

Owens, J., B. Hecht, S. Brown and S. Chartrand

Balance Hydrologics, Inc., 841 Folger Avenue, Berkeley, California 94710

Sediment Transport Trends in Watersheds of the San Mateo Peninsula

Sediment production and its eventual deposition is a major concern for fishery health and the maintenance of reservoirs and downstream channels. Multi-year measurements of sediment transport in several regionally-significant watersheds draining the eastern slopes of the San Mateo Peninsula provide a basis for assessing both short- and long-term inter-annual variations in transport rates and establish a framework for comparing spatial differences in these rates. Comprehensive data sets for Corte Madera Creek and Los Trancos Creek are reviewed and analyzed in light of underlying geomorphic and hydrologic considerations for the entire period from the last substantial ENSO event in Water Year 1998 through Water Year 2005. Simultaneous quantification of bedload and suspended load in conjunction with ongoing stream gaging at these sites shows total annual sediment loads that vary over several orders of magnitude within each watershed. Comparisons are made with similar data sets collected for Bear Creek (in the same watershed), the Gazos Creek watershed draining the western slopes of the Peninsula, and for San Geronimo Creek in western Marin County, demonstrating order of magnitude differences on an inter-watershed basis. Additionally, annual transport rates are expressed as landscape lowering rates to place the data in the context of the geologic-timescale uplifting that frames overall sediment generation and movement in these systems.