

SCCWRP #1134

## **Barriers and opportunities for beneficial reuse of sediment to support coastal resilience**

Nicola Ulibarri<sup>1</sup>, Kristen A. Goodrich<sup>2,3</sup>, Paroma Wagle<sup>1</sup>, Matthew Brand<sup>4</sup>,  
Richard Matthew<sup>1,2</sup>, Eric D. Stein<sup>5</sup>, Brett F. Sanders<sup>1,4</sup>

<sup>1</sup> *Department of Urban Planning & Public Policy, University of California Irvine, 300 Social Ecology I, Irvine, CA*

<sup>2</sup> *Irvine Blum Center for Poverty Alleviation, University of California Irvine, 5548 Social & Behavioral Sciences Gateway, Irvine, CA*

<sup>3</sup> *Tijuana River National Estuarine Research Reserve, 301 Caspian Way, Imperial Beach, CA*

<sup>4</sup> *Department of Civil & Environmental Engineering, University of California Irvine, 5200 Engineering Hall, Irvine, CA*

<sup>5</sup> *Southern California Coastal Water Research Project, 3535 Harbor Blvd # 110, Costa Mesa, CA*

### **ABSTRACT**

As urbanization and climate change alter sediment fluxes, relative sea level, and coastal erosion around the world, management of sediment as a resource is increasingly important. Sediment is needed to enhance marsh accretion rates, raise the grade elevation of development, and build up beaches and dunes. Beneficial reuse of sediment refers to the repurposing of local sources of sediment for these applications, material typically available from dredging or sediment capture infrastructure, and represents a more sustainable approach compared to the status-quo involving transport to and from distant locations. However, in many locations, beneficial reuse remains a concept or is constrained to small-scale applications. In this paper, we draw on interviews with coastal sediment managers and regulators in Southern California to identify barriers to beneficial reuse and opportunities to overcome them. Interviewees reported numerous regulatory, technical, psychological, financial, and interorganizational barriers in their watersheds and regions. By highlighting these barriers, we aim to identify systemic changes that would make beneficial reuse a realistic and accessible option for Southern California and elsewhere. Most prominently, a more flexible regulatory framework that allows sediment management practices to adapt over time, pilot studies to understand how beneficial reuse works in various settings, and educational programs for regulators and the public could make beneficial reuse a more widespread approach.

**Due to distribution restrictions, the full-text version of this article is available by request only.**  
Please contact [pubrequest@sccwrp.org](mailto:pubrequest@sccwrp.org) to request a copy.