



Prevent the slip and stop the slide: Measures to control erosion, sediment



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Field tour participants visited a site which used numerous erosion- and sediment-control techniques, including relocating the road location further upslope and away from a stream, insloping the road surface, building a French drain to direct seepage and subsurface flows away from the steep cutslope, and seeding the site.

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Did the earth just move? Sure it did ... and there it goes again! The forces of erosion, combined with sediment that is continually moving and depositing, means the landscape is constantly

changing. Forest stewardship goals, sustainable management and certification, and changing regulations are fuelling the forest industry's interest in erosion and sediment control.

Forest roads are widely regarded as the main source of erosion and sediment in forest operations. Most erosion occurs during, and shortly after, road and stream crossing construction when the soil is exposed and vulnerable to movement. Forest workers and forest practitioners need to fully understand both the effects of erosion and sediment on the environment, and implement strategies to prevent erosion during road and stream crossing construction.

What is erosion and sediment control? Erosion is caused by rain, moving water, wind, or gravity displacing any amount of soil, loose rock, or dissolved portions of rock. Sediment is the fine particles of eroded soil and rock that have been moved and deposited away from their original location. Erosion is a natural process and is not itself negative. However, the accelerated erosion caused by hu-

man development may reach unacceptable levels. The goal for erosion control is prevention while the goal for sediment control is containment. Preventing erosion will eliminate the source of sediment.

Including an erosion- and sediment-control plan in construction activities can save time and effort. It is less costly to plan ahead and identify techniques to prevent erosion than to conduct repairs once the erosion has started. Early planning is especially important for watercourse crossings as construction often disturbs and removes riparian vegetation, which acts as a filter for sediment delivery to the watercourse.

Erosion prevention techniques focus on soil cover, roughness, and water management, and include preserving existing vegetation, seeding/mulching/covering bare soil immediately, configuring the surface to be rough and irregular, and diverting upland seepage/runoff around exposed soil. Sediment control typically focusses on holding material in place using check structures such as silt fences, fibrous rolls, straw bales, aggregate, etc. Detention through containment is accomplished with techniques such as creating sediment ponds/basins, using catchment sumps during construction, and dispersing sediment-laden water onto the forest floor. Flocculents are used to enhance the rate of deposition by attracting finer particles to band together, making them heavier. All of these techniques have their place on the landscape and many can work together. A multi-technique approach at a site is often needed to control erosion and sediment deposits.

This past Fall, a field tour called "Erosion and Sediment Control Measures for the Forest Industry" was sponsored by FERIC, FORREX, the FIA—Forest Science Program, and Tolko Industries Ltd. During the visit to three Tolko sites near Lumby, participants viewed numerous erosion- and sediment-control practices in the field and discussed control options when planning road and stream crossing construction. **Clayton Gillies** from FERIC led the group discussion. 🌲

Gillies is currently developing a handbook for forest practitioners titled, "Operator's Guide to Erosion and Sediment Control." The handbook will be available in Fall 2007. For more information on erosion and sediment control, contact Clayton Gillies at clay-g@vcr.feric.ca

At this site, participants discuss issues around stream crossing installations and maintenance, including sediment from bridge decks entering fish streams.



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