

**NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD**

Shallow Water Management For Wildlife

(Acre)

CODE 646

DEFINITION

Managing shallow water on agricultural lands and moist soil areas for wildlife habitat.

PURPOSE

- To provide open water areas on agricultural fields and moist soil areas to facilitate waterfowl resting and feeding.
- To provide habitat for reptiles and amphibians and other aquatic species which serve as important prey species for waterfowl, raptors, herons, and other wildlife.
- To provide shallow water habitat for wetland mammals.
- To provide winter cover for open land wildlife.

CONDITIONS WHERE PRACTICE APPLIES

On agricultural and moist soil areas with 2% slope or less, on both hydric and non-hydric soils, where water can be impounded or regulated by diking, ditching, excavating, or flooding for the purpose of wildlife habitat management.

This practice can be used to facilitate the conservation of declining wetland dependent and threatened and endangered species.

This practice applies where the intended purpose is to create and/or manage shallow water for the above purposes. This practice does not apply if the intended purpose is to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and biological habitat are to be returned to presettlement

conditions. For this purpose use the Wetland Restoration (657) standard. Shallow Water Management for Wildlife practice does not apply where the intended purpose is to rehabilitate a degraded wetland where specific functions and/or values are enhanced beyond presettlement conditions. For this purpose use the Wetland Enhancement (659) standard. Shallow Water Management for Wildlife practice does not apply where the intended purpose is to create a wetland on a site which historically was not a wetland or on a site which was formerly a wetland but will be replaced with a wetland type not naturally occurring on the site. For this purpose use the Wetland Creation (658) standard

CRITERIA

General Criteria Applicable To All Purposes Above.

- Soils should be somewhat poorly drained to poorly drained and have moderate to slow permeability (less than or equal to 2.0 inches per hour). These soils typically have a restrictive under-lying layer or high water table.
- Shallow water impoundments require an adequate water supply for reflooding the impoundment during periods of planned inundation. An adequate method for dewatering the impoundment is required if draw downs will be planned. Evapotranspiration is an acceptable means of dewatering a shallow water area when a water control structure is not planned. This will result in a late season draw down that will affect vegetative responses.

Conservation practice standards are reviewed periodically, and updated if needed. To obtain the current version of this standard, contact the Natural Resources Conservation Service.

- Shallow water areas shall be designed and managed to provide varying water depths between 1 and 18 inches over at least 75% of the pool area.
- Landowner shall obtain all local, state, and federal permits necessary.
- Water control structures and drainage modifications shall comply with all local, state, and federal regulations (e.g. state drainage law).
- The Standards and Specifications for : Wetland Restoration (657), Dike (356), and Structure for Water Control (587) will be used as appropriate. Refer to the Engineering Field Handbook for additional design information. Existing drainage systems will be utilized, removed, or modified as needed to achieve the intended purpose.
- Existing wetlands will be preserved and protected from being manipulated or used in a manner which would reduce the functions (type or capacity) the wetlands are providing.
- Water control structures shall be designed on an individual job basis, or applicable NRCS standard drawings shall be adapted, to meet site conditions and functional requirements. They shall be part of an approved overall engineering plan for the site. Care must be used to insure that the area's visual resources are not damaged.
- On structure sites, if soil and climatic conditions permit, a protective cover of vegetation shall be established on all disturbed earth surfaces. If soil or climatic conditions preclude the use of vegetation and protection is needed, nonvegetative means, such as mulches or gravel, may be used. In some places, temporary vegetation may be used until permanent vegetation can be established. Seedbed preparation, weeding, fertilizing, and mulching shall comply with the instructions in technical guides.

CONSIDERATIONS

For optimum site conditions and management considerations for shallow water impoundments see Table 1.

Consider existing drainage facilities (subsurface tile, ditches, culverts, etc.) and the need for their modification.

To insure that foods are available to dabbling ducks impoundments may be designed to be gradually flooded, inundating new areas of food plants in 4 to 10 inch increments of water as the unit fills. For shorebirds, mudflats should be exposed and provide areas with 1 to 4 inches of water during shorebird migration periods.

To provide optimum habitat for waterfowl and other shallow water dependent species, consider waiting until after August 15th to mechanically flood pool areas and beginning spring draw down after the start of the growing season or later. (See the Shallow Water Management for Wildlife (646) job sheet for recommended management options for optimizing wildlife food and habitat in shallow water areas.)

Consider the effects of the timing of the flooding and drawdown, as well as the type of drawdown, on target plant species and plant species composition (moist soil areas).

Consider the target plant species flooding tolerances and the composition of seed in the soil at the site (moist soil areas).

Nearly level sites will allow larger units while keeping the water depths within the optimum range.

Consider effects on wetlands or wildlife habitats that would be associated with the practice.

Consider the need for buffer practices beneficial to wildlife around the perimeter of the site. Plan practices such as Filter Strip (393) to limit sedimentation from entering or leaving the management unit, and/or Field Border (386) and/or Conservation Cover (327) and/or Riparian Buffer (391) to create a vegetative buffer between the management unit and adjacent land uses. This buffer should be planned and sized according to the applicable standard and should use vegetation beneficial to wildlife.

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

Consider the amount and type of human disturbances in the area and their possible impact on wildlife. Limit disturbances during periods when waterbirds are present and plan screened buffer zones to separate disturbances from the site.

Contemplate the use of upstream impoundments as a source of water when additional water is needed.

Consider annually rotating food plots to provide additional food and help maintain early successional vegetation. Food plots, if planned, should contain plant species such as browntop or Japanese millet at 10 to 20 lbs. per acre or grain sorghum or corn at 6 to 8 lbs. per acre. Use of herbicides is generally not required since annual weeds produce useable wildlife food. Only 25% of the pool area may be planted to food plots annually. The area planted to food plot should be rotated annually.

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, narrative documentation in the conservation plan, or other acceptable documentation.

The planner is encouraged to work closely with the NRCS Biologist, KDFWR Biologist, or other wetland specialist in developing site specific plans and specifications.

Plans and specifications for installing structures for water control shall be in keeping with this standard and shall prescribe the requirements for applying the practice to achieve its intended purpose. The plan shall specify the location, grades, dimensions, materials, hydraulic and structural requirements for the individual structure, and the timing or sequence of installation activities. Provisions must be made for necessary maintenance.

OPERATION AND MAINTENANCE

A plan for the operation, maintenance, and management of the shallow water or moist soil 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.

Actions will be carried out to ensure the practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the

practice (operation) such as water level manipulation, moist soil management, managing vegetation through prescribed fire, mowing, and disking. Repair and upkeep of the practice (maintenance) shall be carried out as needed, such as repair or replacement of vegetative or structural components.

Shallow water areas shall be dewatered and disked, mowed, or burned as needed to maintain early successional vegetation and to control woody or other unwanted vegetation.

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

Any use of fertilizers, mechanical treatments, prescribed burning, and pesticides and other chemicals shall not compromise the intended purpose of the shallow water or moist soil area.

Promptly remove and dispose of dead waterbirds or fish to control the spread of avian botulism and other wildlife diseases.

REFERENCES

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Table 1. Important considerations in evaluating wetland management potential.

Factors	Optimum Condition
Water supply	<ul style="list-style-type: none"> • Independent supply into each unit. • Water supply enters at highest elevation.
Water discharge	<ul style="list-style-type: none"> • Independent discharge from each unit • Discharge at lowest elevation for complete drainage. • Floor of control structure set at correct elevation for complete drainage
Water control	<ul style="list-style-type: none"> • Stoplog structure allowing at least 4-inch changes in water levels. • Adequate spillway capacity to handle storm events • Water control structure capable of draining at least 1 inch per day from the unit.
Optimum unit size	<ul style="list-style-type: none"> • 5 to 100 acres
Optimum number of units	<ul style="list-style-type: none"> • At least 5 within a 10-mile radius of units

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