

# Regional Sediment Management Plan Development throughout California



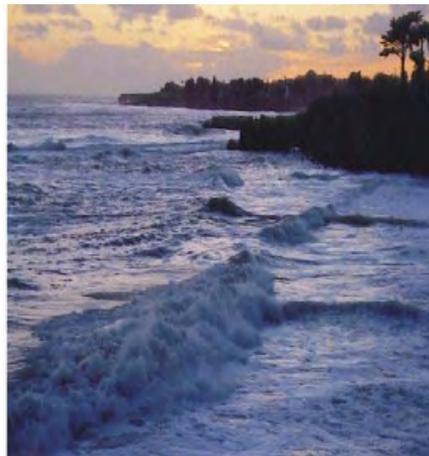
Susie Ming, P.E., PMP  
Presented by John Dingler  
US Army Corps of Engineers  
29 August 12



# Coastal Sediment Management Workgroup (CSMW)

A collaborative taskforce of state, federal, regional, and local entities

- Initiated in late 1999
  - South Pacific Division & State Resources Agency
  - Leverage State & Federal Funds.
  - Collaborate on Coastal Sediments Activities.
  - Prepare a Programmatic Adaptive Master Plan.
  - Restore Beach Health.
- **FEDERAL PARTICIPATION**
    - USACE - South Pacific Division
    - USACE - Los Angeles District
    - USACE - San Francisco District
    - National Oceanic Atmospheric Administration
    - U.S. Geological Survey
    - U.S. Environmental Protection Agency
    - Bureau of Ocean Energy Management, Regulation and Enforcement (formerly MMS)
    - National Ocean Service
    - ERDC
    - IWR
  - **CA STATE PARTICIPATION**
    - Natural Resources Agency
    - Dept. of Boating & Waterways
    - Coastal Commission
    - Coastal Conservancy
    - Parks & Recreation
    - State Lands Commission
    - Geological Survey
    - Dept. of Transportation
    - Dept. of Fish and Game
  - **LOCAL PARTICIPATION**
    - Cal Coast (local agencies)
    - CMANC



# California Coastal Sediment Master Plan



## A "Super-Regional" Approach



# SMP On-Going Activities & Products



- Analysis of Impacts and Recommended Mitigation for Critical Species and Habitats- Guide for Environmental Documentation
- Beach Nourishment Reference Guide - Guidance for local coastal stakeholders
- Beaches, Littoral Drift, and Littoral Cells- Understanding California's Shoreline and Beach Nourishment
- Biological Impacts analysis and Recommendations
- California Beach Restoration Strategy
- Coastal References Online Database
- **Coastal RSM Plans** and Environmental Documents
- Coastal Sediment Benefit Analysis Tool (CSBAT)
- Conceptual Plan to Capture/Reuse Coastal Sediments Lost to Submarine Canyons
- **CSMW Website**
- Development of Sand Budgets for California's Major Littoral Cells
- Draft Priority list for Coastal Mitigation

- GIS User's Survey
- Initial Data Inventory and Collection - GIS Database
- Mud Budget Final Report- Fine Grained Sediment Sources, Transport and Sinks: Phases 1 and 2
- Policies, Procedures and Regulations Analysis
- Public Outreach/Multiple Workshops
- Sand Compatibility and Opportunistic Use Program (SCOUP)- Guidance for upland opportunistic regional programs
- Sand Lost from Dams
- **SMP Brochure and Project Sheets**
- SMP Status Report
- The Economics of Regional Sediment Management in Ventura and Santa Barbara Counties
- **WebMapper tool**
- West Coast Shoreline Risk and Uncertainty Workshop and Technical Note

# SMP On-Going Activities & Products

- **Bibliographic Database**
- **Coastal RSM Plans**
- **CSMW Website**
- **SMP Brochure and Project Sheets**
- **WebMapper tool**

# http://www.dbw.ca.gov/csmw/default.aspx (or search for "CSMW" in any browser)



Coastal Sediment Management Workgroup - Windows Internet Explorer

http://www.dbw.ca.gov/csmw/default.aspx

Coastal Sediment Management Workgroup

CA .GOV C.S.M.W Coastal Sediment Management Workgroup

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Office of Governor Edmund G. Brown Jr. Visit his Website

- Mission
- Meetings
- Ocean Action Plan
- New Contact Form
- Public Outreach
- Contact CSMW



A collaborative effort by federal and state agencies chaired by the U.S. Army Corps of Engineers South Pacific Division and the California Natural Resources Agency

Welcome to CSMW's website! Our collaborative [taskforce](#) of state, federal and local/regional entities, concerned about adverse impacts of coastal erosion on our coastal habitats, is working to implement [Regional Sediment Management](#) (RSM) in order to augment or restore natural processes. Our urbanizing society has significantly changed natural sediment supply and transport patterns, and some coastal areas (e.g., beaches) are eroding while others (e.g., wetlands, ports & harbors) are being deluged with excess sediment. Facilitating beneficial reuse of excess clean sediment from inundated locations at areas experiencing severe erosion is the substance of RSM.

Sediment is an integral component of the coastal ecosystem, representing a public good that must be managed to provide for quality of life, natural resource protection, and economic sustainability. Sediment imbalances resulting from alteration of the natural environment therefore threaten the viability of the public good and require management to restore the natural balance. Coordinated beneficial reuse of sediment resources within a regional context helps to restore natural processes and simultaneously address sediment imbalances.

CSMW is developing a coastal "[Sediment Master Plan](#)" (SMP) to guide political, regulatory, environmental, educational and process-related efforts anticipated when implementing RSM. The physical setting for coastal sediment imbalance problems and CSMW's vision for the "road to solutions" are discussed in the overview, "[Why a SMP is needed](#)". The [SMP Baseline Report 2006](#) describes the initial SMP development process, planned future activities, and CSMW priorities. The [SMP Status Report 2008](#) provides a progress reporting of CSMW and SMP activities to date. The SMP envisions three types of products produced during Plan development- informational reports, computer-based tools, and RSM strategies/Plans.

Currently, CSMW's main thrust for SMP development is preparation of regionally-based RSM strategy plans. We are working with various regional entities to implement RSM within their jurisdictional area through [Coastal RSM Plans](#). These Plans specify how governance, outreach and technical approaches can support beneficial reuse of sediment resources within and throughout that region without causing environmental degradation or public nuisance. CSMW has historically focused on the development of informational documents and computer-based tools to assist coastal managers obtain and utilize the information they need to provide sound decision-making. Links to these tools and documents lie within the column to your right and/or on our [Library](#) page.

Information on the various coastal sediment-related [programs](#) of CSMW [member agencies](#) is available, as are CSMW [meeting minutes](#) since 2003. Our outreach program has included [workshops](#), development of and mailings to our [Public Outreach Contact List](#), and is part of each Coastal RSM Plan development. Comments received to date from our [public outreach](#) activities can be viewed by workshop/region location.

We encourage you to contact us. Please direct technical issues to the CSMW Project Manager. Policy or procedure related questions can be directed to the CSMW co-chairs. A [questionnaire](#) may

CSMWs [Current Activities](#)

RSM Related Reports

- Why a SMP is needed
- Coastal Regional Sediment Management Plans
- National Shoreline Management Study (Draft Outline)
- SMP Status Report 2012
- SMP Status Report 2008
- SMP Baseline Report 2006
- Sand Compatibility and Opportunistic Use Program (SCOUP)
- Tijuana Estuary Demonstration Project

Computer Based Tools

- Spatial Data Website
- Coastal Sediments Benefit Analysis Tool
- Coastal Sediment References Searchable Database

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# Regional Sediment Management

## What Will the Master Plan Do?

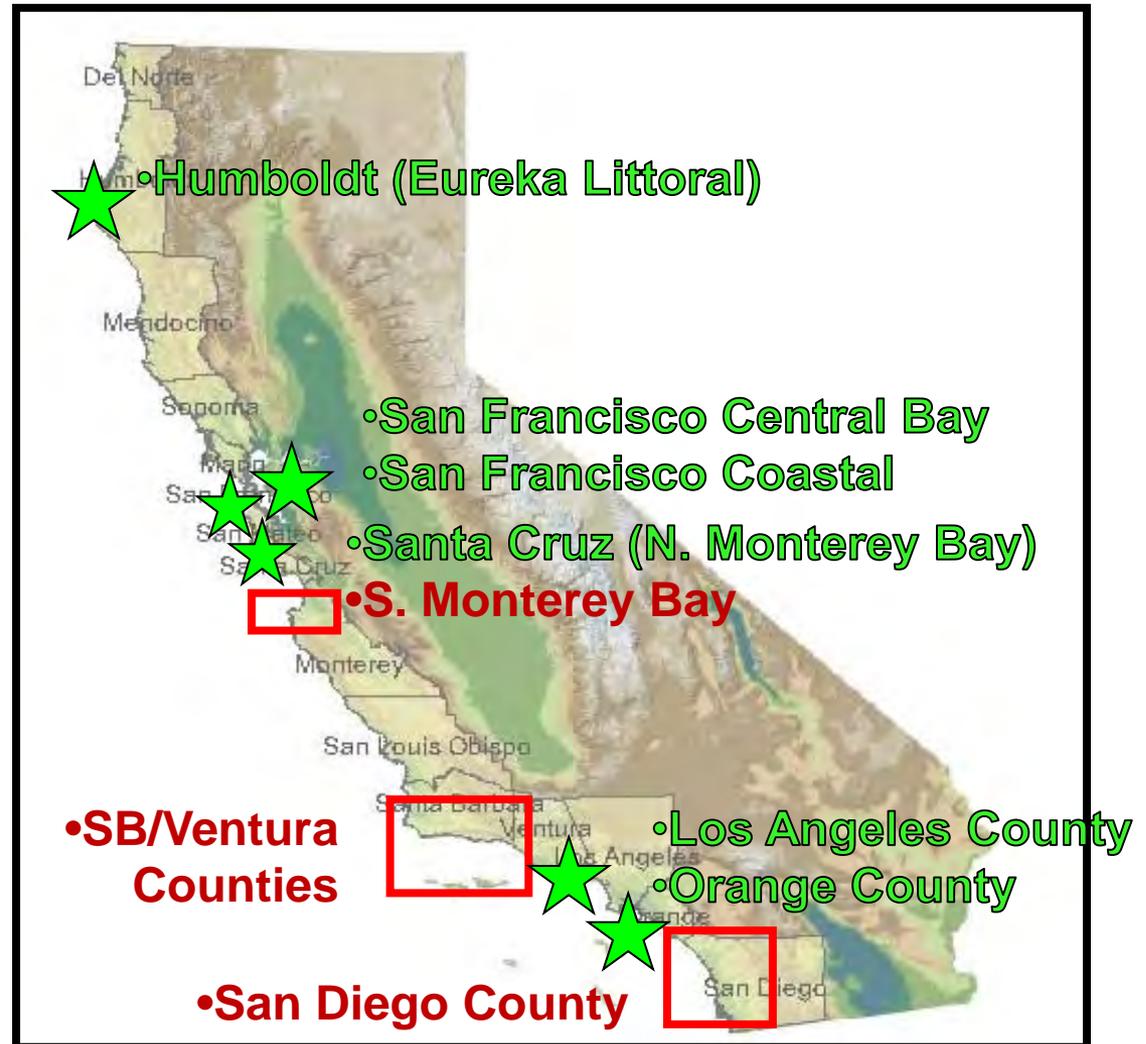
- Improve beach conditions and reduce erosion attributed to human causes.
- Improve wetland quality.
- Improve water quality
- Improve the use of federal and state agency resources and the formulation of regional solutions.
- Optimize project execution by programmatically assessing environmental impacts of regional coastal projects
- Holistically integrate discrete solutions into comprehensive regional solutions.



Regional Sediment (Sand) Management

# RSM Plan Development

- Formulate and seed regional consensus-driven sediment management policy and guidance
- Restore and maintain coastal beaches and other critical areas of sediment deficit
- Reduce the proliferation of protective shoreline structures
- Sustain recreation and tourism
- Enhance public safety and access
- Restore coastal sandy habitats.



# Lessons Learned from RSM Plans

- Involve all local jurisdictions and stakeholders
- Stakeholders ID sediment issues
- Incorporate Plan into Local Coastal Plans
- Focus on the 80% that everyone agrees upon
- Emphasize soft solutions.
- Greatly benefitted from regional USGS studies

# Prado Basin Sediment Management Demonstration Project and Related RSM Efforts

## Demonstration Project Description:

- Orange County Water District (OCWD) proposing to remove 500,000 cubic yards of material from upstream of Prado Dam
- Deposit material downstream of the dam.
- Transport of material via Santa Ana River regular Prado Dam flow releases.
- Through Corps Outgrant Process

## Project Status:

- Preparing 60% design documents and joint EA/EIR.



## Systems Approach

- Restoration of downstream river bottom
- Sediment to the coast
- Sediment for OCWD recharge basins
- Increased water conservation and flood control capacity
- Ecosystem restoration



## Related RSM Efforts:

- Santa Ana River Mainstem (SAR) Phase I
  - Identify the sediment sources and sinks
  - Examine the technical and economic feasibility bypassing sediment
- Santa Ana River Watershed Surveys and Data Collection
  - Visual and Photographic Survey
  - Biological Surveys
  - Soil Data Collection

# MISSION BAY HARBOR DREDGING



- Dredged 390 KCY in Approach and Entrance Channels
- Disposal Site – Mission Beach
- Dredging and Disposal Coordinated with SANDAG and City of San Diego using the adopted San Diego Coastal RSM Plan

# Brochure and Project Sheets



## California Coastal Sediment Master Plan

### Mission

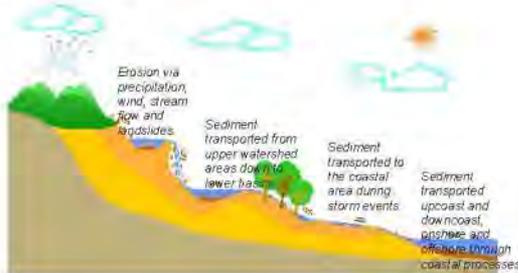
Develop a comprehensive master plan for the conservation, restoration, and preservation of the valuable sediment resources along the coast of California, in order to reduce shoreline erosion and coastal storm damages, provide for environmental restoration and protection, increase natural sediment supply to the coast, restore and preserve beaches, maintain or improve coastal access, improve water quality along coastal beaches, and optimize the beneficial use of material dredged or excavated from ports, harbors, wetlands, and other opportunistic sediment sources.

### The California Coast – An Important Resource

The California coastline consists of a variety of landforms such as sand and cobble beaches, rocky intertidal areas, rocky cliffs, wetlands and lagoons, and partially consolidated bluffs. These landforms provide habitat for hundreds of wildlife species covering the spectrum of birds, mammals, reptiles, amphibians, fishes, and invertebrates. The California shoreline also provides residential, industrial, commercial, and military land uses for humans as well as recreational and educational opportunities.

### Natural Sediment Processes

Natural erosion due to precipitation, wind, stream flow, and landslides makes sediment (i.e., gravel, sand, silt, and clay) from the upper watershed available for transport by streams and creeks down to lower basins. A majority of this sediment is then transported to the coast during storm events. The volume and size of the sediment transported by streams depends upon the stream focus. Larger storms cause increased volumes of sediment with higher proportions of sand and gravel to be transported to the coast. Upon reaching the coast, waves, currents, and wind transport the sediment upcoast and downcoast as well as onshore and offshore, contributing to the dynamic nature of coastal beaches. Beaches represent temporary storage areas for coastal sediment and require an ongoing source of sand to maintain their width.



### Beneficial Uses of Coastal Sediment



Coastal sediment provides many beneficial uses for humans and wildlife. Sand and gravel provide habitat for various wildlife species that use streams and beaches, while sand also provides recreational beach space for humans, lateral beach access, and shoreline protection. Additionally, silt and clay from river substrates supply needed nutrients for nearshore habitats. Sand and gravel, extracted from in-stream, back-beach and offshore sources, is used by the construction industry for infrastructure development. Easy access to this important construction material has been a factor in California's economic growth.



## San Diego Coastal Regional Sediment Management Plan

...one of several regions in the California Coastal Sediment Master Plan

Regional sediment management (RSM) is an approach to solving or minimizing shoreline and watershed problems caused by human modifications. The California Coastal Sediment Master Plan is a statewide plan, led by the Coastal Sediment Management Workgroup (CSMW), to protect, enhance and restore California's coastal beaches through federal, state, and local cooperative efforts. The San Diego Coastal Regional Sediment Management Plan (CRSMP) is part of this statewide program and is led by the San Diego Association of Governments (SANDAG). The San Diego CRSMP stretches from Oceanside to the Mexico border.

### San Diego RSM Overview

The San Diego CRSMP is a guidance and policy document that describes how management of sediment can be implemented in an expeditious, cost-effective, and resource-protective manner. The goal is to identify sediment sources that can be used to: a) restore and maintain beaches and other critical areas of sediment deficit or excess; b) reduce the proliferation of protective shoreline devices; c) sustain recreation and tourism; d) enhance public safety; and e) restore coastal sandy habitats. The overall plan consists of periodic large-scale beach nourishment projects, frequent small-scale nourishment, and use of sand retention measures.

### San Diego Region Receiving Beaches

The coast of the San Diego region is documented to be eroding with a deficit of sediment and is a concern to federal, state, and local agencies. This has been identified by USACE studies during the 1990s and most recently by SANDAG and the CSMW's California Beach Erosion Assessment Survey. The potential sand-receiver sites from the RSM Plan are shown below. The sand volumes to be potentially placed at each site range from 5,000 to 400,000 cubic yards, either onshore or nearshore. The placement quantities and frequency vary depending on whether sand retention is included. Sand retention improves long-term program economics.

