

# ADDITIONAL INFORMATION AND LINKS

Dealing With Dirt ♦ September 23, 2004 ♦ Palmetto Expo Center ♦ Greenville, SC

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## SEDIMENT IN OUR STREAMS The Environmental Resource Perspective

### [Arizona's General Hitchcock Highway: Balancing Safety and the Environment](#)

The construction effort to widen the scenic General Hitchcock Highway in the Santa Catalina Mountains of Arizona focused on the preservation and enhancement of existing resources and landscaping with nursery-grown native plant species. The project involved constructing retaining walls, blasting rock, improving drainage conditions, and controlling erosion after assessing the environmental, visual, vegetation, wildlife, and economic impacts to the area.

### [Survey Says Half of State's Construction Sites Violate Soil Erosion Laws](#)

A survey conducted by the Maine Dept. of Environmental Protection examined more than 800 construction sites in 88 communities found that 44% were not taking proper erosion control measures, which protect lakes and streams from pollution. Due to the surprising results, the state has begun considering mandatory certification, which would have to be passed by the Legislature, a move that would produce skepticism from some larger contractors.

### [Runoff Clogging Lake Wylie's Coves](#)

An Associated Press article describes construction runoff as the biggest threat to Lake Wylie and its treasured coves. It discusses results of water samples taken by Winthrop University Professor Peter Phillips and the efforts of a Lake Wylie advocate who asked the York County Council to institute erosion-control measures for individual lot owners.

### [Impact of Sediment on the Aquatic Environment](#)

This article discusses the impact of suspended and deposited sediment from construction sites on the aquatic environment. Effects range from the sharp decline in biological diversity of freshwater mussels to the increased water treatment costs to meet drinking water standards.

### [Greening Development to Protect Watersheds: Does New Urbanism Make a Difference?](#)

This study compares new urban and conventional developments in the United States to see how well they integrate watershed protection techniques. New urban developments were found to offer greener and more compact alternatives to sprawl, better protect sensitive areas, and incorporate best management practices. Recommendations suggest ways that watershed protection techniques can be used to implement more environmentally sustainable development.

### [Receiving Water Impacts Associated with Urban Runoff](#)

The purpose of this study is to determine the impacts of stormwater runoff on the receiving water. In urban settings, the receiving waters are usually adversely affected and cannot always be used beneficially. This article allows for the possibility of positive uses of receiving waters if adequate stormwater controls are used, but focuses on the negative effects of stormwater on the receiving waters, including oxygen depletion, water contamination, habitat effects and sediment contamination.

### [Developing Links Between Sediment Load and Biological Impairment](#)

This study examines the link between sediment load and biological data for streams with detailed records (i.e. the Mississippi Valley) of flow discharge, suspended sediment transport and biological data. It was preliminarily found that as durations of suspended sediment concentration at or above 1000 mg/l increase, the total number of organisms tends to decrease. This data will be used to create a standard assessment tool to evaluate sites lacking detailed data.

### [Sediment Movement from Forest Road Systems](#)

Research has been conducted that finds roads as a major contributor to erosion and stream sedimentation in forests. Since nonpoint source pollution is a major concern in forest management, forestry BMPs are especially important in decreasing the amount of erosion and sedimentation.



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## [Runoff and Sediment Loss From Natural and Man-made Erosion Control Materials](#)

Man-made erosion control materials (wood excelsior, jute fabric, coconut fiber blankets, and coconut strand mats) were tested under simulated rainfall conditions against two natural materials (straw and turfgrass sod) to evaluate performance of the materials in controlling erosion and sediment loss. Of the man-made materials, only jute reduced runoff and sediment losses at both locations. Therefore, only sod, straw, and jute would be expected to effectively reduce runoff and sediment losses.

## [The dirt in a hole: A Review of Sedimentation Basins for Urban Areas and Construction Sites.](#)

Many reservoirs and basins experience shorter than expected life spans due to sediment erosion and the deoxygenation of water, which results from pollution carried to streams from sediments in runoff. This document discusses the effects of sedimentation basins for urban areas and construction sites.

## [Silt Fence Performance Revisited](#)

A study comparing two different silt fence installation methods in a controlled field environment on 56 sites in 12 states concluded that the static slicing method of installation provided more consistent results than common trenched installations. The results validate the findings of an earlier study and confirm that substantial compaction of soil adjacent to the buried silt fence is critical to its performance.

## [Soil Erosion from Two Small Construction Sites in Dane County, Wisconsin](#)

This article calculates water-quality data collected by the U.S. Geological Survey and the Dane County Land Conservation Department from two small construction sites in Dane County, Wisconsin from June 1998 to July 1999. Results show that sediment loads from the two small construction sites were 10 times larger than typical loads from rural and urban land uses in Wisconsin. The data from this study will be used in the U.S. EPA's National Pollution Discharge Elimination System to implement regulations requiring erosion control practices on construction sites of less than five acres.

## [Evaluation of Erosion Control Products Using Natural Rainfall Events](#)

Five different erosion control products were used during natural rainfall events to determine their impact on vegetative growth, runoff and soil erosion. Three replicates of each treatment (wood fiber blanket, a straw/coconut blanket, a straw blanket, a hydraulically applied bonded-fiber matrix, and disk-anchored straw mulch) were used and runoff and sediment yield was analyzed for five storm events.

## [Soil in Motion: Kinetic Energy Influences Infiltration and Erosion](#)

This article discusses the newly developed tool, the Water Erosion Prediction Project, which can help scientists predict soil erosion under simulated conditions. This tool could possibly replace the traditional Universal Soil Loss Equation technology and be used in soil conservation planning.

## [Stream Insects As Bioindicators of Fine Sediment](#)

This study used aquatic insects as bioindicators of fine sediment in stream ecosystems. Because current applications of aquatic biomonitoring do not allow discrimination among pollutants, a biotic index was used to detect and monitor changes in ecosystem health due to increases in fine inorganic sediment.

