

### CoML Cruises underway

ArcOD: <http://oceanexplorer.noaa.gov/explorations/05arctic/welcome.html>

### All Program Meeting

The All Program meeting will take place Friday-Saturday, 4-5 November 2005 in Frankfurt, Germany. It will be held in conjunction with a EuroCoML symposium (similar to the Washington DC symposium, October 2003) on Thursday, 3 November (see more under the Europe topic below). For an outline of the scheduled events and a preliminary All Program agenda, visit: [www.comlsecretariat.org](http://www.comlsecretariat.org). Send any comments on the agenda to Kristen Yarincik ([kyarincik@coreocean.org](mailto:kyarincik@coreocean.org)) by 1 August 2005. Hotel and other travel related information will be available shortly.

### Scientific Steering Committee (SSC)

The SSC will next meet on 26-29 August 2005 in Cape Tribulation, Australia. Future SSC meetings will take place on 6 November 2005, in conjunction with the events in Frankfurt, Germany, and in February 2006, in conjunction with the Ocean Sciences Conference in Honolulu, HI.

A very nice article about SSC Chair Fred Grassle appeared in the 5 June edition of the New York Times. The article honored his enthusiasm for the oceans and accomplishments for the Institute of Marine and Coastal Sciences and Rutgers and in marine science in general.

### Education and Outreach

The Census Portal has a new look. The team at URI has updated and improved the Census portal at [www.coml.org](http://www.coml.org). There you will find a new front page that highlights new Census developments and a revised layout that makes it easier to connect to other pages. Also, a new section called "Conversations" has been added in an effort to help personalize the Census and the portal. *Conversations* consists of interviews of Census scientists, who explain their work, tell why it is important, and what drove them to study the ocean in the first place. All Census scientists are welcome to be featured in this section. To do so, please contact Darlene Crist at [darlene.crist@cox.net](mailto:darlene.crist@cox.net).

CoML appeared in the May/June 2005 edition of Scholastic News (<http://teacher.scholastic.com/scholasticnews/magazines/edition1/may05/index.asp>), a U.S.-based news source for elementary school children. The article featured animal discoveries and a picture of SSC member / NaGISA leader Yoshihisa Shirayama.

Conversations continue between CoML and French producer-director Jacques Perrin about a film strongly connected to CoML. Perrin has made several highly regarded nature films, including *Microcosmos* (about insects) and *Winged Migration* (about birds). We are trying to arrange for members of Perrin's team to attend the Frankfurt meeting to discuss possible occasions for cooperation.

Richard Ellis, author of several widely read books about the oceans and also a superb illustrator, is making rapid progress on a popular volume integrating much current knowledge about marine

life on behalf of CoML. If all goes according to plan, the book will be available for the Frankfurt meeting.

The University of Rhode Island has received renewed funding (2.5 years) to continue its work on a strategic approach to education and outreach for CoML and to host the international network of E&O liaisons to the CoML projects and national and regional committees. The Education and Outreach Liaison Network will hold its next workshop on 2 November 2005 in Frankfurt, Germany in conjunction with the All Program Meeting.

### **Ocean Biogeographic Information System (OBIS)**

*OBIS International Committee:* The OBIS IC met in San Francisco, 22-24 June 2005, bringing together members of the OBIS community with biodiversity informatics, genetic, and taxonomic experts to develop collaborative and coordinated activities and goals. Along with OBIS IC members the following experts participated in discussions:

- Luis Bermudez - Marine Metadata Initiative (MMI) at the Monterey Bay Aquarium Research Institute (MBARI)
- Stan Blum – International Union of Biological Sciences Taxonomic Database Working Group (TDWG) and the Global Biodiversity Information Facility (GBIF)
- Dan Costa - Tagging of Pacific Pelagics (TOPP), a pilot program of the Census of Marine Life (CoML)
- David Kingsbury – Gordon and Betty Moore Foundation
- Gary Poore –Museum Victoria, Melbourne, Australia
- Rick Prelinger – Internet Archive
- David Schindel – Consortium for the Barcode of Life (CBOL)

*Regional Nodes:* In response to requests from managers of the 10 Regional OBIS Nodes (RONs), from Australia, Canada, China, Europe, India, Japan, New Zealand, South America, Sub-Saharan Africa, and the United States of America, the OBIS Secretariat has published an on-line "how-to" manual for RON development. The resulting [RON Development Manual](#) describes four steps for developing an OBIS RON:

- (1) Implement RON activities as described in "Roles and Responsibilities"
- (2) Provide to the Portal a standard set of information about each Node
- (3) Become an OBIS distributed data provider by implementing the OBIS data schema and DiGIR provider server software
- (4) Install the Plone-based RON Portal software (optional)

The RON Development Manual is important because it provides a simple road map of standardized steps for development of a RON. Connections between RONs and the Portal, both virtual and person-to-person, are documented. The RON data, together with data from other providers and researchers in marine biodiversity and informatics, form the loosely federated, collaborative OBIS data system.

*OBIS Management Committee:* The OBIS MC met in Oostende, Belgium, 23-24 April 2005, hosted by the Vlaams Instituut voor de Zee (VLIZ, Flanders Marine Institute). Discussions between the Intergovernmental Oceanographic Commission's (IOC) International Oceanographic Data and Information Exchange (IODE) Chair, Lesley Rickards, and Regional OBIS Node (RON) representatives led to significant IODE-OBIS agreements. The foremost of those agreements is that IODE and OBIS will collaborate in mutual development activities at IODE National Oceanographic Data Centres (NODCs) and Regional OBIS Nodes (RONs) where those Centres and Nodes have geographic overlap. The NODCs and RONs are both globally distributed networks that will enhance each other's capabilities, especially in the blending of

physical oceanographic data at the NODCs with the marine biological diversity data at the RONS.

Representatives from all 10 Regional OBIS Nodes (RONS), IODE, and the OBIS Portal and Secretariat, participated:

RONS: Kim Finney (Australia), Bob Branton (Canada), Song Sun (China), Edward Vanden Berghe (Europe), Vishwas Chavan (Indian Ocean), Junko Shimura (Japan), Don Robertson (New Zealand), Mirtha Lewis (South America), Ursula von St. Ange (Sub-Saharan Africa), and Mark Fornwall (USA)

IODE: Lesley Rickards (Chair)

OBIS: Phoebe Zhang (Portal), Richard Chinman (Secretariat)

All of the RONS agreed to a set of standards that (a) distinctly identify each as an OBIS Node and (b) support collaborating digitally amongst themselves and with the OBIS Portal.

### **History of Marine Animal Populations (HMAP)**

The HMAP Centers have received two years of renewed funding for research coordination, case studies, discipline building and the launch of a new Southeast Asian center at WorldFish in Penang, Malaysia.

Poul Holm, Tim Smith, Ransom Myers, and Stephen Palumbi participated in “Lives of the Sea: A symposium on the history of marine life” at Princeton University on 29 April. Their talks included: “Fish out of water: History meets marine science” (Holm); “Industrial exploitation of the ocean: Less than one-tenth of the large fish are left” (Myers); “How many whales before whaling? Genetics and the history of populations” (Palumbi); “How much whaling was there and who cares?” (Smith).

The HMAP Open Science Conference, *Oceans Past - Multidisciplinary Perspectives on the History of Marine Animal Populations*, will be held 24-27 October 2005 at Hotel Comwell in Kolding, Denmark. The preliminary program is available at:

<http://www.hmapcoml.org/Default.asp?ID=249>.

### **Future of Marine Animal Populations (FMAP)**

The FMAP team paper “Predator diversity in the open oceans linked to climate and fishing,” which reports worldwide patterns of tuna and billfish diversity and density over the past 50 years, will appear at the end of July in *Science* magazine.

## **Ocean Realm Field Projects**

### **Mid-Atlantic Ridge: MAR-ECO**

A very successful MAR-ECO all-project workshop and steering group meeting was held in Lisbon on 2-5 June, hosted by IPIMAR. More than 40 papers were presented, discussing preliminary results and progress based on the field efforts in 2003 and 2004.

MAR-ECO will enter a second field phase in 2007, following commitments by UK and USA of further ship-time. The new research ships RV Bigelow (USA) and RRS James Cook will be used for process studies in the Charlie-Gibbs Fracture Zone and around the Sub-polar Front. The UK commitment is for cruises in three consecutive years, starting in 2007.

The sei whale tagged in the Azores in April traveled along the mid-Atlantic Ridge northwards to the Charlie-Gibbs Fractures zone where it stayed a long period before continuing northwestwards and into the Greenland Sea. Its track can be followed on [www.mar-eco.no](http://www.mar-eco.no).

Exhibitions of artwork, photographs, and project information are being organized in partner countries. The first was at the Nordic House (Reykjavik, Iceland), where the works of MAR-ECO artist Oernulf Opdahl were exhibited together with photographs by wildlife cameraman David Shale. Icelandic partners added scientific information, thus combining science and art. The exhibit is now being shipped to Horta, the Azores, to be displayed there in August before it returns to Norway in September.

The MAR-ECO project office has received two more years of support for ongoing efforts and coordination, as well as for stimulating the geographic expansion of MAR-ECO approaches to other ridge areas.

See more MAR-ECO news at: [http://www.mar-eco.no/mareco\\_news](http://www.mar-eco.no/mareco_news).

### **Gulf of Maine: GoMA**

In June, Ellen Kenchington, member of the Canadian committee and participant in the Gulf of Maine, participated in a research expedition aboard the Canadian Coast Guard Ship Hudson to "the Discovery Corridor." The Corridor stretches from the New Brunswick shore near St. Andrew's, through the Gulf of Maine, and out beyond George's Bank. On 16 June, Ellen provided an interview to CBC via satellite phone. To listen to some of her discoveries, see: <http://www.cbc.ca/maritimenoon/stories.html>.

In July, GoMA will sponsor a cruise aimed at the high priority question of the Program's Large Vertebrates Working Group: what drives the patterns of utilization by birds and mammals of offshore banks and submarine ridges? For years it has been observed that offshore banks are at times rich in birds and mammals, but at other times are barren of them. Is this pattern being driven by underlying oceanography, by prey fields and the effects of predation, or something else? The study will examine the intersection of foraging with the underlying biology and oceanography. The study site will be Platt's Bank and Three Dory Ridge, about 30 nautical miles off southwestern Maine's shore. The study will combine aerial and vessel surveys to obtain frequent, synoptic, and larger scale views of the area. The PIs are Lewis Incze, Scott Kraus, and Peter Stevick.

### **Chemosynthetic Ecosystems: ChEss**

Since May 2005, ChEss has two coordination offices. One is still based at the National Oceanography Centre, Southampton (UK – formerly the Southampton Oceanography Centre) and is led by Paul Tyler (PI) and Maria Baker (Coordinator). The new office is led by Eva Ramirez Llodra (Coordinator) from the Institute of Marine Sciences in Barcelona (CMIMA-CSIC, Spain) and is aimed to promote ChEss and the CoML in the Mediterranean Region. Since June 2005, Chris German (Co-PI) is the new Chief Scientist for Deep Submergence at WHOI (USA).

Following the discovery of the first hydrothermal vents in the Mid-Atlantic Ridge south of the Equator by a multidisciplinary team from NOC (UK) and WHOI (USA) led by Chris German, a German research team led by Karsten Haase (Kiel Uni., Germany) has been diving with an ROV on the vents within the framework of the DE-Ridge programme.

Cindy Van Dover (College of William & Mary, USA) has participated in two vent research cruises (PI: Bob Vrijenhoek, MBARI, USA), the first one to the Easter Island Microplate in April 2005 ([www.noc.soton.ac.uk/chess/easter05/easter\\_main.html](http://www.noc.soton.ac.uk/chess/easter05/easter_main.html)) and the second one to the Lau Basin in May - June 2005 ([www.venturedepocean.org](http://www.venturedepocean.org)).

Paul Tyler participated in the CoML research cruise to the area of the Indonesian Tsunami.

Chuck Fisher (Penn State Univ., USA) is the PI of a cruise (June 2005) to the LAU Basin ([www.venturedeepocean.org](http://www.venturedeepocean.org)) to investigate the biology, distribution and ecology of vent species in this area. Daniel Desbruyères (Ifremer, France) is one of the taxonomists on board.

In May 2005, Maria Blanco joined the ChEss team as database manager. Maria will be working on ChEssBase (<http://www.noc.soton.ac.uk/chess/database/database.html>) to integrate the InterRidge biological data into the ChEss database, to improve the efficiency of the search facility and to integrate ChEssBase with OBIS by September 2005.

The next ChEss steering committee meeting will take place in Scripps (La Jolla, USA) on 10-11 September 2005. It will be held in conjunction with the 3<sup>rd</sup> Vent and Seep Symposium, which ChEss is co-organizing, which will also be held at Scripps on 12-16 September 2005: ([http://ridge2000.bio.psu.edu/NewR2kSite/mw/Vent\\_Seep\\_Biology/ventsymposium.php](http://ridge2000.bio.psu.edu/NewR2kSite/mw/Vent_Seep_Biology/ventsymposium.php))

Ana Hilario (NOC, UK) participated in Bob Vrijenhoek's cruise to the hydrothermal vent sites in the LAU Basin in May. Ana worked with ChEss and Ridge2000 to prepare 'Ocean Tales' with illustrated stories about the cruise that were posted on the Ridge2000 web site during June (<http://www.venturedeepocean.org/>).

### **Tagging of Pacific Pelagics: TOPP**

TOPP is now in the second year of demonstration projects that involve identifying biological hotspots in the eastern Pacific for top predators; examining the use of animals in ocean observation; and the tagging and analysis of leatherback sea turtles. Each of the projects applies archival and/or satellite tag technologies. Over 1,500 electronic tags have been deployed in the first 15 months of these projects, which involve 40 investigators in the North Pacific.

It promises to be another eventful summer with deployments planned for many of the TOPP species. In addition to tagging 200 or more albacore, bluefin and yellowfin tunas with archival tags, the fish and shark team will deploy over 100 tags on blue, mako, white, thresher and salmon sharks in the eastern North Pacific. The cetacean team plans deployments on blue, humpback and fin whales, the seabird team will tag sooty shearwaters with satellite tags in Monterey Bay, and the tuna team will implant archival tags in three species of tuna. Data analyses, focused on linking movements and behaviors to oceanography, are underway for all species tagged to date.

*Sharks:* The application of SPOT tags (which allow for near real-time tracking) has been extremely successful for following shark movements. We are presently receiving transmission from 30 SPOT tags deployed on blue, mako and salmon sharks with tracks ranging from seven months to three years. The tags record data continuously over consecutive years, providing information on how these sharks use the North Pacific across seasons. This continuous, near real-time data allows rapid mapping of how large pelagic sharks use the North Pacific. TOPP researchers will continue to tag makos, blues, threshers and salmon sharks with spots in 2005.

*Fishes:* The TOPP tuna team is processing some of the largest datasets in the history of archival tagging. This team, composed of scientists from Stanford University, NOAA Southwest Center and IATTC, has collected over 150 records from three species of tunas: albacore, bluefin and yellowfin. For bluefin tuna, over 90 records ranging up to 1000 days in length have been recorded. The distinctive habitats and behaviors in the eastern North Pacific are now being analyzed.

*Mammals:* One of TOPP's most elusive and certainly the largest species group is the baleen whales. Considerable effort has focused on maximizing tag retention time. Through the hard work of Bruce Mate and the rest of the cetacean team, we are still tracking one blue whale that

was tagged in August 2004, providing one of the longest blue whale tracks to date. Tagged in Central California, this animal migrated south and spent the winter in the Sea of Cortez. The whale returned north earlier this year and is now off the Southern California coast.

In order to maximize the potential for using TOPP animals as oceanographic platforms, we have been working with engineers to develop new tags that record salinity in addition to temperature and depth, and also tags that record light levels at two wavelengths to estimate chlorophyll concentration. The elephant seal team deployed 19 tags in Jan-Feb 2005 and 18 females were recaptured between April and May. All tags were recovered from these seals and although analyses are on going, it appears that the tags performed well while recording oceanographic parameters of the animals' habitat.

*Squid:* Efforts to collect information on the equally elusive Humboldt squid have also centered on tagging methods. Bill Gilly of Stanford University has been working with Mexican scientists to tag this species of squid. Previous efforts have shown the pop-up satellite archival tags to be the most promising technology. A recent tagging effort off the coast of Magdalena Bay, Mexico resulted in the successful deployment of an additional four pop up tags. The tags are programmed to release over the next month.

*Birds:* The albatross researchers from TOPP have turned their attention to data analyses to determine where birds go, how they behave when at sea, and what interesting ocean conditions occur that potentially influence their behavior. Sooty shearwaters will get their first TOPP tags in the summer of 2005. This research will focus on the behavior and distribution of the birds in Monterey Bay using satellite tags to track movements along the coast.

*Turtles:* In an effort to identify migratory corridors and pelagic hot spots for conservation efforts, the TOPP turtle team has been deploying satellite tags on leatherback sea turtles. Over the last three months we have received transmissions from seven turtles tagged earlier this year and four turtles tagged in early 2004. All but one turtle, which remains near the coast, have traveled offshore to the south with most animals currently foraging in the southern hemisphere. In addition, turtles tagged in Monterey Bay last fall, in an effort lead by Peter Dutton and Scott Benson of the NOAA's National Marine Fisheries Service, are all returning to the east after traveling substantial distances across the Pacific.

*E&O:* The TOPP Education and Outreach team launched the new TOPP website in May. The lead story focused a recently published paper on electronic tagging of Atlantic bluefin tuna in the journal *Nature*, seminal work that helped lay the foundations for TOPP. In June, the team purchased an innovative display item, a tabletop projector globe from Global Imaginations that allows one to project animated displays of TOPP data against three-dimensional world maps. TOPP debuted the globe during a two day event at the Monterey Bay Aquarium where TOPP staff members and scientists shared program information with over 1,500 visitors and distributed TOPP web cards and Census of Marine Life materials.

### **Salmon/Coastal Tracking: POST**

POST 2005 array is now fully in the water. The deployment is a repeat of the 2004 plan, with some minor changes. The Alaska line went in during the 2nd week of June. It now fully extends to the edge of the continental shelf. Because of the remoteness, the trip took two weeks of traveling to deliver the gear there and return, but the deployment went without a problem. In contrast to 2004, when 1,000 tags were surgically implanted, this year POST affiliated projects have, at last count, implanted approximately 2,700 tags. Acoustic modem equipped units, with a projected 7-year battery life, are out in a large-scale field trial of the performance of these units. These units can be interrogated from the surface, and the data uploaded without having to

physically recover the units. We expect that by the end of summer the units can also be re-programmed from the surface, allowing bug fixes and firmware upgrades.

The POST Management Board will be meeting on 13 July 2005.

### **Latitudinal/Longitudinal Gradients in Near-Shore Biodiversity: NaGISA.**

NaGISA extends a warm welcome to Heloise Chenelot, the new East Pac NaGISA manager working at the University of Alaska Fairbanks, and Dr. Iacopo Bertocci, the soon to be new manager of EU NaGISA working out of the University of Pisa. Both have been funded under contacts for the next two years and we are happy to have them on board.

Fieldwork has occupied most of the NaGISA researcher's time, with more than 7 sites completed in the past two months, including sites in: Vietnam (D. Trong et al.), South Africa (Charles Griffiths and Cape Town University students), Alaska (Katrin Iken, Brenda Konar and UAF students), Baja-California (Matt Edwards et al.), Japan (Robin Rigby, Tetsuya Kato & Tanabe High School), and in the Gulf of Mexico (North West Florida team). In a wonderful show of exchange and cooperation the NW Florida team, including Niceville High School students, teachers and volunteers, joined NaGISA scientists Dr. Patricia Miloslavich and E. Huck from Simon Bolivar University, Venezuela, to sample their *unique*\* NaGISA sites in Destin's East Pass, Florida. For more information see the resulting newspaper article (<http://www.nagisa.coml.org/media/Sampling/BayBeacon%20'05-4-27.jpg>) or photos (<http://www.nagisa.coml.org/SampleFlorida05.htm>) from the collection day. (\* *These sites are unique as they consist of a jetty and surrounding sandy beach and thus are not part of NaGISA's global focus as detailed in its Protocols. See <http://www.nagisa.coml.org/Protocol.htm>.*)

At the end of June, the NaGISA Research and Sorting Center based in Keaserate University closed its doors. This was a difficult decision but it was made in the continued effort to better organize education and training. The intent is to concentrate on a more local scale with the hope that, by doing so, NaGISA will benefit additional players. NaGISA's ties with the researchers and staff of the KU center remain strong, and they will continue to participate in the project as part of West Pac NaGISA.

### **Abyssal Sediments: CeDAMar**

The CeDAMar steering group will next meet 22-23 July 2005 at Ifremer, Brest, France. The meeting is held in conjunction with a *Nodinaut* meeting (20-21 July), during which scientists who participated in the cruise one-year ago will compile and discuss preliminary results. Joelle Galeron of Ifremer hosts both meetings.

### **Ice Oceans – Arctic: ArcOD**

ArcOD scientists Rolf Gradinger (Chief Scientist) and Russ Hopcroft (ROV Coordinator), and Bodil Bluhm are currently participating in an Ocean Exploration cruise – The Hidden Ocean, Arctic 2005. The major focus of the expedition is on a census of the high Arctic fauna and flora in the Canada Basin and associated continental slopes of the Beaufort and Chukchi Seas. All three major realms, the sea ice, water column and the sea floor, will be sampled using both traditional techniques and optical tools (ROV, SCUBA, camera systems). They are joined scientists from the U.S., Canada, Russia and China. The cruise runs from 27 June to 26 July. For background essays, explorer bios, lesson plans and daily logs, visit:

<http://www.oceanexplorer.noaa.gov/explorations/05arctic/welcome.html>. Lesson plans were developed by NOAA staff; daily logs and background essays are contributed by ArcOD and scientists. Jack Adams, a science teacher at Barrow High School, will be participating in the

cruise under NOAA's *Teacher-at-Sea program* (<http://www.tas.noaa.gov/>). Jack has two decades of teaching experience in the 220-people village of White Mountain and in Barrow, Alaska's North Slope Borough capital. Jack will participate in the field sampling activities, conduct a small research project, contribute web logs and work out ways to translate the scientific information into classroom-relevant activities.

The Russian ArcOD centers in St. Petersburg and Moscow, co-coordinated by Dr. Andrey Gebruk at P.P. Shirshov Institute of Oceanology, Russian Academy of Sciences, have designed their database structures for faunal and bibliographic data from the Arctic. Data from about 2,000 stations and over 100 references have already been entered. Please visit Russian ArcOD at <http://www.zin.ru/projects/arccoml/eng/index.html>.

Russian polychaete specialist Sergej Gagaev from the Zoological Institute (ZIN), Russian Academy of Sciences, St. Petersburg, visited ArcOD office members at the University of Alaska Fairbanks. During his stay in Alaska, Dr. Gagaev identified specimens collected during the *Arctic Ocean Transect expedition* in 1994 by Will Ambrose (Bates College), Lisa Clough (East Carolina University) and colleagues. Along with zooplankton specialist Dr. Ksenia Kosobokova (Shirshov Institute of Oceanology, Moscow), Dr. Gagaev is participating in the Canada Basin cruise.

ArcOD researchers Igor Smirnov (ZIN) and Russ Hopcroft (UAF) participated in the first CAML SSG meeting in Belgium in May 2005 to enhance exchange between ArcOD and CAML. An ArcOD poster was designed by the ArcOD office and presented at the 'Climate Variability and Sub-Arctic Marine Ecosystems Symposium' in Victoria, Canada, in May 2005 and at the ASLO meeting in Spain, June 2005.

Planning for the International Polar Year 2007-8 is ongoing. In the tentative listing of all Expressions of Interest (EoI), ArcOD was listed as the potential lead project for Arctic Marine Biodiversity activities (<http://www.ipy.org/>, link to EoI assessment summary). ArcOD had submitted an EoI proposal to the International Council for Science in January 2005. Co-ordination between projects in the same topic cluster is underway.

### **Ice Oceans – Antarctic: CAML**

The new CoML project, the Census of Antarctic Marine Life (CAML), made a fine start at the Brussels Workshop 25-30 May 2005. The ten-member steering group, appointed by the Scientific Committee on Antarctic Research (SCAR), met with about 20 invited experts to formulate a Science Plan. The CAML website <http://www.caml.aq> went live immediately after the Workshop, and the Members' section is now brimming with the workshop results. CAML will meet again at the SCAR Biology Symposium (July, Curitiba, Brazil) and the Dynamic Planet conference (August, Cairns, Australia). After consideration by the steering group, CAML's Science Plan will be finalized in September 2005.

CAML's next challenge is to secure ship time to undertake the project's core science. CAML Administrator, Professor Michael Stoddart, will make a presentation to the annual meeting of the Council of Managers of National Antarctic Programs (COMNAP, July, Sofia, Bulgaria). Michael is looking for support and ships from the managers of the National Antarctic Programs. The new CAML brochure will be ready for COMNAP, providing background information on the project. Michael's Information Paper on the results of the CAML Workshop was well received at the June Antarctic Treaty Consultative Meeting in Stockholm – visit the ATCM website <http://www.ats.org.ar> for details of his paper #115 or contact [caml@aad.gov.au](mailto:caml@aad.gov.au) for a copy.



A major undertaking for CAML is participation in the 2007/08 International Polar Year (IPY <http://www.ipy.org>), an international initiative for interdisciplinary cooperative research in polar regions. The IPY provides “an opportunity to engage the upcoming generation of young Earth System scientists and to get the public to realize just how much the cold ends of the sphere we all live on really do influence us”. The CAML Expression of Interest to IPY was selected as a lead proposal. We have recently worked this into a full proposal, for consideration by the Joint Committee in the next round. The proposal will also provide a reference for the CAML Steering Committee in formulating the Science Plan. Companion lead proposals in our "Marine Biodiversity" cluster have been prepared by members of CAML's Scientific Steering Committee: Professor Angelika Brandt for ANDEEP-SYSTCO on Antarctic benthic deep-sea biodiversity; and Dr Claude De Broyer with newly-appointed Dr Bruno Danis for SCAR-MarBIN, a Marine Biodiversity Information Network to establish and support a distributed system of interoperable databases within a coordinated network. In the inclusive spirit of CAML and IPY, we have gathered 20 related Expressions of Interest under our lead proposal.

Downunder, CAML is breaking the ice – Project Manager Dr Victoria Wadley will make a presentation at the national Census workshop at the Australian Marine Sciences Association conference (July, Darwin, Australia), particularly to invite young scientists to participate. We are finalising a CAML proposal for Australia's Antarctic Science Advisory Committee, asking for ship time during the IPY. Reported recently in *Journal of Fish Biology*, Australian scientists found a species of fish, *Trematomus scotti*, for the first time in a non-marine Antarctic habitat – the brackish waters of Lake Beaver. A tome on Antarctic Marine Protists was published earlier this year, by Fiona Scott and Harvey Marchant of the Australian Antarctic Division.

### **Seamounts: CenSeam**

The CenSeam Steering Group held its first meeting on 16 May in Horta, Azores, Portugal.

Mireille Consalvey (Gatty Marine Lab, St. Andrews, UK) has joined CenSeam as its liaison to the Education & Outreach Network.

### **Microbes: ICoMM**

A news article highlighting the work of ICOMM was featured in the 21 June 2005 edition of the Honolulu Star-Bulletin. The article quotes project PI Mitch Sogin (MBL, USA) and Open and Coastal Systems working group chair David Karl (Univ. Hawaii, USA).

### **Zooplankton: CMarZ**

CMarZ co-P.I. Shuhei Nishida (Ocean Research Institute, University of Tokyo, Japan) convened the CMarZ Japan / Asia workshop on 16-17 June 2005. More than 20 zooplankton researchers from universities, institutes, and fisheries agencies in Japan participated. The planned CMarZ global survey was discussed, with critical discussions on how and why to approach CMarZ' global sampling objectives. A number of new CMarZ cooperating projects were proposed, including data analysis for the ODATE time-series collections and survey cruises on the research vessel Hakuho-Maru. Five newly proposed cooperating projects resulting from the workshop were subsequently approved by the CMarZ Steering Group. A similar workshop will be convened by the CMarZ / Europe Project Office during Fall 2005 for zooplankton researchers from Germany; a third workshop for zooplankton researchers in the USA is planned for Winter 2005.

CMarZ co-P.I. Sigrid Schiel (Alfred Wegener Institute for Polar and Marine Research, Bremerhaven, Germany) hosted the first CMarZ Steering Group meeting in Bremerhaven on 30 June – 1 July. The CMarZ Steering Group includes 21 members from 14 countries; 16 members

from 10 countries were present in Bremerhaven to develop an Implementation Plan for the planned global survey of zooplankton diversity.

Participation in CMarZ is growing through the CMarZ Network, a virtual network of researchers, educators, technical staff, and students who have agreed to help collect samples. The CMarZ Virtual Network of Taxonomic Experts is also growing - albeit more slowly - and will help meet CMarZ goals for zooplankton sample analysis and species identification. To join the CMarZ Network, see the submittal forms on the project website at [www.CMarZ.org](http://www.CMarZ.org).

On July 1st, the CMarZ - USA Project Office moved to the University of Connecticut. CMarZ P.I. Ann Bucklin is now Professor and Head, Department of Marine Sciences and Director, Marine Sciences and Technology Center at the UConn - Avery Point Campus (Tel: +1 860-405-9208; Fax: +1 860-405-9153; Email: [ann.bucklin@uconn.edu](mailto:ann.bucklin@uconn.edu)).

Margaret Van Patten (Connecticut Sea Grant, University of Connecticut) has joined CMarZ as its liaison to the Education & Outreach Network.

### **Coral Reefs: CReefs**

The coral reef field project, CReefs, is now ramping up. Reefs are the most diverse marine ecosystems, and are both highly threatened and economically important around the globe. We are anticipating that the CoML CReefs project will play a crucial role in increasing tropical taxonomic expertise (especially for groups other than corals and fishes) and improving access to scattered information from numerous uncoordinated efforts. This project is managed from centers in Australia and Hawaii and guided by an international panel of coral reef scientists. We are currently developing the CReefs website to provide further information on this effort.

A special session on the "Biodiversity of Coral Reef Ecosystems" was recently approved for the Ocean Sciences Meeting in February 2006, Honolulu. One or more of the CReefs Principal Investigators, Nancy Knowlton of Scripps Institution of Oceanography, Julian Caley of the Australian Institute of Marine Science, Rusty Brainard of National Oceanic and Atmospheric Administration (NOAA), are to be co-convenors for this session. One of the major goals in holding this special session is to bring together lead scientists/taxonomists internationally. Topics of interest for this session will include taxonomic focus in the biodiversity of such understudied groups as sponges, octocorals, mollusks, polychaetes, crustaceans, echinoderms, tunicates, seagrasses, macroalgae (red, brown, and green macroalgae), coralline algae, turf algae, and cyanobacteria, as well as advancement in technology and sampling strategies relative to these foci.

A CoML CReefs discussion workshop will be held back to back with the meeting. Several other meetings/conferences are in the works, including the CoML All Program Meeting in Germany, meetings in Australia, Panama, Mexico and Hawaii, as well as bi-monthly teleconferences. Initial conference calls took place on 9 and 27 June 2005. These calls have included the CReefs Principal Investigators, along with Peter Vroom, Algal Biologist, NOAA, and Megan Moews, CReefs Hawaii Coordinator, NOAA.

The Australian Research Council has announced major new funding for coral reef science, establishing an international Centre of Excellence headquartered at James Cook University, in Townsville, QLD. The new Centre, entitled *ARC Centre of Excellence Innovative science for sustainable management of coral reef biodiversity* will replace the existing *Centre for Coral Reef Biodiversity* at JCU, and is strategically located adjacent to the Great Barrier Reef and reef systems in Asia and the Pacific. Terry Hughes will be the inaugural Director. The Centre of Excellence will focus initially on 5 research programs, each one under the stewardship of

Program Leaders from James Cook University, the Australian National University and the University of Queensland. Program 4, Genetic, molecular and physiological processes, will be led by Ove Hoegh-Guldberg (CReefs, UQ).

### **Margins: CoMargE**

The CoMargE steering group held its first meeting on 3-4 June 2005 at the Bermuda Biological Station for Research.

## **National and Regional Activities**

### **Australia**

On 13 July, the Australian CoML committee will sponsor and host a one-day workshop at the forthcoming Australian Marine Sciences Association (AMSA) annual conference. The workshop will focus on potential national contributions to the global Census. It aims to identify research activities that can help improve our collective understanding of Australia's marine biodiversity and how Australia can contribute this knowledge to the global CoML program. The workshop will also discuss the establishment of a regional OBIS node, and explore with participants how Australian data providers can both contribute to this network and make use of it. For more information, visit: <http://www.coml.org.au:8080/>.

Kim Finney has moved from the National Oceans Office (NOO) to the Australian Antarctic Division. New Australian CoML support staff at NOO includes Miranda Carver and Emma Campbell.

### **Canada**

In anticipation of CoML's upcoming major reports, the Canadian committee is currently conceptualizing an international workshop to develop the CoML reporting framework. The framework will likely focus on CoML's potential societal benefits and address issues such as regional ecosystems, measures of diversity, and habitat classifications. More information will be available following the international SSC meeting in August.

### **Caribbean**

The Caribbean committee is supporting the development of a new Caribbean HMAP case study on Mega Mollusks. A workshop is planned for 26-28 September 2005 at Isla Margarita, Venezuela, chaired by Andrzej Antczak. Participants include representatives from Japan, New Guinea, Australia, South Africa, Near East, Denmark, UK, USA, Canada, Panama, Brazil, Chile and Venezuela.

NaGISA sampling is also being initiated in the Caribbean. A training workshop is planned to take in Venezuela, joining the South American and the Caribbean regions, under the coordination of Caribbean committee members Patricia Miloslavich and Paula Spiniello. The workshop is planned for the first trimester of 2006, and will have as a main objective to standardize methods. A taxonomic workshop may be planned jointly with this workshop. There are currently 11 sites confirmed for South America, including the Caribbean countries Colombia and Venezuela. Other sites for the rest of the Caribbean are to be confirmed.

### **Europe**

Dr Bhavani Narayanaswamy has recently been appointed as the Project Officer for the European Census of Marine Life. Bhavani is a deep-sea ecologist and has worked in this field for almost 12 years. More recently, she spent 3 months in the Antarctic this year collecting deep-sea benthic

samples through ANDEEP, a field project of CeDAMar. You can contact Bhavani at: [Bhavani.Narayanaswamy@sams.ac.uk](mailto:Bhavani.Narayanaswamy@sams.ac.uk).

The head office of the European Census of Marine Life is based at the Scottish Association for Marine Science in Oban, Scotland – UK with Prof Graham Shimmiel as the Chair. The Executive group will be meeting in UNESCO in Paris on 11 July to discuss, amongst other things, progress on new projects that will come under the EuroCoML umbrella as well as the Symposium being held at the Senckenberg Museum in Frankfurt in November.

Planning for the 3 November EuroCoML Symposium in Frankfurt, co-hosted by the Senckenberg Museum of Natural History, is progressing well. A small planning group met 27 June in Frankfurt and identified nine projects to participate in the symposium, tentatively titled *Into the Deep Blue: Europe and the Census of Marine Life*. Projects requested to participate are CeDAMar, ChEss, MAR-ECO, CoMargE, CMarZ, ArcOD, CAML, EuroNaGISA and the emerging European TOPP / tagging effort.

### South America

The South American Committee met 9-11 May 2005 at the University of Concepción in Chile. Discussions focused on South American participation in current CoML initiatives, including NaGISA, OBIS, CMarZ, CAML and ICOMM. The committee also discussed ideas for products to the CoML, such as an integrated map of South American ecosystems and a book or atlas on South American marine ecosystems and related biodiversity.

### USA

The U.S. National Oceanographic Partnership Program (NOPP) recently funded five new projects, related to Census of Marine Life, under the topic of New Methods for Detection of Fish Populations or Mapping of Fish Habitat. These projects include:

- Understanding Apex Predator and Pelagic Fish Habitat Utilization in the California Current System by Integrating Animal Tracking with in situ Oceanographic Observations (Lead PI: Dr. Daniel Costa, University of California at Santa Cruz)
- Development of Mid-Frequency Multibeam Sonar for Fisheries Applications (Lead PI: Dr. John Horne, University of Washington)
- Continuous Monitoring of Fish Population and Behavior by Instantaneous Continental-Shelf-Scale Imaging with Ocean-Waveguide Acoustics (Lead PI: Dr. Nicholas Makris, Massachusetts Institute of Technology)
- Novel Acoustic Techniques to Measure Schooling in Pelagic Fish in the Context of an Operational Coastal Ocean Observatory (Lead PI: Dr. Kelly Benoit-Bird, Oregon State University)
- A Novel Technique to Detect Epipelagic Fish Populations and Map their Habitat (Lead PI: Dr. James Churnside, National Oceanic and Atmospheric Administration)

For abstracts, visit: [www.nopp.org](http://www.nopp.org), and follow the news column link for FY05 NOPP funded projects.

NOAA's Office of Ocean Exploration has recently announced its FY06 exploration funding opportunity, anticipated at \$14M (including ship and ROV costs) available for expeditions in the categories of General Exploration (\$13M), Marine Archeology (\$600K), and Education and Outreach (\$400K). A 2-page pre-proposal is required for all categories and must be submitted in

hardcopy by 5 August 2005. For full details, visit <http://www.explore.noaa.gov> and look under 2006 Announcement of Opportunity.

The next meeting of the CoML U.S. National Committee will be held 18-19 August 2005 at the Alaska Sealife Center in Seward, Alaska.

## **Crosscutting and Other Related Activities**

### **IOC Resolution**

At the recent Intergovernmental Oceanographic Commission (IOC) Assembly (20-29 June, Paris), delegates reviewed a resolution in support of the Census of Marine Life and OBIS. The resolution was brought forward by Australia, with endorsement by a number of countries, including Canada, Portugal, Belgium, Netherlands, Chile, Ecuador, Venezuela, Japan, Cuba, Kuwait, Nigeria, Sri Lanka and the United States.

### **SCOR Panel on New Technologies**

The SCOR Panel on New Technologies for Observing Marine Life was formed to provide advice to individual CoML projects in relation to their technology needs and to help transfer technology information among CoML projects. The Panel met in Goa, India in February 2005 for the first time to begin its work. The meeting summary and recommendations can be found on the Panel Web site ([www.scoml.org](http://www.scoml.org)), which is still evolving. Panel members will attend the All Program Meeting in Frankfurt, Germany in November 2005 and the Panel will meet immediately after the All Program Meeting.

The Panel would like to know which individuals participating in each CoML project are most involved in the technology aspects for the project, so that the Panel can involve them in its meetings and electronic discussions. The Panel also would like to hear from CoML projects about their technology successes and failures, so that this information can be shared among CoML projects through the Panel. Finally, the Panel is available to provide advice on technology to the projects. The Panel can be reached through the Panel Chair, Elgar De Sa ([elgar.desa@gmail.com](mailto:elgar.desa@gmail.com)) or the Panel staff person, Ed Urban ([Ed.Urban@jhu.edu](mailto:Ed.Urban@jhu.edu)).

### **DNA Barcoding**

An All Fish Barcoding workshop took place 5-6 June 2005 in Guelph, ON, Canada. The workshop brought together a core group of international collaborators focused on activating FISH-BOL - a network to assemble DNA barcodes for all fish species. Copies of a CD with the powerpoint presentations from the All Fish meeting are available from Paul Hebert's lab ([pherbert@uoguelph.ca](mailto:pherbert@uoguelph.ca)).

## **General News**

### **Tsunami Cruise**

CoML Scientists – Paul Tyler (ChEss, NOC, UK) and Baban Ingole (CenSeam, NIO, India) – participated in a cruise aboard the M/V *Performer* to lead the biological investigation of the area of the earthquake epicenter off the Indonesian coast that caused the deadliest tsunami in recorded history. Cindy Lee Van Dover (ChEss, College of William and Mary, USA) provided additional support aboard the RV *Melville* in the Lau Basin. The cruise team included geologists, geophysicists, biologists, and modeling and visualization experts whose work was filmed for a BBC and Discovery Channel Networks documentary to be released later this year. For the full press release and related media coverage, visit: [www.coml.org](http://www.coml.org).

## Scientia Marina

The Census of Marine Life Research Plan has been published as two separate articles in the 50<sup>th</sup> Anniversary issue of *Scientia Marina* (69 (Suppl. 1): 2005). PDF files of these articles can be downloaded at: <http://www.icm.csic.es/scimar/69s1.html>.

## Dynamic Planet 2005

Dynamic Planet 2005, a joint assembly of the International Association of Geodesy (IAG), International Association for Physical Sciences of the Oceans (IAPSO) and the International Association for Biological Oceanography (IABO), will be held 22-26 August 2005 in Cairns, Australia. Mark Costello, Ron O'Dor, and Ian Poiner will chair an IABO session on CoML. The session outline is now available at:

[http://www.dynamicplanet2005.com/prog\\_B\\_IABO\\_sessions.htm#b1](http://www.dynamicplanet2005.com/prog_B_IABO_sessions.htm#b1). There are other sessions of relevance to CoML work, as well, including an IABO session on Pelagic Biogeography, organized by Chris Reid, Annelies Pierrot-Bults and Graham Hosie.

## DIVERSITAS

DIVERSITAS will hold its first Open Science Conference on 9-12 November 2005 in Oaxaca, Mexico. A CoML session, *Oceans of biodiversity - discovering species, habitats and ecologies*, has been accepted under the DIVERSITAS theme of BioDiscovery. Pedro Martinez, Mark Costello, and Carlo Heip chair the session. For more information, visit: <http://www.diversitas-osc1.org/>, and click on Science Programme.

## Ocean Sciences 2006

The 2006 AGU / ASLO / TOS Ocean Sciences Meeting, 20-24 February 2006, has accepted a CoML-related session on Understanding The Role Of Biodiversity In Marine Ecosystems. Lew Incze (GoMA, Univ. Southern Maine), Mike Sinclair (Canadian CoML Committee, BIO), and Ron O'Dor will convene. Abstract submission opens 14 July and closes on 20 October. For more information, visit: <http://www.agu.org/meetings/os06/>.

## Funding 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](http://www.comlsecretariat.org), under "Announcements of Opportunity."

## Calendar of Upcoming Events

### July

- 11:** EuroCoML Executive Committee meeting, Paris, France
- 13:** Workshop on Census of Marine Life Australia: Join the Voyage of Discovery, Darwin, Australia
- 13:** POST Management Board Meeting, BC, Canada
- 20-21:** Nodinaut cruise results meeting, Brest, France (CeDAMar)
- 22-23:** CeDAMar Steering group meeting, Brest, France

### August

- 18-19:** U.S. National Committee meeting, Seward, AK, USA
- 22-26:** IABO/IAPSO/IAG Dynamic Planet Conference, Cairns, Australia (CoML Session)
- 25-26:** CReefs Principal Investigator Meeting, Hawaii, USA

- 26-29:** CoML SSC Meeting, Cairns, Australia  
**29-1 Sep:** SCOR Executive Committee Meeting (CoML is a SCOR-affiliated program)

*September*

- 10-11:** ChEss Steering Group meeting, La Jolla, CA, USA  
**12-16:** 3<sup>rd</sup> Hydrothermal Vent and Cold Seep Symposium, La Jolla, CA, USA (ChEss co-organizing)  
**19-23:** MTS/IEEE Oceans 2005, Washington, DC, USA (USNC co-sponsoring a session)  
**26-28:** Early Human Impact on Mega Mollusks (EHIM) Workshop, Isla de Margarita, Venezuela  
**26-29:** Workshop on “New Molecular Approaches for Characterizing and Understanding the Diversity of Coral Reef Ecosystems,” Bocas del Toro, Panama

*October*

- 24-27:** HMAP Open Science Conference: “Oceans Past – Multidisciplinary Perspectives on the History of Marine Animal Populations”, Kolding, Denmark

*November*

- 2:** EuroCoML Committee Meeting, Frankfurt, Germany  
**2:** E&O Network Meeting, Frankfurt, Germany  
**2:** CAML Steering Group Meeting, Frankfurt, Germany  
**2-3:** OBIS International Committee Meeting, Frankfurt, Germany  
**2-3:** NaGISA Steering Group Meeting, Frankfurt, Germany  
**3:** EuroCoML-Senckenberg Symposium & Reception, Frankfurt, Germany  
**3:** MAR-ECO Steering Group Meeting (AM), Frankfurt, Germany  
**3:** EuroCoML Executive Committee Meeting (AM), Frankfurt, Germany  
**4-5:** 2nd CoML All Program Meeting, Frankfurt, Germany  
**6:** CoML SSC Meeting, Frankfurt, Germany  
**6:** CenSeam Steering Group Meeting, Frankfurt, Germany  
**6:** SCOR Panel on New Technologies for Observing Marine Life, Frankfurt, Germany  
**6-7:** OBIS Management Committee Meeting, Frankfurt, Germany  
**9-12:** First DIVERSITAS International Conference on Biodiversity, Oaxaca, Mexico (CoML Session)