MBNMS Research Activity Panel
Meeting Summary
January 9, 2015

Host: James Lindholm – Nearshore Ecology (CSU Monterey Bay)

Location: Tanimura and Antle Family Memorial Library
Building 508, Rm 1176
Divarty Street
California State University Monterey Bay
Seaside, CA

Date: Friday, January 9th, 2015; 9:00 am to 12:00 pm

Members:

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<td>DeVogelaere, Andrew</td>
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<td>Hunt, John†</td>
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*Sanctuary Advisory Council Member: Research (Primary)
†Sanctuary Advisory Council Member: Research (Alternate)

RAP Coordinator:

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

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CONSENT ITEMS

Introductions/Modifications to the Agenda (Lindholm)
- California Sea Grant update replaced with MBNMS Superintendent update
- 2015 meeting hosts sign-up sheet passed around to members; still need July host

HOST PRESENTATIONS AND DISCUSSION

Marine Science at CSUMB Update (Lindholm)
- 425 undergraduate students (BS Marine Science)
- 25 graduate students (MS Applied Marine and Watershed Science)
- 13 lecturers and 17 staff
- Reorganization of science program to unify and strengthen
- New: CSUMB is host campus for CSU Council on Ocean Affairs, Science and Technology (COAST) – internships
- Marine Science moving to old Monterey Herald building (Upper Ragsdale Rd, Monterey)
  - Marine facilities and faculty
  - Upper division classes
  - Plan to occupy in summer 2015
- Recent Research
  - Habitat Suitability Indices=ROV Imagery+Topographic maps
    - e.g., Canary rockfish inside/outside state MPAs (Bodega Head)
  - Science Diving Program growing (AUS divers)
  - Stereo Diver-Operated Video (DOV) – developing methods and course
    - Will compare/complement ROV surveys
    - New Spring course (Phase 1) – Marine Biogeography of California; 4 sites along the California coast (Jenner to La Jolla; MPAs); Phase 2 will expand to other CSU campuses
    - Method advantages: stereo system triangulation can accurately estimate fish size; relatively inexpensive (compared to ROV, other methods)
    - Phase 3 (preliminary): Expand to Chile
- Storlazzi mentioned that new software (3k) is available – structure ocean technology; overlap images for DEMs (digital elevation models)

MBNMS Superintendent Update (Paul Michel/MBNMS)
- Management Plan Update: ramping up for 3-yr process
  - Update will address accomplishments and work still needed
Many science questions within plan
• Kick off late spring, early summer
• Public scoping
  • Speaker series on science w/live audience (Oceans Live)
    • At Museum of Monterey
    • Will air on Your Sanctuary TV (AMP)
    • **ACTION:** Send DeVogelaere email if interested in speaking
  • Your Sanctuary TV (on YouTube)
    • New episode – “Mysteries of the Deep” (lost shipping container)
      • [https://www.youtube.com/watch?v=wrM95bt-IHk&feature=youtu.be](https://www.youtube.com/watch?v=wrM95bt-IHk&feature=youtu.be)
• Sanctuary Exploration Center
  • Updating, and new, exhibits
• Science and Research
  • Condition Report should be complete in May
  • Condition Report will kick off Management Plan Update
• Davidson Seamount mission in May 2015 (~10 days)
• Integrated Ecosystem Assessment (IEA): Ecosystem Health indicators

**SANCTUARY ADVISORY COUNCIL UPDATE**
Summary of October 24th and December 12th SAC meetings (Hunt/Lindholm)
• Oct 24th at Cambria (Hunt), highlights included:
  • Update on state MPAS (CDFW/OPC), including upcoming RFP from OPC for central coast MPA monitoring
  • Crab pot removal effort
  • Sanctuary site nomination process
  • Working Group updates
  • SAC statement on noise in the sanctuary
• Dec 12th at Monterey (Lindholm), heavy rain (low turn out), primarily administrative:
  • 2015 Calendar
  • SAC Charter Revision: we will continue as RAP
  • DeVogelaere gave informational talk on Marine Biodiversity Observatory Network (MBON)
  • Working Group updates
  • SAC member updates
  • Whale Entanglement Team (WET; 4-5 members) update
    • Transponder (6k) used overnight to track gear for multi-day missions
    • Perhaps research community can provide additional transponders
  • *Your Sanctuary* TV update
• Next SAC meeting February 20th; if RAP wants to voice issue to SAC, let James know
• For SAC meeting information, see: [http://montereybay.noaa.gov/sac/sacma.html](http://montereybay.noaa.gov/sac/sacma.html)

**PRESENTATIONS REQUESTED BY RAP**
Documenting the Impacts of Sea Star Wasting Syndrome (Karah Ammann/UCSC)
• Trend: Lesion to mush 4-8 weeks
• Sea Star Wasting Syndrome (SSWS) first showed up in WA during Spring 2013
• How does event differ from previous events?
Not associated with El Nino
- Continuing through winter
- Geographic extent much broader
- Previously only 2-3 spp; now 20 spp.

- Long-term Sea star surveys (PISCO, MARINe, BOEM)
  - Radius measured
  - Disease category assigned

- Citizen science data included
- Intertidal and subtidal affected (different spp being monitored)
- Tracking map available at: www.seastarwasting.org
- Abundance and size monitored
- Observed arm regrowth/healing
- New recruits and juveniles (<25 mm) at some sites
- Created juvenile sea star observation log
- Part of the story…new paper by Hewson et al. 2014: densovirus associated w/SSWS and mass mortality
  - Densovirus (water-borne) previously present in historic collections
  - Encounter rate of densovirus probably hasn’t changed over time
  - Likely a complex interaction; other stressors
  - Other organisms carry densovirus (e.g., urchins)
- What’s next?
  - Continue monitoring of sea stars and other affected echinoderms (carriers, no symptoms)
  - *Pisaster ochraceus* is basis of keystone species concept, SSWS has potential to dramatically alter rocky shore community
  - Impact of SSWS on community needs to be assessed
- Demonstrates monitoring data is important for non-question driven science

Monterey Bay Acoustics Group Update (DeVogelaere)
- Informal Group (lunch chats): John Ryan, Alison Stimpert, Jeremy Goldbogen, John Joseph, Brandon Southhall
- Currently: What has been happening with sound in Monterey Bay?
- MBARI: Internal proposal; hydrophone at end of MARS cable; technology to put hydrophones on AUVs
- NPS: Training how to interpret data sets
- CeNCOOS: Interested in managing in-coming data
- NPS/MBARI:
  - Coursework to deploy temporary hydrophones off R/V Fulmar
  - Opportunity to compare sounds from past (SOSUS array) to current work
- MLML: Recent marine mammal tagging
- MBNMS: NOAA Ship *Bell M. Shimada* at Davidson Seamount in May 2015, deploy hydrophone during marine mammal survey
- Sanctuary Exploration Center Exhibitry: live or canned sounds
- HMS (Goldbogen): MBNMS research permit to measure sound in MBNMS
• NOAA:
  o SAC letter on sound;
  o ONMS: Center of Excellence (Stellwagen; Hatch)
  o ONMS: sound reference stations (OCNMS, CINMS, MBNMS-proposed)
  o HQ request to review document “NOAA ocean sound strategy”
  o ACTION: Can the RAP comment? (re: big concepts)?

SANCTUARY RESEARCH UPDATE
How ONMS is thinking about research at regional and national levels (DeVogelaere)
• MBNMS placement in hierarchy: DOC/NOAA/NOS/ONMS/MBNMS
• 13 national marine sanctuaries, 1 marine national monument
• ONMS Conservation Science Program; current interests include:
  o Natural science and socioeconomics
  o Condition Reports: adding confidence levels and social science
  o Sanctuaries as sentinel sites
  o Communicating science thru video and social media
  o Noise and soundscapes
  o Marine Biodiversity Observatory Network (MBON)
  o Centers of Excellence to share staff expertise: climate, sound, UAS
  o Hollings Scholars (9 wks); Nancy Foster Scholars (300k)
• ONMS West Coast Region
  o Shared staff among sites, topic representatives
  o Pacific Fishery Management Council Essential Fish Habitat (EFH) proposals
  o Reduce whale/ship strikes
  o Introduced species regulations
  o Gulf of the Farallones and Cordell Bank expansions
  o Boat operations and life cycle plans
  o Meet w/NMFS and state agencies
  o Nomination process for new Sanctuaries (http://www.nominate.noaa.gov/)
• Summary
  o SIMoN tracks monitoring in individual habitats
  o Condition Reports use monitoring information and experts to assess health
  o IEA will pick standard parameters to measure
  o MBON will gather data and present it for near real time status and trend assessments

QUICK UPDATES ON NEW HIRES AT INSTITUTIONS; AND FACILITY UPDATES
• UCSC (Carr/Raimondi lab): SSWS latest focus
• HMS (Micheli): new hire Jeremy Goldbogen (Jan 2014); building(s) renovation; Kelp Forest Array continues w/FOCE testing
• MBARI (Haddock): 3 positions to be back-filled (Bellingham moved to WHOI; Etchemendy and CFO retiring); Bioacoustics position; semi-replacement for Brewer (chemical oceanography); R/V Western Flyer going to Gulf of California for 100 days; time-lapse sea star camera (tripod) returned from Antarctica; camera at power buoy; Francisco organizing MBON meeting next Thursday
• NMFS (Sogard): starting project (w/partners) to measure low oxgen in lab at NMFS;
• USGS (Storlazzi): 2 relatively new hires for seismic research; hazards research; ~monthly ripple-scour depression research; 30 yrs wave data (web download-able maps/data, http://axiomdatascience.com/maps/usgs/wave_model/); new organic geo-chemist (Pam Strasinski); Ryan Walter at CalPoly SLO
• SOLITON Ocean Services (Ramp): still in business; renewing RAP membership; verifying propagating models;
• Sanctuary Currents Symposium (Lindholm): call for research posters announced; plenary speakers (Haddock; Friewald; Casselle; Hanneman); Exhibitry; Ricketts = Raimondi

SUGGESTED FUTURE AGENDA ITEMS
• Hunt: scoping management plan and relation to Condition Report
• James: new MBA hire Brandon Kelly (~replaced Chris Harrold)
• DeVogelaere: report out on acoustic review; speaker series
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)

- 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)

- 2nd update on Sea Star Wasting Syndrome

- SAC Charter revision

- Acoustic and seismic surveys
  - Continuation of SAC resolution to ban seismic air gun surveys
  - Seismic testing off Connecticut (per Storlazzi)
  - Monterey Bay acoustics group headed by Jeremy Goldbogen (HMS), John Ryan (MBARI), John Joseph (NPS); grant proposal; team of scientists to address issue (per DeVogelaere)
  - Center of Excellence for acoustics in development at GFNMS, Leila Hatch (SBNMS) involved (per DeVogelaere)

2015 RAP Meeting Schedule and Locations

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<td>Lindholm</td>
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<tr>
<td>March 13</td>
<td>Wasson</td>
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