

Ski Area Erosion

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December 16, 2003

Ski resorts represent a microcosm of the human impact on the planet: we love where we live and we are unwittingly loving it to death. Skiing represents all that is good about the outdoors: clean, brisk air, lush forests, incredible views and lots of fun. But there are some other things, some of them completely out of the view of the skiing public that effects water quality, fish habitat, and even water QUANTITY. And all of those things relate directly to the construction and maintenance of ski runs and other resort infrastructure. The very same things that allow us to enjoy the outdoors so much in the winter can turn into an environmental liability the rest of the year. How do we know? Direct measurement of water quality data tells us that. But it's not the same for all ski areas and it even varies within an individual ski area. The big question is what to do about it. Erosion control BMP's have been used for years but we are just now realizing that some are less effective than others. Michael Hogan and an extended group of individuals from ski area operators to US Forest Service personnel to University researchers are joining together to address this serious issue, an issue whose answer extends far beyond ski resorts and right into your own backyard.

As a former ski area erosion control department manager, Hogan understood how difficult it can be to get information about what works and what doesn't so he began this program of working with ski area managers, erosion control specialists and representatives of the Lahontan Regional Water Quality Control Board to help understand

what works and how to improve what doesn't. One of the main elements of this program is to use a scientific approach and to actually put techniques and materials on the ground in the form of test plots and then quantitatively measure the results. In this way, speculation is minimized and effectiveness is maximized. The group working on these issues, known as the Cooperative Alpine Resorts Environmental Coalition, is developing 'Guiding Principles' for approaching any erosion control project as well as a robust set of Technical Notes or BMP's.

What has all this work and testing been showing? For one thing, some advanced techniques have been able to reduce erosion from treated sites to ZERO, even under simulated rainfall conditions of 5 inches per hour on steep ski runs! And native grass growth in some cases provided over 40% surface cover in the 1st season with no irrigation. These bits of information are pointing the way to ever more effective erosion control in and beyond ski resorts. These same techniques can be adapted to road cuts, disturbed building sites and even your own backyard. And since sediment is usually the pollutant that most effects our watersheds and streams, this is good news for water quality.

It doesn't end there, however. One of the big benefits may be invisible! If you think about it, when that water doesn't run off the soil surface but instead is absorbed into the soil, that water has a much better chance to be retained in the watershed in the form of soil water (available to plants) or as ground water and in either case, will move much more slowly through the watershed.

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Water that runs off is gone and can't be returned. As more development takes place and areas like Mammoth, Squaw Valley and other developing areas look for additional water, it's likely that it can be found by holding on to it in the soil. (See "Running Pure" a report by the World Bank and WWF that addresses this issue and suggests that urban water supplies will depend more and more on healthy forests upslope of cities.) This is just as true in your own backyard where you'll find that if you prepare the soil properly by breaking up compaction and adding organic matter, you'll need to irrigate less or possibly not at all, depending on the plants you're growing. Possibly one of the most important elements of all of this work is the new way that a regulatory agency is working with those they regulate to find a common answer. Lahontan staff is working side by side with the ski resorts to really determine what works best so that a common understanding and approach is developed and is done so with all players at the table as peers. Since the old 'command and control' approach to improving water quality has some severe weaknesses this may just be an approach that gets around some of those weaknesses and produces a big increase in water quality protection and cost effectiveness in the environment. Stay tuned.

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