Consideration of Non-Stationary Sediment Dynamics in Watershed Based Plans

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Suspended sediment is a complex component of aquatic systems. All natural rivers and streams transport these fine sediments, where they play important physical, chemical and biological roles. However, over-abundance of suspended sediment and their contamination with human generated pollutants together represent the most prevalent impairments of water bodies in the US. Efforts to define thresholds of acceptable sediment abundance and composition, and develop actions to meet such targets at the watershed scale are often complicated by highly variable and poorly characterized natural sediment regimes. Variability in fluvial sediment loads also tend to exhibit non-stationary (i.e. time dependent) behaviors stemming from hydro-meteorological forcings, landscape feedbacks, and natural and human disturbances. This seminar focuses on the issue of non-stationary sediment behavior, and why it should be explicitly considered during the development of watershed based plans for water quality mitigation.