

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD AND SPECIFICATIONS**

WETLAND WILDLIFE HABITAT MANAGEMENT

(acre)

Code 644

DEFINITION

Retaining, developing, or managing wetland habitat for wetland wildlife.

PURPOSE

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

CONDITIONS WHERE PRACTICE APPLIES

On or adjacent to wetlands, rivers, lakes, ponds, fens or 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 (657), enhanced (659), or created (658).

CRITERIA

General Criteria Applicable to all Purposes

Habitat development and management, necessary to achieve the purpose(s), shall be based on use of the Wildlife Habitat Appraisal Guides (WHAG) – Community Models or the individual species guidesheets depending upon the needs and objectives of the landowner. The appraisal is used to determine a habitat suitability index (HSI) for the wetland area.

WHAG evaluations must result in a HSI of at least 0.5 for the wetland area to be

developed/managed. Recommendations

selected by the producer for development and management shall achieve this minimum level of scoring on the community or species model.

As indicated by the wildlife habitat evaluation, certain habitat elements may be weak or missing. Application of this practice shall remove or reduce limiting factor(s) in their order of significance, as indicated by results of the habitat evaluation. For the desired natural community or selected wildlife species, identify the types, amount, and distribution of habitat elements and management actions necessary to achieve the management objectives.

The amount and kinds of habitat elements planned, their location, linkage to adjacent wetland type habitats and management shall be identified in a management plan.

Existing wetlands will be preserved and protected from manipulation or use that will reduce the functions (type and capacity) the wetlands are providing.

All disturbed areas (those not inundated) will be seeded to wildlife friendly vegetation. Vegetation used will be adapted for use on the local soil/site conditions. Disturbed areas will be vegetated according to a revegetation plan. Use CONSERVATION COVER (327) unless the area is subject to frequent overflows or spillway protection is needed, then CRITICAL AREA PLANTING (342) will be used. *Native plant materials will be used whenever possible*

to provide the intended protection.

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

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

Any habitat management technique will ensure that the soil resource base is protected.

Livestock grazing or haying and prescribed burning can be used to maintain or improve vegetation structure and composition so as to improve the desired wildlife habitat. This will require a detailed management plan. See PRESCRIBED GRAZING (528) or PRESCRIBED BURNING (338).

Management measures shall be provided to control invasive species and noxious weeds on a "spot" basis. See JS-BIOL-30 Controlling Undesirable Species.

The landowner is responsible for all necessary local, state, and federal permits that apply.

See SHALLOW WATER MANAGEMENT FOR WILDLIFE (646) and JS-BIOL-17 Shallow Water Management for Wildlife Job Sheet for information on shallow water on agricultural fields and moist soil areas.

Marsh Development

Development should fit site and landscape position. Larger areas will provide a more diverse habitat and attract and hold more wetland wildlife species.

The developed area will have an average water depth of no more than 18 inches on at least 20 but not more than 40 percent of the area at design level. At least 50% of the area will be designed to have an average depth of 6 inches. Remaining areas can be upland nesting areas, buffer areas, island loafing areas, or deeper borrow areas used in micro/macro topography and dike construction.

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 MDC or NRCS biologist. The topsoil from wetland excavated areas can be stock piled and redistributed to maintain plant seedbanks.

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 MDC 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.

Micro/macro topography techniques should be used to intersperse open water and emergent cover. Irregular shaped borrow areas mimicking river channel scours, sloughs, and meanders should be used over straight sided (square/rectangular) areas.

Islands can provide loafing, resting and nesting sites. Islands should be at least 15 feet in width and be 2-4 feet above and/or 1-2 feet below normal water level in the wetland area. Islands of oblong shape parallel with water flow are desired. Island should have at least a 6-foot top. At least one-fourth of the side slope should be 6:1 or flatter.

An adequate water control structure is desirable (but not required) to manipulate levels for vegetation succession and control. Slow, shallow water removal will expose mudflats for wetland wildlife use. See STRUCTURE FOR WATER CONTROL (587) and JS-BIOL-17 Shallow Water Management for Wildlife.

WETLAND RESTORATION (657) will be used if dikes are needed as part of the water control

plan. Curved dikes should be featured over straight dikes when feasible to offer additional wetland edge and differing vegetation development.

A water management plan, when needed, will be developed to insure proper use of water level manipulation. Consult with NRCS Biologist/Wildlife Conservationist or MDC Wetland Biologist for specific recommendations. Varying flooding depths and duration is the key to maintaining a healthy plant community and wetland ecosystem. Plans should generally exhibit slow drawdown (>21 days to remove 60% of the pooled water) to target a diversity of desirable wetland plants and use by migratory birds and other wetland dependent wildlife.

Green Tree Reservoir

Flood bottomland hardwood areas on the average of no more than 8 inches during the trees dormant season. Prolonged periods of ice against the trunks of dormant trees should be avoided.

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

Green tree reservoir management is difficult. Stress on the trees can accumulate over time and lead to poor health and vigor and can lead to tree loss. It is important to leave the green tree reservoir area completely dry at least one out of seven years and to vary flooding depth and duration between the flooding years. NO FLOODING SHOULD BE DONE BEFORE TREES ARE DORMANT. Flooding of trees before dormancy leads to further stress on trees and reduces regeneration.

Borrow areas for dike development will be located outside the reservoir area. Use WETLAND RESTORATION (657).

An adequate water control structure is a necessity. Water must be off the area by the time of bud development in early spring. Water control structure must be of sufficient size to pass normal summer flow of water through the ponded area. It should drain the site within one week in case of heavy runoff event. See STRUCTURE FOR WATER CONTROL (587).

A water management plan will be developed to insure proper use of water level manipulation.

Consult with NRCS Biologist/Wildlife Conservationist or MDC Wetland Biologist for specific recommendations. Varying flooding depths and duration is the key to maintaining a healthy plant community and wetland ecosystem. Plans should generally exhibit slow drawdown (>21 days to remove 60% of the pooled water) to target a diversity of desirable wetland plants and use by migratory birds and other wetland dependent wildlife.

Selective cutting can be used to release the more productive tree species and allow openings for use by wetland wildlife. See FOREST STAND IMPROVEMENT (666) and JS-BIOL-16 Permanent Forest Openings for Wildlife Job Sheet for recommendations. A detailed harvest plan will be needed. Consult with NRCS Biologist/Wildlife Conservationist or MDC Wetland Biologist for specific recommendations.

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 TREE/SHRUB ESTABLISHMENT (612).

Crop fields/moist soil areas

SHALLOW WATER MANAGEMENT (646) and JS-BIOL-17 Shallow Water Management for Wildlife will be used to develop/manage these areas.

Water Supply

Opportunistic water supply (flooding or rainfall) will provide an adequate water source in most years.

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.

CONSIDERATIONS

Consider the accessibility of the site for installation and maintenance.

Consider any effects on unique flora and fauna.

Consider the aesthetics of the installation.

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

Consider the effects of runoff, infiltration, evaporation, and transpiration on the water budget.

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

Consider that nutrients and pesticides contained in surface and ground water, as well as accumulated sediments, may have an adverse effect on wetland vegetation. The nutrient and pesticide tolerance of the species planned along with the wetland objectives should be considered where known nutrient and pesticide contamination exists.

Consider the need for buffer practices beneficial to wildlife around the perimeter of the site. Plan practices such as FILTER STRIP (393), FIELD BORDER (386) and/or CONSERVATION COVER (327) to create a vegetative buffer between the management unit and adjacent land uses. This buffer should be at least 30 feet wide, or wider, depending on its purpose.

Consider the use of shrub plantings to provide vegetation structural diversity in both the wetland/upland portions of the planning area. See TREE/SHRUB ESTABLISHMENT (612).

Consider the effects of management actions on compliance with state and federal hunting regulations.

Consider the effects of elevated wildlife uses on adjacent lands (crop depredation, airports, etc.).

Consider the effects on 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.

Consider flood impacts or water seepage problems on adjacent non-wetland areas.

Consider use of these areas by reptiles and amphibians. Stacked logs and/or rock piles may be located near the water's edge to provide critical habitat for local reptile and amphibian species.

Consider the use of these areas by river fish and provide water control structures of adequate size and elevation to assist in fish passage.

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

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

Consider effects of temperature on 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.

When determining which species to plant, consider micro topography and different hydrology levels.

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

PLANS AND SPECIFICATIONS

Plans and specifications for this practice shall be prepared for each site. Plans and specifications shall be recorded using approved specification sheets, job sheets, technical notes, or narrative documentation in the conservation plan, or other acceptable documentation to describe the requirements for applying the practice to achieve its intended use.

Targeted plant community or species of wildlife will be recorded.

Document how habitat needs will be provided: (1) desired depth of water needed during the different seasons; (2) types, locations and sizes of structures required; and (3) desired plant species and the means of establishing and maintaining them.

OPERATION AND MAINTENANCE

Depending upon landowner objectives it is desirable to not flood wetland areas immediately after wetland development. Not flooding for one year after development will allow earthwork to settle and vegetation to begin establishment.

A plan for the operation, maintenance, and management of the area shall be developed and recorded using approved job sheets, technical notes, or other forms of acceptable documentation.

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.

The following activities will be addressed in the plan: (1) timing and level setting of water control structures required for establishment of desired hydrologic conditions or for management of vegetation or for targeting the chronology of migratory birds; (2) inspection schedule of embankments and structures for damage assessment; (3) depth of sediment accumulation allowed before removal is required; (4) management needed to maintain vegetation, including control of unwanted vegetation; and (5) acceptable uses and timing (e.g. grazing and haying).

Inspect the area adjacent to the facility to make sure the area is well protected with desirable vegetation.