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News: Pacific Coast Zooplankton Working Group: Data and Information Infrastructure

- Karen Baker (PAL/CCE)

A Pacific Coast Ocean Observing System (PACOOS; <http://pacoos.org>) zooplankton workshop was held 9-10 June 2009 at Scripps Institution of Oceanography at University of California, San Diego. PACOOS is a large marine ecosystem (LME) program for the California Current so attendees represented ongoing oceanographic sampling programs reaching geographically from Baja, Mexico to Canada. Objectives included considering scientific interests, policy needs and data arrangements for formalizing a zooplankton community as well as developing dialogue, vocabulary and agreements regarding data sampling, analysis, and sharing among data providers. In addition, benefits, roles and responsibilities of data management participation were considered. The workshop effort may be considered an exploration of and a prototype for how to support collaborative biological group efforts and their data. One goal of the meeting was the identification and formalization of a zooplankton community comprised of both scientists and data management participants. Zooplankton researchers from along the Pacific coast of the U.S. have a history of informal collaboration; this meeting served as a forum for considering and reaching agreement on the potential benefits of formalizing some aspects of the collaboration. A community goal is to coordinate development of products through knowledge sharing and management of zooplankton data. Participants from both the Integrated Ocean Observing System program (IOOS) and from the National Coastal Development Data Center (NCDDC) expressed interest in coordinating with the workshop biological data efforts.

Co-conveners of the workshop came from three distinct but interrelated scientific arenas: Jonathan Phinney, a PACOOS Project Manager at Southwest Fisheries Center; Karen Baker, an LTER Information Manager; and Sharon Mesick, an

Ecosystem Program Manager from NCDDC. Members of the Ocean Informatics team (James Conners, Mason Kortz, and Lynn Yarmey) supported the working groups as rapporteurs. The workshop focus was ‘data and information infrastructure’ with particular attention to the standards-making process, joint activities, and community-building. Each co-convenor paired with an Ocean Informatics team member to lead discussion on one of three questions: (1) Community issues: infrastructure requirements for a PACOOS network, e.g. what are zooplankton standards? (2) Data policy issues: zooplankton information sharing goals, e.g. what are data sharing issues and responsibilities? (3) Data documentation issues: infrastructure methods, models and the development process, e.g. what are representative data types, characteristics, and metadata?

Three sub-groups representing a mix of participants – zooplankton biologists, data managers, and national interests - and of geographies were formed for working group discussions. Throughout the workshop combination of presentations, demonstrations, and working groups, an emphasis was placed upon the concept of ‘horizontal integration’ needed within and across communities as well as internal to the National Ocean and Atmospheric Administration (NOAA) in alignment with their broadening interest in biological data work.

Biological data are complex and difficult to convert into well-described data objects given today’s nascent standards that have been developed largely for physical data. A project funded to prototype creation of a queryable application across two zooplankton project datasets at different institutions was reported (<http://oceaninformatics.ucsd.edu/zooplankton/>) as a case study carried out by researchers responsible for data collection (from sampling plan together with sample collection and analysis) in collaboration with the Ocean Informatics team at SIO. Throughout the working group, care was taken with management of expectations and joint understandings in terms of what is involved in negotiating the boundary between large-scale and local-scale situated solutions. Focus was on recognizing the multiple types and scales of data work at differing levels requiring both mediation work and changes in data practices. Bringing together zooplankton researchers and information managers as partners from different contexts and scales is critical for collaborative data efforts and information infrastructure-building as well as for further development of our limited understanding of data differences. The workshop itself was an example of what can be accomplished with scientists, data managers, and program managers working together.