

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD

**WETLAND ENHANCEMENT**

(Acre)  
CODE 659

**DEFINITION**

The modification or rehabilitation of an existing or degraded wetland, where specific functions and/or values are increased beyond what would be expected for normal restoration for the purpose of meeting specific project objectives. Some functions may remain unchanged while others may be degraded.

**PURPOSE**

To modify the hydrologic condition, hydrophytic plant communities, and/or other biological habitat components of a wetland for the purpose of favoring specific wetland functions or values. For example, managing site hydrology for waterfowl or amphibian use, or managing plant community composition for native wetland hay production.

**CONDITIONS WHERE PRACTICE APPLIES**

This practice applies on any degraded or existing wetland where the objective is to specifically enhance a selected wetland function(s) and/or value(s).

Enhancement should not significantly change the primary wetland functions provided at the site.

Enhancement is not applicable when it eliminates or reduces habitat functions for Threatened & Endangered Species, proposed listed species or species of special concern.

Upon completion of the enhancement, the site will meet the current NRCS soils, hydrology, and vegetation criteria of a Wetland.

This practice does not apply to: a Constructed Wetland (656), intended to treat point and nonpoint sources of water pollution; Wetland Restoration (657), intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, biological habitat are returned to original conditions; or Wetland Creation (658) for creating a wetland on a site location 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.

**CRITERIA**

**General Criteria**

The landowner shall obtain all necessary local, state and federal permits that apply before wetland enhancement begins.

Water rights are assured prior to enhancement if required.

The design will not back water onto neighboring land without an easement.

Document the soil, hydrology, and vegetative characteristics of the site and its contributing watershed before alteration.

The potential for occurrence of threatened or endangered species shall be evaluated for each site proposed for enhancement. Sites containing threatened or endangered species will not be enhanced under this standard unless it can be demonstrated that the impact will benefit the species at risk.

If the presence of hazardous waste materials in the sediment or fill is suspected, soil samples will be collected and analyzed for the presence of hazardous waste as defined by local, state, or federal authorities. Sites containing hazardous waste will not be enhanced under this standard.

**Criteria for Hydrology Enhancement**

The hydrology of the site (defined as the rate and timing of inflow and outflow, source, duration, frequency and depth of flooding, ponding and saturation) is modified to meet the project objectives. An adequate source of water must be available to meet designs for increased hydrology.

The standards and specifications for Dike (356), Land Grading (744), Structure for Water Control (587), and Pond (378), will be used as appropriate. Refer to the Engineering Field Handbook, Chapters 13, "Wetland Restoration, Enhancement, and Creation," and 6, "Structures," for additional design information. Existing drainage systems will be utilized, removed, or

modified as needed to achieve the intended purpose.

**Criteria for Vegetation Enhancement**—The use of native species is strongly recommended when conditions are suitable. Preference shall be given to native wetland plants with localized genetic material. Plant materials collected or grown from material collected within a 200-mile radius from the site is considered local. Refer to the Vegetative Guide for approved species lists, planting rates, Vegetative Soil Groups and MLRA information for detailed planting recommendations.

Where possible, native plant material shall be used; however, introduced or cultivated plant species can be used to meet specific project objectives such as for the purpose of establishing wildlife food plots. Vegetative establishment and control of noxious or invasive species should be done in accordance with local Agricultural Commissioner regulations.

In soils where seed banks for selected species exist, or where natural colonization of selected native species (identified from reference wetlands) will dominate within 5 years, then natural regeneration can be allowed.

Biological control of undesirable plant species and pests is recommended when feasible.

Use of Prescribed Burning (338), along with other vegetative management practices such as disking, haying, grazing and mowing are allowed when they contribute to the enhancement of wetland functions. Care will be taken to avoid disturbance activities during nesting and fledging periods.

Adequate substrate material and site preparation necessary for establishment of the selected plant species shall be included in the design.

### **Criteria for Wetland Function**

A functional assessment (Hydrogeomorphic approach or similar method) shall be performed on the site prior to enhancement.

Project goals and objectives shall minimize adverse impacts to wetland functions not specifically targeted for enhancement.

Where possible, wetland functions not targeted for enhancement should also be maximized.

## **CONSIDERATIONS**

Consider existing wetland functions and/or values that may be adversely impacted.

Consider effect of volumes and rates of runoff, infiltration, evaporation, and transpiration on the water budget.

Consider the potential for a change in rates of plant growth and transpiration because of changes in the volume of available soil water.

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

Consider effects on wetlands, water-related resources, and wildlife habitats that would be associated with the practice.

Consider linking wetlands by corridors wherever appropriate to enhance the wetland's use and colonization by the flora and fauna.

Consider establishing vegetative buffers on surrounding uplands to reduce sediment and soluble and sediment-attached substance 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 effects of temperature of water resources to prevent undesired effects on aquatic and wildlife communities.

### **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 gravels 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.

## **PLANS AND SPECIFICATIONS**

Specifications for this practice shall be prepared for each site. Specifications shall be recorded using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other documentation. Requirements for the operation and maintenance of the practice shall be incorporated into site specifications.

## **OPERATION AND MAINTENANCE**

The following actions shall be carried out to insure that this practice functions as intended throughout its expected life. These actions include normal repetitive activities in the application and use of the practice (operation), and repair and upkeep of the practice (maintenance).

Any use of fertilizers, mechanical treatments, prescribed burning, pesticides and other chemicals to assure the wetland enhancement function shall not compromise the intended purpose.

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

Timing and level setting of water control structures is required for the establishment of desired hydrologic conditions, for management of vegetation and for optimum wildlife use.

Inspection schedule for embankments and structures for damage assessment.

Depth of sediment accumulation to be allowed before removal is required.

Management needed to maintain vegetation, included control of unwanted vegetation.

Haying and livestock grazing, disking, crusting, and mowing may be utilized to protect and enhance established and emergent vegetation.