BEST MANAGEMENT PRACTICES AND ROAD BUILDING

The harvesting of timber has only a small short-term impact on forest streams and long-term site productivity if the skid trails, truck haul roads, and landings are well planned and properly constructed. However, if road systems are not carefully located and constructed, erosion will occur, streams can be polluted, and long-term site productivity is jeopardized. West Virginia has established timber harvesting guidelines, commonly referred to as Best Management Practices (BMPs). These guidelines help to:

- control erosion on disturbed areas,
- minimize the amount of eroded soil material entering forest streams,
- protect the habitat of aquatic life, and
- ensure good stewardship and long-term site productivity.

These common sense soil and water conservation measures control water so that erosion is minimized and water quality and site productivity are protected. BMPs incorporate five basic principles:

PLAN THE JOB Time spent planning and laying out roads, trails, and landings will prevent future problems. Careful planning allows you to fit the road to the land and keep grades moderate. Truck haul roads should be constructed under a 10% grade where possible. Grades up to 15% should be no more than 200 feet. Grades on skid trails should not exceed 15%, with the exception of short, steep distances not exceeding 20%.

STAY AWAY FROM STREAMS Try to plan and build roads and landings at least 100 feet from streams. Keep equipment out of streams. Leave a strip of vegetation along streambanks to filter out eroded soil particles.

USE CARE WHEN CROSSING STREAMS When a stream must be crossed, use a culvert, bridge, or well-built ford. Cross the stream at right angles.

CONTROL WATER IN SMALL AMOUNTS Use ditches, culverts, broad-based dips, and grade breaks to handle water *before* it reaches destructive forces. Maintain drainage structures during *and* after logging.

RETIRE ROADS AFTER LOGGING Drain, grade, and seed roads and landings as soon as possible. Limit access between December and April to prevent road damage.

Following are brief descriptions of some of the BMPs used in West Virginia:

FILTER STRIP: A protective strip of undisturbed forest soil between areas disturbed to mineral soil and a streambank. It provides a relatively undisturbed zone to trap and filter out suspended sediments before they reach the stream. Any or all trees may be cut in the filter strip. Heavy equipment should not be allowed into these areas in order to lessen the possibility of soil compaction, disturbance, or exposure. The minimum width of a filter strip is 100 feet on each side of perennial streams and intermittent streams and 25 feet on each side of ephemeral, or temporary, streams. Filter strips should be required around lakes or ponds, perennial flowing natural springs, and all springs and reservoirs serving as domestic water supply.

STREAMSIDE MANAGEMENT ZONE: Land adjacent to perennial, intermittent, and ephemeral (temporary) streams and ponds and lakes requiring special attention during forestry operations.

SHADE STRIP: A no-cut or light-cut area that preserves adequate shading of perennial or intermittent streams so as to maintain normal temperatures.

BROAD-BASED DIP: An earthen water control structure constructed in road beds to intercept and divert water from road surfaces, provide cross drainage, and prevent buildup of excessive surface runoff and subsequent erosion. It is a dip and reverse slope in a road surface with an outslope in the dip for natural cross drainage. Broad-based dips are large enough and gradual enough that loaded log trucks can cross them.

WATERBAR: A water control structure constructed across a road (30 to 45 degrees), usually from earth, to intercept and divert water from a road surface. They can be constructed on a temporary basis or on a permanent basis. Waterbars usually are constructed at least 1 foot deep with fill at least 18 inches high. They are difficult if not impossible to maneuver over with a vehicle. Permanent waterbars should be installed as each section of the logging operation is completed.

GRAVEL: Can be used to curb soil erosion, reduce mud carried onto public highways, and increase aesthetic value. Truck haul roads should be graveled 200 feet from public highways and 100 feet on each side of any stream ford. Gravel 25 feet on each side of culverted stream crossings, on all broad-based dips, and on all haul roads within the filter strip.

OUT-SLOPED SURFACE: An exposed soil surface that is slightly sloped (1% to 3%) to the fill side to permit surface water to drain off.

IN-SLOPED SURFACE: A road surface slightly sloped (1% to 3%) in toward the bank. An inside ditch is required to carry surface runoff.

GRADE BREAK: A change in road or trail grade - abrupt or gradual and out-sloped - which collects and diverts water from exposed soil surfaces.

DAYLIGHTING: Cutting back (20’ to 30’) standing trees away from truck haul roads to hasten drying of road surfaces.

TOPS IN STREAMS: All tree tops should be removed from perennial and intermittent streams.