



Minnesota  
Pollution  
Control  
Agency

# Minnesota Water Quality Standards: Physical Alterations to Wetlands

Water Quality/Surface Water fact sheet #6.01, March 2005

## Environmental Analysis & Outcomes Division

## Water Assessment & Environmental Information Section

## Biological Monitoring Unit

The Minnesota Pollution Control Agency (MPCA) has the responsibility for maintaining the quality and integrity of Minnesota's waters, including its wetlands. State water quality standards are found in Minn. R. ch. 7050. These standards recognize that "pollution," as defined in Minnesota statutes, includes any alteration made or induced by human activity of the chemical, physical, biological or radiological integrity of waters of the state. Physical alterations to water bodies can be significant. Water quality standards define "physical alteration" of a wetland as any activity involving dredging, filling, draining or permanent inundation of a wetland. Restoring a degraded wetland by re-establishing its original hydrology is not a physical alteration. Minnesota's wetland water quality standards are intended to maintain the existing designated uses and restore historical designated uses of wetlands.

Water quality standards specify that activities needing a National Pollution Discharge Elimination System, or a State Discharge System permit, or a Sec. 401 water quality certification review, and which will result in a physical alteration to a wetland, must comply with wetland mitigation sequencing requirements. Any wetland impacts which are not avoided must be compensated through wetland restorations, creation and/or by obtaining credit in an accepted wetland

bank. This process of mitigative sequencing typically involves negotiations between an applicant and representatives of the MPCA for a permit or water quality certification, to assure that the wetland physical alteration is fully mitigated.

## Determining Physical Alterations to Wetlands

**Dredging** is the excavation of the wetland bottom by any means. Dredging a wetland can cause a loss of one or more designated uses, including recreation, aesthetics, wildlife habitat, aquatic community/biological diversity (e.g., vegetation and invertebrates), erosion control, low-flow augmentation, and stream sedimentation. Dredging is occasionally proposed to provide open water in seasonally saturated, Type 1 or 2 wetlands; it can also occur in deeper, pool-type wetlands that typically have semi-permanent standing water. These dredging projects are often intended to improve wildlife habitat, improve aesthetics, or provide human access to the wetland. More often, dredging or excavating in wetlands is proposed as part of a stormwater-management system. The MPCA supports and encourages the use of stormwater ponding to provide treatment of sediments, nutrients and hydraulic surges to protect downstream water quality. However, if these treatment ponds and systems are created in an existing



wetland and if their creation will result in loss of designated uses, the activity is considered to be a physical alteration.

**Filling** includes introducing enough solid material into a wetland to alter its cross-section or hydrological characteristics, obstruct flow patterns, change the wetland's boundary, or convert the wetland to a non-wetland area. Filling a wetland can adversely impact one or more wetland designated uses, including low-flow augmentation, erosion control, stormwater retention, stream sedimentation, ground water recharge, aesthetics or recreation, or cause a shift in the aquatic life/biological diversity of the wetland.

**Draining** results from a permanent lowering of the water table by a method such as ditching, tiling, diverting water flow away from a wetland, or lowering a wetland's outlet elevation. Draining a wetland will adversely impact one or more designated uses, including low-flow augmentation, erosion control, floodwater retention, stream sedimentation, ground water recharge, aesthetics or recreation, and cause an adverse shift in the aquatic life/biological diversity. Occasionally wetlands may be temporarily drained to improve their wildlife habitat uses. Such temporary actions are considered to be physical alterations.

**Permanent inundation** means to raise the ordinary elevation of wetland waters by a physical change, such as constructing a dam, weir, dike, berm or other structure for a period sufficient to change the aquatic community structure. Permanent inundation will cause a loss of one or more designated uses, including floodwater retention, wildlife habitat or recreation, or cause an adverse shift in the aquatic life community, such as the vegetation association. Inundation of an existing wetland can occur when the increased water flow is of such intensity, duration or frequency that the wetland's water regime is shifted enough to change or even destroy the existing wetland type. Most wetland physical alterations from inundation are the result of stormwater ponding in wetlands.

Different kinds of wetlands vary in their sensitivity to inundation. In some wetlands, an increase in the normal water depth may not result in a loss of designated uses. For more information on this subject, the reader is referred to the MPCA publication *Guidance for Evaluating Stormwater and Snow-Melt Runoff Impacts to Wetlands*.

### For more information

For more information, call the MPCA Customer Assistance Center at (651) 297-2274 or (800) 646-6247 and ask to speak with staff about wetland water quality standards.