/manage moist soil areas in cropfields and wetlands.

#### Water Supply

Opportunistic water supply (flooding or rainfall) must provide an adequate water source in years of normal precipitation, or an alternative source of water must be developed.

For optimum benefits a source of water to flood wetland areas must be adequate and dependable. The source should be sufficient to flood one-third to one-half the area within one week. However, water levels should normally be increased gradually rather than all at once.

Withdrawal of water from rivers and streams must protect critical instream flow requirements of fish and other aquatic life in affected waterbodies.

#### Nesting Structures

Wood ducks nest in tree cavities 20 to 50 feet above the forest floor within 1/2 mile of a stream or wetland complex. Where suitable tree cavities are not available, install nesting boxes within 1/4 mile of suitable brood rearing cover. They will use nesting boxes as low as 3 - 4 feet if they are surrounded by water. Place nesting boxes in inconspicuous locations to reduce intraspecific competition (e.g., dump nesting, hen mortality).

### **OPERATION AND MAINTENANCE**

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

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

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

The plan shall include monitoring and management of the overall site, as well as structural and vegetative measures. The area should be reviewed annually to see if adjustments are needed in any water/vegetation management plan.

Repair and upkeep of the practice (maintenance) shall be carried out as needed, such as repair or replacement of vegetative or structural components.

## REFERENCES

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