

**MBNMS Research Activity Panel
Meeting Summary
November 13, 2009**

Host: Francisco Chavez – Biological Oceanography (MBARI)

Location: Monterey Bay Aquarium Research Institute
Pacific Forum
7700 Sandholdt Road
Moss Landing, CA

Date: Friday, November 13th, 2009; 9:00 am to 12:00 pm

Members:

	Discipline	Primary/ Alternate	Name	Institution
X	Research Coordinator		DeVogelaere, Andrew	Monterey Bay National Marine Sanctuary
X	Biological Oceanography	primary	Chavez, Francisco	Monterey Bay Aquarium Research Institute
	Biological Oceanography	alternate	Kudela, Raphael	University of California, Santa Cruz
	Deep-Sea Ecology	primary	Cailliet, Greg	Moss Landing Marine Laboratories
	Deep-Sea Ecology	alternate		
	Estuarine Ecology	primary	Wasson, Kerstin	Elkhorn Slough NERR and Foundation
	Estuarine Ecology	alternate	Van Dyke, Eric	Elkhorn Slough NERR and Foundation
	Fisheries	primary	Grimes, Churchill	NOAA Fisheries Service
	Fisheries	alternate	Vasques, Jason	California Department of Fish & Game
X	Marine & Coastal Geology	primary	Storlazzi, Curt	United States Geological Survey
X	Marine & Coastal Geology	alternate	Paull, Charles	Monterey Bay Aquarium Research Institute
X	Marine Conservation Biology	primary	Harrold, Chris*	Monterey Bay Aquarium
	Marine Conservation Biology	alternate	Micheli, Fiorenza	Hopkins Marine Station
	Marine Policy	primary		
X	Marine Policy	alternate	Sharp, Gary	Center for Climate/Ocean Resources Study
	Nearshore Ecology	primary	Lindholm, James	California State University Monterey Bay
	Nearshore Ecology	alternate	Carr, Mark	University of California, Santa Cruz
X	Physical Oceanography	primary	McPhee-Shaw, Erika	Moss Landing Marine Laboratories
X	Physical Oceanography	alternate	Ramp, Steve	CeNCOOS/MBARI
	Shelf & Slope Ecology	primary	Yoklavich, Mary	NOAA Fisheries Service
	Shelf & Slope Ecology	alternate	Starr, Rick	California Sea Grant Extension Program
	Social Sciences	primary	Pomeroy, Caroline	California Sea Grant Extension Program
	Social Sciences	alternate		
	Water Quality	primary	Epel, David	Hopkins Marine Station
X	Water Quality	alternate	Hunt, John†	University of California, Davis

*Sanctuary Advisory Council Member: Research (Primary)

†Sanctuary Advisory Council Member: Research (Alternate)

GUESTS:

	Name	Institution
X	Brown, Jennifer	Monterey Bay National Marine Sanctuary
X	Burton, Erica	Monterey Bay National Marine Sanctuary
X	Ely, Dick	General Public
X	Etchemendy, Steve	Monterey Bay Aquarium Research Institute
X	Selbie, Hugo	PISCO; University of California, Santa Cruz

CONSENT ITEMS**Introductions/Modifications to the Agenda (Chris Harrold)**

- Add Membership update
- Harrold suggested RAP members send RSVPs prior to RAP meetings

HOST PRESENTATION AND DISCUSSION**MBARI Activities (Francisco Chavez)**

- Marcia McNutt left MBARI, now Director of U.S. Geological Survey
- Chris Scholin now President/CEO of MBARI
- Charlie Paull now Science Chair of MBARI

MARS Cable Research (Steve Etchemendy/MBARI)

- Steve provided an overview of the MARS (Monterey Accelerated Research System) Project
- Suite of tools for scientists to monitor the ocean. Power is provided to *in situ* tools 24/7.
- Single science node located on Smooth Ridge at 891 m; has 8 ports; science node connected to shore via cable
- MARS is a test bed with anticipated lifespan of 25 yrs
- Science and instrument testing began Nov 2008
- Installed instruments include:
 - Free-ocean carbon dioxide enrichment experiment (FOCE)
 - PI: Peter Brewer
 - Studying "the other carbon dioxide problem" – ocean acidification
 - <http://www.mbari.org/mars/science/foce.html>
 - Eye-in-the-Sea
 - PI: Edith Widder
 - Unobtrusive video collected of deep sea animal behavior
 - <http://www.mbari.org/mars/science/eits.html>
 - Monterey Ocean Bottom Broadband (MOBB) Seismometer
 - PI: Barbara Romanowicz
 - Seismic Observatory, continuously records activity west of San Andreas Fault
 - <http://www.mbari.org/mars/science/seismometer.html>
 - DEIMOS Echosounder
 - PI: John Horne (University of Washington)
 - Seafloor echo sounder detects marine life from krill to whales
 - <http://www.mbari.org/mars/science/deimos.html>

- Benthic Rover
 - PI: Ken Smith
 - Measures respiration of animals in sediment
 - <http://www.mbari.org/mars/science/rover.html>
- Deep-Sea Environmental Sample Processor
 - PI: Chris Scholin
 - An automated DNA lab looks for life in the deep sea
 - http://www.mbari.org/mars/science/deep_esp.html
- Instruments planned for 2010
 - Sedimentation Sensor/Time Lapse Camera System
 - A Smart Sensor Web for Ocean Observation
 - Technology Development for Geophysical Monitoring as Cabled Seafloor Observatories
 - Acoustic Communications System for Cabled Observatories
 - Bottom Pressure recorder and precision tilt meter (test bed for Axial Seamount to measure volcanic activity)
- Fishery activities are the likely cause of cable disturbances roughly every six months, so MBARI plans on requesting an MBNMS permit to bury the exposed, short cable near the node.
- For more information, see <http://www.mbari.org/mars/>

PRESENTATION

Ocean Acidification (Francisco Chavez; Co-authors: Peter Brewer, Jim Barry, Ken Johnson)

- Francisco provided overview of ocean acidification
- Waters off Monterey are naturally acidic with upwelling; waters off Monterey have an atmospheric signature of CO₂
- Discussed FOCE experiments at MARS (<http://www.mbari.org/mars/>)
- pH measurements from FOCE: making huge improvements in sensing; 500 fold increase in precision
- Briefly discussed Jim Barry's marine ecosystem work: effects on individuals and implications for ecosystems. Possible impacts include:
 - Reduced calcification
 - Respiratory Stress
 - Acidosis
 - Metabolic depression

MBNMS Condition Report (Jennifer Brown/MBNMS)

- Jennifer provided an overview and highlights of the MBNMS Condition Report published online October 2009
- Goals of the report included:
 - Assess the condition of the site and the system
 - Determine if system is achieving its resource protection and improvement goals as reflected in program performance measures

- The Report is a summary of:
 - MBNMS resources
 - Pressures on those resources
 - Current status and trends
 - Management responses
- In summary:
 - First report to summarize condition and trends in marine resources of the Monterey Bay sanctuary
 - Illustrated many areas where more data are needed
 - Cumulative impacts are common and need to be better understood
 - Population growth and emerging issues, such as climate change, could be significant
 - Continued emphasis on collaborative solutions
 - Expect revision in 5 years
- SAC will review and comment at December meeting
- Download the report at <http://sanctuaries.noaa.gov/science/condition/mbnms/welcome.html>

DISCUSSION ITEMS

2010 Meeting Schedule and State Furloughs (Erica Burton/MBNMS)

- Erica sent email to RAP members who are also State employees, asking if they are unable to attend RAP meetings on second Friday of every other month
- The 2010 RAP meeting schedule may be altered to accommodate attendance of State employee RAP members

ADJOURN

Future Agenda Items (running list):

- Water Quality
 - Critical coastal areas presentation (ASBS, areas water quality impaired, areas in good state; Ross Clark)
 - SIMoN Water Quality Monitoring Viewer (Chris Harrold)
- SIMoN
 - SIMoN Special Status Species Project (Jennifer Brown)
 - Linking SIMoN to management (Amber Szoboszlai)
- MPAs
 - State MPA monitoring projects (Jason Vasques)
- Communication Partnership for Science and the Sea (COMPASS)
- Wave Model Development and Implementation (Paul Wittmann/Fleet Numerical)
- Data integration across monitoring programs (e.g., water quality, PISCO, MARINE, IOOS), and availability to the public
- Recent event: Supreme Court allows Navy Sonar (per John Hunt)
- NOAA Twin Otter plane comes to Monterey
- Predicting sea level rise for the state of California (Larry Breaker, JPL, OPC)
- CeNCOOS update (new website; activities)
- High-res models of CA (Cayan or Dettinger/USGS)
- MBNMS Desal Guidelines (Brad Damitz)
- National Weather Service Forecast Office (Tom Evans, Warning Coordination Meteorologist)
- Offshore Membrane Enclosures for Growing Algae (OMEGA; Jonathan Trent, NASA-AMES)
- Presentation on IEAs (e.g., Phil Levin, Frank Schwing, John Stein), including IEAs that have been implemented (per Yoklavich)
- Marine Spatial Planning presentation (per Harrold); Fio recently heard Marine Spatial Planning talk from Massachusetts, or speaker from Center for Ocean Solutions (Meg Caldwell)
