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**An evaluation of suspended-sediment transport equations using daily-sediment records for the Gunnison River near Grand Junction, Colorado; and the Green River near Jensen, Utah; Water Year 2005.** Cory A. Williams, U.S. Geological Survey Hydrologist, Colorado Water Science Center, Grand Junction, Colorado.

Suspended-sediment transport equations were developed from long-term records at U.S. Geological Survey streamflow-gaging stations on the Gunnison and Green Rivers as part of a sediment retrospective assessment completed in 2005. The transport equations relate suspended-sediment load to streamflow and coarse-scale seasonality, such as snow-melt runoff and base-flow conditions. Intensive sediment monitoring was done at these sites in Water Years 2005-07 to quantify the daily suspended-sediment records and evaluate suspended-sediment loads calculated from the equations. Preliminary findings from the comparisons of transport equations and daily-sediment samples may show that streamflow source area (tributary locations) and timing (relative to snowmelt peak) contribute significantly to the concentration and size distribution of sediment transported in these rivers. Factors controlling suspended-sediment concentration and load are related to hydraulic force (stream power) as well as sediment source availability. Transport equations represent the average response to changes in streamflow and seasonality but only indirectly represent the sediment-source component of sediment loads. Conventional estimates of suspended-sediment load from transport equations may not adequately account for all sediment transport as it relates to endangered fish habitat; specifically, when the sediment transport includes highly-variable seasonal inputs such as monsoon rain events and the timing of tributary peak-streamflows. Further analysis will be done and results will be released in the USGS Scientific Investigations Report scheduled for completion in 2009.