

The Forest Landowner and Water Quality

As stewards of the nation's forestlands and the waters flowing from them, forest landowners have a responsibility to protect our natural resources.

The federal Clean Water Act of 1987 requires proper steps be taken to prevent pollution. Using "best management practices" can control pollution resulting from soil erosion. Best Management Practices, commonly referred to as BMPs, are any practices used to reduce water pollution.

Water originating from undisturbed forestland is virtually unpolluted. Soil disturbing activities during harvesting and other forestry practices can cause pollution if BMPs are not used.

Properly installed and maintained, BMPs are practical and inexpensive ways to prevent erosion and resulting pollution from forestry activities.

Best Management Practices and Timber Harvesting

Pre-Harvest Planning

Pre-harvest planning should be done to determine which BMPs are needed. Careful planning will prevent most erosion problems. Good pre-harvest planning is recommended for water quality control. Soil erosion and sedimentation are forms of nonpoint source pollution that can be minimized by careful planning of road locations, logging and harvesting practices, regeneration operations, and timber stand improvement activities. A forest management plan, complete with water quality objectives, provides the foresight needed to apply environmentally responsible forestry practices.

Roads, Skid Trails, and Landings

Roads, skid trails, and landings should be properly located before logging starts. Roads, skid trails, and landings should be located away from streams on well-drained soils. Water should be diverted off these areas by turnout ditches, broad-based dips, culvert pipes, or other accepted practices found in the Mississippi Best Management Practices Handbook.

Stream Crossings

Stream crossings should be made with bridges, dragline mats, pipes, and culverts. Fords are acceptable only if the stream channel has a gravel bottom and both entrances are stabilized.

Streamside Management Zone (SMZ)

A streamside management zone (SMZ) is a buffer strip of natural vegetation between a disturbed site and a watercourse. This zone slows the flow of water runoff and catches sediment before it enters the watercourse. In Mississippi, streams are classified into two types: perennial (flowing year round) and intermittent (flowing periodically throughout the year).

Drains are considered separately since they flow only for short periods following rain events. Perennial and intermittent streams need the use of SMZs, while drains do not.

The stream type will dictate the amount of harvesting allowed within the SMZ as well as the potential impact for various types of forestry activities. The assistance of professional foresters or loggers familiar with the area will aid in determining stream type. If there is a question about the type, treat it as a perennial stream. Regardless of whether it is a perennial, intermittent stream, or a drain, several limitations must be adhered to:

- Never use a stream or drain channel as a skid trail or road
- Remove all logging debris from the stream
- Minimize the number of stream or drain crossing points
- Cross streams and drains only at right angle
- Never block the flow of water through a stream or drain channel
- Avoid rutting through streams or drains
- Avoid prescribed burning
- Harvest of any stems on the edge of a stream channel must be accomplished in such a manner as to minimize impact to the stream bank.

Guidelines For Drains

Drains do not require SMZs. However, there are several limitations that must be adhered to:

- Never use a drain as a skid trail or road
- Never leave logging debris in a drain channel
- Cross drains only at a right angle
- Minimize the number of crossing points
- Avoid rutting
- Avoid blocking the flow of water

Stabilizing Disturbed Areas

On completion of the logging operation, follow these steps:

- Maintain road surfaces as needed to limit the development of ruts
- Discourage unnecessary traffic during periods of excessive moisture
- Clean all drainage structures and ditches as needed
- When a road is to be retired, culverts may be removed and replaced with water bars, dips, or ditches.
- To protect roads and ditches from erosion after roads are retired, revegetation is recommended. Road closure by barriers, gates, and other structures is advised
- To protect trails after they are retired, proper water diversion structures are recommended
- Discourage unnecessary traffic

- Scatter brush and/or slash on skid trails to slow water movement and reduce erosion.
- At stream crossing, the streambed should be cleared of all slash and restored to natural shape and grade.

For specific information on constructing and maintaining Best Management Practices, refer to the Mississippi BMP Handbook.

Selling Your Timber

Obtain professional forestry assistance. Numerous studies have shown that landowners receive a higher income from a timber sale when the sale is prepared with professional help. A professional forester can advise on timber markets, the type of sale needed, the time to sell, and contract provisions.

Always have a written contract, which covers the following points:

- Logging must be done according to the Mississippi Best Management Practices Handbook
- Payment amount, manner and time
- Timber description and legal description of the sale area
- Specific start and completion dates of the sale
- Penalties for cutting or damaging designated leave trees
- Liability for losses due to fire if caused by the buyer or his agent
- Protection of the seller from workers' compensation claims, liability lawsuits, and property damage claims
- Assignment of the sale agreement to another logger allowed only with the written consent of the seller

Reforestation and BMPs

Site preparation for tree planting can cause soil disturbance and may result in erosion and sediment pollution. Using the appropriate BMPs can prevent problems. A forester should prepare a Forest Management Plan, which will include any needed BMPs before work is begun. Cost-share programs are available to help pay the cost of most reforestation work. Most cost-share programs require the use of BMPs to qualify for payment.

Maintaining BMPs

Best Management Practices can easily be destroyed if they are not protected and maintained by the landowner. Traffic should be restricted, especially during wet weather. Roads should be kept free of debris and ruts so that water can drain from the road surface. The drainage ditches and culverts should be kept open

Wildlife Benefits of BMPs

Streamside management zones (SMZs) protect water quality and temperature. They also provide travel lanes and habitat diversity for most wildlife. Roads and trails can be seeded with plant species that will provide wildlife food and cover. The edge of SMZs, roads, and harvested areas provide the diversity of shrubs, insect foods, grasses, perches, nesting areas, fruit, berries, and cover, all of which enhances wildlife habitat. All SMZs will extend from both stream banks to a distance determined by the slope of the land. The intent is to maintain sufficient overstory and understory cover to provide shade, maintain bank stability, and protect water quality. Additional benefits include enhancing wildlife habitat, creating wildlife corridors, and providing habitat diversity in harvested areas.

Additional Information

For more information contact your local office of the following agencies:

Mississippi Forestry Commission (Local Area Office)
Mississippi State University Extension Service
Natural Resource Conservation Service
Soil and Water Conservation District

Helpful web sites that will provide additional information:

EPA Source Water Protection: www.epa.gov/safewater/protect.html
Southern Forest Resource Assessment: www.srs.fs.usda.gov/sustain
Trust For Public Land demonstration project: www.tpl.org



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