



# Implementing Regional Sediment Management Plans in MBNMS

Karen Grimmer

Resource Protection Coordinator



NATIONAL MARINE  
SANCTUARIES

MONTEREY BAY

June 17 , 2016

# Agenda Topics

1. MBNMS 2008 Coastal Armoring Action Plan
2. Sanctuary actions to date on developing & Implementing two Coastal Regional Sediment Management Plans:
  - *Southern Monterey Bay CRSMP, 2008*
  - *Santa Cruz Littoral Cell CRSMP, 2015*
3. MBNMS Supported Report:  
*2012 Evaluation of Erosion Mitigation Alternatives for So. Monterey Bay*

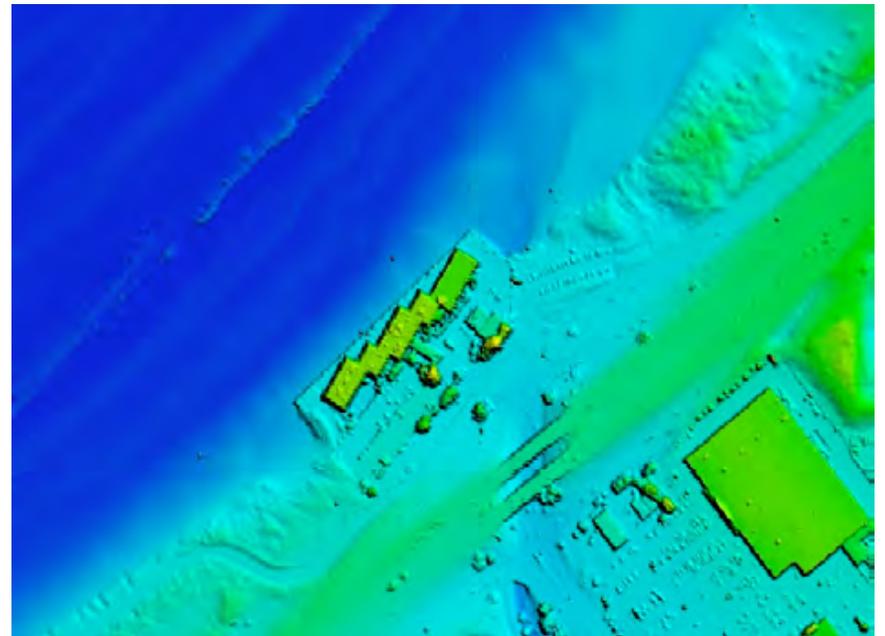


# MBNMS 2008 Coastal Armoring Action Plan

## Goal:

- Reduce expansion of hard coastal armoring in the coastal areas near MBNMS through proactive regional planning, project tracking and comprehensive permit analysis and compliance.

NOAA LIDAR Image of Armored Coastline  
Surrounding Monterey Beach Hotel



# MBNMS 2008 Coastal Armoring Action Plan

## Key Strategies:

1. Develop & Implement Regional Approach to Coastal Armoring. Completed 2 Coastal Regional Sediment Management Plans in partnership with US Army Corps of Engineers including:
  - Southern Monterey Bay CRSMP, 2008
  - Santa Cruz Littoral Cell CRSMP, 2015
2. Pursue a Pilot Program for Alternatives to Coastal Armoring
  - Produced report: “Mitigation Alternatives for So. Monterey Bay”, 2012
  - Coordinated the **Coastal Sediment Management Workgroup**

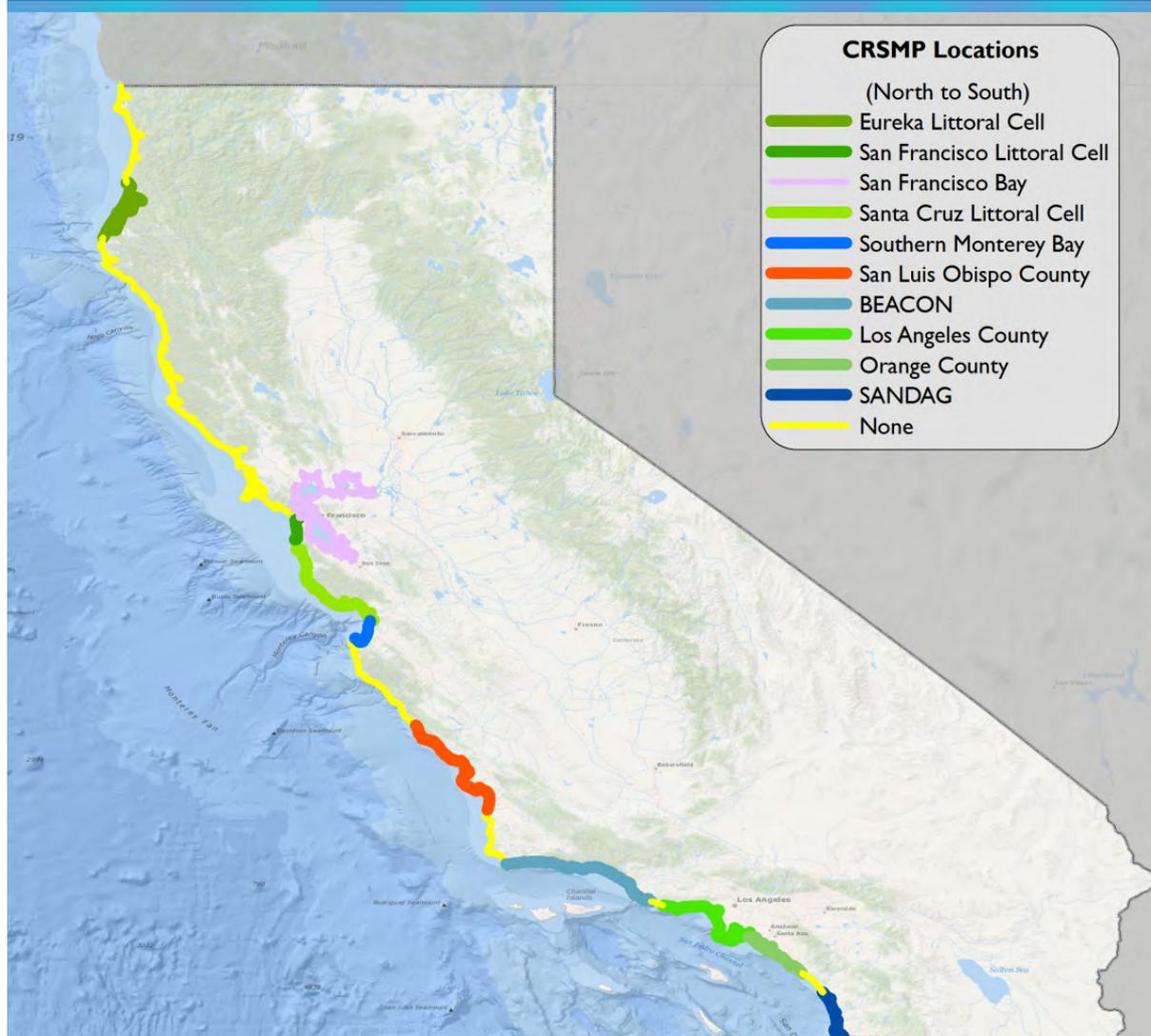
# MBNMS 2008 Coastal Armoring Action Plan

Performance Measure: Complete 3 collaborative, coastal erosion response Plans for MBNMS – Done!

- 2 Coastal Sediment Management Plans
- 1 Report on Erosion Mitigation Alternatives



# Coastal 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.



**Extent of Completed  
& In-Progress  
Regional Sediment  
Management Plans**

# Coastal RSM Plan Objectives

Region-Specific

Consistent with CSMW Goals

Governance, Outreach, “Science-Based”

Developed by local/regional stakeholders

Focus on Implementation



# What is a Regional Sediment Management Plan?

A coastal regional sediment management plan provides information for decision makers to develop policies and/or execute management sub-plans for the future vitality of beaches and shoreline areas within Monterey, Santa Cruz and San Mateo Counties.

- It compiles the best available scientific data on geology, geomorphology, coastal processes, biology, economics, etc., that can be used by local municipalities and agencies in making decisions on existing and future coastal development and adaptation planning.
- It provides an assessment of existing regulatory and policy considerations and outlines a recommended Governance Structure for implementing potential sediment management projects.
- It makes recommendations on potential sediment management approaches at a sub-regional level.

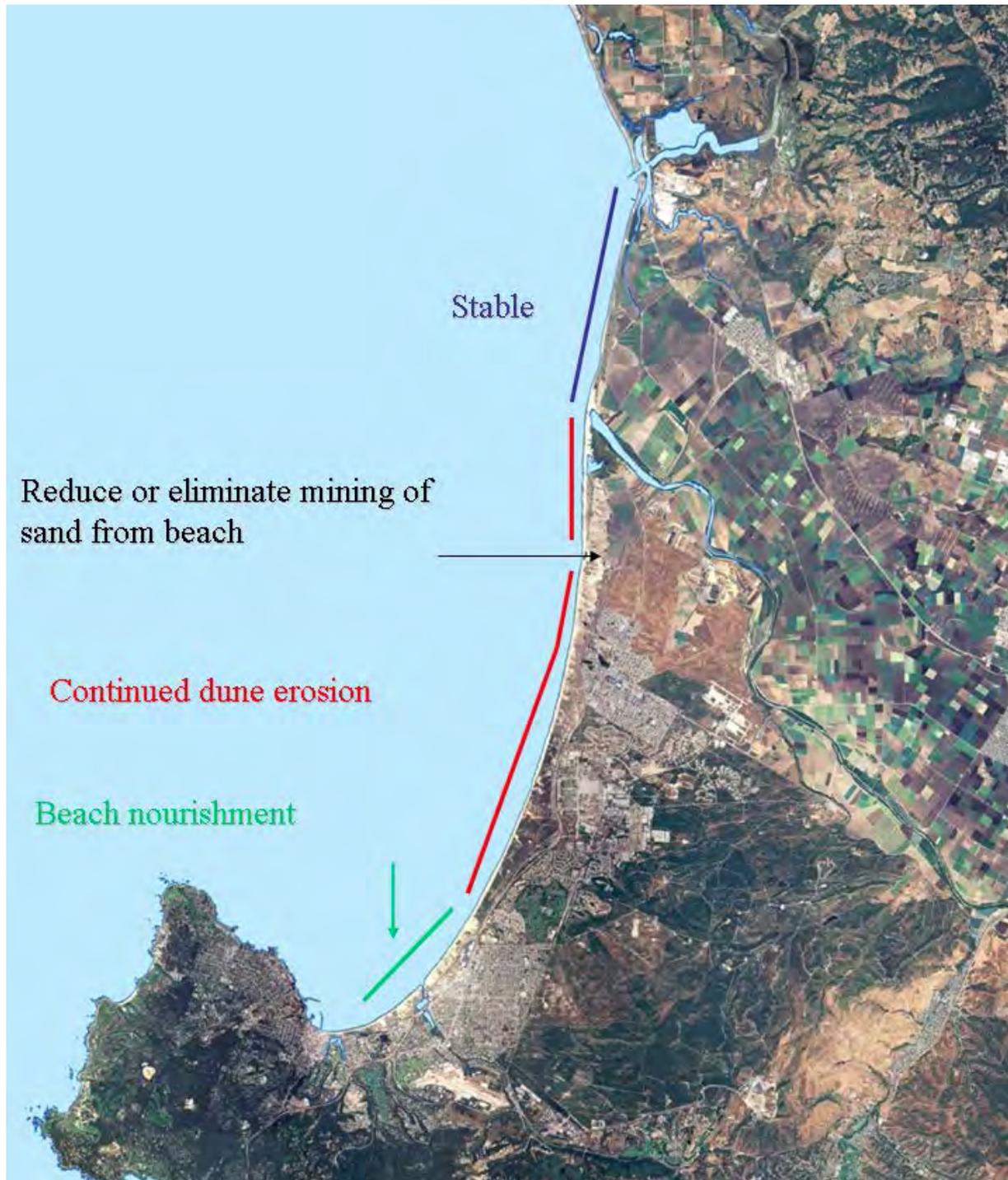
# Each Coastal RSM Plan includes

- An outreach program to insure participation by stakeholders and the public;
- An assessment of physical conditions (erosion, sedimentation, sand transport patterns, etc.) within the Plan boundary;
- An economic analysis of benefits and costs associated with sediment management within the Plan area;
- An assessment of the environmental conditions within the Plan area, including sensitive biota and habitats, and;
- Geospatial data layers of gathered information suitable for inclusion in CSMWs geospatial database and WebMapper.
- A recommended governance structure best suited to implement recommendations within the Plan;

# CRSMP Technical Elements

- Identify critical eroding areas
- Determine potential sediment sources
- Locate critical species and habitats
- Compile physical processes info
- Data gaps, other issues of concern
- Permitting requirements
- Identify potential funding streams





**Figure 1: Summary of Recommendations from 2008 Southern Monterey Bay Coastal Regional Sediment Management Plan**

# Southern Monterey Bay RSM Plan

## Four key recommendations were provided:

- Investigate beach nourishment strategies to help manage erosion along the shoreline within the Cities of Sand City, Seaside and Monterey
- Allow dune erosion to continue without human intervention north of Sand City to the Salinas River
- Use the Coastal RSM Plan as a baseline to build a regionally comprehensive erosion abatement approach (a model)
- Reduce or Eliminate removal of sand from the beach at Marina.

# Beach Erosion Concern Areas (BECAs), Monterey



- Building up back beach to protect against flooding

January 2016

# Beach Erosion Concern Areas (BECAs), Monterey

- Building up back beach is a temporary fix and must be repeated annually or more



January 2016

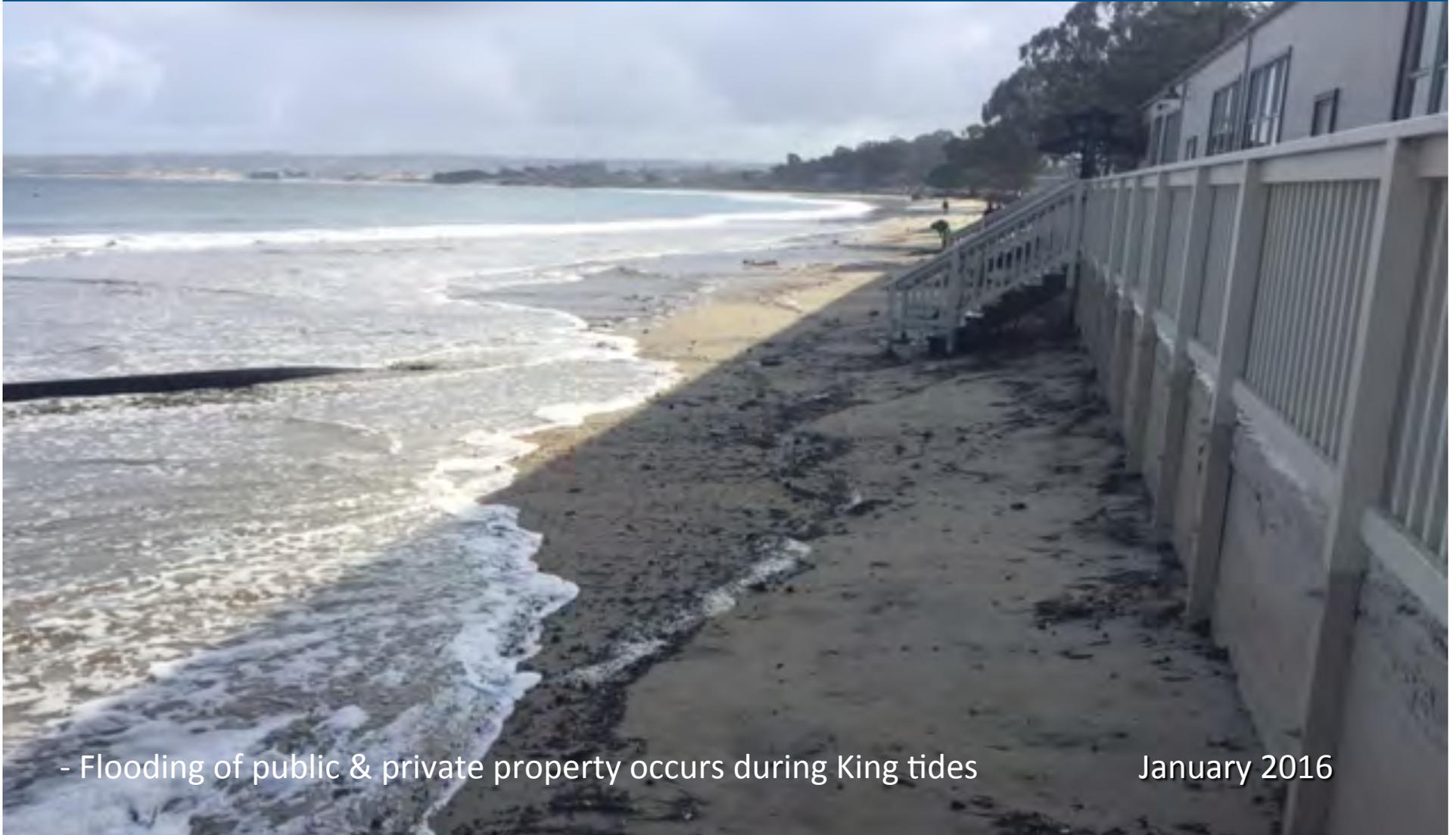
# Beach Erosion Concern Areas (BECAs), Monterey



- Coastal erosion threatens public structures (Monterey Beach House)

January 2016

# Beach Erosion Concern Areas (BECAs), Monterey



- Flooding of public & private property occurs during King tides

January 2016

# Beach Erosion Concern Areas (BECAs), Monterey



- Coastal Erosion threatens public works structures (pump house for sewage pipe)

February 2016

# Beach Erosion Concern Areas (BECAs), Monterey



- Monterey Interceptor pipeline is located under the mid-beach, and carries raw (untreated) wastewater from PG and Monterey to MRWPCA

February 2016

# Beach Erosion Concern Areas (BECAs), Monterey



- Monterey Interceptor pipeline is located under the mid-beach, and carries raw (untreated) wastewater from PG and Monterey to MRWPCA

February 2016

# Beach Erosion Concern Areas (BECAs), Monterey



- Coastal Erosion threatens housing complex with flooding (Del Monte Beach Town Houses)

February 2016

# Beach Erosion Concern Areas (BECAs), Monterey



Monterey Tides seawall

# CEMEX sand mine at Marina

Dredge mining  $\sim 200,000$  yd<sup>3</sup>/yr

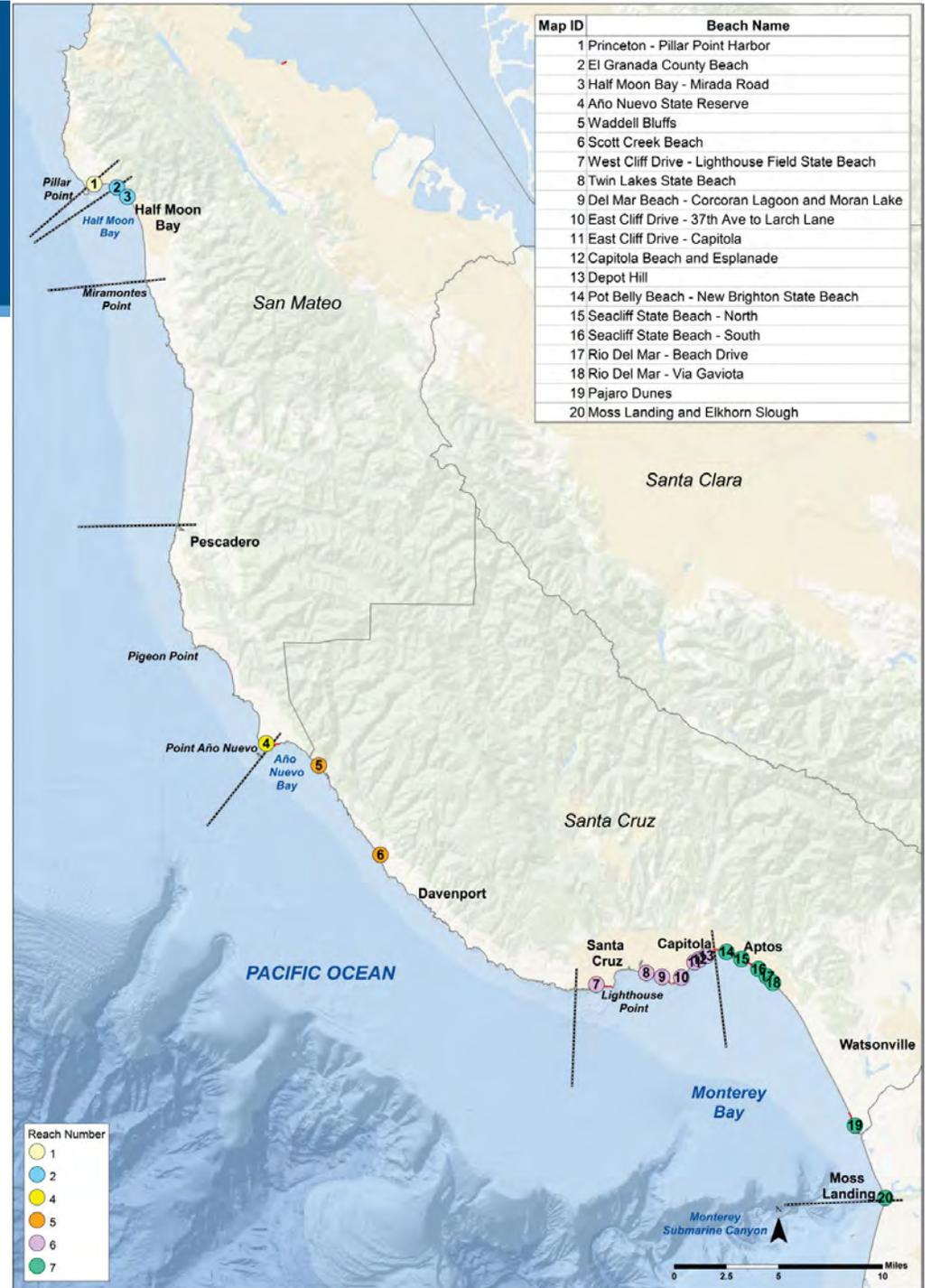


Cessation of dredging the pond will result in increased beach widths, reduced erosion, and enhanced beach and dune habitats for shorebirds and other sensitive species, as well as the biological resources that support them”

# Santa Cruz Littoral Cell RSM Plan



# Santa Cruz Littoral Cell RSM Plan



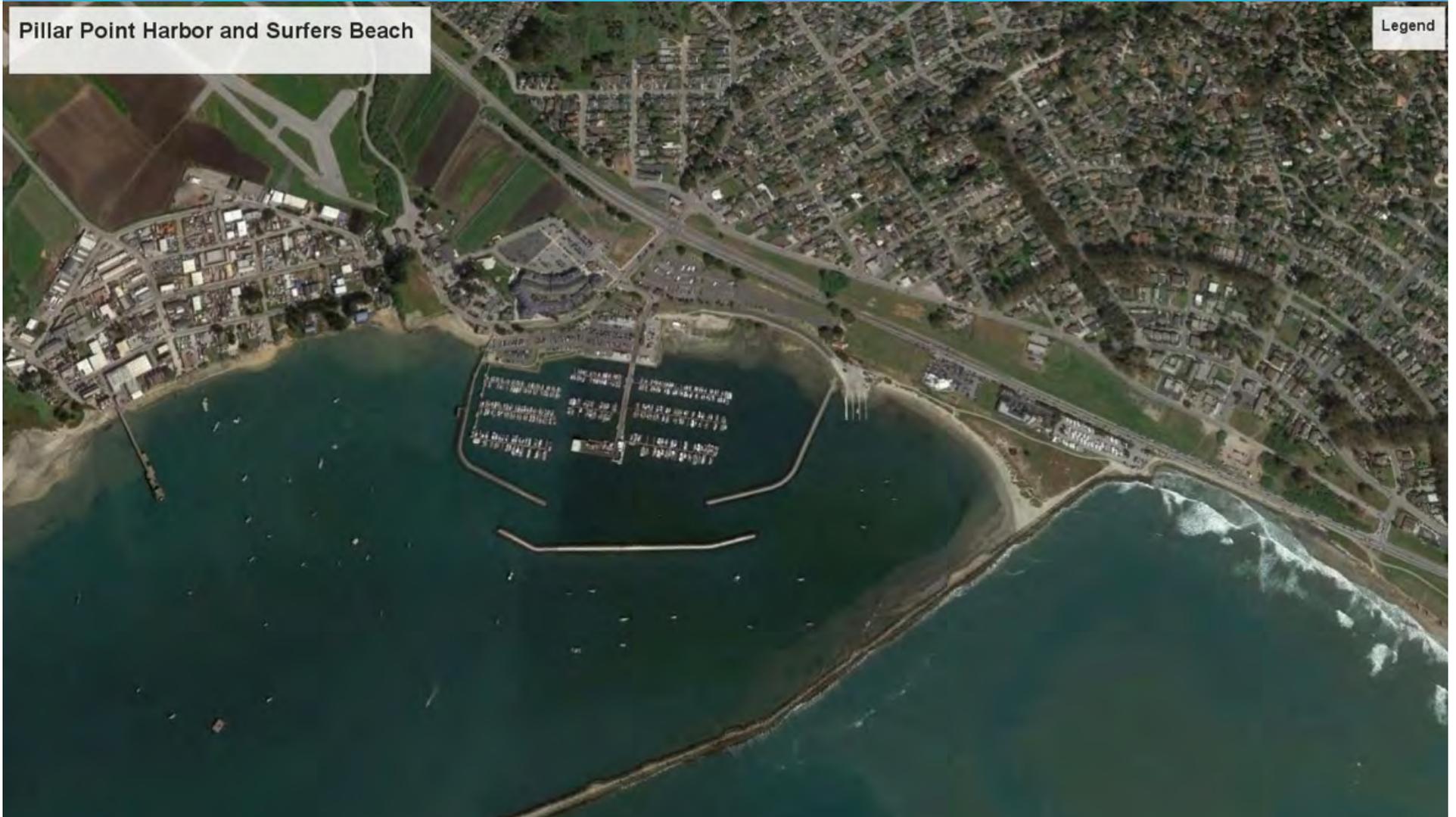
# Santa Cruz Littoral Cell RSM Plan



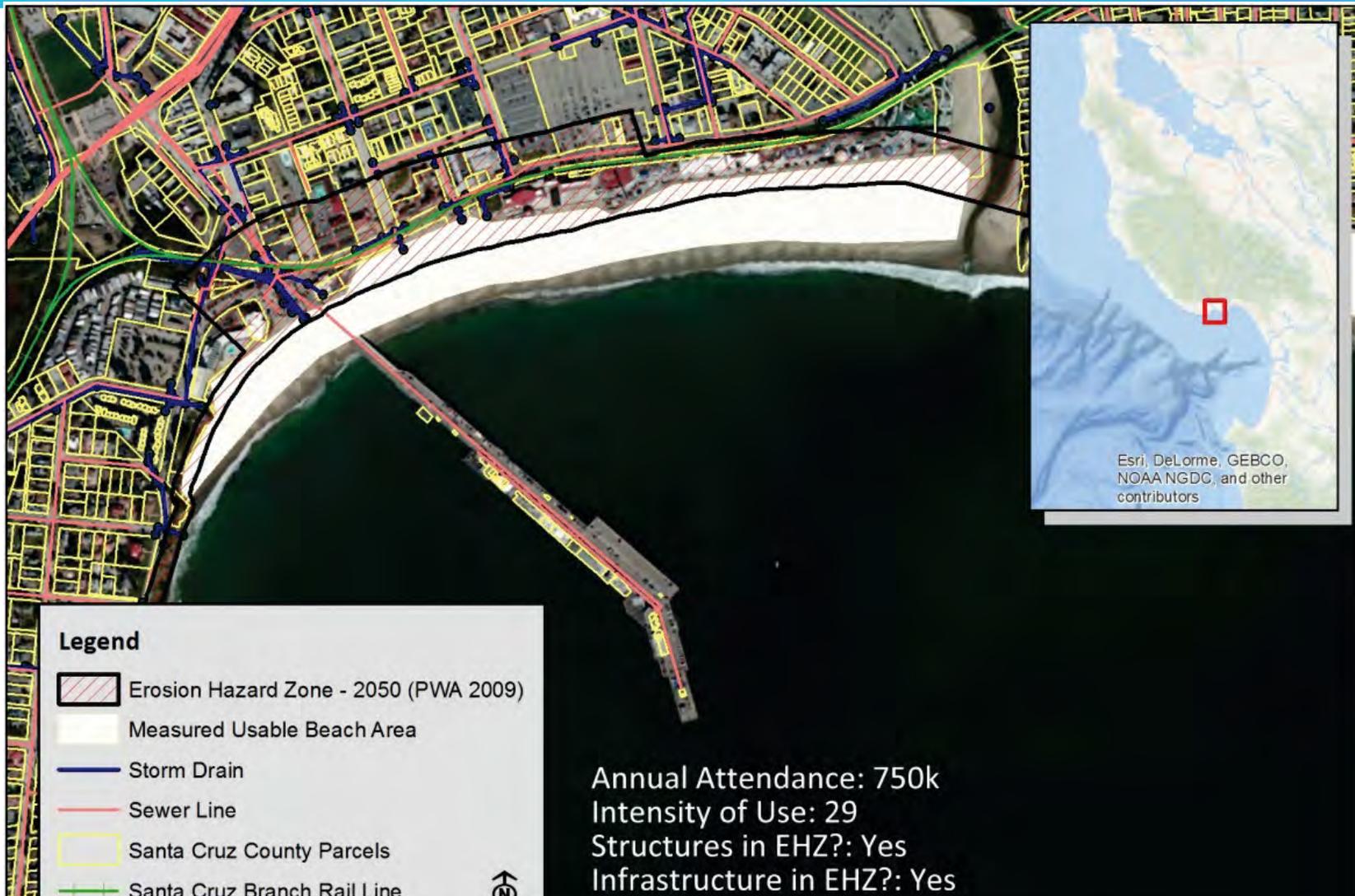
# Santa Cruz Littoral Cell RSM Plan

Pillar Point Harbor and Surfers Beach

Legend



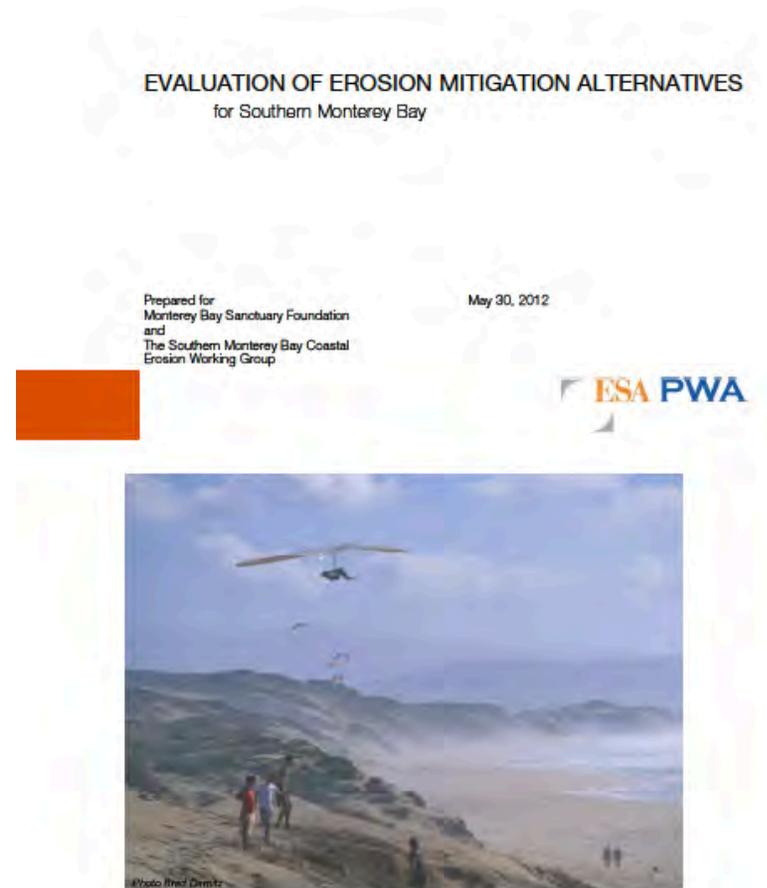
# Santa Cruz Littoral Cell RSM Plan



# Evaluation of Erosion Mitigation

Through Settlement Plan funds, MBNMS supported the 2012 report: *"Evaluation of Erosion Mitigation Alternatives for Southern Monterey Bay"*

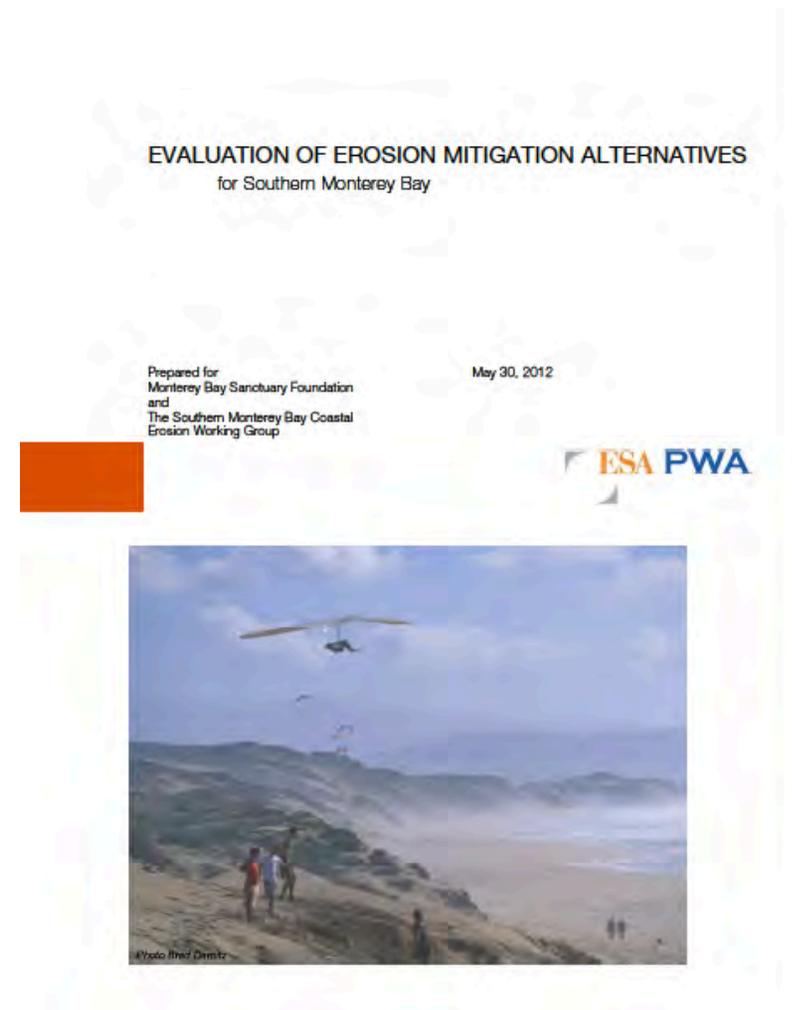
- Produced by ESA PWA and supported by the Southern Monterey Bay Coastal Erosion Workgroup (SMBCEW) including:
  - Dr Ed Thornton, Meg Cauldwell, Dr Phil King, Aaron McGregor
- Purpose: Assess various erosion mitigation measures to support regional strategy to address coastal hazards in So Monterey Bay



# Evaluation of Erosion Mitigation

## Key recommendations of report

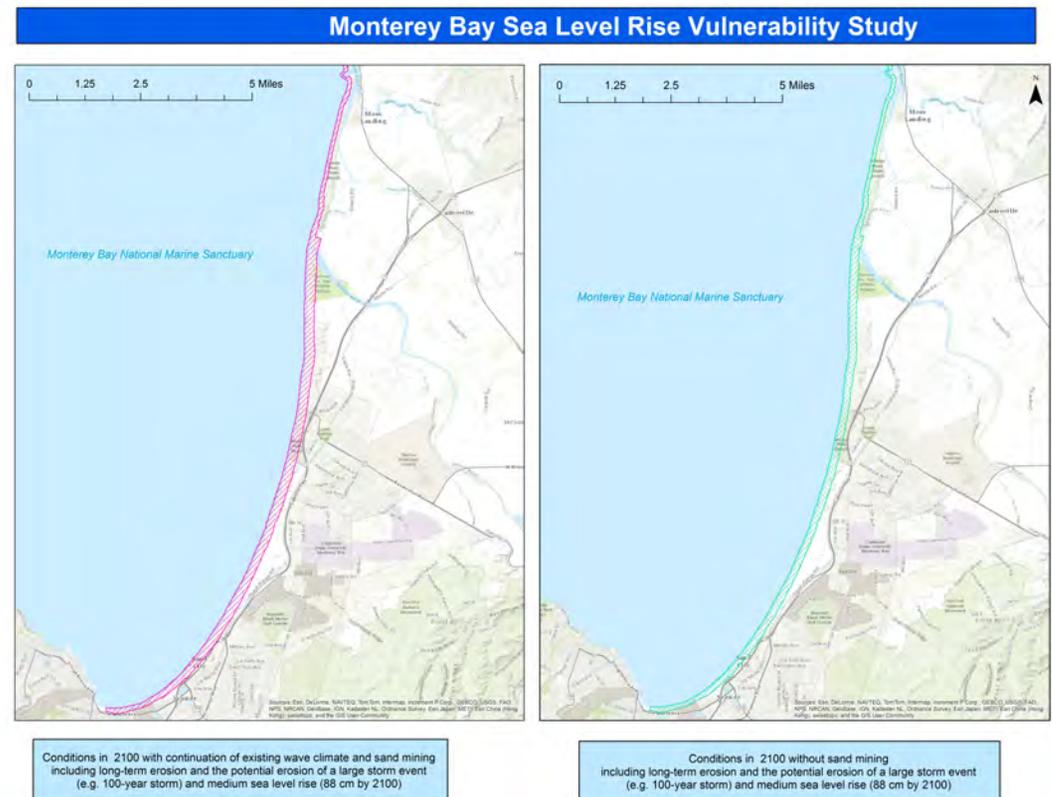
- Cessation of Sand Mining from the Beach
- Consider beach nourishment
- Develop opportunistic sand placement program
- Relocate regional sewage infrastructure
- Monitor for coastal changes
- Implement small scale pilot projects
- Educate property owners on risks of coastal hazards



# Coastal Erosion tools

The Monterey Bay shoreline also absorbs wave energy and protects against coastal hazards, including:

- Flooding and inundation
- Sea level rise
- Coastal storm surges
- El Nino/La Nina events
- King Tide events





Contact:  
**[Karen.grimmer@noaa.gov](mailto:Karen.grimmer@noaa.gov)**