

Landowner _____

Structure for Water Control - Wetlands



WHAT IS A WETLAND STRUCTURE FOR WATER CONTROL?

Structures for water control used in wetland restoration, enhancement, or creation activities provide a means to store water in the wetland by use of embankments or provide a means to manipulate water levels in the wetland by the use of a water control structure.

HOW IT HELPS THE LAND

Management of water within a wetland unit can greatly influence the quality of the wetland. Restoring or creating hydrology by capturing and holding water with embankments is generally the first phase of wetland development. To improve the quality of the wetland established by the embankment, water levels can be manipulated through the use of a water control structure. Proper timing of water withdraws can stimulate desired wetland plants over less desirable species that may take hold if water is allowed to fluctuate naturally with rainfall and evaporation. Withdraws can also expose mud flats at various times during the year to attract and benefit migratory water fowl. Water control structures can also act as principal spillways for the wetland embankments.

WHERE THE PRACTICE APPLIES

The wetland functions of this practice apply to areas where restoration, enhancement, or creation of wetland areas is practical and desired. This practice does not apply to embankments over 8 feet in effective height.

WHERE TO GET HELP

For assistance in planning a structure for water control to establish a wetland, contact your local Natural Resources Conservation Service or Conservation District office.

APPLYING THIS PRACTICE

Detailed topographic surveys are normally required for the installation of a structure for water control for wetland establishment. Typical locations are generally relatively flat and care must be taken to assure water is not impacting unintended areas. The availability of water and the timing of flow events must also be considered.

Embankments. Embankments should be kept as low as practical. Ideal water depths for wetlands are around 18 inches. When installed in a floodplain or where the potential exists for overtopping,

embankment side slopes shall be no steeper than 4:1 (Horizontal to Vertical) and the top width shall be no less than 10 feet.

Borrow areas should be shallow and random in location. A berm (an undisturbed area, a minimum of 10 feet wide) should be created between the embankment and the borrow area to avoid deep water areas near the embankment which can attract beavers or other burrowing animals to the embankment causing damage.

Water Control Structures and Principal Spillways. A number of types of water control structures, principal spillway structures, or combination structures exist for use in establishing wetlands. These include corrugated metal, steel, and plastic pipes, as well as, concrete boxes. Corrugated metal structures may need to be coated with aluminum or polymers to prevent premature corrosion. Water level control mechanisms include flashboard risers, screwgates, and plugs and may involve prefabricated structures.

Principal spillway capacities shall be sized for the local drainage area into the wetland. Where adequate auxiliary spillway conditions exist or can be established, a water control structure may be installed for the sole purpose of water level control without a significant principal spillway capacity.

Guards. Trash, debris, or beaver guards shall be installed on all inlets. Rodent guards shall be installed on outlet pipes. All guards shall meet approved drawings, be included on the Pre-approved Structures, Components, and Appurtenances list, or be approved by the engineer, prior to use.

Auxiliary Spillways. An auxiliary spillway must be incorporated into the design for all embankment type structures for water control. Natural spill areas can be used as well as constructed and reinforced spillways.

When the structure for water control is installed along a creek or stream channel, the auxiliary spillway shall be located at the downstream end of the structure.

Vegetation. Embankments, especially those located in a floodplain or where the potential exists for overtopping, shall be planted to an erosion control type vegetation (i.e. Bermuda or Fescue). Other areas within the wetland unit may be vegetated with native species.

OPERATION AND MAINTENANCE

Operation. Wetlands benefit from controlled water drawdowns. Structures for Water Control equipped with a water level control mechanism allow for these drawdowns. Typically, water should be lowered in early spring to promote growth of the more desirable wetland plants. Water levels may then be restored in early fall for migrating water fowl. Exact timing of drawdowns and flooding is dependent on climate and location and on the target species (vegetative and animal) being promoted. Contact the local NRCS or Conservation District office for specific details.

Not only the timing, but also the rate of water withdraw can impact the wetland function. Studies have shown that slow releases may be more beneficial than rapid withdraws. Consideration should also be given to the creation of mud flats during withdraws and their relation to migratory species and as a possible seedbed for invasive airborne seeds (i.e. willow, cottonwood, etc.).

Permanent water levels should never exceed those called for in the design. The maximum permanent water level is set to not only create the most optimum wetland habitat, but also to protect the structure for water control, all its appurtenances and surrounding properties.

Maintenance. Maintenance of a Structure for Water Control involves all aspects of the structure. Embankments must be kept free of woody vegetation and should be checked regularly for damage caused by burrowing animals. Principal spillways and water control structures must be kept free of debris from flood events and from beaver activity. Guards must remain in place to keep structures operating as planned.

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