

**BMP 10**

# Silviculture in Wetland Areas

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## Purpose

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It is important to reduce the potential impacts of nonpoint source pollution to wetland areas from silvicultural activities. Forested wetlands, because of their uniqueness, require considerations that are greater than those listed in other BMPs dealing with silvicultural activities. The requirements listed here are supplemental to other silvicultural BMPs.

## Definitions

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**Wetlands** are defined as areas characterized by soils saturated with moisture during all or a significant proportion of the year and that support a dominance of hydrophytes (plants adapted to primarily wet conditions). Such areas are transition zones between predominately dry upland sites and permanent water in streams and lakes. Official determinations of whether a forested area is a wetland are the responsibility of the U.S. Army Corps of Engineers unless there is adjacent cropland, in which case the determination may be made by the Natural Resources Conservation Service of USDA.

This BMP is applicable in wetlands dealing with the following situations:

- **Sediment Production:** Sediments can be produced as a result of construction and use of access roads and by other activities, such as operation of equipment in streams and sloughs and disturbance of stream and slough banks with logging equipment and vehicles.
- **Drainage Alteration:** Road construction associated with logging is the activity most likely to cause drainage alteration in wetlands. In such instances, certain areas can receive prolonged flooding that can cause timber mortality or decline and can prevent regeneration of desirable species. Altering drainage could also cause wetlands to drain.
- **Stream Obstruction:** Trees and logging debris that are not removed from streams and dry natural drainages during logging can alter stream flow and cause scour erosion of channels and banks. In extreme cases, trees and logging debris can partially dam streams and cause flooding in forested areas.
- **Soil Compaction:** The potential for soil compaction in wetlands caused by the operation of logging vehicles and equipment is high, especially when the woods are partially flooded or before soils have had a chance to dry after seasonal flooding or periods of wet weather. Skid trails, haul roads, and log landings are areas where compaction is often severe. Compaction reduces infiltration of water into the soil, which affects absorption of moisture and nutrients by tree roots and restricts root growth. Thus, regeneration, growth, and development of trees can be severely affected where soils are compacted.
- **Herbicide Use:** Herbicides can be used in forested wetlands for control of cull and other unmerchantable trees, vines, and brush. With careful handling and use, herbicides pose little threat to wildlife and other wetland values. Herbicides are also prescribed for broadcast use on former croplands and other nonforested areas for control of grasses and vines to permit development of tree seedlings. Such herbicides are applied during the summer after seasonal flood waters have receded and when growth of weeds is active. Herbicides prescribed for such use are degraded by sunlight and soil microorganisms within one to two months following application and, barring accidental spills, pose little or no threat to wetland values.

## Specifications

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The following BMPs for wetland sites should be considered supplementary to BMPs developed for forestry operations on upland areas in the state:

### Access Roads, Skid Trails, and Landings

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- **Construction of permanent roads should be minimized**, and landings should be located on higher ground. When needed, locate roads on the higher ground or “ridges” that are parallel to the drainage system, and use a minimum amount of fill material.
- **Restrict vehicle traffic** to a minimum.
- **Crossing streams and sloughs should be avoided** if possible. However, when unavoidable, cross at right angles, and use culverts and bridges to carry water without altering natural drainage and disturbing stream banks and other sensitive areas.
- **Retire** temporary roads, trails, and landings. Reshape road beds, remove culverts and bridges, and revegetate, as needed, to stabilize bare and disturbed soil. Roads, then, should be closed to prevent erosion and roadbed damage (see BMP No. 1).
- **Locate log decks on elevated areas** away from streams as far as is practical. Keep log landings small and few in number.

### Streamside Management Zones (SMZs)

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SMZs protect stream, slough, and lake banks from disturbance that can be caused by operation of logging and other forestry equipment. In addition, SMZs filter out sediments that can enter streams and reduce movement of logging debris into main channels (see BMP No. 3).

**A stream canopy cover width of at least 50 feet should be maintained with a minimum of 50 percent of the overstory trees retained to shade perennial streams and sloughs (see BMP No. 3).**

- **Operation of logging vehicles** and equipment should be minimized in SMZs to avoid disturbing the forest floor and to protect the banks of streams and sloughs.
- **Remove tops** of harvested trees from streams and sloughs to allow unrestricted waterflow.

### Harvesting

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- **Plan harvesting during dry weather.** Erosion and soil compaction caused by repeated operation of logging vehicles and equipment can occur on skid trails and log landings. Wetlands are particularly sensitive to rutting. To minimize the adverse effects of harvesting, logging should be planned during dry weather.
- **Use low ground pressure tires on skidders**, when available, and concentrate skidding as much as possible on a few primary skid trails to minimize site disturbance and compaction. Avoid or minimize use of skidders in SMZs and streams and sloughs.
- **Scarify severely compacted areas** on log landings and skid trails and revegetate to prevent erosion and improve wildlife habitat (see BMP No. 2).

## Herbicide Use

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- Always **use herbicides in accordance with label instructions** and adhere to all federal and state policies and regulations governing pesticide use.
- **Plan aerial application** of herbicides carefully to prevent contamination of streams, ponds, and forested wetlands and to reduce the possibility of damage to nontarget plant and animal life.

## Regulatory Requirements for BMP No. 10

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*(See Appendix A for explanations)*

- Filling or draining of wetland: (33 USC 1251 *et seq.*, Section 404)
- All silvicultural operations: (410 KAR 5:026, 5:029, 5:030, and 5:031)
- Activities near high-quality waters and outstanding national resources waters: (401 KAR 5:029, 5:030, and 5:031)
- Activities near wild rivers: (KRS 146.200 *et seq.* and 401 KAR 4:100-140)

## Summary: AWQA Minimum Requirements for BMP No. 10

The producer should:

- minimize construction of permanent roads and locate landings on higher ground.
- restrict vehicle traffic to a minimum.
- avoid crossing of streams and sloughs if possible.
- leave 50 to 70 percent of the overstory to shade perennial streams and sloughs.