

TEXAS

**Forestry
Best
Management
Practices**

POCKET GUIDE



TEXAS A&M
FOREST SERVICE



Water Resources Program

<http://tfsweb.tamu.edu/BMP>

Texas Forestry Best Management Practices
Pocket Guide
August 2017

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What are BMPs?

Best Management Practices (BMPs) are designed to help landowners, foresters, loggers, and others protect water quality during forestry (silvicultural) operations. BMPs can prevent, or at least greatly reduce, nonpoint source pollution of water bodies from forestry activities.

The use of the BMPs is non-regulatory in Texas and this guide should be used to remind you of these practices. If everyone involved in forest management implements these practices, water quality can be protected without strict government regulation.

Do:



- ✔ Use aerial photographs, topographic maps, soil surveys, and field reconnaissance to plan operations before starting.
- ✔ Identify sensitive areas such as water bodies, steep slopes, and erodible soils.
- ✔ Clearly mark all property and Streamside Management Zone (SMZ) boundaries.
- ✔ Conduct operations on the contour.
- ✔ Postpone operations when excessive rutting occurs.
- ✔ Capture and properly dispose of equipment fluids.
- ✔ Stabilize disturbed areas subject to excessive erosion.

Don't:

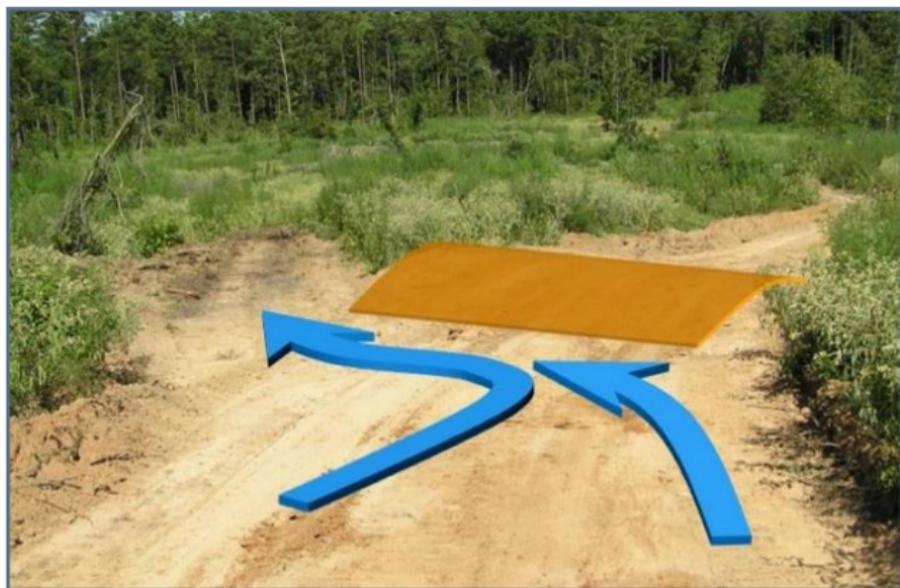
- ⊘ Schedule operations when soils are saturated.
- ⊘ Locate landings near natural drainages.
- ⊘ Leave trash on site.
- ⊘ Service equipment near streams.
- ⊘ Operate heavy equipment excessively in stream channels.



Trash, especially equipment fluids, can pollute groundwater and waterbodies.

Do:

- ✔ Construct roads along the contour.
- ✔ Install appropriate erosion control structures.
- ✔ Inspect roads periodically for problems.
- ✔ Stabilize and close roads no longer in use.



Waterbar with proper turnout (wing ditch).

Don't:

- ⊘ Construct roads in stream channels, steep slopes, SMZs, or wet areas.
- ⊘ Create below-grade roads.
- ⊘ Drain roads, trails, or ditches into streams.



Waterbar improperly draining into stream.

Stream Classification

General Stream Considerations:

- Is there a defined channel?
- Is it connected to another stream or water body?
- Is the channel straight or sinuous (winding)?

Perennial Stream Characteristics:

- **Flows 90% of the year**
- Well-defined channel
- Water pools present, even during dry conditions
- Channel that is almost always sinuous
- Evidence of high water marks and/or sediment transport
- Leaf litter usually absent in the channel
- Wetland vegetation usually in the stream channel
- Identified with blue lines on topo maps

Stream Classification

Intermittent Stream Characteristics:

- **Flows 30% to 90% of the year**
- Well-defined channel
- Absence of water pools during dry conditions, but present in wet conditions
- Channel that is almost always sinuous
- Evidence of high water marks and/or sediment transport
- Leaf litter usually absent in the channel
- Wetland vegetation usually in the channel
- Identified with blue lines separated by 3 dots on topo maps

Ephemeral Stream Characteristics:

- **Flows less than 30% of the year; usually just after rain events**
- No well-defined channel
- Absence of water pools
- Channel almost always straight
- Leaf litter and/or small debris in flow area
- Usually not identified on topo maps

Do:

- ✓ Clearly mark SMZs along all perennial and intermittent streams. Ephemeral drains and stream heads may need protection too.
- ✓ Maintain adequate width and residual density in SMZs.
- ✓ Minimize the harvest of bank trees and soil disturbance within SMZs.



SMZs should be a minimum of 50 feet wide on both sides and retain 50 ft² of basal area per acre, evenly distributed.

Don't:

- ⊘ Fell trees across or push debris into streams.
- ⊘ Construct roads, skid trails, firelines, or landings inside SMZs.



Trees felled across streams can damage streambanks, leading to erosion and sedimentation.

Do:

- ✓ Avoid and minimize crossing where possible.
- ✓ Cross at right angles and along straight, narrow sections.
- ✓ Install appropriate crossings correctly.
- ✓ Size culverts properly.
- ✓ Restore and stabilize approaches and crossings

Stream crossing restored using grass seed.



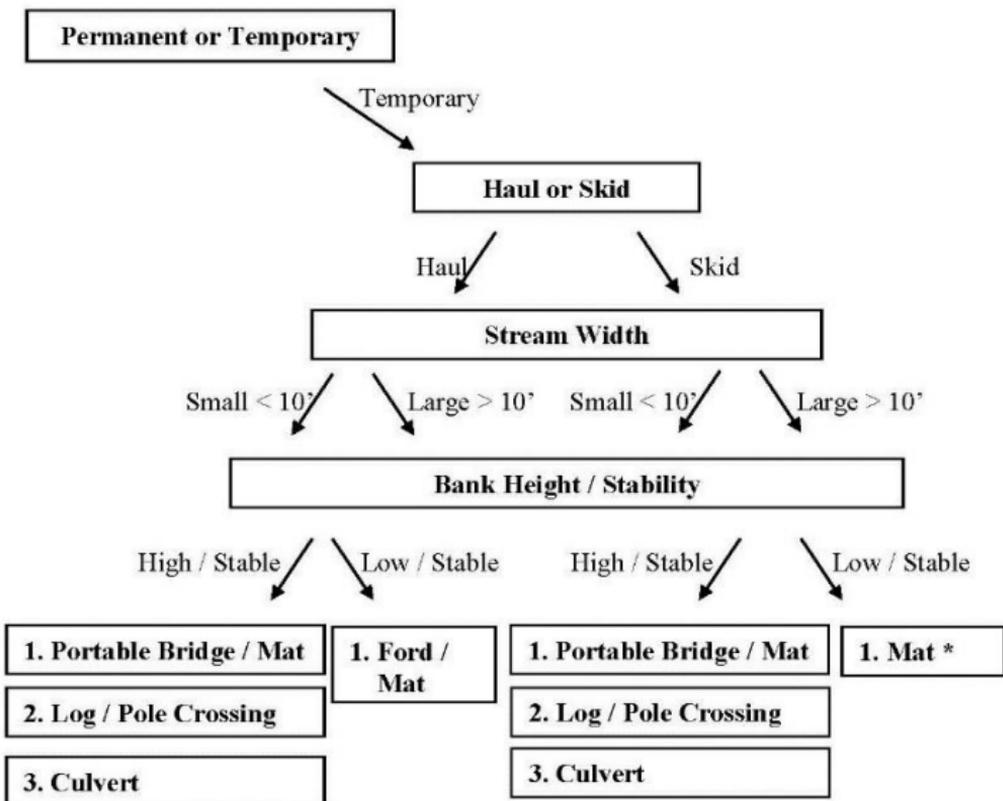
Don't:

- ⊘ Install dirt crossings.
- ⊘ Leave temporary crossings in the stream channel.
- ⊘ Skid across fords or low-water crossings.
- ⊘ Constrict or unduly impede stream flow



Dirt crossings are NEVER recommended.

Stream Crossings Flow Chart



* Should only be used if skidder load will not drag through streambed.

Do:

- ✓ Follow all label directions before applying chemicals.
- ✓ Install erosion control structures on firelanes.
- ✓ Repair any damage to water control structures.
- ✓ Minimize soil disturbance, compaction, and displacement when using heavy equipment.



Diversion structure (waterbar) on firelane.

Don't:

- ⊘ Push soil into windrows.
- ⊘ Broadcast chemicals in SMZs or streams.
- ⊘ Conduct high-intensity prescribed burns inside the SMZ, on steep slopes, or where highly erodible soils are involved.



High-intensity burn through SMZ and stream bed. Very little vegetation left to hold the erodible soils.

Wetlands

Wetlands are among the most productive ecosystems in the world. Forest wetlands improve water quality by filtering sediment and other pollutants, reducing the potential for erosion, and controlling flooding during periods of heavy rain. Wetlands also provide valuable products and amenities such as lumber, wildlife, recreation, and aesthetics. Special attention to BMPs is necessary when operating in or near these sensitive areas.

Three criteria are used in delineating wetlands:

- ❖ Hydrophytic vegetation
- ❖ Hydric Soils
- ❖ Wetland Hydrology

All three criteria must be present for a site to be considered a jurisdictional wetland.

Wetlands

Although wetlands are federally regulated, normal forestry operations in wetlands such as bedding, site preparation, harvesting, and minor drainage are exempt from permit requirements under Section 404 of the Clean Water Act Amendments of 1977, as long as the activity:

- 1) qualifies as “normal silviculture”
- 2) is part of an “established” silvicultural operation
- 3) is not part of an activity whose purpose is to convert a water of the United States into a use to which it was not previously subject
- 4) follows the fifteen Mandatory Road BMPs
- 5) contains no toxic pollutant listed under Section 307 of the Clean Water Act in discharge of dredge or fill materials into waters of the United States.

Do:

- ✓ Identify and mark locations of wetland-like areas.
- ✓ Follow the 15 Mandatory Road BMPs.
- ✓ Minimize permanent and temporary road construction and skid trails in wetland and wetland-like areas.



Forest wetland.

Don't:

- ⊘ Alter the hydrology of the site.



Water flow has been altered and impeded.

Other Resources

Texas Forestry Best Management Practices Handbook app:

- **Native smartphone application**
- **Available on Google Play (Android) and App Store (iOS)**



Texas Forestry BMPs
Texas A&M Forest Service

TFS Online Mapping and Planning Tools:

<http://texasforestinfo.com>

- **Map My Property**
- **Plan My Land Operation**

Other Resources (cont.)

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