

**MBNMS Research Activity Panel  
Meeting Summary  
November 13, 2015**

**Hosts:** Curt Storlazzi – Marine and Coastal Geology (U.S. Geological Survey)

**Location:** USGS Coastal and Marine Geology  
Pacific Coastal & Marine Science Center  
400 Natural Bridges Drive  
Santa Cruz, CA 95060

**Date:** Friday, November 13<sup>th</sup>, 2015; 9:00 am to 12:00 pm

**Members:**

	<b>Discipline</b>	<b>Primary/ Alternate</b>	<b>Name</b>	<b>Institution</b>
X	Research Coordinator		DeVogelaere, Andrew	Monterey Bay National Marine Sanctuary
	Biological Oceanography	primary	Kudela, Raphael	University of California, Santa Cruz
	Biological Oceanography	alternate	Chavez, Francisco	Monterey Bay Aquarium Research Institute
X	Deep-Sea Ecology	primary	Cailliet, Greg	Moss Landing Marine Laboratories (retired)
	Deep-Sea Ecology	alternate	Haddock, Steve	Monterey Bay Aquarium Research Institute
	Estuarine Ecology	primary	Lindley, Steve	NOAA Fisheries Service
	Estuarine Ecology	alternate	Wasson, Kerstin	Elkhorn Slough NERR and Foundation
	Fisheries	primary	Sogard, Susan	NOAA Fisheries Service
	Fisheries	alternate	Grimes, Churchill	NOAA Fisheries Service (retired)
X	Marine & Coastal Geology	primary	Storlazzi, Curt	United States Geological Survey
	Marine & Coastal Geology	alternate	Paull, Charles	Monterey Bay Aquarium Research Institute
	Marine Conservation Biology	primary	Goldbogen, Jeremy	Hopkins Marine Station
	Marine Conservation Biology	alternate	Micheli, Fiorenza	Hopkins Marine Station
	Marine Policy	primary		
	Marine Policy	alternate	David, Aimee	Monterey Bay Aquarium
	Nearshore Ecology	primary		
	Nearshore Ecology	alternate	Carr, Mark	University of California, Santa Cruz
	Physical Oceanography	primary	Ramp, Steve	Soliton Ocean Services, Inc.
	Physical Oceanography	alternate	Cheriton, Olivia	United States Geological Survey
	Shelf & Slope Ecology	primary	<b>Lindholm, James†</b>	California State University Monterey Bay
	Shelf & Slope Ecology	alternate		
X	Social Sciences	primary	Pomeroy, Caroline	California Sea Grant Extension Program
	Social Sciences	alternate	Scorse, Jason	Middlebury Institute of International Studies
X	Water Quality	primary	<b>Hunt, John†</b>	University of California, Davis
	Water Quality	alternate		

\*Sanctuary Advisory Council Member: Research (Primary)

†Sanctuary Advisory Council Member: Research (Alternate)

**RAP Coordinator:**

X	Burton, Erica	Monterey Bay National Marine Sanctuary
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**GUESTS:**

Coble, Katherine	U.S. Geological Survey
Grimmer, Karen	Monterey Bay National Marine Sanctuary
Hart, Pat	U.S. Geological Survey
Hayes, Dawn	Monterey Bay National Marine Sanctuary
Joseph, John	Naval Postgraduate School
Lonhart, Steve	Monterey Bay National Marine Sanctuary
Ryan, John	Monterey Bay Aquarium Research Institute
Seiler, Deborah	California Sea Grant

**CONSENT ITEMS**

Introductions/Modifications to the Agenda (Hunt)

**HOST PRESENTATION AND DISCUSSION**

Current USGS activities in the MBNMS (Storlazzi)

- Storlazzi summarized several USGS research projects in MBNMS
- Marine geohazards: ongoing research in the Monterey Canyon System, including
  - San Gregorio Fault Zone;
  - Geologic evolution of the Monterey Canyon head region
  - CSMP Block 40-41 (recently released)
  - Sediment transport in submarine canyons (large collaborative effort to investigate sediment gravity flow events in Monterey Canyon)
- California Seafloor Mapping Program, including:
  - Offshore Santa Cruz products (online)
  - Photo and video portal (online)
- Modeling wave and seabed energetics on the California continental shelf
- Future wave and wind projections for U.S. mainland coasts
- Episodic and seasonal variation in coastal morphology and sediment transport, El Nino
- Mapping surveys: nearshore surveys, beach and seacliff surveys, forcing data; tools include:
  - Terrestrial LIDAR
  - MPWCs
  - Structure-from-Motion (SfM), can create digital elevation models from California Coastal Records Project images (Adelman)
  - Side scan surveys looking at ripple scour depressions
- Why do we care:
  - MPA designation
  - Defining habitat, ecosystem-based management
  - Hazards assessment
  - Baseline monitoring, climate change
  - Many others (*not captured here*)
- For more information, see: <http://walrus.wr.usgs.gov/>

## PRESENTATION REQUESTED BY RAP

Sound Source Verification (SSV) collaboration between the USGS and BOEM (Patrick Hart/USGS)

- 3-year collaboration between USGS and BOEM to calibrate and characterize high frequency marine acoustic sources used for seafloor mapping and sub-bottom profiling projects
- Motivation
  - USGS uses these sources a lot (200-300 days/yr)
  - Primary objective: obtain accurate measurements of sound source pressure levels, frequencies, and beam patterns produced by these sources
  - Characterization of sound fields produced by these acoustic sources, important to understand potential impact on protected species and designing mitigation procedures to minimize impact
  - SSV results do not define what sound pressure levels (SPL) are harmful to protected species, but do provide distances of Level A radius and Level B radius
  - SSV results will be used to establish the size of the Level A and Level B safety zones for each acoustic system
  - Available: NMFS draft guidance for assessing effects of anthropogenic sound on marine mammal hearing, published July 23, 2015
- Phase I (nearfield): measurements (primarily in the lab: NUWC Newport RI test tank (freshwater); NUWC Leesburg, FL lake test facility (freshwater); WHOI dock moonpool (seawater))
  - Testing completed over several weeks at three locations
  - Technical report will be publicly available March 2016
  - Sources:
    - Seafloor mapping (single beam fathometer, multibeam fathometer, interferometer, side scan sonar)
    - Sub-bottom profiling (impulse signal, FM chirp signal)
  - Hart provided results for a couple of tools: sub-bottom profiler, and multibeam
- Phase 2 (farfield): plan for FY16
  - 17 acoustic sources for testing during 17-day program
  - All sources will be recorded by anchored calibrated hydrophones at offsets out to several km
  - Test sites will be at 10m, 30m, 100m water depths and will include sand (hard) and mud (soft) seafloor types
  - East coast seawater (WHOI)
- Phase 3: Modeling
  - Contract not yet awarded
  - Evaluation of marine sound propagation modeling techniques by taking results from Phase 1 and modeling what the propagated sound field should be for different water depths and seafloor types and comparing the modeled results with the Phase 2 at-sea measured results
- Summary
  - 3-yr study will provide calibrated acoustic measurements for wide variety of seafloor mapping and sub-bottom profiling systems

- Project results will not establish new acoustic guidelines but will accurately define a sound source's acoustic signal

## **SANCTUARY ADVISORY COUNCIL UPDATE**

### Summary of October 23rd SAC Meeting at Cambria (Hunt)

- Hunt provided brief summary of SAC meeting (neither Hunt nor Lindholm could attend), topics included:
  - Management Plan review (Dawn Hayes will address later today)
  - NOAA's Deep-sea Coral Data Portal: MBNMS staff contributed 19 scientific publications (primarily from Davidson Seamount). Portal provides access to deep-sea coral and sponge data, images, and technical reports from research funded by NOAA's Deep Sea Coral Research and Technology Program (DSCRTP) and its partners.
  - Conservation Working Group (CWG) submitted a draft letter on priorities for MBNMS Management Plan Review scoping, including: climate action plan, wildlife disturbance (including entanglement and acoustic), high energy seismic testing, support water quality protection, marine spatial management work, and desalination.
  - Sanctuary Education Panel (SEP) has not yet resurrected. They may restart as a project-based meeting group (rather than holding regularly scheduled meetings), perhaps focusing on supporting the Sanctuary Exploration Center and the Coastal Discovery Center.
  - A motion to request expedited efforts for recruitment to backfill the NOAA Office of Law Enforcement (OLE) Law Enforcement Officer (LEO) position in Monterey, California PASSED (Vote: 13 in favor, 0 opposed, 0 abstention)
  - California Department of Fish and Wildlife (CDFW): The Master Plan for Marine Protected Areas is being updated from the 2008 version. The draft 2015 Master Plan focuses on setting a statewide foundation for MPA management, moving forward. Proposed regulations and boundary adjustments can be viewed on the Commission's web page.
  - Ocean Protection Council (OPC) has gone through the design phase in the Marine Protection Area Management plan. They are now in the implementation phase for MPAs.
  - Water Quality (WQ) update and their contribution to the MBNMS Condition Report
    - Elkhorn Slough: fair/poor WQ and decreasing trends for stressors and eutrophication.
    - Nearshore Waters: fair WQ and decreasing trends for stressors and eutrophication.
    - Offshore Waters: good to fair WQ and decreasing trends for stressors and eutrophication.
  - See SAC meeting minutes at: <http://montereybay.noaa.gov/sac/sacma.html>

## **STAFF REQUESTS TO RAP**

### RAP Input During Management Plan Review (Dawn Hayes/MBNMS)

- Dawn provided update on Management Plan review process (handout)

- Public scoping process completed
- Immediate next steps (Nov 2015 – May 2016) include:
  - Preparation of findings report
  - Prioritization
  - Creation of, and work by, working groups
  - Complete draft plan and regulations package
- RAP opportunities to participate include:
  - Review findings and prioritization reports
  - Review Condition Report and determine if the assessments are addressed properly in the Management Plan
  - Identify topics of interest
  - Participate in working groups, based on individual member expertise
  - Review and comment on draft plan
  - Attend SAC meetings for updates

### **SANCTUARY RESEARCH UPDATE**

#### **MBNMS Research Diving Projects (Steve Lonhart/MBNMS)**

- Lonhart provided brief summary
- 40 days at sea for diving in 2015
- Seastar Wasting Syndrome (SSWS): beginning of year
- Annual surveys (inverts, fish, kelp) with REEF
- MPA surveys and training with PISCO
- Invasive species surveys (with Smithsonian), *Watersipora* and other high-profile species in harbors leaking out of harbors (4 days)
- GFNMS expansion (2-day reconnaissance trip off R/V *Fulmar*)
- 3-D Catalin Seaview surveys (camera system) waiting for clear water (e.g., Monterey Breakwater, Point Lobos); capture images of iconic locations, Catalin will do stitching, not sure who will host (probably Catalin), we will provide link
- Support Hopkins Marine Station marine science diving training, SSWS, science techniques, gather information for MBNMS
- UC Davis PhD student (Olivia Rhodes), fish behavior related to diver-related disturbance in/out MPAs (received Mia Tegner award at WSN)

### **MEETING UPDATES**

#### **Western Society of Naturalists Annual Meeting in Sacramento: “Marine Science Informing Management” (Steve Lonhart/MBNMS)**

- Workshop before meeting, intersection between science, management, decision makers
- First time WSN had issue-based theme with invited speakers
- 644 attended
- 438 students
- 160 posters
- November 2016 will be WSN 100<sup>th</sup> anniversary in Monterey, expecting 800-1000 people
- Hyatt Regency will be venue
- Attitude Adjustment Hour will be at Monterey Bay Aquarium

- WSN grappling with expanding membership, perhaps need 4 days (not 3), perhaps talks need to be vetted/rejected

### **RAP MEMBERSHIP UPDATE and 2016 HOSTS**

#### Membership Terms and 2016 Meeting Hosts (Burton)

- Burton provided brief update on membership renewal process
- Eleven 3-year term memberships have expired, and all have been requested to renew membership, six have agreed, awaiting responses from five;
- **ACTION**: Burton will send reminder to five RAP members
- Burton provided 2016 meeting dates and requested members to host a meeting
- 2016 dates include: Jan 8, Mar 11, May 13, Jul 8, Sept 9, and Nov 4
- Lindholm will host Jan 8 at CSUMB
- Cailliet will host Sept 9 at MLML
- **ACTION**: Burton will email Call for 2016 meeting hosts

### **QUICK UPDATES ON NEW HIRES AT INSTITUTIONS; AND FACILITY UPDATES**

- Cailliet: new MLML faculty/staff
  - Birgitte (Gitte) McDonald, Assistant Professor of Vertebrate Ecology
  - Tom Connolly, Assistant Professor of Physical Oceanography
  - Colleen Durkin, Research Affiliate, Biological Oceanography
  - Kathleen Donahue, Assistant to the Director
  - Terra Egglink, Graduate Coordinator
  - Librarian: in process of replacing Joan Parker
- DeVogelaere: Dan Basta, Sanctuary Program Director, has retired
- Pomeroy: Sea Grant Director search closed, reviewing applications; housed at Scripps
  - State Fellows program growing, one will be in the Lt Governor's office

### **SUGGESTED FUTURE AGENDA ITEMS**

- Pomeroy: Domoic Acid situation – crab fishery closed till further notice; California Department of Public Health and/or CDFW, helpful to get update, CDFW to clarify testing/monitoring, Pomeroy will suggest speaker
- Pomeroy: whale entanglement and crab pots, coordinated effort to talk and address issue, Pomeroy might be able to provide (or Carrie to suggest speaker)
- Pomeroy: state updating MLMA, may take awhile
- Hunt will poll the RAP for interesting items to report back to the SAC
- REMOVE from list
  - Hunt: strike-out “Ocean-based WQ presentation”; OPC gave funds to OST to take over portal, nothing will be happening in next year due to other priorities
  - Storlazzi/ADV: strike-out Center of Excellence acoustics
  - Hunt/ADV: strike-out CDFW permits

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#### **Future Agenda Items (running list):**

- MBNMS Updates:
  - Sanctuary Ecologically Significant Areas (SESAs)

- Integrated Ecosystem Assessment (IEA)
- Water Quality:
  - Follow-up to Hunt’s WQ presentation (9/12/14), where does all the data go? Successful uses, shared capability, proper use of data (per Scorse); Roy Mendelson would be good speaker (per Lindley)
  - ~~Ocean based WQ presentation (per Hunt)~~
  - Elkhorn Slough Report Card:  
[http://www.elkhornslough.org/research/waterquality\\_reportcard.htm](http://www.elkhornslough.org/research/waterquality_reportcard.htm)
- Leadership changes at Big NOAA, and how affects little NOAA (MBNMS)
- RAP Membership:
  - Revisit RAP member policies including representation: discipline vs institution; available at: [http://montereybay.noaa.gov/sac/rap/history/rap\\_policies.html](http://montereybay.noaa.gov/sac/rap/history/rap_policies.html)
- SAC Charter revision
- Acoustic and seismic surveys
  - Continuation of SAC resolution to ban seismic air gun surveys
  - ~~Center of Excellence for acoustics in development at GFNMS, Leila Hatch (SBNMS) involved (per DeVogelaere)~~
  - Report-out on RAP review of acoustics paper “NOAA ocean and sound strategy”
- Speaker series on science (Oceans Live; *Your Sanctuary* TV)
- ~~Proposed regulation changes relative to CDFW Scientific Collecting Permits~~
- Coastal Rivermouth Lagoon inventory for state and central coast (Central Coast Wetlands Group/Ross Clark)
- RAP feedback for SAC (per Hunt)

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**2015 RAP Meeting Schedule and Locations**

<b>Date</b>	<b>Host</b>	<b>Location</b>
January 9	Lindholm	CSU Monterey Bay
<del>March 13</del>	<del>Wasson</del>	<del>ESNERR – cancelled</del>
<del>May 8</del>	<del>Carr/Pomeroy</del>	<del>Long Marine Lab, UCSC – cancelled</del>
July 10	Lindholm	CSU Monterey Bay
September 11	Scorse	Monterey Institute of International Studies
November 13	Cheriton/Storlazzi	U.S. Geological Survey