



1201 New York Ave, NW Fourth Floor
Washington D.C. 20005 USA

**Upcoming
Events/Meetings:**

Biological Ocean
Observing Workshop
14-15 January
Washington D.C.

USNC Spring Meeting
March 10-11
Washington D.C.

NOAA Science
Advisory Board
March 12-13
Washington D.C.

2008 Ocean
Sciences Meeting
March 2-7
Orlando, FL

Inside this issue:

CoML Hosts All Program Meeting	1
NRIC News from All Program Meeting	2
FAQs	2
CoML Visualizations Take Off	3
Education Corner	4
CORE-JOI Merger	4
USNC Fall Meeting	5
Budget Update	5
Census: One of the 6 Most Important	5
Seven Questions with Jesse Ausubel	6
YouTube Video of the Quarter	8

CoML Hosts All Program Meeting in New Zealand

During the week of November 10, 2007, the University of Auckland in New Zealand became the temporary home of the Census of Marine Life. Since the first time since Frankfurt, Germany in 2005, over 200 Census scientists, project managers, education and outreach specialists and guests gathered from around the world for the 3rd All Program Meeting.



The meeting was jointly hosted by The University of Auckland and New Zealand's National Institute of Water & Atmospheric Research (NIWA). The meeting focused on assessing the progress made by the Census so far and discussing plans for synthesis in 2010. This began with an informative and lively Education and Outreach Workshop, led by Sara Hickox, of the University of Rhode Island. Small groups spent time discussing unifying themes of the Census and the "Big Messages" that describe these themes. These discussions continued through the Public Symposium and All Program Meeting, where a new Synthesis Group was established to oversee and provide guidance to the synthesis process for the CoML. The new group will specifically lead the development of three primary products – a single integrative, cross-cutting book and two volumes of contributed chapters. Paul Snelgrove, of the Memorial University of Newfoundland, will chair the Synthesis Group.

A dinner, hosted by OBIS Chair and University of Auckland Faculty member, Mark Costello, took place on Thursday evening. The dinner featured typical New Zealand food and wine, along with a secondary-school aged group performing traditional Maori dance. Friday's events were capped off by a reception at the Auckland Maritime Museum, where attendees were fortunate to view a 20 minute preview of the still-in-production Galatée Film *Oceans*.

Closing out the week's events was the inaugural meeting of the 2020 Science Council, a group being established to develop and implement a Census program in the next decade. This informal meeting yielded discussion on the scope of the potential program and possible funding sources. Additional information about the All Program meeting, including a detailed summary, can be found at <http://www.comlsecretariat.org/Dev2Go.web?id=308572>.



The Maori dancers pause for moment after their performance for a picture



Group photo at the University of Auckland

National and Regional Implementation Committees Work Toward Clarification of Goals, Improved Communication

One of the primary purposes of the Census of Marine Life All Program meeting is to give the widely dispersed members of the Census a chance to come together, discuss relevant issues and make connections that strengthen the global network. The Chairs and managers of the National and Regional Implementation Committees (NRICs) took advantage of this opportunity, meeting several times over the week-long meeting. One of the main issues on the minds of the NRIC leaders was the role of the committees in the 2010 synthesis activities of the Census of Marine Life. (Confused about what “Synthesis” refers to? See the new *Frequently Asked Questions* section on page 3 of the newsletter).

A presentation at the All Program Meeting by Diego Rodriguez of the South American committee identified the major tasks for the NRICs, including producing a report which will synthesize the results of the Census on a regional basis. Each NRIC is expected to contribute a chapter on their specific region. Bhavani Narayanaswamy, of EuroCoML, was positive about the outcomes. “I think a lot of progress was made at the All Program meeting. Diego gave a good overview, on behalf of all of us, as to what the NRICs are here for and what we have to try and achieve by 2010...A series of papers from each region highlighting the diversity, new discoveries, etc. across all realms will be

of use not only to the scientific community but also to governments and other bodies,” she said after the meeting. Communicating the synthesis information within each region will also be an important task. With such a widespread Census network, the NRICs will be crucial in determining the best method of reaching audiences in their respective region or country.

There was a widespread call for improved communication between the NRICs and the projects and between the NRICs themselves. All were in agreement that the completion of the newly-decided upon tasks would require much more interaction than in previous years. A more formal system of communication is currently being developed at the Secretariat level in response to this request.

The USNC representatives felt the meeting was very productive and are looking forward to working with all the NRICs to achieve these new goals.

Below: NRIC Chairs and Managers at the All Program Meeting



NRIC Contacts Worldwide

Australia

Ian Cresswell, Chair

Sub-Saharan Africa
Charles Griffiths, Chair

Canada

Paul Snelgrove, Chair

Caribbean

Patricia Miloslavich, Chair

China

SUN Song, Chair

Europe

Graham Shimmield, Chair
Bhavani Narayanaswamy, Project Manager

Indian Ocean

Mohideen Wafar, Chair
P.A. Lokabharathi, Secretary

Indonesia

Indroyono Soesilo, Chair
Tonny Wagey, Secretary

South America

Diego Rodriguez, Chair
Juan Manuel Díaz Merano, Vice Chair

United States

Andrew Rosenberg, Chair
John ‘Wes’ Tunnell, Vice Chair
Michael Feldman, Program Coordinator

Frequently Asked Questions

Frequently Asked Questions about the Census of Marine Life

Q: How does the U.S. National Committee (USNC) fit into the overall structure of Census? What is their role?

A: The USNC is one of 10 regional/national Census committees around the world. The role of these committees is to bring together regional Census stakeholders to build partnerships, explore funding opportunities for local science, and promote the Census to local audiences. The USNC does this through workshops, outreach events like Capitol Hill Oceans Week, and networking through its broad-based membership.

Q: I've heard that the Census is a 10 year program. What happens after the 10 years is over?

A: Once the 10 years are over, support from the Sloan Foundation, the major funder of the Census of Marine Life, will end. The Census was originally designed as a 10 year assessment of the biodiversity of the world's oceans. Since 2000, CoML has made tremendous progress, but we also realize how much of the ocean is yet to be explored. As a result, several CoML projects are planning (and are funded) to continue their efforts and activities beyond the initial 10 years. The U.S. National Committee has been exploring possibilities for a second Census beyond 2010, even going as far as developing legislation for a Census-like program within the US Federal Government. In addition, a "science council" of interested Census community members met during the All Program meeting to discuss options and interest for continuing the Census after 2010. If you'd like to see a summary of that meeting, please contact the Program Office at CoML@oceanleadership.org.

Q: What is the "Synthesis" that everyone keeps referring to?

A: The "Synthesis" refers to the integration of CoML information collected over the first 10 years, which will be disseminated to the world through a variety of products. Each project and NRIC will have synthesis products, as well as several outputs from the Census as a whole. A Synthesis Committee has been formed to oversee the completion of the synthesis.

Do you have a question about the Census of Marine Life? Submit it to CoML@OceanLeadership.org and we'll answer it!

Dr. Pat Halpin and Team at Duke University Set to Bring Visualizations to a New Level in Census

At the All-Program Meeting in Auckland, Dr. Patrick Halpin and his team presented their plans for assisting Census of Marine Life field projects with mapping and visualization of their final results. The project was recently approved by the CoML Scientific Steering Committee, with dedicated funding from the Sloan Foundation. The mission of this newly formed "Mapping and Visualization Team" is to assist projects in creating compelling, intuitive, accurate and consistent mapping and visualization

products in order to communicate the messages of the Census to the scientific and public media.

While the primary clients of this project are the staff from within Census, technical expertise and promotional capability will be drawn from industry partnerships with Google, National Geographic and ESRI. A northern workshop is being planned for Fall 2008 at Duke University. The CoML Community will hear more about this exciting new project as it develops. For now, please see www.comlmaps.org for more information.



Education Corner



Participants in the USNC Education Workshop

On September 18th, the U.S. National Committee (USNC) of the Census of Marine Life (CoML) held an education workshop entitled “*Developing a National Education Component for the Census of Marine Life*” in conjunction with the NOAA’s Ocean Exploration and Research Program. The workshop aimed to assess and determine the best course of action towards further developing an education component as part of the global CoML program. The workshop participants included representatives from the Centers for Ocean Sciences Education Excellence (COSEE), NOAA, Sea Grant, the National Ocean Sciences Bowl (NOSB), the College of Exploration, and the Smithsonian Institution. The participants of the workshop showed great enthusiasm concerning the idea of utilizing the abundance of CoML research to create an education component of the global project, and eagerly took part in a breakout session, supplying the USNC Program Office with suggested recommendations for the next steps, including recommendations for future activities/strategies, key events to participate in and key partnerships/collaborations with existing national efforts. The overwhelming support, input, and recognition for CoML, as shown by the workshop participants, will undeniably help solidify an exciting new collaborative venture for CoML and marine biodiversity education.

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★ EDUCATION LINK OF THE QUARTER

The Living Oceans Foundation and Project SeaCAMEL (Classroom Aquarius Marine Education Live) broadcasted six classroom modules, from November 12-14, 2007, live via satellite and internet from Atlantis, the NOAA Aquarius underwater laboratory in Key Largo, Florida. The modules, now archived on their website in QuickTime and Windows Media formats, covered topics including coral reef biology, sponges, physical oceanography and life 45 feet below the surface of the ocean in the Atlantis habitat. The “underwater classrooms” are geared towards high school to college level students and each video has associated reading materials, online resources and data sets available as well. For more information, please visit the SeaCAMEL website at <http://seacamel.livingoceansfoundation.org/>.



CORE Merges with JOI to form the Consortium for Ocean Leadership



In exciting news, the organization where the Program Office for the U.S. National Committee is housed, The Consortium for Oceanographic Research and Education, has officially merged with the Joint Oceanographic Institutions to form a new organization; the Consortium for Oceanographic Leadership. As a

new organization, the Consortium for Ocean Leadership is a Washington, DC based nonprofit that represents 95 of the leading public and private ocean research education institutions, aquaria and industries with the mission to advance research, education and sound ocean policy. The organization also manages ocean research and education programs in areas of scientific ocean drilling, ocean observing, ocean exploration, and ocean partnerships. On Wednesday, November 7, the Board of Trustees announced Dr. Robert Gagorian as the

first president of Ocean Leadership. “This new consortium brings exciting new opportunities. I am looking forward to working with the ocean community to fulfill our education and research missions,” said Dr. Gagorian recently. While Ocean Leadership is experiencing an exciting transformation, life at the U.S. National Committee Program Office will remain relatively unchanged. The program staff is looking forward to continuing work on all aspects of the U.S. National Committee with the additional support of our new colleagues.

USNC Holds Fall Meeting in Portsmouth, New Hampshire



Slide from Jeff Bolster's presentation on HMAP at the USNC Fall Meeting

The U.S. National Committee (USNC) of the Census of Marine Life (CoML) held its biannual meeting at the Hilton Garden Inn in Portsmouth, NH on October 9-10, 2007. The meeting was lead by Chair Dr. Andrew Rosenberg of the University of New Hampshire and newly selected Vice-chair Dr. Wes Tunnel of the Harte Research Institution of Texas A&M University.

The meeting's major theme was the vision and strategy for the U.S. CoML contribution to the 2010

synthesis and potential plans for after Sloan Foundation funding ends in 2010. Discussions focused on the upcoming All Program meeting, the Code of Conduct for doing scientific collections, the future of CoML post 2010 – ensuring the program continues as a marine biodiversity program in the U.S., and the state of affairs with OBIS (Ocean Biogeographic Information System) USA.

Special presentations were made by University of New Hampshire faculty including Dr. Ru Morrison, who discussed ocean observing systems, Dr. Jim Gardner, who informed the USNC on the Law of the Sea and technology and implications of the Extended Continental Shelf, and Dr. Jeff Bolster, who discussed the HMAP (History of Marine Animal Populations) project and the idea of using “the past as a new frontier in ocean science”. An additional presentation was made by Consortium for Oceanographic Research and Education President, RADM

(ret.) Richard West who spoke to the Committee about the current state of the Consortium for Ocean Leadership (a result of the merger of CORE and JOI). During the meeting, a new ex-officio position was created for the U.S. OBIS Node manager. The position is currently held by Dr. Mark Fornwall of the United States Geological Survey and Director of the Center for Biological Informatics.

Members of the USNC were joined in their discussions by representatives of the U.S. Regional OBIS Node (Mark Fornwall), CoML Education and Outreach at the University of Rhode Island (Darlene Crist and Sara Hickox), Ocean.US/Rutgers University (Jim Ammerman), NOAA's Office of Ocean Exploration (Margot Bohan), CORE (Richard West and Nina Young), and the CoML Secretariat (Kristen Yarincik).

The next meeting of the USNC will be held March 10-11, 2008 in Washington, DC.

Federal Budget Update

by Kevin Wheeler, Director of External Affairs, Ocean Leadership

In keeping with the holiday spirit, Congress is wrapping up its work on the FY2008 appropriations bills by sending the President an omnibus spending package that meets his discretionary funding caps. Democrats had previously passed spending bills that would allocate approximately \$22 billion more than the President requested. But with Presidential vetoes looming and Republicans standing firm to uphold his vetoes, Democrats capitulated. The impacts on ocean science funding are significant. In order to meet the President's budget caps, Democrats had to cut funding from a variety of agencies and programs including the National Science Foundation (NSF) and the National Oceanic and Atmospheric Administration (NOAA). NSF, which was expected to receive approximately \$6.5 billion budget will now only receive \$6.1 million, approximately \$150 million above this year's enacted level. For the fourth year in a row, NOAA will receive approximately \$3.9 billion, which is significantly less than the \$4.2 billion proposed by the Senate.

Census: One of "The 6 Most Important Experiments"



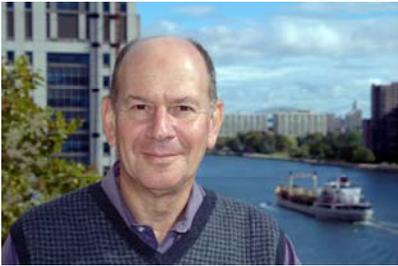
Editors of Discover Magazine cited the Census of Marine Life as one of the six most important experiments in the world in its December 2007 issue. The Census was chosen based on its potential to better protect the world's

ocean resources, and through its discoveries, for the promise of developing new pharmaceuticals and industrial applications. It joined the ranks of other exciting initiatives such as a computer model that mimics the function of the human brain and a new way to manipulate genomes. The full story can be found here:

<http://discovermagazine.com/2007/dec>

Seven Questions with Jesse Ausubel

As a regular feature of the U.S. CoML Newsletter, we ask a member of the CoML Community seven (or so) questions. This edition features an interview with Jesse Ausubel, Sloan Foundation Program Manager for the Census Of Marine Life.



Heather Mannix: Would you tell me a bit about the creation and development of the Census?

Jesse Ausubel: Fred Grassle visited my office at the Woods Hole Oceanographic Institution (WHOI) early in the afternoon of July 2nd 1996 carrying a copy of the 1995 US National Research Council report on Understanding Marine Biodiversity which Fred helped write. Fred and I then knew one another only slightly. Fred visited at the suggestion of Andy Solow or John Steele. Since 1990 I have worked during July and August at WHOI, so on the 2nd of July I was pondering what to do for the summer. I had attended many biology and fisheries seminars at WHOI in which one of the messages was “the model is better than the data.” Fred said something needed to be done to lift attention to life in the oceans *at the species level*, both because of the potential for scientific discovery and because of the increasing threats to marine biodiversity.

Fred was completing at that time the only marine chapter of the 1997 Global Biodiversity Assessment. I had worked a lot on climate change

and the carbon cycle, so I appreciated that all of ocean life was routinely stuffed into three to five ocean boxes measured in gigatons. I had also participated in the creation of major cooperative international scientific endeavors such as the World Climate Program and Global Change (IGBP) Program. At the end of our conversation, Fred and I agreed that we should explore encouraging an ambitious observational program for marine life. I started calling it the Census of the Fishes, which I thought had a good biblical ring to it.

During the next two-three weeks I spoke with experienced people such as John Steele, William Nierenberg, Robert M. White, Van Holliday, and Michael Sissenwine, as well as experts outside the U.S., almost all of whom said “good idea, but it has to be on a large scale to make a difference.” At the end of July I met for an hour with the President of the Alfred P. Sloan Foundation, mathematician and former naval officer Ralph Gomory, who immediately liked the idea and authorized feasibility studies of it.

Ralph and I agreed the feasibility studies needed to address three questions: Could it be done? That is, did technology exist to do very large scale surveys? Should it be done? That is, would the benefits repay amply the effort and investment? And, would it be done? That is, would the stakeholders allow it to proceed or, better, enthusiastically cooperate to make it happen?

After three years of feasibility studies, including about a dozen workshops and conferences, we had affirmative answers to all three questions. A set of grants in May

2000 by Sloan, ONR, NSF, and NOAA under the auspices of the US National Ocean Partnership Program (NOPP) to create the data assimilation framework (Ocean Biogeographic Information System) for the Census of Marine Life marked the real start of activity. Meanwhile, an international scientific steering committee had been established at CORE with Fred as chair.

“FRED FROM THE OUTSET FELT... THE PROGRAM SHOULD BE A COALITION OF THE WILLING. WE SHOULD NOT INSIST ON ADDRESSING EVERY OCEAN REALM OR TAXONOMIC GROUP BUT RATHER BUILD THE PROGRAM WITH RESEARCH COMMUNITIES EAGER TO WORK AT A SYNOPTIC OR GLOBAL SCALE.”
-J. AUSUBEL

HM: How does the current Census program compare with your vision in 2000/2001?

JA: The vision from the outset was a decadal program to conclude in 2010 with the first Census of Marine Life addressing three questions: What did live in the oceans before fishing became important? What does live in the oceans? What will live in the oceans? From the outset, we sought a balanced interest in diversity, distribution, and abundance and attention to the limits to knowledge, that is, the program should describe what is known, what is unknown, and what may be unknowable or very hard to learn. The mission of the program has been very stable.

Fred from the outset felt we should get in the water quickly and lead by example rather than use lots of time and effort writing plans. He also felt the program should be a coalition of the willing. We should not insist on addressing every ocean realm or taxonomic group but rather build

Continued on next page

Seven Questions with Jesse Ausubel, continued

the program with research communities eager to work at a synoptic or global scale. Fred was wise on both counts. A happy surprise is that CoML has attained remarkably comprehensive coverage with the bottom-up strategy. Communities joined. Great examples are the International Census of Marine Microbes and the Census of Reefs and of Zooplankton. CoML provided a framework for these communities to meet ambitious objectives that were latent in the communities.

HM: In your opinion, what's the most exciting discovery to come from a Census project so far?

JA: Among the most exciting discoveries are the existence of the rare microbial biosphere by the Microbes project led by Mitch Sogin and Jan de Leeuw and the huge shoals of fish, billions of herring, in the Gulf of Maine, by the ocean acoustic remote sensing developed by Nick Makris and colleagues. I am also very fond of some of our newly discovered and described species, such as the now famous Yeti crab, carnivorous sponges, and Sloan squid.

HM: What has been the most enjoyable part of working with the Census over the last 7 years?

JA: Many aspects of the program are a joy. The ocean itself is the greatest joy. Even the fieldwork in which I have been able to participate has astonished me, for example, a December week in the dark above the Arctic Circle in the Norwegian Sea on the Johan Hjort counting herring on a cruise with Ken Foote and a July week in the continuous light in the Canada Basin north of Alaska on the US icebreaker Healy on a cruise led by Bodil Bluhm, Rolf Gradinger, and Russ Hopcroft. The project is blessed with wonderful people in all the field

programs and on the Steering Committee and Secretariat.

HM: How do you see the U.S. Census contributing to the international program and its legacies?

**"I CANNOT STRESS ENOUGH THE VALUE OF SHARED, OPEN-ACCESS DATABASES."
-J. AUSUBEL**

JA: The U.S. scientific community continues to have a special talent for conceiving and rapidly implementing new ideas. As mentioned, the U.S., through NOPP, launched the Ocean Biogeographical Information System. The U.S. National Committee generated the microbial and plankton field projects at its Salem, Massachusetts, workshop in 2003. The University of Rhode Island Office of Ocean Programs, led by Sara Hickox, has generated many wonderfully creative and effective outreach programs of the Census. In the present implementation phase nearly every U.S. marine research center from Fairbanks to Florida is helping carry out the Census. With regard to legacies, OBIS will flourish only if the U.S. government and research community sustain commitments to it. Similarly, the integration of CoML-developed technologies in the Global Ocean Observing System, for example, in tagging and telemetry, will depend in large part on big commitments in biology by the U.S. components of the ocean observing system.

HM: In what ways can or should the oceanographic community (and/or U.S. federal entities) become more involved with CoML?

JA: CoML offers prototypes for the biological aspects of the ocean observing system and its data assimilation framework. The community and

the agencies should both use CoML to push the frontier and take from it technologies and practices that are ready to serve as part of routine continuous or periodic monitoring systems.

I cannot stress enough the value of shared, open-access databases. OBIS and its cousins, the barcode of life database (<http://www.boldsystems.org/views/login.php>) and the marine species pages of the emerging Encyclopedia of Life (www.eol.org) can multiply our effectiveness and opportunities in both research and education if the community fully absorbs the habit of contributing data to them and providing quality control. These databases are what we observe through our macroscopes. The Federal agencies should require data deposition in OBIS and its linked cousins.

Finally, the findings and discoveries of the Census should improve management of ocean resources. Groups concerned, for example, with management of seamounts, margins, reefs, polar oceans, and top predators should begin gleaning ideas for their policies and practices.

HM: What would you like to see happen in the Census community after 2010?

JA: At the recent All Program meeting of the Census in New Zealand, Song Sun, a member of the Scientific Steering Committee from China, said the Census is a snap shot, and our challenge will be to move from a photo to a movie. I hope the Census community is so effective in sharing its exciting discoveries and important insights that resources are readily available for magnificent marine movies in the next decade. ☺

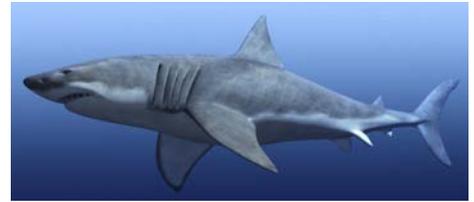
Check out our Video Clip of the Quarter!



Census of Marine Life Ocean Observing Technologies

<http://www.youtube.com/watch?v=kXXzvGJCVAc>

The Census of Marine Life is excited to present their new video on Ocean Observing technologies, which first premiered at the Group on Earth Observations (GEO) Summit in late November in Capetown, South Africa. Using photo-realistic techniques, the video highlights the need for the ocean observing technologies developed by the Census of Marine Life. After only one day, the video had 176 views on YouTube and has received high rankings in the Science and Technology categories. Additionally, the Partnership on Observation of the Global Oceans has created a similar video, which can be viewed at <http://www.youtube.com/watch?v=Q5hnhNmGeh0>.



Still image from the CoML Animation

U.S. CoML Committee Members

Dr. Andy Rosenberg (USNC Chair), University of New Hampshire, Durham, NH
 Dr. John W. "Wes" Tunnell (USNC Vice-Chair), Harte Research Institute, Corpus Christi, TX
 Dr. Vera Alexander (SSC Liaison), University of Alaska, Fairbanks, AK
 Dr. Judith Connor, Monterey Bay Aquarium Research Institute, Monterey, CA
 Ms. Penelope Dalton, University of Washington, Washington Sea Grant, Seattle, WA
 Dr. Sylvia Earle, Conservation International, Oakland, CA
 Dr. Daphne Fautin, University of Kansas, Lawrence, KS
 Dr. Daniel Finamore, Peabody Essex Museum, Salem, MA
 Dr. Mark Fornwall, U.S. Geological Survey, Kahului, HI
 Mr. Terry Garcia, National Geographic Society, Washington, DC
 Dr. Pat Halpin, Duke University, Durham, NC
 Dr. Jo-Ann Leong, Hawai'i Institute of Marine Biology, Kaneohe, HI
 Mr. Paul Kelly, Ret. from Rowan Industries, Houston, TX
 Dr. Judith Kildow, Monterey Bay Aquarium Research Institute, Monterey, CA
 Dr. Clarence Pautzke, North Pacific Research Board, Anchorage, AK
 Dr. Shirley Pomponi, Harbor Branch Oceanographic Institution, Fort Pierce, FL
 Dr. Paul Sandifer, Hollings Marine Laboratory, Charleston, SC
 Dr. George Sedberry, Gray's Reef National Marine Sanctuary, Savannah, GA

For member's biographies visit our website at: www.coml.us/dev2go.web?anchor=CoML_us_leadership



Happy Holidays from the USNC Program Staff!

-Mike, Melissa, Heather, Jerry, Maureen, Gregg, Nina, and Bob

