

**RULES
OF
TENNESSEE DEPARTMENT OF AGRICULTURE
DIVISION OF FORESTRY**

**CHAPTER 0080-7-3
FORESTRY BEST MANAGEMENT PRACTICES**

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0080-7-3-.01 IDENTIFICATION OF FORESTRY BEST MANAGEMENT PRACTICES (BMP) - GENERAL

(1) General

(a) Purpose, Scope and Applicability.

This Rule Chapter specifies forestry best management practices (BMPs) -pursuant to TCA 69-3-103(35) and TCA 11-4-301(d)(18). These are applicable to forestry activities as defined by TCA 69-3-103(38), i.e., harvesting of timber and construction of roads and trails. Although no law mandates the use of BMPs, if an operator fails or refuses to implement these BMPs and water pollution results, the Commissioner of the Department of Environment and Conservation may issue a stop work order. These are practices that, if implemented properly, would prevent, limit, or eliminate water pollution that might be associated with the harvesting of timber including road and trail construction. BMPs are intended to prevent water pollution that might result from sediment, mechanical and chemical intrusion, or other activity that would adversely impact the aquatic resource. The potential for forestry activities to pollute streams is significantly influenced by factors such as time of year, topography, soil type, vegetative cover, logging technology, and the duration and intensity of rainfall events. Some judgement is, therefore, necessary to relate the choice and installation of BMPs relative to those factors. The following rules provide flexibility in the choice and application of BMPs for purposes of assuring that silvicultural activities do not result in pollution of waters of the State. Guidance and specifications are contained in respective publications of the Department of Agriculture.

(b) Use of Number and Gender-As Used in these Rules:

1. Words in the masculine gender also include the feminine and neuter genders; and
2. Words in the singular include the plural; and
3. Words in the plural include the singular.

(c) Rule Structure - These Rules are organized, numbered, and referenced according to the following outline form:

- (1) paragraph
 - (a) subparagraph
 1. part

(Rule 0080-7-3-.01, continued)

- (i) subpart
 - (I) item
 - I. subitem
 - A. section
 - (A) subsection

(2) Definitions

When used in this Rule the following terms have the meanings given below unless otherwise specified:

- (a) “Broad-based dip” means a feature constructed into a forest roadbed for achieving effective drainage.
- (b) “Culvert” means a conduit through which surface water can flow under roads.
- (c) “Log deck/landing,” means an area to which logs are skidded to an on-site mill or collected for loading onto trucks for transport out of the woods.
- (d) “Outsloping” means a method of rapidly draining road surfaces by tilting the road surface toward the downhill side at the rate of ¼ inch per foot of road width or a 2 to 3 percent outslope.
- (e) “Pole ford” means a method of fording soft-bottomed streams by placing poles (small logs) across the stream bottom.
- (f) “Sediment control structures” means natural materials, terrain features, or man-made structures that trap and hold sediment. Such structures include straw bale fencing, silt fencing, brush barriers, and sediment traps. Sediment control structures should be installed where necessary to slow the flow of runoff and to trap sediment until vegetation is established on the sediment source. The structures must be maintained, cleaned or replaced until areas of exposed soil are stabilized. Sediment control structures should not be installed in stream channels.
- (g) “Sensitive areas” means site specific natural or topographic features of consequence to an aquatic resource including but not limited to fragile soils, wetlands, sink holes, seeps, springs and heads of springs, landslides, old gully systems, and known locations of officially listed threatened or endangered aquatic species. Activity that disturbs or disrupts such areas and promotes potential water pollution should be avoided. Activity is not necessarily excluded from these areas, however, caution and judgment must be used when these areas are encountered.
- (h) “Skid trail” means a path established by multiple passes used by harvesting equipment to transport logs or trees from the stump to a landing or log deck.
- (i) “Streamside management zone (SMZ)” means a designated area that consists of the stream and an adjacent area of varying width where management practices that might impact water quality are modified or restricted. SMZs are typically areas where qualified activities are closely managed rather than areas of total activity exclusion.
- (j) “Water bar” means a structure constructed into a temporary road or skid trail to achieve effective drainage.

(Rule 0080-7-3-.01, continued)

- (k) “Wing ditch” means a water turnout or diversion ditch constructed to move and disperse water away from a road and side ditches into adjacent undisturbed areas so that the volume and velocity of water is reduced on the road surface.

Authority: T.C.A. §§11-4-301 et seq. and Public Chapter 680 of the Acts of 2000. **Administrative History:** Original rule filed May 23, 2001; effective August 6, 2001.

0080-7-3-.02 BMPs THAT PREVENT EROSION, SOIL LOSS, AND POTENTIAL SEDIMENTATION

(1) Access Roads.

(a) Access Road Location.

Access roads shall be designed and located to prevent sediment from entering the waters of the State as defined at Tennessee Code Annotated (T.C.A.) § 69-3-102. Methods to prevent sedimentation to streams include, but are not limited to, the following:

1. Minimize the amount of road to be constructed using existing roads where practical and if properly located
2. Locate roads as far from streams and lakes as possible and practical.
3. Locate roads as far as practical from streamside management zones (SMZs) and sensitive areas.
4. Avoid or minimize stream crossings. If crossings are unavoidable, roads should cross streams as close to right angles as possible.
 - (i) When possible, locate crossings on the straightest section of streams and minimize disruption of normal streamflow.
 - (ii) Design crossings such that disruption of movement of aquatic life is minimized.
 - (iii) Where applicable, approaches to stream crossings should climb away from streams to minimize erosion during high water and should be graveled to prevent washing and rutting.
 - (iv) Where practical, broad-based dips and wing ditch turnouts should be installed to turn water off roads before entering the stream.
 - (v) When fords are used:
 - (I) Fords should be located where streambanks are low.
 - (II) Fords should have a solid bottom; if not, use a pole ford or other appropriate stream bottom cover. Poles should be removed after use.
 - (vi) When culverts are used:

(Rule 0080-7-3-.02, continued)

- (I) Culvert size should accommodate the area to be drained. Temporary culverts may be smaller in size than those otherwise specified but must be removed at the completion of logging activity.
 - (II) Installation of culverts should minimize disturbance of stream channels and prevent sloughing of streambanks. Fill material should be stabilized with rip-rap, vegetation or any other acceptable method to prevent soil movement.
 - (III) Periodic inspection should ensure that culverts remain free of debris and other blockages.
- (vii) When bridges are used:
- (I) Bridges should be located across narrow points on firm soils.
 - (II) Care should be taken to protect banks from sloughing when constructing and removing temporary bridges.
 - (III) Bridges should not be covered with soil.
5. Avoid sensitive areas that could interfere with drainage and cause soil compaction or erosion.

(b) Access Road Construction.

Access roads shall be constructed to prevent sediment from entering the waters of the State as defined in T.C.A. § 69-3-102. Methods to prevent sedimentation to streams include, but are not limited to, the following:

1. To the extent possible, construct and stabilize new roads several weeks or longer in advance of logging.
2. Avoid road construction during periods of wet weather.
3. Construct roads on grades of 2 to 12 percent where possible. Runoff from roads should not directly discharge into a stream channel. Runoff associated with stream crossings should be minimized. Control runoff from roads using techniques such as varying the slope of the road, crowning, outsloping, wing ditches, sediment traps, sediment control structures, broad-based dips, rolling dips, water bars and cross drain culverts and other measures recommended by the Department of Agriculture. Steeper grades are acceptable for short distances provided additional attention is given to water control/drainage structures.
4. When possible, trees and brush cleared for road corridors should be pushed to the downhill side of the road to assist in trapping sediment.
5. Minimize soil disturbance during road construction.
6. Revegetate exposed soil in potential problem areas that could generate sediment (i.e.: culverts, stream crossings, and fill areas).
7. In association with wetlands:

(Rule 0080-7-3-.02, continued)

- (i) Design the road fill with bridges, culverts or other drainage structures to prevent the restriction of expected flood flows.
 - (ii) Remove all temporary fills in their entirety and restore the area to its original elevation.
- (c) Road Retirement.

Access roads shall be retired in such a way as to prevent sediment from entering the waters of the State as defined at T.C.A. § 69-3-102. Methods to prevent sedimentation to streams include, but are not limited to, the following:

1. Water bars or other drainage structures should be constructed immediately after active logging has ceased. If logging will be delayed for a substantial period of time, temporary drainage and erosion control structures should be constructed.
2. Upon completion of logging, remove temporary bridges, temporary culverts, and pole fords; remove sediment and debris from ditches, ditches and culverts; and revegetate problem areas.
3. Use lime, fertilizer, mulch, and/or seed when needed to prevent soil erosion. Amounts should be based on recommendations from the Department of Agriculture or the University of Tennessee Agricultural Extension Service.

(2) Streamside Management Zones (SMZ) and Wet Weather Conveyances

- (a) Streamside management zones shall be planned and implemented to prevent the occurrence of water pollution. The configuration of SMZs is dependent in part upon soil types, slope, and exposure as well as the type and intensity of activity associated with the logging operation.
1. In the vicinity of streams that maintain a defined and discernible channel and flow much or all of the time, the SMZ shall be planned and implemented to prevent pollution from sediment as well as elevated water temperatures that could adversely impact aquatic life. Methods to prevent pollution include, but are not limited to the following:
 - (i) The width of SMZs should be a minimum distance of 25 feet from the disturbed area to the stream for zero percent slope and 20 additional feet for each additional 10 percent of slope. This applies to both sides of the stream (total minimum width of 50 feet). In association with wetlands, establish SMZs at least 50 feet in width along both sides of all streams and open water (total minimum width of 100 feet).
 - (ii) Do not remove any trees within the SMZ if such removal would result in soil potentially getting into stream. If trees can be harvested without risk of soil loss, maintain 50 to 75 percent of the vegetation canopy shading a perennial stream.
 - (iii) Avoid operating any harvesting equipment or vehicles within the SMZ. Whenever possible, timber harvested within the SMZ should be pulled or winched out.
 2. The establishment of SMZs may not be necessary relative to wet weather conveyances [Rule 1200-4-3-.02(7)]. However, in the vicinity of wet weather conveyances and topographic features that will likely transport sediment, the operator should modify and limit activities so that sediment pollution will not occur.

(Rule 0080-7-3-.02, continued)

- (3) Locating and Constructing Log Landings.
 - (a) Log landings shall be designed and located to prevent sediment from entering waters of the State. Methods to prevent sedimentation to streams include, but are not limited to, the following:
 1. If correctly located, use existing landings from previous timber harvests.
 2. Locate landings outside of SMZs and away from stream channels and sensitive areas.
 3. Slope landings to allow for drainage.
 4. Prevent sawdust, chips and other residues such as fuels and lubricants from entering drains where runoff may wash the material into streams.
 5. Revegetate landings if they pose a potential water quality problem.
 6. Install drainage and sediment control structures to divert run-off if needed.
- (4) Locating and Constructing Skid Trails .
 - (a) Skid trails shall be located to prevent sediment from entering waters of the State. Methods to prevent sedimentation to streams include, but are not limited to, the following:
 1. Minimize the number of skid trails; use existing trails where appropriate.
 2. Locate skid trails on grades of 2 to 30 percent where possible. Control runoff from trails so that it does not directly discharge into a stream channel. This may be accomplished by using techniques such as varying the slope of the trail, wing ditches, sediment traps, sediment control structures, and other measures recommended by the Tennessee Department of Agriculture. Steeper grades are acceptable for short distances provided additional attention is given to water control/drainage structures.
 3. Runoff associated with stream crossings should be prevented. Avoid crossing streams, drains, other wet areas, and sensitive areas; skid away from streams and drains. If crossing streams is unavoidable, use culverts, pole fords or simple bridges.
 4. Skidders and other equipment should not be operated directly in streams.
 5. Avoid skidding directly up or down hill; operators should slant the course and follow a “zig-zag” pathway, if possible.
 6. Upon completion of logging, remove temporary bridges and culverts; remove sediment and debris from dips, ditches and culverts; and revegetate problem areas.
 7. Use lime, fertilizer, mulch, and/or seed when needed to prevent soil erosion. Amounts should be based on recommendations from the Tennessee Department of Agriculture or the University of Tennessee Agricultural Extension Service.
 8. Avoid ruts that risk channeling water to a stream.

Authority: T.C.A. §§11-4-301 et seq. and Public Chapter 680 of the Acts of 2000. **Administrative History:** Original rule filed May 23, 2001; effective August 6, 2001.

0080-7-3-.03 BMPS THAT MANAGE THE PLACEMENT OF LOGGING DEBRIS AND OPERATION OF EQUIPMENT.

- (1) Logging debris and operation of equipment shall be managed to prevent sediment or other materials from entering waters of the State. This includes, but is not limited to, the following:
 - (a) Disposal of Trees, Tree Tops and Branches.
 1. Trees felled in or across streams should be dragged out in a manner that prevents channel and stream bank disturbance.
 2. Tree tops should be pulled far enough back to prevent being washed into streams during high water.
 3. Trees and tree tops should not be dragged down a stream channel.
 4. Root wads in banks should be left in place.
 - (b) Use and Maintenance of Logging Equipment.
 1. When available, use low ground pressure tires on skidders and concentrate skidding as much as possible on a few primary skid trails to minimize site disturbance.
 2. Prevent oil and fuel spills. If a spill occurs, clean up all spilled materials, contaminated soil and dispose of both properly, as soon as possible, per guidelines of the Tennessee Department of Environment and Conservation.

Authority: *T.C.A. §§11-4-301 et seq. and Public Chapter 680 of the Acts of 2000. Administrative History: Original rule filed May 23, 2001; effective August 6, 2001.*