

# Our Coast—Our Future

## Planning for Sea Level Rise and Storm Hazards Along the Bay Area's Outer Coast

Kelley Higgason

Ocean Climate Initiative Coordinator  
Gulf of the Farallones National Marine Sanctuary

BAECCC Meeting  
January 13, 2011



# Our Future—Our Coast

## Goals and Objectives

### Goal

- Provide Bay Area natural resource managers, local governments, and others with science-based, decision-support tools to plan for and respond to sea level rise and storm hazards along the region's outer coast.

### Objectives

- Model vulnerabilities to SLR & storm hazards.
- Assess stakeholder information needs.
- Map societal and ecosystem vulnerabilities at the scale needed for management action.
- Communicate the findings in accessible, user-friendly formats to apply to local adaptation and response strategies.



Tomales Bay, CA

# Our Future—Our Coast



## Staff

- Patrick Barnard and Li Erikson (USGS): seamless digital elevation model
- Grant Ballard (PRBO): web-based tools and interactive maps
- Kelley Higgason (GFNMS): stakeholder participation & project management
- Ellie Cohen and Maria Brown: advisors

## Funding

- NOAA Climate Program Office - Sectoral Applications Research Program (SARP) funds
- Sept 2010 – Aug 2012 with possibility of no cost extension; official start Nov 2010

## Additional Partners

- NOAA Coastal Services Center; National Park Service; BAECCE Members

# Our Future—Our Coast Study Region



**Point San Pedro, Pacifica to Point Reyes**  
Possible extension to Bodega Head and Half Moon Bay

# Our Future—Our Coast Methodology



## Modeling Vulnerabilities

- USGS Coastal Storm Modeling System (CoSMoS) applied in Southern CA
- Seamless DEM (2 m horizontal res) using the latest available Lidar data and multibeam bathymetry, apply a set of future storm and SLR scenarios
- Factors considered include: water levels, wave heights, flooding, erosion, and cliff failures.
- DEMs constructed by spring 2011, first scenario anticipated fall 2011 with additional scenarios developed through spring 2012

# Our Future—Our Coast Methodology

## Assess User Needs

- Two workshops spring 2011
- Coastal planners, resource managers, municipalities....
- Discuss objectives, anticipated products & outcomes; assess stakeholder info needs and ideal formats



## Map Societal and Ecosystem Vulnerabilities

- Data layers to assess impacts to: Societal infrastructure; Commercial buildings and residences; Habitats; Wildlife
- Produce interactive maps

## Develop Tools Based on Needs

- Web-based decision support tools for use in adaptation planning in this region
- Coordinate with efforts within the Bay and sites such as Digital Coast

# Our Future—Our Coast Methodology



## Provide Trainings on Use

- Two additional workshops when products are finalized to provide training on use of tools and maps

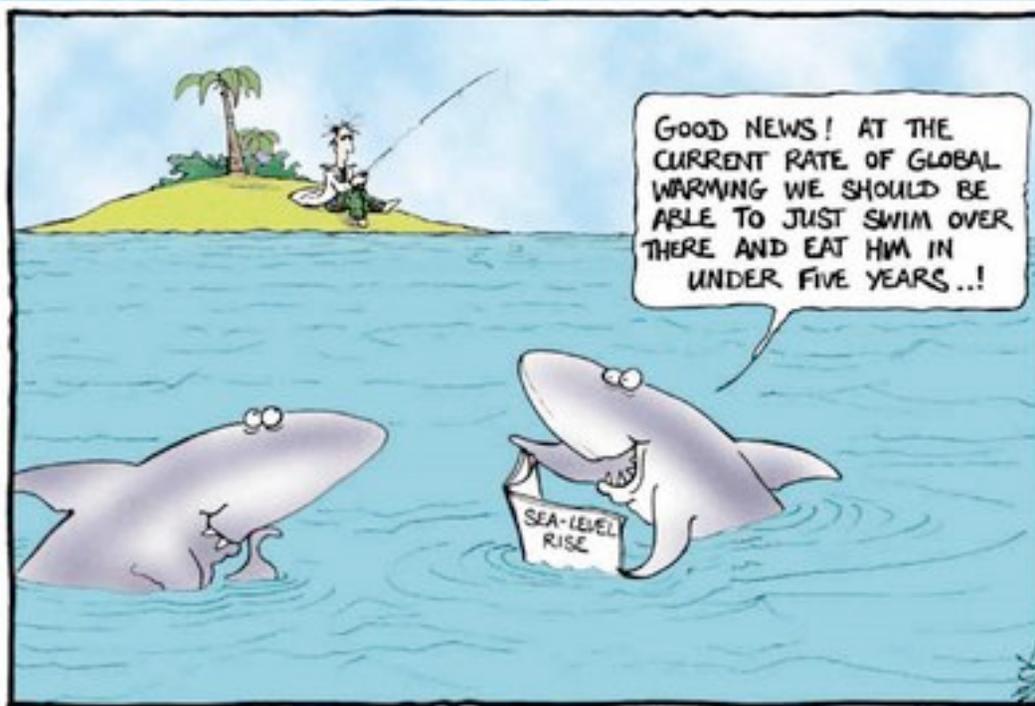
## Develop Adaptation Strategies

- GFNMS will convene working group to develop adaptation and response strategies as one chapter of the sanctuary's Climate Change Action Plan

## Next Steps

- Continue to seek funds to: expand boundaries; provide more specialized trainings on use of the tools; solicit feedback from users and modify tools based on this; keep data current

# THANK YOU!



**FOR MORE INFORMATION CONTACT**

[kelley.higgason@noaa.gov](mailto:kelley.higgason@noaa.gov); [pbarnard@usgs.gov](mailto:pbarnard@usgs.gov); or [gballard@prbo.org](mailto:gballard@prbo.org)