



Summary

Meeting of the U.S. National Committee for the Census of Marine Life September 22-24, 2008

**Monterey Bay Aquarium Research Institute
7700 Sandholt Road
Moss Landing, CA 95039**

The U.S. National Committee (USNC) of the Census of Marine Life (CoML) held its biannual meeting at the Monterey Bay Aquarium Research Institute (MBARI) in Moss Landing, CA on September 22-23, 2008. The meeting was lead by Chair Dr. Andrew Rosenberg of the University of New Hampshire and Vice-Chair Dr. Wes Tunnell of the Harte Research Institute of Texas A&M University.

The meeting's major goals were to develop potential products, identify opportunities to better disseminate the upcoming results of the entire CoML program to a variety of audiences (agency/fed, Capitol Hill, universities, general public, etc.) within the U.S., and ensure the progress and direction of OBIS-USA towards a functional, robust system providing services to decision makers and managers. Among other key topics of discussion were the future opportunities for greater CoML-NOAA interactions, especially the NOAA Science Advisory Board, determining a USNC strategy for the upcoming transition to a new administration, and determining appropriate action regarding the potential ethical and regulatory implications of CoML research, particularly in regards to new technologies enhanced or developed through CoML projects. Special presentations were made by Margot Bohan of NOAA's Office of Ocean Exploration and Research, who discussed NOAA relevant activities and Jesse Ausubel, Alfred P. Sloan Foundation, who initiated discussion on the ethical, legal and regulatory implications of CoML. Dr. Steve Haddock, MBARI, presented on his work with the Census of Marine Zooplankton (CMarZ) project and his research on deep-sea gelatinous zooplankton and assembling phylogenies for organisms such as ctenophores and siphonophores. Additional guests included Dr. Marcia McNutt (Monterey Bay Aquarium Research Institute) who opened the meeting, Dr. David Fluharty (University of Washington/NOAA's Science Advisory Board (SAB)), Dr. Robert Guralnick (University of Colorado), Philip Goldstein (University of Colorado), and Dr. Lew Incze (University of Southern Maine).

CoML Program Updates: Vera Alexander presented on recent changes in the structure of the Scientific Steering Committee (SSC). Fred Grassle stepped down as Chair of the SSC and Ian Poiner (Australian Institute of Marine Science) assumed the roll. Fred, who will remain active in the SSC, was honored in China during the May 2008 SSC meeting and members of the USNC agreed that they should also recognize or honor Fred for his vision and hard work that resulted in the Census of Marine Life. Other SSC changes included the addition of Myriam Sibuet (CoMarge) as the SSC Co-Vice Chair with Victor Gallardo and the addition of six new ex-officio members including Dan Costa ("Beyond 2010" Science Council), Pat Halpin (Mapping &

Visualization), Sara Hickox (Education & Outreach), Enric Sala (National Geographic), Paul Snelgrove (Synthesis) and Edward Vanden Berghe (iOBIS). Vera noted that International OBIS is preparing a draft proposal with long term support made possible by the creation of a joint office with the Intergovernmental Oceanographic Commission (IOC). The next SSC meeting will take place November 15-17 in Valencia, Spain in conjunction with the World Conference on Marine Biodiversity. The “Beyond 2010” Science Council will meet for the first time in Valencia as well.

Michael Feldman presented on the status of the USNC Code of Conduct for Scientific Collections and the newly created Code evaluation form. He noted that the Department of State has shown interest in the Code and he has been engaged in conversation with members of the Office of Ocean Affairs. The USNC members agreed the next logical step for the Code was determining how best to evaluate it and its potential impact. The Code will be distributed to the CoML community again requesting they now distribute the Code more widely, enabling the USNC to gain global responses on its usefulness across academia and agencies. Michael will discuss the Code on an upcoming SSC Executive Committee conference call, asking the SSC to stress the use of the Code with CoML PI's, as well as suggest that it be added to a future Highlights Report or press release. Some USNC members agreed to circulate the Code and evaluation form to their universities' Internal Review Boards (IRBs) to determine if the Code interacts well with existing rules or if it could be useful as a supplement (these questions will also be added to the evaluation form). As the current government has shown interest in identifying and designating additional marine monuments, Sylvia Earle and J. Leong agreed to explore the use of the Code as a requirement for attaining permits for research in future monuments. David Fluharty commented that the NOAA SAB-CoML sub-committee should discuss the Code of Conduct, allowing SAB members to review the document, and determine if it should be presented to the NOAA SAB as a potential document for NOAA's collections policy. All USNC members will continue to explore additional opportunities for distribution of the Code and evaluation form as the document will become more powerful as more people adopt it or agree to its importance and effectiveness.

David Fluharty, NOAA SAB member, gave a brief update on the SAB meetings to which all of NOAA leadership attends. The next SAB meeting is scheduled for 15-16 October 2008. The SAB is interested in receiving scientific advice, therefore the USNC was encouraged to raise issues at the meeting and develop recommendations that he could take back to the board. He described a few NOAA SAB working groups, including the Oceans and Human Health working group that is currently looking for people who are knowledgeable on the topic and understand how NOAA operates so they can decide if NOAA is involved in the right type of science, and if not, make strong recommendations. An Ecosystem Sciences and Management working group is vetting nominations for the standing permanent committee to work with NOAA on implementing an ecosystem approach across the entire agency. The working group wants people outside the committee to monitor their decisions before they are solidified into policy. A Social Science working group is also determining ways in which NOAA can more effectively use social and economic information.

Transition to a New Administration: After a legislative update from Nina Young of Ocean Leadership, the USNC discussed how they could best participate in the ongoing activities surrounding the transition to a new administration. The committee agreed that the creation of a CoML white paper would be ineffective given the number of other white papers the new administration will receive. It was decided that the USNC would use existing relationships such as the NOAA SAB, and Ocean Leadership to add a clear biological/biodiversity messaging in transition documents. Members were informed that Ocean Leadership is soliciting nominations for key political positions in the new administration. A slate of names will be provided to transition teams with the permission of the nominees. USNC members were urged to nominate

ocean community members on the Ocean Leadership website at <http://www.oceanleadership.org/policy/AdministrationTransition>.

CoML Synthesis: Michael Feldman gave a brief update on the global CoML synthesis structure that was put in place by the SSC and Synthesis team, describing some of the numerous products being developed. Many USNC members expressed confusion over the growing list of products and concern for the emerging challenge of organizing all the publications, media activities and products before the CoML community has come to their final conclusions. The USNC was reminded that they have two primary goals in terms of synthesis: disseminating the findings of CoML and their contribution to the NRIC Synthesis Volume. The NRIC volume will offer a regional perspective on the current state of biodiversity knowledge and how CoML has attributed to that knowledge in each region. It will focus on knowledge outside of CoML to reduce any redundancy with the CoML project synthesis efforts. The NRIC volume will be published in PLOS-ONE with a science audience and a USNC Synthesis Writing Team has been established to ensure this requirement is met. USNC members were asked to determine an audience, vehicle, or venue in which they could relate the CoML findings and results, all tasks to be completed by October 2010. Michael noted the next Sloan proposal should encompass the products that U.S. members want to complete and the subsequent funds needed to accomplish them. The list of products developed from this discussion can be found in the meeting actions document.

USNC Presentation Opportunities to Highlight CoML:

- **World Conference on Marine Biodiversity (Nov 11-15 2008, Valencia, Spain)**
A number of CoML projects, including HMAP and the deep-sea projects, will be attending the WCMB and the SSC and the “Beyond 2010” Science Council will be meeting in conjunction with the conference.
- **NCSE Biodiversity in a Rapidly Changing World (Dec 8-10, 2008, Washington, DC)**
The USNC will be represented at the annual conference as a proposal for a break out session was accepted. The session entitled “Applying Marine Biodiversity Toward Better Ecosystem Management into the Next Decade” will occur on December 8th from 1:30 – 5:00 pm. The session will focus on exploring themes and goals for marine biodiversity research in the U.S., more specifically, how to apply this research to best support policy and management decisions during the future administration.
- **AAAS (Feb 12-16, 2009, Chicago, IL)**
The session entitled ‘Making Ocean Life Count: Applying Biodiversity to Marine Policy’ will focus on policy from the standpoint of climate change and fisheries management. It was suggested that a press event with the USNC AAAS symposia is crucial and needs to be secured as soon as possible. COMPASS, CoML E&O and Ocean Leadership External Affairs will be contacted for assistance in crafting a strong message for a press opportunity.
- **International Marine Conservation Congress (May 20-24, 2009, Washington, DC)**
The IMCC engages natural and social scientists, managers, policy-makers, and the public with the goal of developing deliverables such as policy briefs and blue ribbon position papers that can be use to drive policy change and implementation. One of the major themes is ecosystem based management, with global cross cutting themes of conservation, marine protected areas, fisheries and education and outreach. The U.S. Program Office will determine if proposals as still being accepted for presentations.
- **International Congress of Maritime Museums (Fall, 2009, Annapolis, MD)**
Daniel Finamore noted at the March 2008 USNC meeting that he hoped to secure CoML representation for the September 2009 International Congress of Maritime Museums that will meet in Annapolis, MD as well as other various Chesapeake Bay locations. The meeting participants will be maritime museum staff, mostly directors, from around the world. Jeff

Bolster of the HMAP project (at the University of New Hampshire) has agreed to attend and will highlight the HMAP projects and the prospect of developing future environmental history projects using maritime museum resources and using their results as the basis of future exhibitions.

- **Other Meetings**

Other meetings that were suggested include the National Marine Educator Association in Pacific Grove, CA in June 2009, Coastal Zone '09 in Boston, MA (one theme will be Conservation in the Face of Change) and the Pacific Congress on Marine Science and Technology (PACON International) in Hawaii in 2010. The Pacific Ocean Shelf Tracking (POST) project will be contacted to determine if they are involved with the Puget Sound Georgia Basin Ecosystem Conference in Seattle, WA in February 2009. Clarence Pautzke and Vera Alexander will explore the possibility of presenting at the 2010 PICES meeting in Seattle as well as look into a session at the Alaska Marine Science Symposium in January 2010. It was also suggested that USNC members review the sessions for the May 2009 HMAP Oceans Past 2 conference in Vancouver to determine if they are interested in attending. Jesse Ausubel asked the USNC members to consider hosting a panel discussion(s) in conjunction with the 2010 U.S. openings of the Galette film 'Oceans'. The premiers will take place in all major cities and he expects requests for hosts from the U.S. CoML community to come in the next few months.

NOAA and CoML: Andy Rosenberg gave a brief update on the NOAA SAB-CoML Subcommittee (consisting of 4 NOAA SAB and 4 CoML members) that was created as an outcome of the USNC meeting and his presentation to the SAB in March 2008. The working group was charged with relating and applying CoML projects and marine biodiversity efforts to NOAA mission requirements. It is believed that this group could help determine NOAA's role in shaping a CoML follow-on program.

David Fluharty noted that the SAB agreed that Andy's presentation in March was helpful and it ultimately convinced the SAB that they should take action with the creation of the joint subcommittee. He was unsure if the conference calls held by the group were the most effective form of communication and noted he would present the idea of face to face meetings or work sessions to the SAB at their 15-16 October meeting. In initial conversations the SAB had highlighted the CoML Pacific Ocean Shelf Tracking (POST) and Tagging of Pacific Predators (TOPP) projects as those with new technologies and approaches that NOAA was interested in adding to their missions. The Integrated Ocean Observing System (IOOS), ongoing exploration and integrated ecosystem assessments (IEAs) were also mentioned by USNC members as possible areas in which CoML could assist NOAA, and other agencies. The USNC workshop in January addressed ensuring biological data, including OBIS data, is incorporated into IOOS, and although CoML does not prepare IEAs, it would serve as a useful resource.

The meeting participants discussed a broad strategy that should be undertaken with the joint CoML-NOAA SAB subcommittee regarding ensuring marine biology, and biodiversity in particular, are recognized as a mission in NOAA and other agencies. Many mentioned it would also be extremely beneficial to get recognition that OBIS can be part of IOOS and get a clear multi-agency commitment to building IOOS. Strategies include the creation of an interagency white paper, securing a congressional hearing, or submitting an Op-Ed in the *Washington Post*, all aiming to get marine biology and biodiversity raised in the agency and federal priorities. A National Academies of Science (NAS) study on how marine biodiversity research is used in decision making was also suggested. The NAS study could be an opportunity to have a report in place for 2010 that outlines the key questions relating our current understanding of how biodiversity is related to ecosystem function and what tools are needed make such links, offering

direction to Congress. It could also help get CoML defined as an integrative program. Andy Rosenberg will contact Shirley Pomponi and Sue Roberts of the Ocean Studies Board as to their interest in pursuing a study. David Fluharty noted that the SAB, particularly the Ecosystem Goal Team, may want to take part in the NAS study. Jesse Ausubel stated that if the CoML-NOAA SAB subcommittee proceeds along these lines and OSB is receptive to a study, the Sloan Foundation may consider providing some funds, which would assist in obtaining funds from agencies. The short term strategy would include discussions with the NOAA SAB, the Op-Ed in the *Washington Post* that highlights the USNC *Frontiers of Biology* publication, with a longer term goal of the NAS study.

Ethical, Legal & Regulatory Implications of CoML: Jesse Ausubel noted he was happy to see the USNC focusing on policy development and responsible scientific collecting and hoped that USNC would begin a discussion in the U.S. on the responsibilities CoML, and scientists in general, acquire with new technology, power and knowledge. Sharing knowledge, such as real-time tracking data, can allow for enhanced and improved management or fall into the wrong hands and result in activities such as destructive fishing. Some technologies have major implications for national security. The Sloan Foundation thought that perhaps the USNC could embrace this topic and consider the responsibilities that are attained with the use of new and emerging tools. It was suggested that the 2009 USNC workshop could encompass this topic and cover the policy application of what CoML has produced, looking at the research and resulting knowledge from an ethical viewpoint. CoML case studies would highlight projects that have shown their application of data solves problems, has positive results on a societal problem, and can be used to influence the regulatory implications.

OBIS-USA: Rob Guralnick and Philip Goldstein introduced themselves as the newest members of the OBIS-USA team, both of whom came on in August 2008. Mark Fornwall provided an update of the achievements and successes that occurred since the last USNC meeting, including the new advisory group (with members involved in NOAA IOOS, a CoML project, metadata standards, economics and International OBIS) which was established in May 2008 and has been conducting regular conference calls. OBIS-USA has received \$365K from USGS/NBII to keep OBIS-USA in operation and working for at least the next year. Of the 10 key datasets/data collections that were agreed upon at the USNC biological observing workshop in January 2008, three (MARMAP, SEAMAP and CalCOFI) were deemed as priorities in which to focus on in the coming months. Other datasets, including NOAA Hawaii National Monument and sanctuaries data, are in queue and the team is finding providers that are willing to work with them. Philip gave a demonstration of his OBIS-USA development site and discussed the capabilities and functions he hopes to have established six months and one year from now, including tools for analysis, mapping interfaces, and the addition of environmental data. It was agreed that OBIS-USA needs to be absolutely specific on how it describes its processes, most notably whether it uses a data service or data holder model. Data providers may not agree to OBIS-USA holding a copy of their data for fear that it will be altered. It was also strongly stressed that every step be taken to ensure that the data providers are shown as the original providers in citations. Data aggregators can be cited, but it is imperative that the original citation information is not stripped off as data is aggregated. Federal agencies will pull their data if they are not properly cited. Mark noted that he and the advisory group are currently working on an OBIS-USA Business Plan, as was requested of him at the last USNC meeting, which will be circulated soon for USNC member comment.

2009 USNC Workshop: The USNC discussed the topic for the next major workshop to take place at the end of 2009, noting that the application to policy issue agreed upon at the last meeting could effectively be linked to the ethical, legal and regulatory implications that were

discussed by Jesse Ausubel the first day of this meeting. The workshop questions would have to be crafted carefully based on the audience. Margot Bohan, Judith Connor, Penny Dalton, Margaret Spring and Jo-Ann Leong agreed to be members of the Workshop Steering Committee. They will hold a conference call to develop the central questions for the workshop topic and the target audience, if it is determined that a workshop is the best option. The ideas will be circulated to the USNC via email for their input and approval.

Education and Outreach / Technology: Pat Halpin presented on his current activities regarding mapping and visualization (M&V), including the funding he has received to work on M&V across CoML to help with synthesis products, ensuring they have a cohesive look, and the delivery of those products to the public. He noted most projects are interested in creating high end animation videos (either project by project or possibly thematic with a few projects working together on one animation) which is not the M&V team's expertise and will require hiring outside companies to produce them. Most projects and NRICs have limited capacity and therefore want products developed for them. The more 'technical' members of CoML projects and NRICs will participate in a M&V Workshop at Duke University on 23-25 October 2008 where they will gain some much needed hands on experience in the creation of maps and images.

Melissa Brodeur gave a brief update on the U.S. CoML education initiatives, notably the U.S. Program Office's collaboration with the National Ocean Sciences Bowl (NOSB) as their 2009 challenge theme is biodiversity. Members of CoML projects, primarily project coordinators and E&O liaisons, were contacted and encouraged to supply team challenge questions highlighting CoML research and biodiversity. Nearly twenty team challenge questions and twenty buzzer questions were received. CoML will be also be highlighted when students from Niceville High School in Florida, which participates with NaGISA, present on their experiences with NaGISA. NOSB's 2009 Finals will take place in Washington, D.C. on 25-27 April and all USNC members were encouraged to participate. The U.S. Program Office will also collaborate with NOSB in a national video competition encouraging students to produce a short 60-second Public Service Announcement that promotes the importance of the ocean, marine ecosystems and biodiversity, specifically illustrating at least one of the seven *Ocean Literacy Essential Principles*. Entries will be collected and judged at Ocean Leadership and winners have their video posted on the CoML YouTube site.

USNC Membership and Charter: No membership terms were up for renewal as all members agreed during the meeting to continue their memberships until 2010.

Future USNC meetings: The USNC will next meet in March 2009 in Washington, D.C. Jo-Ann Leong agreed to possibly hosting the Fall 2009 meeting in Hawaii; the U.S. Program Office will look into the feasibility of a meeting in Hawaii. Seattle, WA was suggested as a back up for the Fall 2009 meeting. Jesse Ausubel noted that the USNC should choose a symbolic meeting location for the Fall 2010 meeting. Please note: The dates for the October 2010 celebratory events in London are 4-7 October 2010. Please mark these dates on your calendars!