

2015 Coastal GeoTools

Oral Presentation: Geospatial Applications to Coastal Issues Session

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WMOST: A tool for assessing cost-benefits of watershed management decisions affecting coastal resilience

The Watershed Management Optimization Support Tool (WMOST v.1) was released by the US Environmental Protection Agency in December 2013 (<http://www2.epa.gov/exposure-assessment-models/wmost-10-download-page>). The objective of WMOST is to serve as a public-domain screening tool that is efficient and user-friendly for local water resources managers and planners. WMOST is intended to be used as part of an integrated watershed management process, considering both current and future land-use and climate scenarios. The tool allows users to screen a wide-range of potential water resources management options across their watershed or jurisdiction for cost-effectiveness as well as environmental and economic sustainability (Zoltay et al., 2010). Examples of options that can be evaluated with the tool include projects related to stormwater, water supply, wastewater and water-related resources such as low-impact development (LID) and land conservation. The tool is intended to aid in evaluating the environmental and economic costs, benefits, trade-offs and cobenefits of various management options under both current and future climate regimes. In addition, the tool can facilitate the evaluation of low impact development and green infrastructure as alternative or complementary management options. Version 1 of WMOST focused on balancing human and aquatic life needs for water during critical low-flow periods. Version 2 of WMOST, scheduled to be released in spring of 2015, will include new modules to automate import of regional hydrology data, pre-process inputs to evaluate potential effectiveness of green infrastructure stormwater BMPs in moderating peak and low flows, evaluate flooding risks and costs, and assess the robustness of optimal management solutions across a range of climate scenarios.