GFNMS and MBNMS
Climate Change Activities

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Joint Advisory Council Meeting
February 10, 2011
Goal

Address local climate change impacts through fostering awareness, advocating solutions, and promoting action to build ecosystem resilience and sustainability.

Objectives

Coordinate across GFNMS program areas to integrate climate into the work we do.

Coordinate partnerships and collaborations to address climate change impacts to sanctuary resources.

Work within NOAA and with other Bay Area agencies and orgs to form an alliance to share resources and knowledge.
ONMS CC Coordination
GFNMS OCEAN CLIMATE INITIATIVE

Initiative Activities

➢ Ocean Climate Summits  ➢ Our Coast–Our Future
➢ Climate Change Impacts Report  ➢ West Coast OA Task Force
➢ Climate Change Action Plan  ➢ ONMS Climate Subcommittee
➢ Ocean Climate Center  ➢ Bay Area Ecosystems CC Consortium

ONMS Climate Smart Status

✓ Minimum green standards (Aug 09)
✓ Adaptation Training (Nov 09, Feb 10)
✓ Climate Change Impacts Report (June 10)
✓ Condition Report (June 10)
  Climate Change Action Plan (in progress)
GF/CB CLIMATE CHANGE IMPACTS REPORT

Goal
Determine observed and predicted physical and biological climate change impacts to the north-central CA coast through local scientific consensus

Extensive Collaboration
17 WG members, 36 contributors, 16 agencies, orgs, institutions; 2 WG staff, 2 superintendents

Outcome
Foundation to guide development and prioritization of R&M activities, and inform future outreach and management actions

Public Release June 10, 2010
Cal Academy of Sciences Planetarium
Key Issues

⇒ Observed increase in sea level (100 year record at mouth of San Francisco Bay)
⇒ Expected increase in coastal erosion associated with changes in sea level and storm waves
⇒ Observed decrease in spring runoff of freshwater through San Francisco Bay, due to decreased snowpack
⇒ Observed increase in precipitation variability (drier dry years, wetter wet years)
⇒ Observed increase in surface ocean temperature offshore (50 year record)
⇒ Observed increase in winds driving the upwelling of cold, nutrient-rich waters (30 year record at offshore buoys)
⇒ Observed increase in extreme weather events (winds, waves, storms)
⇒ Expected decrease in pH, due to uptake of CO₂ by the ocean
⇒ Observed northward shift of key species (including Humboldt squid, volcano barnacle, gray whales, bottlenose dolphins)
⇒ Possible shift in dominant phytoplankton (from diatom to dinoflagellate blooms)
⇒ Potential for effects of climate change to be compounded by parallel environmental changes associated with local human activities

Recommendations

⇒ Educate society – inform people to allow for optimum decisions
⇒ Put ecosystems in context – link greenhouse gas emissions with marine ecosystem health
⇒ Anticipate change – obtain best available information on changing and future conditions
⇒ Mitigate impacts on the system – reduce manageable stressors that compromise system resiliency
⇒ Adapt to change – create policies and management strategies that are flexible to future changes

http://farallones.noaa.gov
June 2010
Frame strategies based on Climate Impacts Report

Public Outreach; Science and Information; Adaptation and Innovation Breakout Groups

Share successes/challenges, promote collaborations amongst local educators, managers, scientists

Partners: Cal Academy, SF Bay NERR Coastal Training Program, 11th Hour Project, ONMS

http://farallones.noaa.gov/eco/climate/summits.html
Green Operations: Reducing Our Carbon Footprint
Working group developed over 130 strategies, annual emissions audits: http://farallones.noaa.gov/about/facilities.html

Research and Monitoring
Est. working group of local scientists: identify gaps, develop strategies, identify leads/partnerships to implement

Adaptive Management and Policy
Est. working group in 2011: identify local planning obstacles, develop strategies and collaborative outcomes

Education and Outreach
Internal staff team, partner workshop and review: exhibits, school and public programs
OCEAN CLIMATE CENTER OPENING
October 26, 2010
Focus

Implement OCI and other Resource Protection programs

Communicate local coast and ocean climate change issues and pathways toward solutions through exhibits and programs

Serve as a regional hub for info exchange, partnerships, and collaborations
Our Coast–Our Future: Planning for Sea Level Rise and Storm Hazards Along the Bay Area’s Outer Coast

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 info needs and ideal formats.

• Map societal and ecosystem vulnerabilities at the scale needed for management action.

• Communicate products in accessible, user-friendly formats to apply to adaptation and response plans.
Our Future–Our Coast

Team

- USGS: seamless digital elevation model, 2 m resolution; suite of 10 year interval SLR and storm scenarios
- PRBO: web-based decision support tools and interactive maps
- GFNMS: project management, stakeholder participation, working group coordination
- NPS: Additional funding for data collection and modeling

Funding

- NOAA Climate Program Office - Sectoral Applications Research Program (SARP)
- Sept 2010 – Aug 2012 with possibility of no cost extension; official start Nov 2010
- Seeking additional funds: finer scale model; additional trainings on tools; modification of products based on feedback; current data
Ocean Acidification Symposium

The Ocean in a High CO₂ World 2012, Monterey

- 3rd International Symposium
- September 24 – 27th at the Monterey Marriott & Conference Center
- Planning Committee members include MBARI, Hopkins Marine Station, MBA, NPS, MBNMS, COS & others
- Participants include 300-500 scientists; one day planned for media and outreach, as well as field trips to local institutions and on the water trips
- Hosting the meeting raises the profile of the region and local institutions in the field of ocean acidification
- MBNMS will keep SAC members informed as plans develop
2011 Adaptation to Climate Change in the Monterey Bay Region

- November 2011: 1-Day Workshop focused on Climate Change Adaptation Planning for Cities and Coastal Communities
- Planning Team includes MBNMS, Center for Ocean Solutions, CCC, AMBAG, Cities of Santa Cruz and Carmel, ICLEI (Local Governments for Sustainability), CENCOOS, NOAA Coastal Training Center, & others
- Participants will include local elected officials and city staff (planners) and resource managers
- Workshop goals: equip participants with knowledge on climate change impacts & adaptation planning processes in the Monterey Bay region that can assist with specific issues such as sea level rise, infrastructure issues and wetlands/shoreline habitat protection
- For more information, contact karen.grimmer@noaa.gov
THANK YOU!

FOR MORE INFORMATION VISIT
http://farallones.noaa.gov/eco/climate/climate.html

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