

Upcoming CoML Cruises: Watch the project websites for cruise diaries!

CAML Polarstern: <http://www.awi.de/MET/Polarstern/psobse.html>

Scientific Steering Committee (SSC)

The **SSC met 13-14 October in Nara, Japan**. Representatives from the CoML national and regional committees were present at the meeting, as well as additional guests from Japan, Indonesia, Taiwan and South Korea, and ensuring CoML's global impact was a major focus for the meeting. The group discussed ways to increase the impact of and support for OBIS at national levels and started thinking about ways to gain local interest in the global findings report in 2010. The SSC also gave thought to the 2007 All Program meeting, suggesting topics of interest to invitees from industry and a format for the interim status report. The SSC will next meet jointly with the Caribbean Regional Committee on 12-15 February at the Smithsonian Tropical Research Institute in Panama.

SSC Member **Carlo Heip** has been selected as the new **General Director** of the Royal Netherlands Institute for Sea Research (NIOZ), the oceanographic institute of the Netherlands Organization for Scientific Research. Carlo started this position on 1 October, and combines this position with his position as the Director of the Center for Estuarine and Marine Ecology (CEME) of the Netherlands Institute of Ecology (NIOO-KNAW). As NIOZ general director, he will strive to maintain and where possible improve the international position of the institute. The combination of both jobs will allow him to enhance the cooperation between both major Dutch marine institutes upon which their boards have recently agreed. Congratulations to Carlo!

On 7 December, SSC Member **Myriam Sibuet** will be **inducted** as an Officer of the French National Order of Merit (Ordre National du Mérite). This is a prestigious honor, which is can be awarded to French nationals for distinguished civil and military achievements. It is given by the President of France, who is the Grand Master of the Order and appoints all other members, by convention, on the advice of the Government.

Secretariat

The Secretariat welcomes **three new members to the CoML team**.

Kirsten Martin, who participated in the Frankfurt All Program meeting as a representative of the World Conservation Union (IUCN), will be serving as a consultant to the National and Regional Implementation Committees (NRICs) to facilitate the prioritization and coordination of goals and activities and to develop a plan for implementation of national and regional programs. Kirsten holds a Master of Science from the Institute for Polar Ecology in Kiel, Germany and has extensive experience in global marine research and policy issues through her work as Programme Officer for IUCN's Global Marine Programme. Kirsten will be based in Europe

CORE's new Technical Director and Director of Research, Dr. Jerry Miller, oversees and provides guidance to the CORE Research programs, including the International and U.S. Census programs. Jerry received his doctorate in Meteorology and Physical Oceanography from the University of Miami, and has held research and management posts in academia and government.

Heather Mannix has joined the CORE Research Team as a new Research Assistant to both the International and U.S. CoML programs. She comes to CORE from the Audubon Naturalist Society in Chevy Chase, MD, where she worked on field and educational programs for the general public. Heather holds a B.A. in Environmental Science and Policy from Hood College in Maryland.

CoML Reporting Framework

In September, the **Reporting Framework Committee held its second meeting**, hosted by committee chair Paul Snelgrove, at Memorial University in Newfoundland. The committee has made good progress, which was reported at the October SSC meeting. It has received extensive input from the CoML Projects and a variety of users of the 2010 report information regarding CoML's potential societal impacts and products of benefit to a range of stakeholder groups. The committee will present its full recommendations at the February SSC meeting and to the entire CoML community at the 2007 All Program meeting. The framework recommendations will likely focus thematically on the connectedness of the oceans.

2007 All Program Meeting

The **3rd CoML All Program Meeting** and related events will be held at the University of Auckland, New Zealand, during the week of 12-18 November 2007. The main events will be held on the 14-16th, including a public event for the New Zealand community and a two-day All Program Meeting. The All Program agenda will be designed to maximize interaction across projects outside of plenary sessions. Input from the CoML community is welcome as the agenda evolves. Individual meetings may be scheduled for the 12-13th or 17-18th. All Project teams, NRICs and other groups should **contact the Secretariat by 15 December to request individual meeting space**.

New Community Resource

The E&O team at URI is collaborating with the Secretariat to develop and implement a set of **online databases to facilitate communication and coordination within the CoML community** and with the public. All databases will have multiple levels of access, including restricted viewing by the public and editorial access for the CoML community. Two (of four) databases will become available online by the end of 2006. The first is a searchable bibliography of publications produced by the CoML projects, NRICs and other components. The second is a searchable database of all CoML participants and their affiliations. As these databases come online, further information and instructions will be available. The Secretariat and E&O team will request input and correction of information from the CoML projects and NRICs. Please watch for these announcements.

Education and Outreach

The E&O Team at URI is finalizing the **2006 Highlights Report**. The report will be available in December, with copies sent to each Project and NRIC headquarters for distribution.

Database: Ocean Biogeographic Information System (OBIS)

OBIS marked a major milestone in September when it **surpassed 10 million records**. The records represent 71,000 species from 142 datasets. Most new additions were contributed by the network of Regional OBIS Nodes and cover the understudied southern oceans, particularly the waters around Africa, Australia, Antarctica, and South America. These datasets are diverse both taxonomically and in the way they were collected. The data include records for algae, plankton, molluscs, crustaceans, fish, cetaceans, and birds. Collection methods included trawls and

sightings from shore and satellites. Six of these datasets were contributed by the Australian Antarctic Data Centre, five by AfrOBIS, and two from AR-OBIS in Argentina. More information on these datasets is available at: <http://www.iobis.org/newdata>. A map of all records currently in OBIS can be found at: <http://www.iobis.org/OBISWEB/category/All.html>.

OBIS now has the ability to view a polar projection via the C-Squares mapping tool. After a search has yielded a global distribution map, select “World” view. Beneath the global map, alternate links for the poles are provided. Try it at: www.iobis.org.

In October, OBIS was **awarded renewal funds** for two more years. During this time, OBIS must focus on additional fundraising for sustainable, long-term funding beyond 2010. Congratulations to Fred Grassle, Mark Costello, Phoebe Zhang and the entire OBIS team.

Oceans Past: History of Marine Animal Populations (HMAP)

A *Nature News Feature* (12 October), “**The Real Sea Change**,” describes HMAP’s work on pirate logs, medieval cookbooks and restaurant menus around the world. The article makes particular mention of studies by Andy Rosenberg, Tim Smith, Heike Lotze, Jeremy Jackson and graduate student Loren McClenachan, and highlights the need for fisheries managers to look further into the past.

The **second HMAP Mediterranean workshop** took place 27-29 September in Chioggia, Venice, Italy. The workshop, organized by team leader Ruthy Gertwagen and local hosts Otello Giovanardi and Saša Raicevich, advanced the Mediterranean case study by examining the fishing activities in the region from the Late Roman period to the 19th century to assess what changes in Mediterranean marine animal populations and ecosystems had already occurred in the past and to which extent, and if these changes can explain what we observe today. Groups in the Adriatic and Black Seas, both part of the overarching study, reported significant progress.

The August issue of *Frontiers in Ecology and the Environment* featured **two HMAP papers**. The first, “Rebuilding US fisheries: progress and problems” (Andy Rosenberg, Jill Swasey, Margaret Bowman), illustrates some of the problems with the Magnuson-Stevens Fishery Conservation and Management Act of 1996, which was created to end overfishing and restore depleted fish populations. (2006; 4(6): 303-308). In “Conservation implications of historic sea turtle nesting beach loss,” Loren McClenachan, Jeremy Jackson, Marah Newman employed 163 historical sources to map the loss of nesting sites and the long-term decline in populations of green and hawksbill turtles in the Caribbean of the last 1000 years. They report that 20% of historic nesting sites are completely gone, and another 50% support only remnant nesting populations. Modern populations of green and hawksbill turtles in the Caribbean have declined over 99.5% from numbers once described as “infinite,” which has had a profound negative impact on sea grass beds and coral reefs. While populations of nesting green and hawksbill turtles have risen on protected beaches over the past 30 years, those results are still sobering when compared to historic levels of abundance and distribution. (2006; 4(6): 290-296.)

Jeffrey Bolster makes a strong case for marine research in his paper, “**Opportunities in Marine Environmental History**,” published in *Environmental History* (July 2006). Arguing that marine environmental history can complement on-going research in historical marine ecology, the essay invokes recent scientific work while staking out distinct terrain for historians. Read it online at: <http://www.historycooperative.org/journals/eh/11.3/bolster.html>.

A special session dedicated to scientific presentations and discussion of the importance of historical perspective for fisheries science and management in the Gulf and Caribbean will be convened as a part of the **Gulf and Caribbean Fisheries Institute annual conference, 5-10**

November 2006 in Belize City, Belize. The purpose of the symposium is to stimulate investigation of historical data on diversity, abundance and distribution of marine fisheries resources, to present and discuss several case studies from the region, and to lay the groundwork for an interdisciplinary research network. The session is organized by Jeremy Jackson, Loren McClenachan, Diego Schapira and Juan M. Posada, with economical support from Environmental Defense and NOAA.

The **HMAP Steering Group will meet in Roskilde**, Denmark in January. The meeting will be held in conjunction with a European HMAP workshop on long-term impacts of fisheries funded by MarBEF.

Oceans Future: Future of Marine Animal Populations (FMAP)

FMAP co-PI, **Boris Worm was lead author on a paper published in Science on 3 November** stating that current trends in overfishing and pollution project collapse of all currently fished seafoods before 2050. "Impacts of Biodiversity Loss on Ocean Ecosystem Services," co-authored by 13 other scientists including several from the FMAP and HMAP projects, is based on a four year analysis of 32 controlled experiments, other studies from 48 marine protected areas and global catch data from the UN Food and Agriculture Organization's database of all fish and invertebrates worldwide from 1950 to 2003. The scientists also looked at a 1,000-year time series for 12 coastal regions, drawing on data from archives, fishery records, sediment cores and archaeological data. "At this point 29 percent of fish and seafood species have collapsed – that is, their catch has declined by 90 percent. It is a very clear trend, and it is accelerating," Worm said. But the impacts of species loss go beyond declines in seafood. Human health risks emerge as Depleted coastal ecosystems are vulnerable to invasive species, disease outbreaks and noxious algal blooms, which create human health risks and negative impacts on human economy dependent on healthy oceans. The good news is that the data show that ocean ecosystems still hold great ability to rebound, but change needs to happen soon. Read the paper at: <http://www.sciencemag.org/cgi/content/full/314/5800/787>. Press materials and other supporting information can be found at: <http://www.fmap.ca/pressmaterial.php>.

FMAP welcomes **three new students**, who will join the FMAP team in late 2006 and 2007. Allison Schmidt, a PhD student supervised by Heike Lotze, will work on predicting impacts of near shore habitat loss on coastal biodiversity, with funding from a scholarship and the Lenfest Ocean Program. Her work will provide links to HMAP and NAGISA. Marta Coll, a post-doctoral fellow working with Heike Lotze, will model past, present and future of coastal biodiversity and provide an additional link with HMAP. Kristin Kaschner, a post-doctoral fellow working with Boris Worm, will focus on predicting global distributions of marine mammals. Kristin's study will also serve as a link with OBIS-SEAMAP.

Ocean Present: Realm Field Projects

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

NaGISA held its **first open scientific symposium in Kobe, Japan, 15-18 October 2006**, with about 130 participants from 26 countries. The conference began with keynote lectures by Jesse Ausubel and Dr. Tony Underwood of the University of Sydney, followed by three days of scientific presentations, posters and discussion sessions. The participants, comprised of scientists performing NaGISA surveys around the globe, shared the latest results of nearshore surveys in their regions and addressed important topics such as the global integration of NaGISA data, the pros and cons of the NaGISA protocol, and NaGISA's role as a global education tool. Stories about the conference were featured in the newspaper *Kobe Shinbun* and on local radio. The

conference summary, as well as Jesse Ausubel's opening talk and a closing statement by Fred Grassle, will soon be posted at <http://www.nagisa.coml.org/World%20Conference%2006.htm>.

Reefs: Census of Coral Reefs (CReefs)

CReefs has a new website at www.creefs.org. The site features an introductory video, highlights interesting life on the reef, and provides cruise information such as journals and interviews with the scientists. The website was developed in collaboration with Randy Kochevar (of TOPP) and ad2, NBII Pacific Basin Information Node, AIMS, and the NHI Marine National Monument.

From October 8-25, the **CReefs team explored the Northwestern Hawaiian Islands (NWHI) French Frigate Shoals** aboard the NOAA research vessel *Oscar Elton Sette*. French Frigate Shoals is one of the healthiest and least disturbed atolls in the world, and lies within the newly established NWHI National Marine Monument. The cruise's Chief Scientists and CReefs Co- PI, Rusty Brainard, led the team of 20 scientists, including renowned invertebrate, algal, and microbial taxonomists. Exciting news from the ship includes 100 potential new species of crabs, corals, sea cucumbers, sea quirts, worms, sea stars, snails, and clams. While some of these species are known from other areas, this will be the first time they have been recorded in the French Frigate Shoals of the Northwestern Hawaiian Islands. The cruise website, which can be accessed through the CReefs homepage, provides more information about the potential new discoveries. The CReefs team thanks ICoMM for providing its protocol and help with the microbial component of the cruise. A good example of project integration!

Through September and October, the **SANTO 2006 Survey**, deep reefs component of CReefs, has been documenting the fauna and flora of the South Pacific island Espiritu Santo in Vanuatu. Because of Santo's isolated location, it has been largely unexplored and maintains a very high level of biodiversity. Scientists expect to find many new species of flora and fauna. More than 100 scientists from 15 countries are participating. Philippe Bouchet and Bertrand Richer de Forges lead the marine biodiversity component. Read more about this expedition at <http://www.ird.fr/recherche/santo2006/blog/>.

Regional Ecosystems: Gulf of Maine Area Program (GoMA)

The **second annual cruise of the Canadian Discovery Corridor project**, a GoMA component project, took place in late July. The two-week cruise, led by the Canadian Department of Fisheries and Oceans explored several offshore basins in the Gulf of Maine. This was just a single cruise within a ten-year biodiversity project to study the distribution of key species in the region. Cruise participants collected a number of potentially new species they were unable to identify and brought them back for further analysis.

Nick Makris reported from aboard ship in the Gulf of Maine on 5 October, where he was further testing his long-range Ocean Acoustic Waveguide Remote Sensing (OAWRS) technology: "We are seeing wonderful and amazing things. The images we bring back will likely change the way people think about the nation's fisheries on Georges Bank...We set our OAWRS imaging diameter at 100-km, with the OAWRS ships, Oceanus and Endeavor, in the Franklin Basin just above the Northern Flank of Georges Bank...We have watched as diffuse clouds of fish slowly form into both small schools and massive shoals...We have also watched as these dense aggregations dispersed back into diffuse clouds..."

The GoMA project recently **sparked the interest of a Maine artist, Shoshannah White**, who consulted GoMA's Suzy Ryan during the design phase of her project for an installation on the exterior of the University of Southern Maine's new Bioscience Research Wing. Inspired by the

discussion, the artist used a nautilus shell in the project to represent GoMA's research. Congratulations to GoMA on its contribution to art and awareness of marine life.

Continental Shelves: Pacific Ocean Shelf Tracking (POST)

POST welcomes Jonathan Thar, its new Research Program Coordinator. Jonathan recently completed a Bachelor of Education program and has experience communicating with a variety of audiences. Jonathan will also lead POST's marketing and outreach efforts.

On 26 September, **Canada AM aired a piece on POST**. You can still view this piece online by visiting www.ctv.ca/canadaam and searching for "cutting edge."

A story about **POST aired on Oregon Field Guide**, a production of Oregon Public Broadcasting, on 19 October 19.

POST Senior Scientist George Jackson and colleague Chuck Greene are **organizing a session** on the Emergence of Conservation Oceanography at the 2007 American Association for the Advancement of Science (AAAS) Conference (15-19 February, San Francisco, CA). The session will highlight the tracking technologies available to support ecosystem-based management, and will feature presentations from both the POST and TOPP projects, as well as the proposed integration project, the Offshore Tracking Network.

POST E&O team member **Tara Taylor was married in September**. Congratulations to Tara and her husband Steve!

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

HERMES, a contributing project of COMARGE, **completed the first leg of a cruise** aboard the RV *Meteor* to the central Mediterranean. The 3-week leg (24 Sept - 16 Oct) investigated the geobiology of the deep-water coral ecosystems in the Sicily Channel, Tyrrhenian Sea and Malta escarpment. Detailed investigations by ROV *Quest* led to the discovery of two new live coral provinces in the region, and revealed that the Santa Maria di Leuca reefs extend as far north as the Bari Canyon. In addition, ROV inspections of the mud volcanoes in the Ionian Sea revealed active seepage. The RV *Meteor* now continues into the eastern Mediterranean to investigate the cold seep ecosystems on the Nile Fan and the Anaximander Seamounts.

COMARGE is pleased to report it has won the **support of Fondation Total**, along with ChEss. Thanks to Bernard Tramier and Laure Fornier of the Fondation.

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

CeDAMar and MarBEF will co-host a workshop on "taxonomy and identification of deep-sea nematodes and the use of the NeMys tool kits" on 8-12 January 2007 at the University of Ghent (Belgium). The aims of the workshop are to: learn techniques for preparation of slides for taxonomic study, identify the major deep-sea genera, use NeMys as identification and archiving tool, make taxonomic descriptions for identification of within genera diversity. The NeMys database system was developed at the Marine Biology Section (Ghent University) to store as many as possible types of biological information (morphology, biogeography, taxonomy, literature, pictures, collections and molecular analyses) on mainly marine taxa in a fully digital way.

In July 2006, CeDAMar steering group member **David Billett was elected** for a 5-year term (January 2007 to December 2011) to the International Seabed Authority's (ISA) Legal and Technical Commission (LTC). Through this body, the results from CeDAMar projects will be

readily taken up into regulations for the controlled management of deep-sea mineral resources, such as polymetallic nodules, cobalt crusts and polymetallic sulphides.

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

MAR-ECO held an **international workshop in Balneário Camboriu, Brazil** on 6-7 September 2006. The goals of the workshop were to inform the South Atlantic marine science community about MAR-ECO strategies and methodologies to study biodiversity along the mid-Atlantic Ridge in the North Atlantic and to stimulate the development of collaborative research efforts on the southern mid-Atlantic Ridge. The workshop was hosted by Dr. Fernando Diehl (Associação Brasileira de Oceanografia) and Dr. Angel Perez (CTTMar, Brazil). Eighteen scientists from South America and Africa participated, as well as members of the MAR-ECO network. Participants posed potential scientific questions to be addressed and suggested three target areas for work on the southern MAR: the Equatorial Fracture Zone, the middle area of the ridge including the Vitoria-Trindade Seamounts, and the southern area including the Walvis Ridge and Rio Grande Rise. To follow up on the recommendations of the workshop and prepare a science plan, an Interim South Atlantic MAR-ECO Steering Group was established, chaired by Angel Perez. Additional members include Debora Pires (Brazil), Pablo Muniz Maciel (Uruguay), Viviana Alder (Argentina), Richard Santos (Portugal and N. Atlantic MAR-ECO steering group), Malcolm Clark (CenSeam PI), and, potentially, Johan Augustin (Africa). More information can be found at: http://www.mar-eco.no/sci/data_management/workshop_in_south_atlantic.

In a recent paper published in the *Proceedings of the Biological Society of Washington*, MAR-ECO scientists Richard Young, Michael Vecchione, and Uwe Piatkowski **describe a new species of squid, *Promachoteuthis Sloani***. The new species is based on two specimens with the following characters that are unique within the family: each tentacle with two series of complex papillae in the proximal 80%, and each tentacle with pigmented ridges dorsolateral to the papillae that break into papillae distally. (Vol. 119, No. 2, pp. 287–292.)

A component of the exhibition *Deeper than Light* will be shown in Genoa, Italy at a European Science Festival from 26-31 October. The exhibit represents an outreach collaboration between MAR-ECO, ChEss, COMARGE and CeDAMar. The larger, full exhibit will open at the Bergen Museum in Norway in early 2007. For more, see: <http://www.mar-eco.no/exhibition/genoa>.

Seamounts: Census of Marine Life on Seamounts (CenSeam)

On 8-16 October, CenSeam researchers explored the Rumble III seamount off the coast of New Zealand on a cruise funded by the New Zealand Foundation for Research, Science and Technology. The aim of the cruise was to determine the seamount's influence on the water column. CenSeam management team members Malcolm Clark and Mireille Consalvey were among 12 scientists aboard the *RV Tangaroa*. Daily reports are available at: http://censeam.niwa.co.nz/outreach/rumble/censeam_rumble.

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

The ChEss Field Programme is going strong, with several new funded projects...

ChEsSo, a NERC funded consortium bid for the exploration and investigation of chemosynthetic ecosystems in the Southern Ocean, is the major Antarctic component of the ChEss Polar field programme. It will run from 2007-2012. Paul Tyler of NOC (UK) is the PI.

A signature of Memorandum of Understanding between Census of Marine Life/Sloan Foundation and Fondation Total, signed in Paris on 12 October 2006, initiated **ChEss-Fondation Total**. Fondation Total is contributing funding support for the ChEss Atlantic Equatorial Belt

region and O&E activities from 2006-2010. The PIs are Eva Ramirez-Llodra & Paul Tyler. For more details, visit: http://www.soc.soton.ac.uk/chess/fondation_total.html.

Two proposals have been accepted for the **South MAR** programme. Nicole Dubilier of MPI (DE) is the PI on a proposal to revisit South Mid-Atlantic Ridge vent sites in 2008. A proposal for “New methods for exploration of deep-sea hydrothermal vents” has been accepted by NSF-ITR. ChEss’ Tim Shank (WHOI, USA) is the co-PI. Work will be done in 2008.

GUINECO, a cruise to investigate Congo and Angola cold seep ecosystems, will occur in 2008. Antje Boetius (Uni. Bremen, DE) is the PI for this collaboration between Uni. Bremen and Ifremer.

Anders Warén (SMNH, SE) has been funded by the Swedish Museum of Natural History for two projects. The first is a **Review of gastropod taxonomy from seeps and vents**. The second studies **gastropod fauna of sunken driftwood in the South Pacific**.

...and several more proposals submitted and under consideration...

Nine full proposals have been submitted for **EuroDEEP** under the European Science Foundation. Decisions are expected early 2007.

Lucia Campos (Uni. Rio Janeiro, BR) submitted two IPY proposals: 1) **SEASOAM** – Study of A Separation Between Antarctica and South America: its geological and biological implications; 2) **MABIREH** – Marine Antarctic Biodiversity in relation to environmental heterogeneity at Admiralty Bay, King George Island and adjacent areas at the Bransfield Strait.

Cindy van Dover (Duke Uni., USA) submitted proposals for work on **Blake Ridge**: 1) to NOAA-OE for the study of seep system and associated communities, including a barcoding effort; 2) proposal pending with NOAA and UNC-Wilmington Undersea Research Centre for ROV Jason work to map organism distribution on Blake Ridge seeps.

ChEss participated in **several recent cruises**, including: (1) Vikking, an interdisciplinary cruise under the HERMES programme to the Barent Sea cold seeps (June 2006); (2) SeepOs, an exploratory cruise to the Chile margin OMZ (August-September), with the participation of Javier Sellanes (PI, COPAS), Lisa Levin and Victor Gallardo; (3) Whale fall cruise to Sagami Bay (PI: Y. Fujiwara (JAMSTEC), August); (4) Two cruises to the Oregon & California OMZ for the investigation of metazoan life within the OMZ (PI: Lisa Levin (SIO, USA), July & September); (5) GRAVILUCK, a geological and geophysical cruise to Mid-Atlantic Ridge where a new vent field close to Lucky Strike was found (Ricardo Santos (Azores Uni.) participated).

The data in **ChEssBase** has been edited and updated by Sally Hall, including the addition of species described since 2005 and new publications. ChEssBase has now information on 1235 species and 1118 genera from 90 chemosynthetic sites and includes the full references of 1296 papers.

ChEss co-funded and participated in the **11th International Symposium of Deep-Sea Biology** in Southampton in July 2006. Presentations were made by the CoML-ChEss and DESEO programmes.

The **ChEss Polar Field Programme**, which includes projects in the Antarctic and Arctic, was presented at the InterRidge Polar Ridges workshop in Sestri Levante in September. An article entitled “ChEss – a Census of Marine Life project,” in press for InterRidge News, will also feature Polar Field programme (Baker, M., Ramirez-Llodra, E., Tyler, P.A. & German, C.R., 2006). The programme will soon have a new website linked from www.noc.soton.ac.uk/chess/field.php.

An article covering work by ChEss (and ICoMM) appeared in the **7 October edition of *Science News***. Read the article at: <http://www.sciencenews.org/articles/20061007/bob7.asp>.

ChEss Steering Group member Cindy Van Dover has relocated to Duke University where she is Director of the Marine Laboratory at the Nicholas School of the Environment and Earth Sciences.

Arctic: Arctic Ocean Diversity (ArcOD)

ArcOD wishes to highlight **examples of ongoing student projects** within the ArcOD framework:

Tara Connelly is working with Dr. Don Deibel (Memorial University, Newfoundland, Canada) on biodiversity of benthic boundary layer zooplankton from the Beaufort Sea shelf. She says: “A major gap in our understanding of the biodiversity of zooplankton in the Arctic Ocean exists for zooplankton that live near the sea floor (benthic boundary layer (BBL) zooplankton) because of sampling difficulties. Yet, without an understanding of BBL zooplankton abundance and biodiversity patterns, their impact on carbon fluxes cannot be appropriately evaluated. In order to better define this community in the Beaufort Sea, we collected BBL zooplankton with an epibenthic sled from 28 stations between September 2003 and August 2004 from the Canadian Coast Guard Ice Breaker *Amundsen* as part of the Canadian Arctic Shelf Exchange Study. Animal samples are being identified to species level and counted to assess BBL zooplankton community composition and abundance patterns. In Fall 2005, with help from ArcOD and under the direction of Pedro Martinez [CeDAMar], I went to the German Centre for Marine Biodiversity Research to begin my taxonomic analyses. While in Germany, I realized that I have at least a half dozen undescribed copepods—harpacticoid, cyclopoid and calanoid—in my samples, including a new genus of calanoid according to Lena Markasheva and Knud Schultz. Back in Canada, while samples are being identified and counted, length and weight measurements are being taken to estimate production. Together, abundance and production data will help us to estimate the quantitative role of this community in carbon fluxes in the BBL. To our knowledge, this study is the first to look at the biodiversity of BBL zooplankton collected with an epibenthic sled in the Beaufort Sea and is helping to fill in large gaps in our knowledge of BBL communities on an Arctic shelf.”

Bente Stransky is working with Dr. Angelika Brandt (CAML, University and Zoological Museum Hamburg, Germany) on the abundance and diversity of Amphipoda (Crustacea) from the Greenlandic shelf. She tells us this about her project: “A couple of travel activities have been and will be financed by the ArcOD mini grant and are embedded into the final phase of my PhD project, encompassing the complete taxonomic determination of the peracarid fauna (Crustacea, Malacostraca) from the South Greenland shelf. The main objective of this grant is the identification of the amphipod material. After first familiarizing myself with amphipod taxonomy, I have already carried out several 1-2 week visits to specialists. The first one was a visit to Bergen, Norway, to work with Dr. L. Buhl-Mortensen, who knows the Nordic amphipod species very well. Our focus was on the family Oedicerotidae. Back in Hamburg, I used my knowledge of the Oedicerotid family and finish identifications of that family before I prepared for the next family, the Lysianassoidea (Amphipoda), which were the main reason for my trip to Dr. C. de Broyer in Brussels (Belgium). Dr. de Broyer, well known for his work with Lysianassoidea, spent the entire time of my stay helping me with the determination of this very difficult taxon, including identification of a new species, which we will describe soon. The expert help contributed a major step in the progress of my PhD work, and significantly more work was done than expected during these excellent co-operations. Later this year the following

visits are planned: Dr. A. Myers in Cork, Dr. C.O. Coleman in Berlin and Dr. T. Krapp-Schickel in Bonn.”

Imme Rutzen (University of Hannover, Germany) is working with Dr. Falk Huettmann (University of Alaska Fairbanks) on GIS Model-Predictions of Arctic Biodiversity: Applications using opportunistic Plankton and public online databases towards a digital distribution atlas of the Polar regions. They described to us what this project is all about: “High-quality biodiversity information is difficult to obtain, and this is specifically true for Arctic regions. This thesis investigates a method on how to overcome such shortcomings. Zooplankton organisms are crucial drivers in Arctic food chains, and contain considerable species diversity. We are working on an application for zooplankton data from ArcOD and other publicly available online data sources such as NMFS, WOA94, ETOPO2. Recent field data obtained by the ArcOD team will be implemented as well. We are applying latest statistical modeling algorithms such as TreeNet, RandomForest and MaxEnt in order to derive the best possible distribution maps for a selected set of Arctic zooplankton. Here, we focus primarily on compiling datasets, setting up such a GIS model, and start to assess the performance of the first model generation with traditional and progressive accuracy metrics such as ROC and confusion matrices. This project can serve as a proof-of-concept on the use of ArcOD data and other publicly available IPY online data sets in order to derive seamless, high quality, online and in-time Biodiversity information for the circumpolar Arctic and elsewhere. Such information is crucial for ecological studies and applied management questions assuring global sustainability.”

Antarctic: Census of Antarctic Marine Life (CAML)

In October, CAML was **awarded renewal funds** for three more years, covering International Polar Year and beyond. Congratulations to Michael Stoddart, Vicki Wadley, Colin Summerhayes and the entire CAML team.

Under the umbrella of CAML, the German research vessel ***Polarstern* will explore life under the Antarctic ice** and the consequences of the Larsen A & B ice shelf disintegration on organisms close to the seafloor. Julian Gutt of the Alfred-Wegener Institute will lead the team of 47 scientists from 14 countries. The expedition will begin on 23 November in Cape Town, South Africa and conclude on 30 January 2007 in Punta Arenas, Chile. You can follow this voyage at: <http://www.awi.de/MET/Polarstern/psobse.html>.

The **CAML Top Predators Working Group met** on October 11-12 at the National Institute of Polar Research near Tokyo. The group, which includes Diego Rodriguez (Chair), Vicki Wadley, Akinori Takahashi, Akiko Kato, and Yan RopertCoudert, discussed cooperative research on the biodiversity of predators at the apex of the trophic web. Seabirds, penguins, seals and whales were the main groups considered, with squid and large fishes also covered. Initiatives to share data were discussed, with a view to exploring how different species are responding to climate change.

The **South American nations have formed a consortium** called I Oficina Latinoamericana para el Census of Antarctic Marine Life (IOLA-CAML) to coordinate the Antarctic biodiversity research of Argentina, Brazil, Chile, Ecuador, Peru and Uruguay. The consortium first met 15 August in Concepcion, Chile, under the leadership of Lucia de Siqueira Campos, Diego Rodriguez and Manuela Bassoi. Together, administrators and scientists discussed common interests, needs, and effective potential collaboration. Several potential links and forms of collaboration immediately identified, and negotiations started towards projects that can contribute to CAML. South America may play a key role and make significant contributions during IPY through agreements about sharing its science and logistics.

The **report from the Southern Ocean Observing System (SOOS) Workshop**, held in Hobart on 15 July, is now available on the CAML website at www.caml.aq. There is also a link to the PowerPoint presentations from the Workshop. The workshop participants voiced a strong consensus of opinion that developing an observation system for the Southern Ocean is worthwhile. A second workshop will be held within the next year or so to follow up on the recommendations of the participants. An organizing Committee for the next SOOS workshop was formed and includes CAML leaders Colin Summerhayes, Michael Stoddart and Victoria Wadley, as well as TOPP leader Dan Costa.

The **next CAML SSC Workshop will be held 4-8 June 2007** in Bialowieza, Poland.

Top Predators: Tagging of Pacific Pelagics (TOPP)

The 8 September issue of *Nature* featured an article about TOPP's elephant seal tracking program, focusing on the vast amounts of oceanographic data collected through the tags. This data represents a significant contribution to the World Ocean Database. Read the article at: http://www.toppcensus.org/Upload/News_61/Tags%20Science.pdf.

TOPP scientists made a scientific breakthrough as they **tracked the sooty shearwater** in its journey of more than 40,000 miles in 200 days – the longest animal migration distance ever electronically recorded. Four years in the making, TOPP scientists finally developed a tag that would work on these little sea birds. What they discovered is that the sooty shearwater flew in a giant figure eight pattern, traveled 40,000 miles annually in search of food, and crossed the equator twice and covered the entire Pacific Ocean. Their findings were reported in the *Proceedings of the National Academy of Sciences* (16 August). Download the paper at: <http://www.toppcensus.org/web/PublicationDetails.aspx?id=20>.

Zooplankton: Census of Marine Zooplankton (CMarZ)

TBS, a major television network in Japan, produced a **documentary program “Planet Blue”** that includes a video clip and some zooplankton photos from the April CMarZ cruise in the Sargasso Sea. The documentary aired on 18 September.

In October, CMarZ was **awarded renewal funds** for three more years. Congratulations to Ann Bucklin, Sigrid Schiel, Shuhei Nishida and the entire CMarZ team.

The **CMarZ Steering Group will meet 6-8 November 2006** in Tokyo, Japan.

Microbes: International Census of Marine Microbes (ICoMM)

In a paper published in the *Proceedings of the National Academy of Sciences* (31 July), ICOMM scientists reveal **marine microbial diversity may be some 10 to 100 times more** than expected, and the vast majority are previously unknown, low-abundance organisms theorized to play an important role in the marine environment as part of a “rare biosphere.” Lead author and ICoMM PI Mitch Sogin notes, “These observations blow away all previous estimates of bacterial diversity in the ocean.” Using a revolutionary new DNA technique called “454 tag sequencing” that requires only small snippets of genetic code to identify an organism, the ICoMM team discovered more than 20,000 kinds of bacteria in a single liter of seawater. They expected to find just 1,000 to 3,000. This discovery is important because microorganisms are vital to our survival. These rare ones have as yet unknown roles in the ecosystem and can be significantly impacted by global change. Read the paper at: <http://www.pnas.org/cgi/content/full/103/32/12115>.

Faculty of 1000 Biology, an online research service that comprehensively and systematically highlights and evaluates the most interesting papers published in the biological sciences, ranked the “rare biosphere” paper as **No.1 in All Biology** for the week of 15 August. The weekly

evaluations are based on the recommendations of a faculty of over 2000 of the world's top researchers. The ICoMM paper received a rating of 9.8 out of possible score of 10. For more about Faculty of 1000 Biology, visit: <http://www.f1000biology.com/home/>.

The W. M. Keck Foundation has awarded the ICoMM (through its U.S. headquarters at MBL) a two-year, \$1.5 million grant to acquire a parallel DNA sequencing system to enable an initial census of marine microbes.

ICoMM has **revamped its website!** Visit it at: <http://icomm.mbl.edu/>.

National and Regional Activities

Australia

In November 2006, Ian Poiner (SSC Vice Chair) will be meeting with senior Officials from Indonesia's Ministry for Marine Affairs and Fisheries (MAF) to plan the development of a collaborative program between CoML Australia and Indonesia. MAF is the Indonesian Ministry responsible for marine biodiversity and includes the Agency for Fishery and Marine Research and has close links to other key Indonesian marine research agencies (e.g. LIPI and universities). The meeting will discuss: the establishment of an Indonesian National Implementation Committee; the incorporation of existing Indonesian marine biodiversity data into OBIS; the development of a Indonesian, Timor Leste, Australian and Papua New Guinea CoML affiliated project focused on the Arafura and Timor Seas, which could be linked to the proposed GEF project - *Arafura and Timor Seas Ecosystems Action Program (ATSEA)*. The Arafura and Timor Seas region is one of the global marine biodiversity "hotspots."

Canada

The Canadian Postal Service is **planning a series of postal stamps featuring CoML** scientists and images from the ArcOD project to commemorate the International Polar Year. It is anticipated that these will be available in February 2007.

Caribbean

The **Venezuelan NaGISA team was awarded funding** from Chevron to carry out the NaGISA protocol as a marine biodiversity monitoring program in the east region of the Venezuelan coast. Work will begin in 2007.

China

CoML China and OBIS China launched websites at <http://www.coml.org.cn> and <http://www.iobis.org.cn>, respectively. Currently, the Chinese OBIS Database contains about 200,000 records, which mainly include the data on marine algae in China Sea and the data on the Chinese National Comprehensive Oceanographic Survey carried out during 1958-1960. Quality control of these data is being carried out by the experts from various fields of taxonomy in Marine Biological Museum of Chinese Academy of Sciences. Part of the data in Chinese OBIS database is accessible online through the international OBIS portal now.

Europe

In September, a **workshop on European Tracking of Predators in the Atlantic (EUTOPIA)** was held in London by Drs. David Sims and Julian Metcalfe (UK). The main objective of the project is to track marine vertebrate predators such as sharks, turtles and whales in the Atlantic and Mediterranean. More specifically, investigations will take place to determine how these animals utilize key habitats in the ocean, and to identify animal-environment interactions by

studying changes in the environment e.g. plankton, sea level. Links will be made to TOPP and MAR-ECO, as well as the European MARBEF programme on the role of marine top predators.

EuroCoML has offered **funding for two workshops** to take place in early 2007. The first is on “Colonialism and Historic patterns in the Arctic and sub-arctic regions (HMAP-Arctic).” The second is an ArcOD-IPY PI cluster meeting to encourage synergies and collaborations between projects.

Le Muséum national d’Histoire naturelle (MNHN) in Paris has recently published its latest volume of ***Tropical Deep-Sea Benthos (Vol. 24)***, a series dedicated to inventoring and describing the deep-sea faunas of the world, with special emphasis on the most extensive and least explored biogeographical region – the Indo-West Pacific. The series is a result of an ongoing sampling programme by MNHN and L’Institut de Recherche pour le Développement, and Bertrand Richer de Forges of CenSeam is a co-author. Volume 24 contains 12 contributions by systematists from Australia, New Zealand, Indonesia, Japan, Poland, Spain, Sweden, and the United States, together describing 5 new genera and 57 new species. Thanks to Philippe Bouchet, who serves as Director of the Paris Museum Press, *Tropical Deep-Sea Benthos* is a contribution to the Census of Marine Life.

Indian Ocean

The **Indian Ocean Committee (IO-CoML) met jointly with the Sub-Saharan Africa Committee** at the University of Dar Es Salaam in Tanzania on 9 September. The meeting was hosted by Prof. Yunus Mgaya, member of the Sub-Saharan Africa Committee. The meeting goals were to strengthen current activities and explore opportunities for new initiatives. Additional invitees to the meeting included Dr. Edward Kimani of Kenya, coordinator of Indian Ocean NaGISA, and Dr. Greg Wagner of Tanzania, Chairman of IO-GOOS Coastal Projects.

Ind-OBIS held its First National Workshop at the National Institute of Oceanography (NIO) Regional Centre in Kochi, India on 25-26, September. The workshop was co-sponsored by the Council of Scientific and Industrial Research (New Delhi), the Department of Biotechnology (New Delhi), and Marine Technologies (Chennai). Twenty-six delegates from 19 institutions in India, along with three overseas delegates representing AfrOBIS, and US-OBIS Nodes, attended. The workshop had wide media coverage from both television and newspapers and succeeded in creating greater interest among data holders and young researchers.

India is **making great strides in the barcoding effort**. At the 7th Asia Pacific Marine Biotechnology Conference in Kochi in November 2006, there will be a special session on barcoding of marine organisms. The conference organizing committee includes IO-CoML participants Mohideen Wafar, P.A. Loka Bharathi, and Vishwas Chavan, as well as SSC member D. Chandramohan.

South America

The South American committee **met 27-29 September in Mar del Plata, Argentina**. They reviewed South American participation in the CoML projects, which is strong for OBIS and NaGISA and emerging in CAML, ICoMM, MAR-ECO and COMARGE. The meeting was covered by the Brazilian media.

A **new book on biodiversity of Chile** contains a chapter written by South American SSC member and Vice Chair, Victor Ariel Gallardo.

Sub-Saharan Africa

CoML Africa Chair, Charles Griffiths, and colleagues made a number of discoveries this year, the most exciting of which is a **new and impressively large species of rock lobster** from the Madagascar Ridge. *Palinurus barbarae* is 50 cm long and already attracting the interests of commercial fishers and unfortunately lies in international waters, where fisheries control is impossible. This was Charles' 100th new species find. Congratulations to Charles! The paper describing this lobster is published in *Crustaceana* (Groeneveld, Griffiths and Van Dalsen, 79(7): 821-833).

USA

On 11-13 September in Washington DC, the US National Committee convened a **workshop entitled Approaches for Researching the Roles of Marine and Coastal Biodiversity in Maintaining Ecosystem Service**. Over 70 scientists and program managers from all over the US and Canada gathered to discuss the effect of marine diversity as a predictor of ecosystem function. Participants agreed that there are evolutionary / ecological differences in diversity among systems that affect ecosystem resilience, in particular low diversity systems are at risk because of low functional redundancy, whereas high diversity within a system results in more ecosystem resilience. Additionally, biogenic habitat complexity plays a key role in determining biodiversity and ecosystem functioning, specifically the extent a single dominant species/ top predator plays a role in the regulation of food webs. The workshop concluded that although additional research and analysis is needed to map and determine the correlation between biodiversity and marine ecosystem management, it's clear that biodiversity is an essential factor in recognizing and maintaining the health of the oceans. The workshop steering committee plans to publish a workshop report for presentation to the Joint Subcommittee on Ocean Science and Technology and the Subcommittee on Integrated Management of Ocean Resources, both of which were created under the President's Ocean Action Plan, to assist in determining the future direction of biodiversity research and study within the agencies and the federal government. For more information, including a meeting agenda, visit:

http://www.coml.us/Dev2Go.web?Anchor=2006_biodiversity_workshop.

The **next meeting** of the U.S. National Committee for the Census of Marine Life will be held on **14-16 November 2006** at the Harte Research Institute for Gulf of Mexico Studies in Corpus Christi, TX, hosted by USNC member Wes Tunnell.

Crosscutting and Other Related Activities

SCOR: Panel on New Technologies & Other Events

The SCOR Panel on New Technologies **met 18-20 October 2006 in Kobe, Japan** (in conjunction with the NaGISA world conference). Discussions included electronic tags and AUV technology. The SCOR Panel expressed a desire for improved communication with the CoML Realm Projects. There was a joint technology session with Techno-Ocean on the 18th to present CoML research and needs for new technology.

On 24-26 October, Victor Gallardo hosted a **SCOR workshop on oxygen minimum systems in the oceans: distribution, diversity and dynamics**. Workshop topics covered physical and chemical oceanography, biogeochemistry, ocean-atmosphere interactions, biology, biodiversity, ecology, paleoceanography, and anthropogenic influences related to oxygen minimum zones and oxygen deficient waters. The workshop was held during the SCOR General Meeting in Concepcion, Chile. For a list of speakers and other information, see: <http://www.cona.cl/scor/oms.htm>.

On 7-9 December 2006, SCOR will **host a second summit of international large-scale research and observation projects and programs**. The proposed meeting would help CoML to increase its interactions with related efforts, which would benefit both CoML and the other efforts. Areas for cooperation include observational platforms and data management. This is a follow-up to the well received 2004 summit, which took place in Venice. For the agenda and other information, see: <http://www.jhu.edu/scor/ProjCoord2.htm>.

ICES 2006

The **2006 ICES Annual Conference** was held 19-23 September in Maastricht, The Netherlands. SSC Member **Carlo Heip gave an invited lecture** on “Marine Biodiversity: the Exploration and Understanding of the Blue Planet.” On 19 September, SSC Members Mike Sinclair (Canada) and Myriam Sibuet (France) convened a **theme session, entitled “Census of Marine Life: Community and species biodiversity in marine benthic habitats from the coastal zone to the deep sea”** (Theme Session D), which focused on benthic biodiversity, an emerging research area of high priority for ICES. Papers and posters were presented by EuroCoML, CenSeam, COMARGE, ArcOD, MAR-ECO, Great Barrier Reef Seabed Biodiversity (CoML Affiliated Project), and other high quality studies. As a follow-up to the session, participants met for a discussion on conceptual issues in benthic ecology that are of interest to several of the CoML Realm Projects and useful in thinking forward to the CoML 2010 synthesis. The discussion identified “hot topics” that are tractable within a 3 to 5 year time frame, as well as technical issues that require attention across projects within the Census. Links to Carlo’s lecture and the draft report of the CoML theme session can be found at: <http://www.ices.dk/iceswork/asc/2006/index.asp>.

Barcoding Marine Life

A **special session on barcoding of marine organisms** will be held at the 7th Asia Pacific Marine Biotechnology Conference in Kochi in November 2006. Additionally, Jesse Ausubel will give a lecture on barcoding and the Barcode of Life during plenary session. For more information on this conference, visit: <http://www.7apmbc.in/>.

For news about recent barcoding of bryozoans and sponges see the 2 November and 26 October entries at The Rockefeller University’s barcode blog: <http://phe.rockefeller.edu/barcode/blog/>.

Other Community News

UN Atlas of the Oceans

The UN Atlas of the Oceans (<http://www.oceansatlas.org/>), which prominently features Census of Marine Life in its Biology section, added new marine categories over the past few months, including marine insects, microbes and reptiles. The Atlas newsletter, distributed to over 6,200 members of the Atlas community, featured OBIS as its lead story in October.

E&P Sound and Marine Life Program

A group of oil- and gas-producing companies, most of which are members of the International Association of Oil and Gas Producers (OGP), have embarked on a new research initiative on exploration and production (E&P) sound and its potential impacts on marine life. Together, the companies will provide funds for research on sounds produced during the E&P phases of offshore oil and gas operations, and the possible effects these sounds have on marine animals. It is anticipated that the funds will be approximately US\$8.1 million per year and that the program will last three to five years. More information about this program, including requests for proposals (when available), can be found at the program website: www.soundandmarinelife.org.

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

November

- 2-5** 7th Asia Pacific Marine Biotechnology Conference, Kochi, India
- 5-8** CMarZ Steering Group meeting, Tokyo, Japan
- 14-16** USNC Meeting, Corpus Christi, TX, USA
- 23-30 Jan** CAML *Polarstern* cruise

December

- 7-9** SCOR Summit of Major International Marine Programs

January

- 8-12** CeDAMar–MarBEF Workshop on taxonomy and identification of deep-sea nematodes and the use of the NeMys tool kits, Ghent, Belgium
- 17-19** Meeting of the Partnership for Observation of the Global Oceans (POGO), Tsingtao, China

February

- 12** Meeting of the CoML Caribbean Regional Implementation Committee, Panama City, Panama
- 13-14** Meeting of the CoML International Scientific Steering Committee, Panama City, Panama
- 15-19** American Association for the Advancement of Science (AAAS) Annual Meeting, San Francisco, CA, USA (TOPP/POST related session on 19th)

April

- 9-13** Mediterranean Science Commission (CIESM) Congress, Istanbul, Turkey

June

- 4-8** CAML Steering Group meeting, Bialowieza, Poland
- 9-10** SCAR-MarBIN workshop, Bialowieza, Poland
- 13-15** 2nd International Conference on Barcoding Life, Singapore