NATURAL RESOURCES CONSERVATION SERVICE
CONSERVATION PRACTICE STANDARD
SOUTH DAKOTA SUPPLEMENTS ITALICIZED

WETLAND ENHANCEMENT

(ac.)
CODE 659

DEFINITION

The modification or rehabilitation of an existing or degraded wetland, where specific functions and/or values are modified 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 *and physical* 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).

This practice does not apply to: a Constructed Wetland (656) intended to treat point and non-point sources of water pollution; Wetland Restoration (657) intended to rehabilitate a degraded wetland where the soils, hydrology, vegetative community, and 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 *or class* not naturally occurring on the site.

CRITERIA

General Criteria

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

The design will comply with local, state, and federal requirements.

Conduct an alternative analysis in accordance with requirements set forth in Sec. 404 (b)(1) of the Clean Water Act.

Enhancement will not adversely affect the wetland functions provided at the site prior to the enhancement.

Upon completion of the enhancement, the site will meet the current Natural Resources Conservation Service (NRCS) soils, hydrology, and vegetation criteria of a wetland.

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

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 or saturation) *will be* modified *or maintained* 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), Pond (378), and Structure for Water Control (587) 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

Where possible, native plant materials shall be used; however, introduced or cultivated plant species can be used to meet specific project objectives. When using native species, preference shall be given to local*ly adapted* plant materials. *Stewart and Kantrud (1971) provides appropriate species lists for specific wetland classes, subclasses, and zones*.

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

Criteria for Wetland Functions

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.

Guidance on wetland functional design can be found in Marble, 1992.

CONSIDERATIONS

Where native seed sources are adequate, natural regeneration will be allowed.

Consider how introduced species will respond at the site, if used in vegetation establishment.

Consider delineating wetland boundaries before any enhancement work is undertaken.

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

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

Consider effects on wetlands, water-related resources*, and* wildlife habitats 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 substances 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 the wetland class diversity in the area in order to enhance those functions missing or limiting in the ecosystem.

Consider effects on *the* temperature of water resources *on and offsite* to prevent undesired effects on aquatic and wildlife communities.

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 pests (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, including control of unwanted vegetation;

Haying and livestock grazing will be managed to protect and enhance established and emerging vegetation.

A functional assessment may be used to track progress or failure and to indicate the need for maintenance or management changes.

REFERENCES

Marble, A.D. 1992, A Guide to Wetland Functional Design, CRC Press, Inc., Boca Raton, Florida.

Stewart, R. E. and H. A. Kantrud. 1971. Classification of natural ponds and lakes in the glaciated prairie region. U.S. Fish and Wildlife Service Resource Publication 92.