

August 27, 2019 Meeting Notes

Agenda

1. Welcome back, recap/plans with Monique
 - a. Data extraction updates for papers, extend analysis
 - b. There are new 16,17
 - c. New data in BOG: fixed data entry issue (more recent)
 - d. FCM, think we got them
 - e. Update all three to supply information for the paper
 - f. Two points
 - i. 2nd Mode
 - ii. Link with upwelling
 - g. Will start to write and iterate with data
 - h. EPOC conference presentation (Sept 29 - October 2)
2. Data system update
3. Wrap up report
 - a. Earlier white paper
 - i. Goal
 1. Integrate 3 time series
 2. Reduce costs
 3. Increase temporal resolution using autonomous systems
 4. Export technology
 - b. Final Report outline
 - i. What did we define as the vision of the project?
 1. Infrastructure components:
 - a. Complete development of midwater and benthic imaging AUV (s) –optical imaging (2015, acoustic imaging (2016)
 - b. Complete development of 300m -LRAUV water sampling system – Fall 2014
 - c. Develop existing LRAUV with docking capabilities for both data and power exchange
 - d. Develop 4000m-LRAUV to conduct full depth optical and acoustic monitoring at both stations
 - e. Develop 4000m-LRAUV with docking capabilities for both data and power exchanges
 - f. Install a mooring of two sediment traps and time-lapse camera at Sta. MB
 - g. Develop mooring based instrumentation to provide continuous monitoring of water column (low-cost cameras, RDI acoustics, SES, Rover) for LRAUV data and power exchanges through docking stations
 - h. Install a 500 m depth sediment trap w/ extended mooring at Sta. M
 - i. Establish data management and acquisition system for all MBARI time-series data.
 - j. Develop VARS routines for processing AUV images from midwater and benthic transects
 - k. Export time-series instrumentation and data management system
 2. Time-series monitoring implementation:

- a. Begin monitoring of upper ocean parameters using LRAUV at Sta. MB and Sta. M and processing data.
 - b. Begin monitoring of physical and chemical parameters as well as the distribution, abundance and size of pelagic fauna using optical and acoustic imaging at 100m intervals down to 1000 m depth and processing data at both stations.
 - c. Begin oblique AUV faunal transects of water column between 1000 m and the bottom at both stations.
 - d. Begin monitoring of the physical and chemical parameters as well as the distribution, abundance and size of benthic boundary layer fauna using optical and acoustic imaging from the seafloor to 50 m above bottom at both stations.
 - e. Continue annual servicing of moorings and processing of sediment trap and time-lapse images from both stations.
- ii. What did we do?
- iii. What are the results?
- iv. What are the gaps to achieve the full vision
 - 1. Engineering
 - 2. Science

Notes:

- 1. In order to accurately quantify an organisms carbon content, you would need a platform like Mesobot that could follow an organism for a very long period of time to capture its life cycle
- 2. Organism size: we can estimate using averages
- 3. Could we do something in the future to measure size using video?
 - a. Probably not, but would need stereo cameras
 - b. 3D imaging systems
 - c. What about VR? Would the content of the VR camera be a viable option?
- 4. We need to talk about the advances we made in the project and how we export them
 - a. I2MAP
 - b. Video classification: 6 keys species and video TAG work
- 5. What were we missing or what is necessary?
 - a. We need one/two locations fully instrumented. We proposed and did not get this
 - b. We need to describe how we would do this if we had everything in one location
- 6. We need a lessons learned section
- 7. What about eDNA?
- 8. Francisco brought up the possibility of looking at the joint cruise he did with Bruce along line 67, which Monique thought would be interesting.