

CeNCOOS HABMAP Meeting Notes  
August 18, 2008  
MBARI Pacific Forum

- I. Meredith Howard presentation notes and discussion: April HABMAP Workshop
- II. Raphe Kudela presentation
- III. Short CeNCOOS discussion
- IV. SCCOOS HABMAP effort by Dave Caron
- V. Wrap-UP

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**I. First presentation: Meredith Howard**

Topic: State-wide April HABMAP workshop results

HABMAP Workshop Goals:

- 1) Assess feasibility of creating a network of HABs for an alert network.

HABMAP Workshop Outcomes:

- 1) Elected a Steering Committee
- 2) SCCWRP to facility HABMAP
- 3) Established a HABMAP listserv. Receiving lots of positive feedback.
- 4) Established an intercalibration committee. Now moving from CA to National. Sponsored by ACT, CICORE and Florida FWC.

Gregg Langlois of the California Department of Public Health is starting to make a Google Earth-based map of who is doing what and where for HAB research and monitoring.

Role of HABMAP: bring interdisciplinary groups together to make data available in different formats.

*Discussion:*

Mellissa Miller: In CeNCOOS, OSPR and DFG could use something like an email alert list or program to receive good, consistent data. So far, the link between biotoxins and otter deaths is under-recognized.

Chris Scholin: Make sure the HAB community works with the consultant who will receive the Conservancy/OPC grant to assess user needs for ocean observing systems.

Funding:

- Need to be sure to highlight sustained HAB research and monitoring as a priority in the OPC's process of selecting CA ocean priorities.
- In any given region, there will be a call for MERHAB, ECOHAB funding annually. NOAA is blurring the line of research and monitoring. Need to do the same here.

- Need to look at sustaining a system rather than just a pilot-level project.
- M. Miller suggestion: NIH grants focused on Oceans and Human Health

## **II. Raphe Kudela Presentation**

- California does have a program which is led by Gregg L. It is a comprehensive program run by the state BUT there is very little overlap between where CeNCOOS is monitoring and where the state is monitoring.
- We have multiple programs and are measuring a long list of parameters. If we try to put them together with the State, we realize we actually don't have much data to share.
- We don't even have enough data in Monterey Bay to predict and follow toxins. This is surprising since we've been monitoring DA since it showed up in the Bay.
- Where we have nutrients, don't have cells or chlorophyll...etc. Not measuring core things in same place at same time. Need coordination here, not necessarily new data.
- There is a lot of data, just very little overlap.

### **OPC statement:**

OPC staff will work with resource managers and researchers to develop a pilot HAB alert system that will provide forecasts and facilitate information exchange between HAB researchers, managers, and the public to reduce response time and the risks to human health.

This pilot program can be expanded region-wide as called for in the West Coast Governors' Agreement on Ocean Health. Better understanding of the cause and spread of HABs may provide the basis for future policy actions related to coastal water quality and reductions in HABs

### *Discussion:*

- Can we add some cell and toxin measurements to where we have MPA monitoring with CeNCOOS?
- There is a whole freshwater side that needs to be addressed in HABMAP.
- Sanctuary's Central Coast Water Quality Synthesis, Assessment and Management (SAM) program is interested in contributing data from nearshore and onshore.
- John Largier (Bodega Marine Lab) is working on a project that links the off and onshore.
- M. Miller. Land-sea connection is crucial and seeing many links. Benefits: 1) ecosystem basis is sexy 2) already connected to groups with power to do mitigation.  
Receiving funds from state water board.
- Chris Scholin: Idea to co-locate sensors on piers. He has a proposal to do so in the coming year on Newport pier, Morro Bay, and Monterey Bay.
- SCCOOS is currently operating a pier-based system. The hope is that once it is brought together, it will stay. However, the pier based monitoring system is short.

### III. CeNCOOS

#### *Location Options:*

- Currently, CeNCOOS has pier based sites including CTD, trans, fluorometer, net site with surface winds, pressure, temperature. Light on chemistry and biology. Hardly species ID or nutrients.
  - San Louis Obispo.
    - Sufficient technology for sampling 4-5 years. Ian Robbins/Moline
  - Monterey Bay
  - San Francisco
  - Humboldt
  - Tiburon
    - Ex. all abiotic parameters collected. Require funding to have someone to id species or run toxins. Lots of grad students and techs at RTC. Seem like a good spot for Gregg to have a site. It was though that Gregg may be amenable to adding a site if volunteers are dependable. RTC could get someone to collect samples, fix them and send them to Gregg.

#### Standard packages:

- NERRs: A NERR program can purchase a standard package for monitoring estuaries. Tiburon switching to this package too. This could serve as a great land-sea bridge.
- Global Ocean Observing System (GOOS) pilot project: CLOROGEN (??) proposing that everyone wants to use satellite data, can't trust it, so for 3<sup>rd</sup> world to deploy to feed into global database. Want to turn into HAB monitoring program. Discussed MB and South Africa instrumentation at recent meeting (Raphe Kudela) Same package allows for data comparison.

Trying to find time to communicate and get data in a website is the most difficult. We are missing funds to deal with data and a web presence. It is very difficult for sampling to be all over the place in various datasets.

Gregg's L. program: Data is difficult to get. He would prefer to be the recipient of information rather than coordinate it.

#### *Suggestions:*

- Perhaps CeNCOOS can examine technologies to "purchase" for HAB network outside of priority locations.
- C. Scholin: have a place to test technologies, make synoptic.
  - Ex. EPA-mandated coliform detection could also serve for HABs.
- R. Kudela: MBARI or CALPOLY can design the 'package'
- M. Miller: Engage with state and regional water boards

#### IV. SCCOOS: What is Happening with HABs. By Dave Caron

- SCCOOS is maintaining a rudimentary HAB program with cuts to NOAA budget.
- Funding is basically promoting SCCOOS coordination of HAB monitoring
- SCCOOS group. All run pier stations.
  - Mark Moline (CalPOLY)
  - Brzezinski and Chang (UCSB)
  - Shipe (UCLA)
  - Jones and Caron (USC)
  - McGowan and Carter (UCSD)
- SCCOOS goals
  - Bloom monitoring: shoreline surveillance of HABs and toxins. Focus on DA
  - Bloom tracking : space and time. . glider obs; buoy reconnaissance
  - “Event Response” sampling (regional; limited)
  - Regional Ocean Characterization
  - Product Development and Display – web based dissemination
- SCCOOS piers
  - CalPOLY (Avila Beach)
  - Steams Wharf (UCSB)
  - Santa Monica Pier
  - Newport Beach Pier
  - Scripps Pier
- SCCOOS timeline
  - Weekly sampling from dock. One year. July 08 to end of June 09
- FY08 Planned SCCOOS HAB Activities
  - HAB shoreline and nutrient surveillance along Bight
  - Continued operation of nearshore egg and larval surveys that complement the offshore CalCOFI survey
  - Development of neashore climatologies and climate relevant indices relevant to ecosystem assessment for fisheries, IEAs, and MPA development
  - Continued operations and maintenance of the SCCOOS 1km resolution, realtime ocean nowcase/forecast system
- Routine Measurements
  - Specimens for HAB taxonomy. 9 species.
  - DA concentrations in plankton samples
  - Primary inorganic nutrients: nitrate, nitrite, phosphate, silicate
  - Extracted chlorophyll concentration in plankton samples
  - Temperature, salinity
- Event Response Measurements
  - Glider studies. SCCOOS and MERHAB Webb SLOCUM gliders. T, S, chlorophyll fluorescence, DOM, phcoerythin, optical backscatter at three wavelengths.
  - Limited ancillary ship work to characterize event of a HAB event

- Problems
  - Events are very nearshore in the southern region, so sampling offshore can 'miss' the bloom.
  - Can't map chlorophyll (good for detecting blooms, but not necessarily harmful ones) to get DA. Can pseudo-nit track toxins.
- Potential Interactions, Collaborations and Contributions
  - MERHAB: RADPALERT (usc,ucla,scwrrp)
  - West Basin Water Recycling (usc, caron, jones)
  - King Harbor, Redondo Beach, Marine Del Rey, (usc, caron, sukhatme). Realtime. Available to OOS groups.
  - CICORE (SCMI; Peiper)
  - Bight 08
    - Once every 5 years led by SCCWRP. In-kind \$\$ from water districts. Run a bight wide study. Focus HABs and nutrient sources.

## V. Afternoon Discussion/Wrap-Up

- D. Caron: Utilize blackberries; phones for real-time monitoring in field kits.
- R. Kudela: Develop web-based HAB sites indicating what we have in the water
- Create a snapshot of the phytoplankton community at each site to identify what conditions existed preceding events. It is helpful to know what is there at each site. Should provide an online image of microscope sample.
- M. Silver: Put photos from dissecting scope with digital camera online for HAB science. Provide: digital photo of net tow, coordinates, size of organisms.
- M. Miller: Digital microscope on-site may be made available for network.

CeNCOOS should sample the same parameter measurements as SCCOOS:

1. *Pseudo-nitzschia* spp.
2. *Alexandrium* sp.
3. *Cochlodinium* spp.
4. *Lingulodinium polyedra*
5. *Prorocentrum* spp.
6. *Dinophysis* spp.
7. *Heterosigma* spp.
8. *Akashiwo sanguineum*
9. *Phaeocystis* sp.

Possible ways for CeNCOOS and/or HABMAP to move forward:

- Funds \$\$ to design standardized above water sampling package
- A mechanism to bring information together. What OPC might support. Ex. Wiki webpage.
- Creation of maps for specific HAB users: animals, algae distribution, etc.

- Group purchases for instruments for better prices.
- Digital microscope. Locate at various institutions.

Upcoming Workshop:

NOAA HAB West Coast Workshop. January. Portland.