

Ongoing & Upcoming CoML Cruises: Watch the project websites for news and cruise diaries!

16 Dec – 30 Jan: CAML cruise to Terre Adelie - <http://www.caml.aq/voyages/aurora-australis-200708/index.html>

28 Nov – 4 Feb: CeDAMar (ANDEEP-SYSTCO) cruise to Weddell Sea - www.awi.de/en/infrastructure/ships/polarstern/

Top News!

Census Named One of “The 6 Most Important Experiments in the World”



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 magazine is currently available on newsstands, with the online version appearing online at

<http://discovermagazine.com/2007/dec/the-6-most-important-experiments-in-the-world>.

CoML's Adventurer of the Year

Angelika Brandt, a member of CeDAMar and CAML's Steering Groups, **was named a National Geographic Adventurer of the Year**. Angelika, along with others, was recognized for her exceptional accomplishments in her field. The “adventure heroes” were presented with awards on 15 November at a gala event at the National Geographic Society headquarters in Washington, D.C. Since Angelika was participating in the All Program meeting in Auckland on that day, she accepted her awards through a pre-recorded video message. An Adventure's role “is to inspire people to experience the natural and cultural wonders of the world in exciting ways”. Congratulations Angelika!

2007 All Program Meeting & Synthesis Plan

CoML held its **3rd All Program Meeting** in Auckland, New Zealand on 14-16 November 2007. The meeting was highly productive in gaining updates on all the projects, as well as receiving input on the upcoming synthesis process and desired outcomes and products. As a result of all the discussions, a long list of outputs and outcomes for 2010 has been produced and we now work towards accomplishing these goals. Thank you to everyone that participated in the meetings.



Scientific Steering Committee (SSC)

The CoML international **SSC met in New Zealand on 17 November**. They approved three primary Synthesis Products – an integrative book written by the Synthesis Group (Paul Snelgrove, Fred Grassle, and Ron O'Dor) and two volumes of synthesis chapters from cross-project and regional analyses. The SSC also endorsed the long wish-list of additional synthesis initiatives for which strategies will be developed.

Mapping & Visualization

The Mapping and Visualization team, led by Pat Halpin at Duke University, has been hard at work moving toward the synthesis and products phase of the CoML program. During the All Program Meeting in New Zealand, **Pat noted that he and Ben Best will be communicating with all the projects**, helping each to utilize OBIS data and produce the desired final products. An important mapping and visualization survey was recently sent to all the projects. The responses will help the team assess each project's capacity and need in visualization assistance. Completed surveys were due December 7th... we hope all

projects submitted their responses! The Mapping and Visualization team is also planning a [northern] Fall 2008 Visualization Workshop at Duke University. Contact Pat Halpin (phalpin@duke.edu) for additional information or refer to the M&V website: <http://www.comlmaps.org>.

Education and Outreach

The portal website has a **new look**. Visit it at www.coml.org.

A National Geographic Society (NGS) video production workshop entitled “**A Crash Course in Video Production for Scientists**” took place during the 11-12 November 2007 E&O meeting in Auckland, New Zealand. The goal of the workshop, lead by Greg Marshall (Executive Producer and Director for NGS Mission Programs), was to inform the CoML scientists how to best film and sell a science story for maximum results. Please contact Sara Hickox (sara@gso.uri.edu) if you would like information on the outcomes of the workshop.



Since the All Program Meeting in New Zealand, the E&O team has been working with the Scientific Steering Committee, Executive Committee, Synthesis Committee, and Secretariat to further refine the “**Overarching Messages**” that will be encompassed by CoML outputs and communication in 2010. It is expected that these messages will continue to evolve, but will also strive to reflect many of the suggestions made during the E&O Workshop and the All Program meeting.

In October, CoML was featured in an episode of National Geographic’s Wild Chronicles. The video segment is available on the portal (www.coml.org). Gayle Young, a producer with National Geographic’s Wild Chronicles, is interested in receiving more stories and film footage from CoML. She is looking for 3-5 minutes of video in the field showing researchers actively using equipment in the water, sorting through samples or looking through microscopes. A videotaped interview with one or more scientists discussing the research being conducted, what is being learned, or a potential problem being uncovered should also be included. The Wild Chronicles segments are only 5-7 minutes in length, allowing for a targeted piece. Please contact Darlene Crist (darlene.crist@cox.net) if you have appropriate material or need assistance pulling a piece together.

Database: Ocean Biogeographic Information System (OBIS)

From 27-28 November, Mexican scientists participated in a workshop, discussing publishing biodiversity and museum specimen data through the OBIS network. The main **potential OBIS partners include CONABIO (Comisión nacional para el conocimiento y uso de la biodiversidad) and UNAM (Universidad nacional autónoma de México)**. OBIS hopes the CONABIO and UNAM data will be available relatively soon.

The **World Register of Marine Species (WoRMS)**, which the OBIS community is currently developing, **was recently accepted by Species 2000 as its marine node**. Many of the Global Species Databases that are maintained within the WoRMS system will automatically be added to the Catalogue of Life. The Catalogue of Life, regarded as the prime supplier of taxonomy information, is a joint venture between Species 2000 and ITIS (Integrated Taxonomic Information System). Please visit the WoRMS website (<http://www.marinespecies.org/>) for more information.

After more than ten years at Rutgers University, Phoebe Zhang has left OBIS. Phoebe played an instrumental role in building OBIS, helping run the secretariat, including data management and web site development. OBIS and the Census community wish her all the best in her future endeavors.

At the October Global Biodiversity Information Facility (GBIF) meeting in Amsterdam, OBIS presented on its activities and relationship to GBIF, as well as held a joint meeting for the OBIS RON managers. During the Governing Board meeting, proposals for GBIF Campaigns were discussed, including support for the World Register of Marine Species (WoRMS), which was proposed by members

of the OBIS community. OBIS also expressed interest in working with those that proposed the 2010 Campaign, which strives to create indicators to support the 2010 goal of halting biodiversity loss.

OBIS node managers and other OBIS community members were present at the 2007 Ocean Biodiversity Informatics (OBI) conference, held on 2-4 October at the Bedford Institute of Oceanography in Dartmouth, Nova Scotia, Canada. Participants discussed many of the issues related to biodiversity informatics, including data policy issues and the advantages of free and open sharing of biodiversity data, with representatives of the Global Biodiversity Information Facility (GBIF) and International Council for the Exploration of the Sea, Food and Agriculture Organisation (ICES FAO). For information on the conference, including abstracts of the presentations, please visit the conference website at <http://www.marinebiodiversity.ca/OBI07>.

Edward Vanden Berghe co-chaired a meeting and presented at the **2007 ICES (International Council for the Exploration of the Sea) Annual Science Conference (ASC)** held in Helsinki from 17-21 September. Edward's presentation focused on data management and sharing in the framework of the North Sea Benthos Project (NSBP). The NSBP data will eventually be available through EurOBIS. For more information on the conference, or to read Edward's paper, please visit the ASC page at <http://www.ices.dk/iceswork/asc/2007/index.asp>.

Oceans Past: History of Marine Animal Populations (HMAP)

HMAP was featured in the November 2007 special issue of *Fisheries Research*, entitled 'History of Marine Animal Populations and their Exploitation in Northern Europe'. The issue was edited by Henn Ojaveer and Brian MacKenzie. The articles in the special issue all contributed to establishing new baselines for marine ecosystems management, including strategies for conservation of overexploited resources, in the waters of Northern Europe. To view all the articles in the special issue (Volume 87, Issues 2-3) of *Fisheries Research*, please visit <http://www.sciencedirect.com/science/journal/01657836>.

The volume of papers from the 2005 *Oceans Past* conference **has been published** and is available for sale online: <http://shop.earthscan.co.uk/ProductDetails/mcs/productID/821/groupID/6/categoryID/21/v/2>.

Oceans Future: Future of Marine Animal Populations (FMAP)

Faculty of 1000 (www.f1000biology.com) selected **two papers published by FMAP as "Must Reads"**, stating that each had exciting new findings. "Experimental simulations about the effects of overexploitation and habitat fragmentation on populations facing environmental warming" was in the April issue of *Proceedings of Biological Science*. The second paper, "Human impacts on the species-area relationship in reef fish assemblages", was published in *Ecology Letters* in September 2007 (see paragraph directly below). The papers can be accessed at <http://www.fmap.ca/publications.php>.

An **FMAP study** on reef fish biodiversity and human impact was **published in the September 2007 issue of *Ecology Letters***. The authors found that humans have an impact on one of the most well-known patterns in ecology – the relationship between species richness and area. Fisheries exploitation "impacts the fundamental scaling of biodiversity as well as the species richness and spatial distribution patterns of the reef fish". They suggest that species-area curves could be used as indicators of changes in biodiversity and possibly helpful in determining human impacts in other marine environments. To view the abstract, please visit the *Ecology Letters* (Volume 10) website: <http://www.blackwell-synergy.com/toc/ele/10/9>.

Boris Worm was awarded the Elisabeth-Mann-Borgese-Meerespreis Schleswig-Holstein, by the Premier of Schleswig-Holstein of Germany on 26 November. The Meerespreis honors scientists who have made outstanding contributions to a sustainable use of the sea and its protection and preservation. The 2007 prize, worth EUR 20,000, is specifically awarded for excellent scientific contributions towards the sustainable management of the biological resources of the oceans. The press notification (in German) is at: <http://www.schleswig-holstein.de/MWV/DE/Service/Presse/PI/2007/juli2007Dezember2007/071126MeerespreisVerleihung.html>. Congratulations Boris!

A new FMAP paper, entitled "The completeness of taxonomic inventories for describing the global diversity and distribution of marine fishes", will be published in the January 22, 2008 (volume 275)

Proceedings of the Royal Society. The **research behind the article was a Census effort between FMAP and OBIS**. Large, publicly available datasets of marine fish records were used to determine the usefulness of the georeferenced data in determining diversity and distribution of the taxonomic group. Grouping all records at multiple spatial resolutions, creating accumulation curves and using nonlinear models, the researchers extrapolated the expected number of species. Comparing the expected value with the number of species inventoried, they could calculate the completeness of the taxonomic inventory at each spatial resolution. The researchers determined that, in terms of global numbers of fish species, **approximately 21% of the species remain to be described**.

The late **Dr. Ransom Myers** was inducted posthumously into the **Nova Scotia Science and Technology Hall of Fame** during the 2007 Discovery Awards for Science and Technology on November 29, 2007. He was inducted as a world leader in large marine animal analysis who dedicated his career to studying marine life in Nova Scotia and around the globe.

Ocean Present: Realm Field Projects

Near-Shore: Natural Geography In Shore Areas (NaGISA)



We are sad to report that NaGISA's project manager and outreach liaison **Robin Rigby** was killed on 9 December 2007 in a traffic accident in Kushimoto, Japan. Her loss is a great shock to the Census community and **she will be dearly missed by her many colleagues and friends**. Our condolences and prayers go out to Robin's family and husband.

In remembrance of Robin Rigby, it was suggested that CoML-associated taxonomists name a new marine species after her. Appropriately, as Robin studied cephalopods, Michael Vecchione and his co-authors submitted a manuscript naming a new species of Benthoctopus from Antarctica ***Benthoctopus rigbyi***.

Reefs: Census of Coral Reefs (CReefs)

A new CReefs paper was published in the leading evolutionary journal, *The American Naturalist*, in December. The paper reported on the joint study carried out by scientists from Queen's University in Canada and the Australian Institute of Marine Science (AIMS). Stating coral reefs are not safe from climate change, they reported **a new way of examining how coral reefs my respond to climate change**, including evolving a greater resistance to bleaching.

Regional Ecosystems: Gulf of Maine Area Program (GoMA)

In August, scientists from GoMA and NaGISA gathered with other scientists from Australia, Canada, Japan, Serbia and Spain at the Friedman Field Station of Suffolk University in Edmunds, Maine to review their research plans. **The international team met to investigate the changes in biodiversity along the intertidal and near-shore zones of Cobscook Bay** in the Bay of Fundy (near the US-Canadian border). Cobscook Bay has a unique geography which leads to highly axproductive macro-tidal estuary and diverse species communities. The researchers learned about and used the NaGISA sampling protocol that has been applied to coastlines worldwide. Samples were collected, sorted and identified to establish a baseline database. Please visit the GoMA website, <http://www.usm.maine.edu/gulfofmaine-census/>, to see the photo journals, personal essays and research logs.

Continental Shelves: Pacific Ocean Shelf Tracking (POST)

POST recently held a Management Board meeting on 4-5 December in Vancouver. During the meeting the board approved the 2008 budget and field plan. The **next POST Management Board meeting** is scheduled for **13-14 March** in Washington D.C. at the Consortium for Ocean Leadership.

Continental Margins: Continental Margin Ecosystems on a Worldwide Scale (COMARGE)

COMARGE researchers set sail on October 8 aboard the *R.V. Pourquai Pas?* The Medeco cruise, in the framework of HERMES, is traveling across the Mediterranean Sea from west to east, investigating the

Var Canyon off the coast of France, cold coral reefs off Italy, and mud volcanoes off Crete Turkey and in the Nil deep-sea fan using the ROV Victor 6000. To read daily reports from the research team, please visit <http://www.ifremer.fr/medico/English/07-10-20.htm>.

COMARGE and the Marine Biology Research Group at Ghent University are organizing a **workshop on bathyal free-living nematodes** in Ghent, Belgium in February 2008. The goal of the workshop is to bring active deep-sea nematologists together in order to gain a better understanding of the global scale patterns in deep-sea nematode diversity, distribution and community composition. If you are interested in attending the workshop or would like additional information, please contact Dr. Ann Vanreusel (ann.vanreusel@ugent.be).

Abyssal Plains: Census of the Diversity of Abyssal Marine Life (CeDAMar)

CeDAMar, in cooperation with the Marine Barcode of Life (MarBoL), is organizing the May 13-18, 2008 **International Workshop on Barcoding of Deep-Sea Organisms** to take place at the German Centre for Marine Biodiversity Research, Senckenberg Research Institute in Wilhelmshaven, Germany. The workshop hopes to promote molecular barcoding of deep-sea organisms as well as promote further cooperation between CoML and Barcode of Life projects. Any expressions of interest should be sent by email to Stefanie Keller (skeller@senckenberg.ed) by January 1, 2008, along with information about your background and interest in the workshop. Please note that the number of participants is limited. Visit the CeDAMar website for more information on specimens, accommodation and travel expenses:



http://www.cedamar.org/index.php?option=com_content&task=view&id=167&Itemid=81.

Mid-Ocean Ridges: Mid-Atlantic Ridge Ecosystem Project (MAR-ECO)

Fifty MAR-ECO participants met in Reykjavik, Iceland for three days in September for **the annual MAR-ECO meeting**. The host was Dr. Olafur S. Astthorsson of the Marine Research Institute of Iceland. The participants were treated to a reception hosted by the Fisheries Ministry as well as a tour through a museum exhibition of a collection of ancient medieval manuscripts recounting Norwegian and Icelandic sagas from the 12th century. The researchers are making efforts to form another MAR-ECO initiative in the southern Atlantic. Working groups were also created to work on pulling together results for the CoML 2010 Synthesis.

The traveling exhibition “**Deeper than Light**” opened in Essen, Germany, with its German title “In Lichtlose tiefen” on October 17th. The exhibition is housed at the Haus der Technik and is part of the Essen annual event called the Festival of Lights, which draws hundreds of thousands of visitors each year.



MAR-ECO’s cruise to the north Atlantic aboard the James Cook expedition received a large amount of coverage in August, including a **story and photo spread on the National Geographic website**. The team of researchers explored and mapped more than 1,500 square miles (3,900 square kilometers) of the deep-sea ridge between Iceland and the Azores islands off Portugal. The team returned with thousands of specimens to analyze and deployed six automatic observing stations to provide continuous measurements and photos over the next two years. The future voyages planned for 2008 and 2009 will retrieve this equipment and collect additional samples. The National Geographic article can be read at <http://news.nationalgeographic.com/news/2007/08/070821-sea-creatures.html> and the photos can be viewed at <http://news.nationalgeographic.com/news/2007/08/photogalleries/sea-creatures/index.html>.

MAR-ECO’s Ingvar Byrkjedal and Alexei M. Orlov’s **description of a new species of fathead sculpin** has been published, three years after the fish was collected. The paper was published in ZOOTAXA’s online edition. To read the paper, visit: http://www.mar-eco.no/_data/page/882/zt01580p068.pdf.

Seamounts: Census of Marine Life on Seamounts (CenSeam)

The CenSeam steering group met in Auckland on 17-18 November, following the All Program meeting events. A summary of that meeting will be available shortly. **CenSeam will soon also announce the results of its recent mini-grant solicitation.**

Vents & Seeps: Biogeography of Deep-water Chemosynthetic Ecosystems (ChEss)

An interview with **Cindy Lee Van Dover** was featured in the *New York Times* Science section on October 16, 2007. Cindy discussed how she was the first woman with a license to pilot Alvin, the three-person submersible used for deep sea exploration, and how last year she was the first woman to be named director of the Duke University Marine Laboratory. She also explained her views of why the general public should care about the deep-sea environment and the impacts human have on the sea floor.

To view the article in the *New York Times*, please go to

http://www.nytimes.com/2007/10/16/science/16conv.html?_r=2&oref=slogin&oref=slogin.

Arctic: Arctic Ocean Diversity (ArcOD)

ArcOD is finishing up the selection proposal for its second mini grant program. The mini grant program is intended to enhance the knowledge of Arctic marine biodiversity, from micro-algae to marine mammals, on a pan-Arctic scale. The proposal evaluation process included external evaluation by two or three external referees and a final decision from the Fairbanks ArcOD office. The competition was tight and not all the proposals could be funded. Those chosen presented the greatest benefit for the ArcOD effort. More details on the funded projects will be forthcoming.

Both **Rolf Gradinger** and **Russ Hopcroft** were interviewed for a piece in *Science News* the week of December 1, 2007. The article explained that the ice covering the Arctic Ocean isn't barren or simply inhabited by polar bears, and that the organisms below the ice form the bottom of the food web sustaining fish and ultimately the fish eaters. **Rolf Gradinger explained that hundreds of species live in the sea ice**, noting that some 400 species of photosynthesizers survive on the light that occasionally filters through the ice above. He also mentioned that his belief that humans have the wrong perception of ice. He's afraid that a thaw in Arctic ice may decimate species that have adapted to life on stable ice, but would not survive in open water. To read the entire article, please go to:

<http://www.sciencenews.org/articles/20071201/bob9.asp>.

Synthesis discussions have moved into the focus CoML-wide, **ArcOD has begun to work on synthesis products** even though the project is only just beginning its fourth year. Examples of ongoing activities include: (1) review articles on Arctic biodiversity and Arctic ecosystems (one in press in *Ecological Applications*, one submitted to *Biologie in unserer Zeit* and one in preparation as part of an International Polar Year (IPY)-related book edited by an Arctic AAAS team), (2) contributions to the new edition of the textbook "The Biology of Polar Regions" (expected for March 2008 with specific mentioning of ArcOD, CAML and BOL), (3) pan-Arctic modeling of zooplankton and ice amphipod distribution and abundance, (4) editing the first in a series of nine pan-Arctic invertebrate identification keys, and (5) drafting species pages of at least 100 dominant Arctic species.

ArcOD has organized a **special session** "Arctic Marine Communities and Biodiversity" (#053) to be held at the **Ocean Sciences Meeting** in March 2008 in Orlando, Florida (www.aslo.org/orlando2008/).

Session chairs will be Rolf Gradinger, Russ Hopcroft and Bodil Bluhm. ArcOD will also hold its next SSG meeting in conjunction with this event and will offer a town hall meeting for the Arctic Marine Biodiversity Cluster of the International Polar Year.

ArcOD researchers are gearing up for the **2008 IPY field season**. The 2008 cruises within the Arctic Marine Biodiversity IPY cluster, lead by ArcOD, will cover Canadian, Russian, American, Norwegian and Polish Arctic waters. A cruise planning meeting for the 2008 Russian-American Census of the Arctic (RUSALCA, www.arctic.noaa.gov/aro/russian-american/RUSALCA-summary-intro.htm) expedition was held in Moscow, Russia, Dec 4-6, 2007. RUSALCA projects on fish, zooplankton and benthos are conducted by Russian and American (alias Canadian and German) ArcOD researchers. A cruise planning meeting for the Bering Sea Ecosystem Study (<http://bsierp.nprb.org/>) was held in Seattle Nov 28-29, 2007; **ArcOD researchers are contributing to the sea ice portion of this effort.** Canadian researchers

will head out to the Arctic in 2008 within the 'Canada's Three Oceans' project the goal of which is to observe North Pacific, Arctic, and North Atlantic waters, and establish a scientific basis for sustainable, long-term monitoring. Polish ArcOD researchers will sample Hornsund Fjord in the Arctic and Admiralty Bay in the Antarctic to present as complete a taxonomic list as possible of all metazoan marine organisms inhabiting these two polar fjords.

ArcOD is one of the partners of the newly formed **Polar Barcode of Life Initiative** (PolarBOLI), in which various Arctic-focused researchers, institutions and projects have joint forces for barcoding Arctic biota. The Polar Barcode of Life Initiative, led by Canada and New Zealand, is an international project linked to the iBOL International Consortium Initiative with the major goal to provide the most efficient and accurate tool for mapping and monitoring polar biodiversity. **The program aims to coordinate barcode efforts in ongoing bioinventory projects and expand the current database of DNA barcodes** in BOLD with data from 1/3 of all polar organisms within a five year period. ArcOD/UAF IPY-post doc Sarah Mincks participated in PolarBOLI's second workshop held in Trondheim, Norway, Oct 7-8, 2007. ArcOD researchers are already active in contributing to barcoding Arctic zooplankton in collaboration with CMarZ and Arctic fishes in collaboration with FishBOL. Efforts for barcoding Arctic benthos are now being launched.

Antarctic: Census of Antarctic Marine Life (CAML)

On November 28th, Census scientists set sail from Cape Town for a ten week expedition to the Southern Ocean. **Scientists from CeDAMar and CAML are part of the international team aboard the German R/V Polarstern**, which will be traveling to the Lazarev Sea and the eastern part of the Weddell Sea. The goal of the expedition is to increase understanding of the physical and biological processes of the Antarctic Circumpolar Current and the Weddell Gyre, both of which play key roles in Earth's climate. The climate related research is also being conducted as part of the International Polar Year (IPY). **The Census scientists will focus primarily on the biodiversity of the area**, which has been relatively unexplored. Check the CAML website, <http://www.caml.aq/voyages/polarstern-200708/index.html>, for updates on the progress of the expedition.

Scientists in the South American consortium LA-CAML, which coordinates Antarctic marine biodiversity research from the seven countries of Latin America, made a **video of their 2007 voyage to Admiralty Bay**. The voyage was part of a long-term study of the seafloor communities. To view the video, please visit: <http://www.caml.aq/voyages/humboldt-1/2007-news.html>.

Top Predators: Tagging of Pacific Predators (TOPP)

TOPP.org was among the top winners in TheScientist.com Laboratory Web Site and Video Awards. Out of 60 entries, six sites took honors. **TOPP.org received the "Best of the Web"** for three of the seven Judge's Choice awards, with four lab sites receiving one each of the remaining judges' votes. Judges based their decisions on design, usability, content, and community. Kudos go to Val Krist, TOPP.org's Web designer, who makes this site look so beautiful, and to Civic Actions, particularly Jacob Singh, Drupal magician; Sam Lerner, Flash guru; and to Jenn Sramek, Civic Actions project manager.

The BBC's Planet Earth movie site **Loveearth.com features TOPP whale researcher Bruce Mate and his Antarctic humpback whale project**: <http://www.loveearth.com/uk/tracking/humpbackwhales>. The site presents tracking data, a narrative journal, and video. Planet Earth, the movie, premieres in Europe soon, and will make it to the U.S. next year.

TOPP researchers Scott Shaffer and Michelle Kappes make cameo appearances in a story – "On the Wings of the Albatross" – in the December 2007 issue of National Geographic Magazine (now online at: <http://ngm.nationalgeographic.com/ngm/2007-12/albatross/safina-text.html>). Writer Carl Safina and Santa Cruz, Ca., photographer Frans Lanting put together the feature story. It's a fabulous look at the world's albatross, and features – in still photos, text and video – black-footed albatrosses on Midway Island, where Scott and Michelle have been doing research.

Zooplankton: Census of Marine Zooplankton (CMarZ)

CMarZ completed its zooplankton research during the ANT XXIV/1 cruise aboard the *RV Polarstern* from 26 October to 26 November 2007. They investigated the zooplankton, focusing on the insufficiently known meso- and bathypelagic realms, genetically sequencing the zooplankton species at sea. Post cruise follow-up will include molecular analysis and expert taxonomic evaluation and description of any new or undescribed species. Visit <http://www.cmarz.org/Polarstern2007/index.html> for more information.

Microbes: International Census of Marine Microbes (ICoMM)

ICoMM's Julie Huber was the lead author on a paper published in the October 5, 2007 issue of *Science*. The dataset that served as the base for the publication represents the most exhaustive survey, to date, of microbial population structure in a single habitat. It explains, in great detail, the fine-scale variation within and between microbial communities and the extreme complexity of the deep-sea hydrothermal vents. Their results show that the richness and diversity of microbial communities have to be considered during experimental design to properly evaluate and determine the inventory of metabolic capacity in an ecosystem. For more information visit: <http://www.pmel.noaa.gov/vents/nemo/>.

Julie Huber's *Science* article was also covered by Reuters, "**Thousands of new marine microbes discovered**" on 4 October. The article mentioned the new DNA sequencing techniques used to identify as many as 37,000 different kinds on bacteria near two hydrothermal vents off the coast of Oregon. Amazingly, although the two vents were just a few miles apart on the same volcano, they had totally different chemistries and completely different types of Proteobacteria. Huber and her colleagues believe the microbes had simply adapted to the two different environments. To read the Reuters article, go to: <http://www.reuters.com/article/scienceNews/idUSN0441498020071004?sp=true>.

ICoMM, along with EuroCoML and Ribocon, is funding an international workshop on ribosomal RNA technology from 7-9 April at the BITZ-Bremen in Bremen, Germany. The workshop, coordinated by Frank Oliver Gloeckner of the Max Planck Institute for Marine Microbiology, hopes to discuss current topics, in a cross disciplinary manner, in rRNA technology including the kinds and quality of emerging data and how they should be organized, stored and analyzed. Linda Amaral-Zettler of ICoMM will chair the session on 'Diversity and Ecology' which is intended to show and discuss current aspects in taxonomy, biodiversity and ecology research. Registration for the workshop is open until 31 January 2008. For more information, please visit the workshop website <http://www/arb-silva.de/rrna-workshop/> or contact Anke Lindström at eu-workshops@mpi-bremen.de.

National and Regional Activities

Arabian Sea

Michel Claereboudt and colleagues at Sultan Qaboos University hosted an **Arabian Sea regional biodiversity workshop in Oman** on 28-30 October to discuss regional participation in CoML and OBIS activities. International experts and representatives of Oman, Pakistan, Iran, Kuwait and Saudi-Arabia defined regional activities in support of CoML. A Regional OBIS Node for the North West Indian Ocean, including the Red Sea, is a possible outcome of the meeting.

Australia

OBIS Australia is developing an OBIS mirror site and delivering additional data points from the Australian region to the international OBIS node. The datasets being published initially are largely records of fish and invertebrates. Visit the OBIS Australia website at <http://www.obis.org.au/>.

The Department of the Environment and Water Resources (DEW) collaborated with CSIRO Marine and Atmospheric Research in July 2007 to undertake a biodiversity survey of deep water habitats in the waters off North-western Australia. This voyage "**Exploring and characterising marine ecosystems of the NW Region**" collected a wealth of information on the distribution of deep seabed habitats and benthic fauna in this relatively unexplored region. The information will contribute to a circum-Australia collection of deep shelf and slope benthic fauna that can be used to test hypotheses on the evolution and

biogeography of Australia's biodiversity. It will also contribute to the validation and refinement of a marine bioregionalisation in this region.

Canada

The Natural Sciences and Engineering Research Council of Canada (NSERC) has funded a large biodiversity proposal led by Paul Snelgrove, Philippe Archambault, Kim Juniper, Anna Metaxas, D. Schneider and Verena Tunnicliffe. The Canadian Healthy Oceans Network (CHONe – pronounced Ko-Nee) is **a strategic partnership between university researchers and government** – predominantly Fisheries and Oceans Canada (DFO). *Chone* is also a marine worm that occurs in all of Canada's three oceans and characterizes healthy benthic habitats. This network is about aligning Canadian marine science capacities to respond to research challenges and knowledge gaps in frontier oceanic environments. **CHONe will address a need for scientific criteria for conservation and sustainable use of marine biodiversity resources.** The research themes have three broad foci: Marine Biodiversity, Ecosystem Function and Population Connectivity. Multiple themes will be present in each of Canada's three oceans. The concept for this project grew out of the report, "Three Oceans of Biodiversity: A Canadian National Plan 2004-2009," which was the output of a CoML Canada meeting in 2002.

Caribbean

CoML Caribbean is exploring **partnership with the Caribbean Large Marine Ecosystem (CLME) Project: Engaging Partners for Effective Transboundary Living Marine Resource Governance.** The areas (subprojects) in which there is a potential partnership to CoML are: Biological cycling of flying fish in the Lesser Antilles (CRFM); Pan-Caribbean lobster fishery in Central America Concern in adult and larval dispersal (identification of larvae is an issue) (OSPESCA); and Reef fisheries resources in Central Caribbean (Jamaica, Haiti, Dominican Republic) and the archipiélagos of San Andrés and Providencia).

Andrzej Antczak presented research on "**a contribution to the history of marine turtle exploitation in Venezuela**" during a special session on Historical Perspectives for the Gulf and Caribbean Fisheries at the 59th Gulf and Caribbean Fisheries Institute Meeting in Belize, 6-10 November 2007.

China

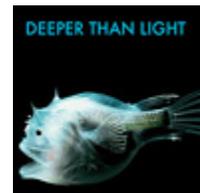
CoML China (Song SUN and Xiaoxia SUN) presented a poster at the **2nd Global Conference on Large Marine Ecosystems**, held 11-13 September 2007 in Qingdao. An additional poster was presented by CoML China efforts related to CMarZ on the eco-region of zooplankton functional groups in the southern Yellow Sea, China (Song SUN, Chaolun LI, Yuanzi HUO)

Europe

Henn Ojaveer and colleagues **recently found the thin-lipped grey mullet, a marine warm-water fish species, inhabiting the waters of the Gulf of Riga in the northern Baltic Sea.** The species usually prefers brackish coastal areas or lagoons, but in October the thin-lipped grey mullet was recorded in Estonian waters of the Baltic Sea. This was the third thin-lipped grey mullet found in the Gulf of Riga in the past few years. Usually the species is a rare visitor to the NE Baltic, but may be entering the Baltic Sea as the northern edge of its distribution area is extending further north. They note that it is unlikely that the species will establish local populations due to the low water temperatures in the winter.

The **official launch of the ESF EUROCORES Programme EuroDEEP** (Ecosystem functioning and biodiversity in the deep sea), involving ten scientific funding and performing agencies from eight European countries, took place in Brussels on 5 June with its first meeting. EuroDEEP's goal is to further explore the deep sea and describe the biological species and communities that inhabit it, as well as to better understand the geochemical and physical processes that shape the environment where these communities live. Researchers can then better describe and predict the variations in biodiversity between deep-sea habitats and the interactions of the deep sea with the global biosphere. EuroDEEP hopes to make stronger links to other major biodiversity initiatives including CoML. Visit the EuroDEEP website, www.esf.org/eurodeep, for more information.

The European led Deep-Sea projects (CeDAMar, ChEss, CoMargE and MAR-ECO) are happy to announce the **accompanying book to the exhibition “Deeper than Light” is available in for purchase** in Europe (in English), from Amazon. Please contact CeDAMar if you’d prefer a version in German.



Indonesia

The Arafura and Timor Seas Ecosystem Action Programme (ATSEA) has received clearance from GEF-CEO to begin preparation of a project proposal for its April 2008 Council Meeting. **This project is a central component of the CoML program in Indonesia.** Congratulations to Tonny Wagey and the ATSEA Steering Committee!

Indian Ocean

A national workshop on coral reef status and protection will take place 21-23 January in Lakshadweep, India. **This workshop coincides with beginning of the International Year of Coral Reefs in 2008.** IO-CoML hopes this will be an opportunity to promote the development of CReefs component in the Indian Ocean region.

South America

Victor A. Gallardo’s proposal was awarded funding from the ICoMM 454 call for proposals. Congratulations Victor!

An agreement has been signed between the University of Sao Paulo (USP) and PETROBRAS, establishing a 36-month partnership to **continue the development of the Tropical and Subtropical Western South Atlantic OBIS RON in Brazil.** PETROBRAS will support the improvement of equipment, personnel and outreach activities while USP will maintain management of the RON.

A journal article by Victor A. Gallardo and Carola Espinoza entitled “Large Multicellular filamentous bacteria under the oxygen minimum zone of the eastern South Pacific: a forgotten biosphere” has been published in volume 6694 of the Proceedings of SPIE (International Society for Optical Engineering). The article was presented at the Instruments, Methods and Missions for Astrobiology X Conference in San Diego on 28 August. The article ascertains that the **presence of large ancient bacteria in the sediments of the oxygen minimum zone suggests that the area must have been productive throughout geologic history,** thus allowing the bacteria to survive. The ancient bacteria also offer another hypothesis for the evolution of life on Earth, as they do not suggest metabolism by photosynthesis. To read more, visit:
<http://scitation.aip.org/dbt/dbt.jsp?KEY=PSISDG&Volume=6694&Issue=1&vqctype=#MAJOR14>.

Sub-Saharan Africa



The **CoML Sub-Saharan Africa Regional Committee met on 26 October**, in association with the Western Indian Ocean Marine Science Association (WIOMSA) Conference in Durban, South Africa. Representatives of Africa CoML, OBIS, NaGISA and the Indian Ocean Regional Committee discussed future plans, expectations by the SSC for 2010 and Africa CoML legacies.

AfrOBIS also presented on its report to the OBIS Managers Committee in Sao Paulo in April and its ongoing search for funding and available data sets.

USA

The **U.S. National Committee (USNC) 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 US CoML 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 US, 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 his ocean observing systems with the University of New Hampshire, 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).

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 CoML 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 USNC Program Office agreed to use the numerous suggestions as a guideline for establishing a national education component for CoML. 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.

The **next U.S. National Committee meeting** will be held 10-11 March, 2008 at the Consortium for Ocean Leadership offices in Washington, DC.

The USNC **workshop on “Ocean Observing: Using the Census of Marine Life as a Biological Component of IOOS”** will be held on January 14-15, 2008. The workshop will demonstrate the importance of incorporating biological data into the Integrated Ocean Observing System (IOOS). Workshop participants include representatives from the eleven Regional Associations, NOAA IOOS, IOOS DMAC, OOI, NOAA NMFS, USGS and numerous ocean observing experts from universities and various organizations.

The U.S. National Committee of the Census of Marine Life has produced a **Code of Conduct for Scientific Collections** to clearly identify the practices and procedures that will guide scientists in their collection efforts. The USNC believes that collecting should always be limited to the minimum necessary for the scientific purpose intended and done in full compliance with legal requirements relating to particular sites and species. The Code was distributed to the CoML community at the All Program Meeting in Auckland, New Zealand in November. The Ocean Research and Resources Advisory Panel (ORRAP) were also briefed on the Code during their December meeting in Washington, D.C. by USNC member Shirley Pomponi. The ORRAP (<http://www.nopp.org/Dev2Go.web?id=207773>) is a FACA panel that advises the ICOSRMI (<http://ocean.ceq.gov/about/icosrmi.html>), the agency-head level committee for federal ocean issues. The Panel members agreed unanimously to recommend to the ICOSRMI that there is a need for a universal code of conduct among the US agencies, and that they have reviewed the code developed by the US CoML National Committee and fully support it. For more information on the Code, please contact coml@oceanleadership.org.

Visit the Education section of the U.S. CoML webpage to learn more about our **monthly featured education links**. The December link is the American Museum of Natural History’s website ‘Ology’. Their website offers educational information, games, quizzes and activities. Kids can collect over 200 ology cards, create their own homepage or ask museum scientists questions about a range of topics. There is also a link for educators offering an After-School Educator’s Guide to Ology. Visit http://coml.us/?anchor=coml_us_ed monthly to learn more about other institutions’ educational efforts.

The USNC has released its 2nd issue (Volume 2) of its newsletter. The December issue features an interview with Jesse Ausubel of the Alfred P. Sloan Foundation. To view the newsletter, please visit http://coml.us/?anchor=us_newsletter. If you would like to receive the newsletter by email, please contact CoML@oceanleadership.org.

Crosscutting and Other Related Activities

Technology

The SCOR Technology Panel met 17 November in Auckland, following the All Program events to map out its potential contributions to the CoML synthesis in 2010.

Ministers and officials from over 100 governments and international organizations assembled in Cape Town, South Africa from 28-30 November 2007 at the GEO (Group on Earth Observations - <http://www.earthobservations.org/>) Ministerial Summit to work towards a plan for building a Global Earth Observation System of Systems (GEOSS). Both CoML and POGO (Partnership for Observation of the Global Oceans - <http://www.ocean-partners.org/>) took part in the GEO Summit exhibit, under Ocean United, with displays and continuously looping ocean observation videos. David Farmer attended the Summit and Plenary Sessions on behalf of CoML and noted that the oceans community was seen as a major player at the Cape Town meeting and that the strength of the oceans contribution to the exhibition was very apparent. All participants agreed that real *in situ* ocean monitoring must be incorporated into GEO/GEOSS's future. His advice to the oceans community entailed encouraging our colleagues to volunteer for and play an active role in GEO Task teams. Videos on ocean observing produced by CoML and POGO premiered at the Summit and are available on the CoML Secretariat webpage (<http://www.comlsecretariat.org/>) or on YouTube:

CoML (<http://www.youtube.com/watch?v=kXXzvGJCVAc>) and POGO (<http://www.youtube.com/watch?v=Q5hnhNmGeh0>).

A positive outcome from the ocean community's advocacy with the GEOSS community was apparent in a recent article, "Blue in Green", on Economist.com, which mentioned POGO. The article debates the idea of using the color green as a synonym for environmentalism. As earth is mostly water, it is dangerous to take only a terrestrial view of the world when considering conservation. That view has created a society that has largely ignored the oceans which hold some of the most important places on the planet and are facing some of the biggest environmental issues. Technology is responsible for putting marine conservation on the environmentalism agenda. POGO (Partnership for Observations of Global Oceans) was selected, drawing attention to its goal of creating a proper global marine monitoring system. While not mentioned in the article, POGO meets in January 2008 to strategize about its \$3 billion / 5-year plan.

Barcoding Marine Life

MarBOL has been awarded full support to continue its marine barcoding initiatives. Congratulations to Dirk Steinke and the entire MarBOL team!

Encyclopedia of Life

The Encyclopedia of Life (EoL) continues to move forward and CoML encourages all of the Projects to contribute to the EoL.

Other Community News

Galatee Film

The Galatee film 'Oceans' is moving forward using some new, inventive technology – The Rocket. Andrew Sneath, from the company Hydrodome (which recently signed a contract with the film production company Galatee), has created a new camera housing called the Rocket. The Rocket was originally designed for a new series, Pacific Abyss, for the BBC. The new housing, which will also be used to produce "Oceans", allows cameramen to film steady shots through caverns and canyons without

being slowed down by the equipment and also helps reduce the jolting effect the underwater movements of the cameramen can sometimes have on the resulting film.

World's Oceans Textbook

The **Census is highlighted in the new 9th edition of An Introduction to the World's Oceans** by Keith Sverdrup (University of Wisconsin, Milwaukee) and E. Virginia Armbrust (University of Washington) on a page featuring "Biodiversity in the Oceans". ISBN 978-0-07-282701-9. Copyright 2008.

New Lowy Institute report on Australia and Southeast Asia's Fisheries

Meryl Williams, a member of the CoML Scientific Steering Committee (SSC), was commissioned by the Lowy Institute for International Policy to write a report on Australia and Southeast Asia's fisheries. Entitled "*Enmeshed: Australia and Southeast Asia's Fisheries*", the report contends that Southeast Asia and Australia are connected by dynamic and growing fish trade, illegal cross border fishing and management of shared fish stocks including the major tuna fisheries of the Indian and Pacific oceans and southern bluefin tuna, and shared stocks of sharks, rays and snappers. These connections have and could still further lead to international tensions over fish and fishing. The tensions are being driven by underlying major problems such as rampant overfishing throughout Southeast Asia, little progress in turning around this problem, overlapping but often ineffective regional fisheries management organizations and a lack of basic information, especially on the social and economic side of the fisheries hotspots, as well as on basic fisheries resource characteristics. The report recommends a course of comprehensive policy action for Australia to take, in regional partnerships with governments, non-government and private sector interests, including those along the international fish supply chains. The report can be downloaded or purchased through: <http://www.lowyinstitute.org/Publication.asp?pid=714>.

Biodiversity in the fisheries of Algarve

The programme MARE (Marine Research on Eutrophication) financed a new book in July 2007 titled Biodiversity in the fisheries of Algarve (South Portugal). The eight-year (1999-2006) research programme MARE was aimed at decision-makers working on Baltic Sea environmental issues. The main objective of the book is to make the present biological diversity of the Algarve region known, as well as open new commercial opportunities or markets. Three hundred species are described in the book and presented in the form of identification cards with a picture, scientific name, common name in multiple languages and the main characteristics, distributions, size and commercial interest in Portugal and elsewhere. The descriptions are simple, in layman's terms and the book contains a glossary that explains some of the terminology used and is available in Portuguese and English.

Funding & Employment Announcements

Information regarding Calls for Proposals and other opportunities (jobs, fellowships, post-docs, etc.) can be found at the CoML Secretariat website: www.comlsecretariat.org, under "**Announcements of Opportunity.**"

Calendar of Upcoming Events

January

20-23 Alaska Marine Science Symposium, Anchorage, AK

28 – Feb 1 Convention on Biological Diversity Subsidiary Body on Scientific, Technical and Technological Advice Meeting, Montreal, Canada

February

15-19 AAAS Annual Meeting, Boston, MA

17-21 CoML SSC Meeting, Punta Arenas, Chile

March

2-7 AGU/ASLO Ocean Sciences Meeting, Orlando, FL (CoML, CMarZ, ArcOD & TOPP Session)

April

7-11 Global Conference on Oceans, Coasts and Islands, Hanoi, Vietnam

May

18-21 International Meeting of the International Society for Biological and Environmental Repositories (ISBER), Bethesda, MD

19-23 International Symposium on Effects of climate change on the world's oceans (ICES, PICES, IOC, GLOBEC, SCOR and WCRP), Gijon, Spain

19-30 9th Meeting of the Confederation of the Parties to the Convention on Biological Diversity, Bonn, Germany

23-25 CoML SSC meeting, Huangzhou, China

June

8-13 ASLO summer meeting, St. John's New Foundland

July

7-11 Australian Marine Sciences Association AMSA2008 Conference, Christchurch, New Zealand

7-11 International Coral Reef Symposium, Ft. Lauderdale, FL

28-Aug 1 International Congress on the Biology of Fish, Portland, OR

August

3-8 Organic Geochemistry Gordon Research Conference

September

22-26 ICES Annual Science Conference, Halifax, NS, Canada

October

6-8 Second Symposium on the Ocean in a High-CO₂ World, Monte Carlo, Monaco (Sponsored by SCOR, UNESCO, IAEA, IGBP)

16-26 PICES 17th Annual Meeting, Dalian, China

20-21 SCOR 50th Anniversary Symposium, Woods Hole, MA

20-24 5th World Fisheries Congress, Yokohama, Japan

22-24 SCOR General Meeting, Woods Hole, MA

November

11-15 First World Conference on Marine Biodiversity (MARBEF), Valencia, Spain

16-17 CoML SSC Meeting, Valencia, Spain