

BEST MANAGEMENT PRACTICES FOR STREAMSIDE MANAGEMENT ZONES

PURPOSE

The Best Management Practices (BMP's) for Streamside Management Zones (SMZ) provided in this enclosure are designed to facilitate establishment of natural vegetated filters, erosion control, and increased filtration adjacent to natural or manmade water bodies.

GENERAL RECOMMENDATIONS

BMP's should include precautions to protect the remaining timber stands within the SMZ. Flag or mark SMZ's adjacent to all perennial and intermittent streams and lakes before harvesting timber, locating roads, skid trails, fire lanes, and logging sets outside the SMZ; limit harvesting within SMZs and sensitive forested wetlands during abnormally wet periods; maintain a vegetative filtration strip around streams and wetlands; consider using wide-tired skidders, forwarders, cable skidders, and tracked equipment to minimize soil disturbance in an SMZ; direct water runoff into vegetated areas.. Reestablish vegetation on temporary roads, drainage systems, side slopes, back slopes, skid trails or landings following significant soil disturbances when natural revegetation will not prevent erosion; replant seeds or seedlings by hand; fell trees away from stream; remove all logging debris from the stream; never block the flow of water within a stream. Harvest of any stems on the edge of a stream should be accomplished in such a manner as to minimize impact to the stream bank.

CROSSINGS

Care should be taken to minimize the number of stream crossing points; cross streams at right angles and at gentle slopes; stabilize crossing approaches. After construction, promptly remove all temporary crossings and restore the site after harvesting is completed; use seeding and mulching in a timely manner to reduce erosion. Portable bridges should be considered for temporary stream crossings.

ROADS

Road construction should incorporate a grade of less than 10 percent; proper road drainage should disperse water through the forest and not cut channels across the SMZ; logs or stems should be used as fill over temporary culverts instead of fill dirt; rehabilitate roads with vegetation when timber harvest completed.

AVOIDANCE

At all times the following should be avoided: skidding across perennial or large intermittent streams, except over an adequately designed crossing; removing trees from stream banks, beds or steep slopes, if removal will destabilize soil and degrade water quality; use of streams or drainage channels as a skid trail or road; excessive skidding within an SMZ; chemical and fertilizer applications; mechanical site preparation; and spillage of petroleum products, antifreeze and other equipment maintenance materials.

SMZ WIDTH

SMZ widths should consider watershed characteristics, risk of erosion, soil type, and stream

width. SMZ widths are measured from the top of each bank and established on each side of the stream. The table below provides recommended SMZ widths.

Erosion risk is increased with sandy soil, steep slopes, large watersheds and increasing stream widths. Primary SMZ refers to ephemeral streams; secondary SMZ refers to intermittent, braided, and perennial streams, lakes and ponds.

| Stream Width (Feet) | Slope (Percent) | Primary SMZ (Feet) | Secondary SMZ (Feet) |
|---------------------|-----------------|-----------------------------|----------------------|
| <20 | <7 | 35 | 0 |
| <20 | 7-20 | 35 | 50 |
| <20 | >20 | Top of slope or 150 | 75 |
| 20-50 | <7 | 50 | 0 |
| 20-50 | 7-20 | 50 | 50 |
| 20-50 | >20 | Top of slope or 150 | 75 |
| >50 | <7 | Width of stream or 100 max. | 0 |
| >50 | 7-20 | Width of stream or 100 max. | 50 |
| >50 | >20 | Top of slope or 150 | 75 |

PERMIT REQUIREMENTS

A permit may be required from the U.S. Army Corps of Engineers should fill material be placed in wetlands or other waters of the United States. Should such a permit be required, the BMP's contained in this enclosure, as well as other conservation provisions, may become permit conditions. Additional permit requirements may apply, depending upon the nature of individual projects.

DEFINITIONS

Perennial streams have a well defined channel and flow year-round, except during periods of extreme drought.

Intermittent streams have a seasonal flow and a continuous well-defined channel.

Ephemeral streams flow during and for a few hours or days after periods of heavy rain and the stream channel is less recognizable than either perennial or intermittent streams.

Braided streams are stream systems with multiple and frequently interconnected channels.

Wetlands generally support hydrophytic vegetation, hydric soils and wetland hydrology.

Literature Cited

Arkansas Forestry Commission. 2001. Draft Arkansas Forestry Best Management Practices for Water Quality Protection.