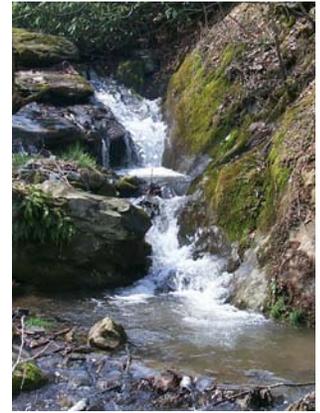




The Water Bar

Water Quality Update
For Loggers and Other Forestry Professionals



Issue 16, November 2007

Serving Northwest North Carolina

BMP Top Ten List

David Letterman ain't got nothing on the staff of *The Water Bar*. Here's our list of the top ten most effective BMPs.

#10

Stream shade - To avoid sharp increases in stream temperature which can kill aquatic animals you should leave at least 50% shade cover on streams.

#9

Equipment maintenance - The best way to avoid petroleum spills that can contaminate streams is to maintain your equipment regularly. Make maintenance part of your daily routine.



Oil covered equipment advertises not only poor maintenance but also environmental problems.

#8

Sediment traps - Sediment traps are great at stopping sediment when you must work near a stream. Sediment traps include basins and pits, silt fence, and brush barriers. Keep in mind that sediment traps should always be considered temporary fixtures that hold sediment until permanent measures such as groundcover are established. Another word of caution about sediment traps; they are designed to trap sediment not water therefore you should always provide an outlet in sediment traps to allow the water to escape.

#7

Gravel - When used effectively gravel will provide permanent ground cover on truck roads. It will also allow you to haul logs on days when your road would otherwise be too muddy.

#6

Bridge Mats - Portable bridge mats help loggers avoid putting culverts (and fill material) at stream crossings thus avoiding potential sediment problems. Many loggers now own bridge mats or have access to them through the company they contract for. Bridge mats are also available for short-term loan from the N.C. Forest Service.

#5

Brush - Generously applied and packed brush on trails and decks provides some of the best ground cover available. And it's free!



Brush and poles laid on an Alleghany County skid trail in corduroy-fashion.

#4

Avoid or minimize stream crossings - The first rule of stream crossings; avoid them whenever possible. Every stream crossing that you avoid is a potential problem and expense that you have eliminated.

#3

Water diversions - Water diversions such as *water bars* and *broad-based* dips are effective because they reduce the

volume of storm water runoff on a road or skid trail by diverting it into areas that have good natural ground cover. Reduce runoff and you reduce the erosion.

#2

Stream buffers - Maintenance of a *streamside management zone* (SMZ) keeps disturbed areas at a distance from streams. Buffers are proven to be one of the most effective BMPs, not just for sediment, but also for keeping all kinds of runoff (especially nutrients) from reaching streams.

And the #1 effective BMP is!!!!...

(Drum roll please)

Ground cover - The more ground cover, the better...always. If you could keep full ground cover on your site at all times you would *never* have problems with sedimentation. Ground cover not only includes grass and other seeded vegetation but also includes packed brush, gravel, natural forest ground cover, and just about anything else you can think of to cover bare, disturbed ground.

-Roger Miller



Excellent ground cover established at a closed stream crossing in Watauga County.

Did you know?

North Carolina has 18.7 million acres of forest. Only Georgia, Alabama, and Oregon have more forest land.

Using Existing Roads

Most roads and skid trails that were built more than 20 years ago were not built to the same standards as they are built today. Certainly some are very good roads that can still be used today with few problems. However, many old roads were built for one-time access with little or no regard for environmental issues that loggers face today. Others were used for many years but because they were poorly located and lacked maintenance while they were in use, they make poor choices for logging access today. Whether or not to use an existing road is a decision that every logger must make occasionally.

Our advice to loggers in regards to existing roads has always been, "Make a careful assessment of the benefit of using an existing road because if you use it, you bought it". In other words, if you choose to use an existing road to access your logging job you must keep that road in compliance with the Forest Practices Guidelines (FPG), even if there were prior-existing problems. It can pay big dividends to take a close look at existing roads and determine if they will cause more problems than they are worth.

Common Problems

Fifty years ago most loggers and landowners did not have dozers or other excavation equipment that we see today. Consequently, roads were located in areas where a minimum amount of excavation was required. That's why you see so many old woods roads located next to streams, in the bottom of dry hollows, and along the spine (crest) of ridges. These are exactly the locations we advise landowners and loggers not to build roads today.

Existing roads that are located next to streams are in the streamside management zone (SMZ) required by the FPG's. If you use a road like this you will have a difficult job of keeping full ground cover and preventing sediment from reaching the stream.

An old road located in the bottom of a dry hollow (ephemeral stream) affords you little opportunity to divert runoff from the road. Since the road is located at the lowest point in the terrain (the bottom of the dry hollow), water diversions such as water bars cannot be used to divert runoff away from the road. Old woods roads that run along the spine of a ridge, although usually located well away from streams, present another

inherent problem. After a period of time these roads become worn down (incised) by erosion to have a high bank on both



A deeply incised old road running the spine of a Caldwell County ridge. The logger wisely chose to abandon this road.

sides that prevents water from being diverted. As a result the road continues to be worn down creating ever-higher banks. This type of situation also occurs when a road is constructed straight up and down a slope. Obviously, as the roadway continues to wear down, sediment that can potentially reach streams continues to leave the site.

If You Must Use an Existing Road

According to the FPG's, an existing road within a SMZ can be used only under certain circumstances. Performance Standard .0201 of the Forest Practice Guidelines states, "Access roads, skid trails, logging decks and mill sites shall be placed outside the SMZ. When barriers such as property lines or limiting land features prohibit the location of any of these outside the SMZ, they may be located within the SMZ provided effective erosion control structures or measures are installed to restrain accelerated erosion and prevent visible sediment from entering streams and water bodies." If there are no other options you can use that existing road next to the stream but you must still take whatever measures are needed to keep visible sediment from reaching the



The logger who used this old road beside a creek in Avery County did a good job of stabilization using brush, water bars and sediment pits.

stream. Some of the most effective measures (BMP's) we have seen where a road is located next to a stream is a combination of rolling dips, sediment pits, and packed brush.

In Summary

Logging roads are usually the greatest source of sediment from harvesting operations. That's why you should carefully assess existing roads and their benefit or liability to you. In some cases it may be more beneficial to both you and the landowner to relocate a new, problem-free road that can be used as permanent access. Once the decision has been made to use an existing road you must take all measures necessary to stabilize it.

-Roger Miller

Did you know?

Yellow-poplar is a prolific seeder, and large crops are produced almost annually. A seedfall of 300,000 to 600,000 per acre is not uncommon. Yellow-poplar seeds remain viable in the forest floor from 4 to 7 years. Clearcutting or heavy partial cutting can result in over 50,000 yellow-poplar seedlings per acre. For best growth, yellow-poplar seedlings need full sunlight.

Dragline Mats Available

The Forest Service has bridge mats (portable bridges) available for loggers to borrow. The mats are 24 feet long and a set of three will make a 12 foot wide bridge suitable for a skid trail or truck road. Contact Roger Miller at 828-757-5611 about borrowing the mats.

Enclosed with this newsletter is a list of dealers who sell wood and steel bridge mats, and road mats in North Carolina.



Wooden bridge mats on a Caldwell Co. stream

Your comments are appreciated.

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