

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**WILDLIFE WETLAND HABITAT MANAGEMENT**

(Acre)  
**CODE 644**

**DEFINITION**

Retaining, creating, or managing wetland habitat for wildlife.

**PURPOSES**

To maintain, develop or improve habitat for waterfowl, shorebirds, migratory songbirds, small mammals, furbearers and other wetland-dependent wildlife species.

To maximize habitat for targeted wetland dependent threatened, endangered, and proposed listed species or species of special concern.

**CONDITIONS WHERE PRACTICE APPLIES**

On or adjacent to wetlands, rivers, lakes 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**

**Retaining Wetlands**

Soil erosion within the wetland unit (wetlands and associated uplands) and its drainage must be controlled, to extent feasible, within tolerable limits (erosion rate at/or near Soil Loss Tolerance (T)), and to prevent excessive sedimentation and maintain water quality.

When the planned land use on the wetland habitat unit, including associated uplands, is wildlife habitat the unit will not be intensively farmed.

Livestock will generally be excluded from the wetland habitat unit, by fencing if necessary. Livestock grazing can be recommended to achieve specific purpose such as reducing residual vegetative cover to create vegetation more attractive to grazing waterfowl, or to prevent excessive accumulation of undesirable vegetative cover.

Water supplied must be adequate amount and of proper quality and chemistry to meet the purpose of the wetland habitat unit. If agricultural or wastewater is used it must be clear of toxic materials or water management should be designed to prevent concentration of toxic materials, such as, selenium and pesticides.

Adequate flushing action (tidal action) must be assured on Coastal Salt Flats and Salt Marshes where natural flooding by salt water is necessary for the production of desired plants and animals associated with these ecosystems.

Where levees, ditches and water control structures exist, maintenance will be planned to retain designed capacity.

Water level manipulation is recommended to produce desired aquatic vegetation, allow for drainage for control of emergent vegetation such as cattails and hardstem bulrush, and to make food crops more attractive and available to waterfowl, i.e. moist soil management units.

Wildlife species to be benefited will be listed on the SCS-CPA-6 or in the conservation plan. Impacts on non-target and non-game species will be considered. The habitat of rare, threatened, or endangered species will be identified and protected.

The vegetative component of the wetland habitat unit should be as diverse as possible, including trees (living and dead), shrubs, grasses, forbs and aquatic plants to support diverse animal populations. Limited growth of emergent vegetation is important as a source of shelter, nesting habitat and thermal cover for birds as well as for aesthetic purposes. Critical habitat of rare, threatened or endangered species will be given special consideration.

Wetland types, vegetation and associated upland complexes will be arranged in irregularly shaped, mosaic patterns so as to simulate natural landscape appearances. Water depths should be varied to provide as many aquatic habitats as possible and to maximize diversity.

Small fish, like mosquito fish, may be stocked, where legal, to provide forage for fish-eating waterfowl and other fish-eating wildlife species and help control nuisance aquatic insects, such as mosquitoes.

The wetland habitat unit should be protected from uncontrolled fire using FIREBREAKS (394A). PRESCRIBED BURNING (338) can be used to manage vegetation on wetlands and associated uplands. Burning of emergent vegetation should be done along with crushing and disking practices in order to ensure effective, long-term control. Once the area has been crushed and burned, disking is necessary to expose subsurface tubers to the hot sun to prevent tillering and growth of new plants. Disking should be timed so as to take advantage of summer heat, usually during July or early August.

Grazing, disking, mowing or other mechanical means can be used to manage vegetation for the purpose of achieving the desired results. Grazing and mowing are commonly used to produce optimum pasture grass stubble height habitat for cranes and geese.

Disturbance activities should be avoided during spring nesting periods unless a thorough investigation has been made to ensure that nests are not present.

Herbicides can be used for vegetation management, but will comply with Federal, State and Local regulations and be used according to label instructions. Great care must be used to not cause adverse environmental impacts.

### **Creating or Improving Wetlands**

Specification items in part I also apply when creating wetland and will be considered.

Soils must be suitable for the impoundment of water and production of appropriate aquatic plants or domesticated food plants.

Topography must be sufficiently level (0 to 3 percent slopes) for basin development or contour disking.

Where wetland construction is planned, such as, ditches, levees, or water control structures; engineering recommendations shall meet minimum California Engineering Standards and Specifications. Maintenance will be planned to retain designed capacity.

All critical and spoil areas resulting from construction will be seeded or otherwise treated

according to the Vegetative Section of the Technical Guide.

Islands should be added to provide loafing and nesting habitat and to provide protection from predators for nesting adults, juveniles and flightless adults. A secondary use for islands may be sites for hunting blinds.

When land smoothing or rough leveling is used to increase the size of ponded areas, some naturally occurring adjacent uplands should be retained. It is desirable to have an interspersed of areas above high water level within wetland fields. At least 25% of the naturally occurring high ground should be retained when creating or improving wetlands.

## **CONSIDERATIONS**

### **Endangered Species Considerations**

Determine if installation of this practice with any others proposed will have any effect on any federal or state listed Rare, Threatened or Endangered species or their habitat. NRCS's objective is to benefit these species and others of concern or at least not have any adverse effect on a listed species. If the Environmental Evaluation indicates the action may adversely affect a listed species or result in adverse modification of habitat of listed species which has been determined to be critical habitat, NRCS will advise the land user of the requirements of the Endangered Species Act and recommend alternative conservation treatments that avoid the adverse effects. Further assistance will be provided only if the landowner selects one of the alternative conservation treatments for installation; or at the request of the landowners, NRCS may initiate consultation with the Fish and Wildlife Service, National Marine Fisheries Service and/or California Department of Fish and Game. If the Environmental Evaluation indicates the action will not affect a listed species or result in adverse modification of critical habitat, consultation generally will not apply and usually would not be initiated. Document any special considerations for endangered species in the Practice Requirements Worksheet.

Some species are year-round residents in some streams, such as, freshwater shrimp. Other species, such as steelhead and salmon, utilize streams during various seasons. Be aware that during critical periods, such as spawning, eggs in gravel's, and rearing of young may preclude activities in the stream that may directly affect the stream habitat during those periods. For example there should be no

disturbance of stream gravel beds that may have eggs in them. That could include any equipment in the stream or even walking in the stream or work upstream that may result in sediment depositing in the gravel beds. Document any special considerations for endangered species in the Practice Requirements Worksheet.

### **Water Quantity**

Impoundment development can result in reduced frequency of destructive flood flows in the downstream channel. In areas of permeable soils, increased infiltration and percolation in the impoundment areas may increase ground water recharge. Protection and vegetation management elements of this practice would have minor effects on surface and ground water resources.

1. Effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.
2. Effect on the volume of downstream flow or charge to aquifers that might cause undesirable environmental, social, or economic effects.
3. Potential for a change in plant growth and transpiration because of changes in the volume of soil water.

### **Water Quality**

The effects of water manipulation may be more substantial than other elements (i.e. vegetation management, excavation, area protection by fencing, etc.). Impoundment of water may result in sediment storage and reduction in sediment transport to downstream areas, increased nutrient uptake with a reduction in amounts delivered to downstream areas and entrapment of pesticides, heavy metals or other toxic elements.

1. Effects on erosion and the movement of sediment, and soluble and sediment-attached substances that would be carried by runoff.
2. Effects of nutrients and pesticides on surface and ground water quality.
3. Effects on the movement of dissolved substances below the root zone and to ground water.
4. Effects on temperatures of water resources to allow for the enhancement or protection of aquatic and wildlife communities.

5. Effects on wetlands or water-related wildlife habitats.

### **PLANS AND SPECIFICATIONS**

Plans and specifications for this practice shall be in keeping with this standard and shall describe the requirements for applying and management of the practice to achieve its intended purposes.

A NRCS Biologist prior to the application shall review all plans and specifications for the application of this practice. Further coordination should include discussions with local Mosquito Abatement Districts to ensure that timing and duration of water applications is compatible with approved pest and disease control practices.

Items to be specified:

1. The desired kinds of wildlife.
2. Required depth of water during the different seasons.
3. Types and sizes of structures required.
4. Desired plant species.
5. The means of establishing and maintaining them.

The work shall consist of the application of practice and of management to accomplish the objectives; which may include:

Retaining Wetlands.  
Creating or Improving Wetlands.  
Providing Nesting Areas.  
Providing Food Production Areas.  
Providing Hunting Areas.

### **Brood Water Habitat**

For the development of brood water habitat, flooding periods will be established in accordance with nesting and fledging dates of resident nesting birds. Critical flooding times will be based upon pre-nesting courtship behavior (pair water), egg laying and incubation periods and care of young until they leave the nest. It is important that flooding levels of the brood pond be static throughout the nesting season in order to prevent inadvertent flooding of nests that may have been established during low-water or dry periods. Design considerations for brood ponds should emphasize an approximate 50/50 combination of open water habitat and emergent vegetation

Recommended flooding periods are as follows:

MLRAs 21, 22, 23, 26: January 1 through August 15  
All other MLRAs - January 1 through July 15.

### **Annual Food Plots**

Domestic food plants commonly grown and managed to attract and hold waterfowl include wheat, barley, corn, milo and millet. For the cultivation of domestic food plants, the Practice Specification 644 A - Annual Food Plots shall be used.

### **Moist Soil management Units**

Fields managed for the propagation of wildlife food plants through the manipulation of natural, diverted or pumped water sources. May include plants such as watergrass (*Echinochloa crus-galli*), swamp timothy (*Cyperus schoenoides*), alkali bulrush (*Scirpus* spp.), spikerush (*Eleocharis* spp.) and smartweed (*Polygonum* spp.) Promotes growth of plants from existing seed sources through the application or management of water through periodic irrigations at specified times during spring and/or summer. Refer to local vegetation management fact sheets for specific water management requirements.

Due to the sometimes-monotypic nature of the plant community and the subsequent lack of habitat diversity, wildlife food plots should not exceed 20 percent of the wetland/upland complex.

### **OPERATION AND MAINTENANCE**

An operation and maintenance plan must be prepared by the designer for use by the owner or other person responsible for operating this practice. The plan should provide specific instructions for operating and maintaining the system to insure that it functions properly. It should also provide for periodic inspections and prompt repair or replacement of damaged components.