

NATURAL RESOURCES CONSERVATION SERVICE  
CONSERVATION PRACTICE STANDARD  
**SURFACE FLOODING OF ORGANIC SOILS**

(Acre)  
Code 756



#### DEFINITION

Establishing and maintaining a saturated condition in organic soils.

#### PURPOSE

This practice may be used as a part of a conservation management system to support one or more of the following purposes:

- Conserve the organic soil by reducing subsidence and wind erosion.
- Aid in controlling nematode and other pest populations.

#### CONDITIONS WHERE PRACTICE APPLIES

This practice applies to organic soils during the off-cropping season or when growing water tolerant crops and drainage of the soil profile is not required for plant growth.

#### CRITERIA

##### General Criteria Applicable to All Purposes

All Federal, state, and local laws, rules and regulations governing the construction and use of water storage and management facilities shall be followed. The landowner or operator shall be responsible for obtaining all necessary permits.

The design of related water management practices shall be coordinated with this practice in order for it to achieve the intended purpose.

Flooding shall be accomplished through the use of dikes, water control structures and/or low head lift pumps. Water control structures and pumps shall be located where they are easily accessible for operation and maintenance. Water control structures shall meet NRCS conservation practice standard, Structure for Water Control, Code 587. Pumps shall meet NRCS conservation practice standard, Pumping Plants for Water Control, Code 533.

**Capacity.** The water delivery system shall have the capacity to provide a minimum of 10 gpm per acre for the area to be flooded.

**Duration.** Flooding (complete soil saturation) shall be maintained for a minimum of 30 continuous days with the design water level at an elevation that will ensure a minimum of 90 percent of the design land surface area is at or below the design water level.

If pumping is intermittent, additional water depth shall be added to account for seepage and evaporative losses during non-pumping periods.

**Drainage.** Release of water at the end of the flooding period must be controlled at a discharge rate that will not result in erosion damages.

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

**Dikes.** Dikes shall be designed and constructed in accordance with NRCS conservation practice standard, Dike, Code 356 if the possibility of a breach of the constructed dike could cause off-site damages.

If a breach of the dike poses no potential damage, the dike may be temporary in nature with little or no shaping of the cross-section. Minimum height of temporary dikes shall be 0.5 feet above the planned water level with a minimum top width of 2.0 feet. Existing roads or spoil banks of adequate height (minimum of 0.5 feet above planned water level) are acceptable for temporary dikes.

### CONSIDERATIONS

Whenever feasible, the source of water for flooding should be from existing drainage ditches which are normally installed for drainage and irrigation. In some areas, detention ponds constructed to hold drainage pump-off water may be used as a supply source for flood water.

Flooding the area for longer than 30 days will result in reduced oxidation and provide an increase in the life of the organic soils.

Surface flooding of organic soils may affect the water budget. During the flooding period, there will be an increase in evaporation, an increase in runoff, a decrease in soil storage, and possibly an increase in deep percolation or interflow caused by a prolonged saturated soil condition.

Coordinating the flooding of organic soils with water tolerant crops such as rice, may result in increased economic benefits.

Some soil nitrogen may be lost to denitrification when the soil is flooded.

The drainage waters from the flooded field may contain dissolved nutrients, pesticides and organic matter which may be discharged to surface waters.

Flooding for a minimum of 30 days will kill most nematodes and other harmful pests that host in organic soils.

The drainage water may be discharged at a higher temperature than normal flows resulting in a detrimental effect on in-stream biota.

Where possible, avoid direct release of water at the end of the flooding period to surface water

bodies. Release of water through overland filter strips or constructed or natural wetlands will reduce nutrient levels, lower temperature, and reduce suspended solids.

Consideration should be given to allowing the flood water to recede through evaporation or deep percolation in lieu of discharging off site.

The flooded fields may have a positive effect on aquatic wildlife habitat such as feeding areas used by waterfowl and wading species. The timing, depth of water and duration of flooding should be considered for wildlife benefits.

### PLANS AND SPECIFICATIONS

Plans and specifications for surface flooding of organic soils shall be in conformance with this standard. They shall be site specific and shall describe the requirements for applying this practice in order to achieve the intended purpose. Plans and specifications shall include construction plans, drawings, job sheets or other similar documents. These documents are to specify the requirements for installing the practice such as the kind, amount, or quality of materials to be used or the timing or sequence of installation activities.

### OPERATION AND MAINTENANCE

Operation and maintenance (O&M) shall be in accordance with the requirements of this standard and in conformance with all local, state, and federal laws and regulations. The O&M plan shall include such information as time and stage to maintain flood waters over the soil surface, pumping schedules, and coordination of water management operations in the system with respect to rainfall, season, crop and soil moisture. The O&M plan shall also include drawdown procedures at rates that will not cause erosion or other damages.

### REFERENCES

NRCS Conservation Practice Standards  
 Dike, Code 356  
 Pumping Plants for Water Control, Code 533  
 Structure for Water Control, Code 587