6.0 RELATIONS WITH INTERGOVERNMENTAL ORGANIZATIONS

6.0 RELATIONS WITH INTERGOVERNMENTAL ORGANIZATIONS

6.1 Intergovernmental Oceanographic Commission

Bjørn Sundby and Ed Urban attended the IOC Executive Council meeting in June 2006 to represent SCOR. The two organizations have a variety of joint projects that have been discussed under previous agenda items, including

- WG 119 on Quantitative Ecosystem Indicators for Fisheries Management
- Global Ocean Ecosystem Dynamics (GLOBEC) Project
- Global Ecology and Oceanography of Harmful Algal Blooms (GEOHAB) Program
- International Ocean Carbon Coordination Project (IOCCP)
- Symposium on the Ocean in a High-CO_2 World

6.1.1 Global Ocean Observing System (GOOS)

An Overview of the Year 2005 in IOC's Operational Observing Systems Section
By Keith Alverson, Head of Section (from IOC Annual Report)

"GOOS is the ocean component of GEOSS"
-Vice Admiral Conrad C. Lautenbacher Jr., U.S. Under Secretary of Commerce for Oceans and Atmosphere and GEOSS co-chair, speaking to the 130 Member States of the IOC at their biennial Assembly, 2005.

"Ultimately, GEOSS must make the case for, and oversee, an upgrading of systems such as GCOS and GOOS"
-Nature, editorial, 24 February 2005.

2005 was again a remarkable year for operational oceanographers. Just as evidence suggesting a climatic slowdown of the Atlantic meridional overturning was published (*Bryden et al., Nature 238, 2005*) hurricane Epsilon was simultaneously etching its Greek-letter-name into the record books. These events were respectively predicted and diagnosed as a result of the availability of ocean observations, but the prediction of an above normal hurricane season was *operational* and the suggested slowing of the Atlantic overturning circulation was *research*. To be effective, GOOS needs to break down the often cited, but unhelpful, distinction between research and operations. A comprehensive ocean observing system simply cannot exist without the full engagement of the oceanographic research community.

On August 2, 2005 the US National Weather Service called for a "95% to 100% chance of an above-normal 2005 Atlantic hurricane season." This was the highest confidence they had ever expressed in predicting an above normal season. True to the prediction, the season was indeed far above normal, with a record four Category 5 storms (Emily, Katrina, Rita and Wilma) including the most intense hurricane ever

recorded in the Atlantic (Wilma, 882 millibars). The season also included the largest total number of tropical storms on record (27) and the latest ever dissipation of the final tropical storm of the season (Zeta, January 6, 2006). Given the veracity of these predictions, there can be no doubt that climate related hazard predictions based on operational ocean observations are providing substantial and tangible societal benefits.

The reported slowdown of the Atlantic meridional overturning makes an interesting counterpoint. This report was based on five transatlantic hydrographic sections at 25°N carried out by research cruises over the period 1957 to 2004, which appear to show a slowing, by about 30%. Along with widespread publicity in the mainstream press, this study drew rather critical comments from some scientists for its dramatic conclusions about a system that is poorly understood, based on five data points, at a single location, spread over five decades. The short and easy answer to such criticisms is no doubt to acknowledge their validity, but also assert that this is the best data at our disposal and thus our best guess as to what is going on.

A more forward looking answer would be to ensure that the ocean observing system we are building will monitor large scale ocean changes occurring on decadal timescales. Realistically, the scientific research community is, and for many years will continue to be, both the primary provider and primary user of climate related ocean data. Thus, incorporating the research community products in the observing system, and simultaneously designing the system to help address research community hypotheses, will be absolutely critical in ensuring we can monitor climate change in the oceans. Case in point is the Bryden et al. study. These five hydrographic sections were brought together by a small research team to address a specific hypothesis. This kind of research would surely be a lot easier, and the conclusions substantially more robust, if research vessel tracks and data were seamlessly included in the observing system. The observing system would be a lot richer as well. Research vessels travel far from traditional ship of opportunity routes and take a large number of the highest quality temperature and salinity data available from any source. They provide the only high quality dataset for calibrating Argo floats – now the dominant source of ocean salinity data. The call to enhance the contribution of research vessels to GOOS (Gould and Smith, Eos, submitted) is simply one example of the need to break down the fallacious research-operational divide. But it is a clear one, and one we cannot afford to ignore.

Meetings

A number of meetings were organized within the Operational Observing Systems Section in 2005. Highlights included:

- The 8th meeting of the GOOS Scientific and Technical Committee (GSSC), 21-28 February, 2005, Australian Bureau of Meteorology, Melbourne, Australia;
- The 7th meeting of the Intergovernmental committee for GOOS (I-GOOS), 4-7 April, UNESCO/IOC headquarters, Paris, France;

- The 10th session of the Ocean Observations Panel for Climate (OOPC) 9-12 May, WMO Headquarters, Geneva, Switzerland.
- Second Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology, 15-17 September, Halifax, Canada.

Reports from these and all other meetings coordinated by, or participated in by, the Operational Observing Systems Section are available on the GOOS and JCOMM websites: (http://ioc.unesco.org/goos and http://ioc.unesco.org/jcomm)

Publications

The secretariat was active in publicizing the work of GOOS and JCOMM in 2005. Outreach publications included:

Alverson, K. and A. Fischer, "The Global Ocean Observing System (GOOS)" *IGBP Global Change News*, 61, 12-14, 2005.
Alverson, K. "Watching over the world's oceans", *Nature*, 434, 19-20, 2005.
Fischer A., "Watching the oceans for signs of climate change" *A World of Science*, 4:1, 2-8.

The secretariat also published a number of reports in the past year. Highlights included:

Progress with the initial ocean climate observing system: A report to the UNFCCC, GOOS Report 146, 2005.
An Implementation Strategy for the Coastal Module of GOOS. GOOS report 148, 2005.
Coastal Theme Report of the Integrated Global Observing Strategy (IGOS), 2006.
JCOMM to come

A full list of publications is available on the GOOS and JCOMM websites (http://ioc.unesco.org/goos and http://ioc.unesco.org/jcomm)

Links with Partner Programmes

The Operational Observing Systems Section continues to participate actively in joint activities with a number of partner organizations. Highlights from 2005 included:

GOOS took on the role of co-leading (with NASA/JPL) a review and update of the Integrated Global Observing Strategy Partners (IGOS-P) ocean theme.
GOOS and JCOMM have been active as oceanic contributions to The Global Earth Observing System of Systems (GEOSS).
JCOMM, and in particular the JCOMM-II session (see meetings), continues to constitute an important cooperation with the World Meteorological Organization (WMO).

6-4

A sea of changes for GOOS

By Keith Alverson, Director of GOOS project office.

In June 2005, by resolution XXIII-5, the 23rd IOC Assembly adopted new terms of reference governing the GOOS scientific steering committee (GSSC) and the Intergovernmental Committee for GOOS (I-GOOS). Through this resolution, substantial clarity in the governance and guidance of GOOS was achieved. I-GOOS was given the overall responsibility for promotion, planning and coordination of GOOS, while the GSSC has the responsibility for providing scientific and technical advice to I-GOOS. Finally, the I-GOOS board was set up, consisting of the chair and vice-chairs of IGOOS and the chair of the GSSC, to provide guidance and advice on the implementation of the decisions of I-GOOS during the inter-sessional period. The newly formed I-GOOS board has quickly and effectively established a clear executive guidance and leadership for GOOS.

GOOS can point to three major accomplishments in 2005. First, the open ocean observing system for climate is now more than 50% complete. Second, the coastal ocean observing system strategy and implementation plans were endorsed and published. Finally, and most importantly, relevant components of the observing system, specifically tide gauges, are now providing data in real time to operational hazard warning centers, a tangible societal benefit from GOOS.

For the coming year GOOS has a number of challenges to face. Nature, among others, has called for enhanced support for GOOS calling the system ‘chronically underfunded’ (Nature 433, 785; 2005). Nature also specifically called for the need for ‘global’ and ‘sustained’ monitoring of the ocean in a second editorial entitled ‘the circulation challenge’ (Nature 439, 244; 2006). Heeding these calls will require three future successes. First and foremost that the Member States of IOC support the development of I-GOOS as a robust commitments mechanism to efficiently take stock of individual national efforts and increase resources available for coordination. Second, GOOS will need to vastly increase its efforts to reach out to, and build capacity for, a much wider range of potential contributors and users of the system than have heretofore been identified. This biennium, for the first time, the secretariat has allocated a small budget for outreach and communication. Finally, the GOOS regional alliances will need to be developed as implementation bodies for coastal GOOS including clarifying a global coordination mechanism amongst them.

These future challenges have been quantified as two “expected results” with associated “performance indicators”, “means of verification”, and “benchmarks” within the UNESCO Performance Based Management System as follows:

Expected Result 1: Increased member state contributions to operational open ocean observing systems.
Performance Indicator: 20% increase in national commitments to GOOS and its OOPC.
Benchmark: initial GOOS commitments meeting report, June 1999
Means of verification: I-GOOS VIII report in 2007.

Expected Result 2: Establishment of clear principles and guidelines for GOOS regional alliances as the primary implementation bodies for coastal GOOS.
Performance Indicator: Functionality of GOOS regional alliances as a synergistic global implementation mechanism."
Benchmark: Somewhere very close to zero
Means of verification: Outcome, outputs and level of follow-up to GOOS regional forum to be held in November 2006 and degree to which COOP plan is implemented by GRA's.

6.2 Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)

Significant steps were made in the last year toward implementing the recently developed strategic vision for the "New GESAMP". GESAMP's Sponsoring Organizations (UN, UNEP, FAO, UNESCO-IOC, WMO, IMO, and IAEA) have not yet signed a revised Memorandum of Understanding (MOU) to implement the strategic vision, but have agreed that many elements of the New GESAMP can be implemented under the existing MOU. UNIDO is moving toward formal sponsorship of GESAMP and has agreed to jointly sponsor some working groups.

In December 2005, GESAMP obtained three-year funding from the Swedish International Development Agency (SIDA) for implementation of the strategic vision, in particular to provide resources for a GESAMP role in the regular UN process for global marine assessment (the "regular process") that is being developed and to support increased participation in GESAMP by experts from developing countries. The funding will also contribute to the development of GESAMP's Pool of Experts and web site.

A GESAMP report on inputs of oil into the global marine environment from sea-based activities will be released in the near future. Existing Working Groups on the **Evaluation of the Hazards of Harmful Substances Carried by Ships** and **Environmental Risk Assessment and Communication in Coastal Aquaculture** remain active. A new **Ballast Water Working Group** was established in January 2006 to develop methodologies and information requirements for the review of applications to IMO for the approval of active substances for use in the management of ships' ballast water and to undertake such reviews. Another working group met in September 2006 to peer review **An Overview of Global and Regional Assessments of the Marine Environment**, a report prepared by UNEP-WCMC to support the "Assessment of Assessments" being undertaken as a first step in establishing a regular UN process for global marine assessment. Steps are also being taken toward the establishment of several new working groups including groups on deep-sea fisheries and developing an ecosystem approach to offshore mariculture. In addition, in an area that has been of interest to SCOR recently, GESAMP will also be considering the possibility of a working group looking at the importance of the atmospheric input of certain chemical substances to the ocean.

GESAMP Session XXXIV is planned at UNESCO-IOC headquarters in Paris from 28 November to 1 December 2006. A 1-day workshop on identification of themes of mutual interest between GESAMP and Regional Organizations will be held in conjunction with the session.

Michael Huber, GESAMP Chairman

6.3 North Pacific Marine Science Organization (PICES)

SCOR and PICES: Continuing Connections

Report at the 28th SCOR General Meeting
Concepción, Chile
October 23-26, 2006

The North Pacific Marine Science Organization (PICES) is an intergovernmental scientific organization and its current membership includes Canada, Japan, People's Republic of China, Republic of Korea, the Russian Federation, and the United States of America. The organization was established in 1992: (i) to promote and co-ordinate marine scientific research in the northern North Pacific and adjacent marginal seas; (ii) to advance scientific knowledge about the ocean environment, global weather and climate change, living resources and their ecosystems, and the impact of human activities on them; and (iii) to promote the collection and rapid exchange of scientific information on these issues. Information on PICES and its activities can be found on the PICES website at http://www.pices.int.

Continuing and extending collaboration between SCOR and PICES is based on the recognition that PICES could play an important role in bringing a North Pacific perspective to global activities of SCOR, and that by participating in these activities, PICES could advance its own scientific agenda. PICES is a major regional participant in the Global Ocean Ecosystem Dynamics (GLOBEC) project, through the PICES/GLOBEC Climate Change and Carrying Capacity (CCCC) Program. PICES also contributes to other SCOR-sponsored international large-scale ocean research projects, including the Integrated Marine Biogeochemistry and Ecosystem Research (IMBER), the Surface Ocean-Lower Atmosphere Study (SOLAS), and the Global Ecology and Oceanography of Harmful Algal Blooms Program (GEOHAB), to SCOR Working Groups and to ocean carbon activities supported by SCOR.

LARGE-SCALE OCEAN RESEARCH PROGRAMS CO-SPONSORED BY SCOR

Global Ocean Ecosystem Dynamics project (GLOBEC)

- The PICES Climate Change and Carrying Capacity (CCCC) Program provides a mechanism for integrating national GLOBEC research programs in the North Pacific and is a regional component of the international GLOBEC effort.
- Several Topic Sessions of scientific interest to GLOBEC were convened at PICES XIV held from September 28 - October 9, 2005, in Vladivostok, Russia. Examples include: "*Mechanisms of climate and human impacts on ecosystems in marginal seas and shelf regions*" (S1), "*The comparative response of differing life history strategists to climate shifts*" (S4), and "*Modeling climate and fishing impacts on fish recruitment*" (S5).

- PICES and GLOBEC co-sponsored (with FRA, APN and IAI) a workshop to extend the NEMURO.FISH model, originally developed for the North Pacific, to fish stocks in other geographic regions, held November 14-17, 2005, in Tokyo, Japan.
- The PICES/GLOBEC Symposium on "*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*" was held April 19-21, 2006, in Honolulu, U.S.A. The primary scientific objective of this symposium was to present a synthesis of the effects of seasonal to multi-decadal variability on the structure and function of the North Pacific that goes beyond the analysis and understanding developed from studies of a single trophic level, process or region—a true synthesis. The symposium is a part of GLOBEC synthesis efforts, and the GLOBEC SSC met in conjunction with this event. At the request of GLOBEC and PICES, SCOR provided $7,500 US for scientists from countries with "economies in transition" to attend the symposium. The papers presented at the symposium will be considered for publication in a special issue of *Progress in Oceanography* following peer review.
- PICES and a new GLOBEC regional program on *Ecosystem Studies of Sub-Arctic Seas* (ESSAS) share the goal of developing comparative studies of the sub-arctic seas and understanding how climate variability affects their productivity and ability to support sustainable commercial and subsistence harvests. In May 2005, PICES co-sponsored and served as a local organizer for the GLOBEC (ESSAS) Symposium on "*Climate variability and sub-arctic marine ecosystems*", in Victoria, Canada. In June 2006, GLOBEC and PICES will co-sponsor a workshop on comparing four sub-arctic ecosystems marine ecosystems, those of the Okhotsk Sea/Oyashio region, the Bering Sea, the Newfoundland/Labrador Shelf and the Barents Sea, to be held in St. Petersburg, Russia. This would include areas with currents both to and from the Arctic Ocean, and those with marginal ice zones at low and high latitudes. The ESSAS SSC will meet in conjunction with this workshop.
- A special CCCC Contributed Paper Session and several Topic Sessions directly related to GLOBEC activities will be convened at PICES XV to be held October 13-22, 2006, in Yokohama, Japan. Examples include: "*Modeling and historical data analysis of pelagic fish, with special focus on sardine and anchovy*" (S6), "*Key recruitment processes and life history strategies: Bridging the temporal and spatial gap between models and data*" (S7), and "*Synchronous and asynchronous responses of North Pacific boundary current systems to climate variability*" (S10).
- PICES, GLOBEC and ICES are working together to organize the 4th International Zooplankton Production Symposium on "*Human and climate forcing of zooplankton populations*" to be held May 28 - June 1, 2007, in Hiroshima, Japan (local sponsors/organizers are the Plankton Society of Japan and the Japanese Society of Fisheries Oceanography).
- GLOBEC has been invited and agreed to join PICES, ICES and IOC as a co-sponsor for the Symposium on "*Effects of climate change on the world's oceans*" to be held in May 2008 in Gijón, Spain.
- The papers authored by scientists from Canada, China, Japan, Korea, Mexico, Norway, Russia, and U.S.A., and presented at the GLOBEC-related Topic Session on "*Mechanisms that regulate North Pacific ecosystems: Bottom up, top down, or something else?*" (PICES

XIII, October 2004, Honolulu, U.S.A.) were published in spring 2006 as a special issue of *Progress in Oceanography* (Guest Editors: G. Hunt and S. McKinnell).

- Peer review is in progress for a special issue of *Ecological Modelling* on NEMURO and NEMURO.FISH models (Guest editors: S.-I. Ito, M. Kishi, B. Megrey and F. Werner) and a special issue of *Progress in Oceanography* (Guest editors: K. Drinkwater, G. Hunt, D. Mackas and S. McKinnell) based on papers from the ESSAS Symposium on "*Climate variability and sub-arctic marine ecosystems*". These special issues are expected to be published in late 2006 and early 2007, respectively.

Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)

- At PICES XIII (October 2004, Honolulu, U.S.A.), the PICES Governing Council accepted the recommendation of the Science Board that PICES should assist in the implementation of IMBER in the North Pacific.
- A brief proposal entitled "*North Pacific marine ecosystem response to global change*" has been submitted for PICES to consider issues of marine biogeochemistry and food webs (that would link with IMBER) as a potential topic for a new PICES scientific integrative program.
- A joint PICES/IMBER Topic Session on "*Interactions between biogeochemical cycles and marine food webs in the North Pacific*" will be convened on October 19, 2006, at PICES XV in Yokohama, Japan.

Surface Ocean-Lower Atmosphere Study (SOLAS)

- Understanding iron biogeochemistry and the role of iron in ocean ecosystems is an important part in the scientific agenda of both SOLAS and PICES. Three international collaborative meso-scale iron enhancement experiments were developed under the umbrella of PICES, through its Advisory Panel on the *Iron Fertilization Experiment in the Subarctic Pacific Ocean* (IFEP-AP) established in 2000. SERIES (**S**ubarctic **E**cosystem **R**esponse to **I**ron **E**nrichment **S**tudy) was performed in the eastern subarctic Pacific in summer of 2002, and SEEDS-I and SEEDS-II (**S**ubarctic Pacific Iron **E**xperiment for **E**cosystem **D**ynamics **S**tudy) were conducted in the western subarctic Pacific in the summers of 2001 and 2004, respectively. Important new findings from the first two experiments were published in *Science* (SEEDS-I: Tsuda *et al.* 2003, 300: 958-961) and *Nature* (SERIES: Boyd *et al.* 2004, 428: 549-553). More detailed results from these experiments can be found in a special issue of *Progress in Oceanography* (SEEDS-I) published in 2005 (Vol. 64, No. 2-4) and in a special issue of *Deep-Sea Research II* (SERIES) to be published in 2006. SEEDS-II was completed in August 2004, and results are being analyzed.
- A 1-day workshop on "*Modeling and iron biogeochemistry: How far apart are we?*" was convened October 2, 2005, at PICES XIV. The goal of this workshop was to examine the structure of iron biochemical models with respect to what is known about iron biogeochemistry and to establish a framework for a joint PICES/SOLAS workshop on "*Modeling iron biogeochemistry and ocean ecosystem*" to be held October 13, 2006, at PICES XV. The later workshop is expected to address the question "*How can ocean models be improved with detailed iron dynamics to better represent ocean ecosystems?*"

- A 2-day workshop on SEEDS-II, co-sponsored by the Ocean Research Institute (University of Tokyo), SOLAS-Japan and PICES, was held October 17-18, 2005, in Tokyo, Japan. The goals of this workshop were: (1) to synthesize results from the second *in situ* iron enrichment experiments in the western subarctic North Pacific (SEEDS-II); and (2) to discuss differences in magnitude, biology and export between SEEDS-I and SEEDS-II.
- A Topic Session on "*Synthesis of* in situ *iron enrichment experiments in the eastern and western subarctic Pacific*" will be convened on October 17, 2006, at PICES XV.
- A 5-year synthesis report of the IFEP Advisory Panel is planned for publication in the PICES Scientific Report Series in 2006/07. It will include summaries of SEEDS-I, SEEDS-II and SERIES, and future plans to understand why the three iron enrichment experiments in the subarctic North Pacific are different in magnitude, biology, and export.

Global Ecology and Oceanography of Harmful Algal Blooms Program (GEOHAB)

- All PICES member countries have significant HAB problems, and similar levels of scientific uncertainty in regard to HABs that are severely limiting the ability to forecast and mitigate HAB events. Responding to interest in sharing information from active science and management HAB programs in each of its member countries, and to achieve the appropriate level of coordination and collaboration among these countries, PICES established in 2003 a Section on *Harmful algal blooms and their impacts*. (see http://www.pices.int/members/sections/HAB.aspx for TOR and reports) It is expected that through this Section PICES will participate in international collaborations, including GEOHAB.
- In 2004-2005, a major focus for the PICES HAB Section was on building a common data resource among PICES nations that allows inter-comparison of HAB species composition and the magnitude of environmental and economic impacts. Two joint PICES/IOC workshops were convened, "*Harmonization of harmful algal bloom data*" at PICES XII (October 2003, Seoul, Korea) and "*Developing a North Pacific harmful algal bloom data resource – Phase II*" at PICES XIII (October 2004, Honolulu, U.S.A.), to facilitate this activity and to utilize the successful harmful algal event database (HAE-DAT) format on a trial basis. In June 2005, IOC and PICES signed a formal agreement to establish a partnership in systematically compiling, storing, and presenting on-line records on harmful algal events. Event records will be compiled and stored annually in the format specified in the HAE-DAT database. A similar agreement was also signed between IOC and ICES.
- At PICES XIII (October 2004, Honolulu, U.S.A.), the PICES HAB Section agreed to annually convene workshops entitled "*Review of selected harmful algae in the PICES region*" to document the existing knowledge on the eco-physiology of HAB species that impact all, or most, countries in the North Pacific. The first workshop of this series was held on September 30, 2005, at PICES XIV and focused on two genera, *Pseudo-nitzschia* and *Alexandrium*. The second workshop will be held on October 14, 2006, at PICES XV and will focus again on two genera, *Dinophysis* and *Cochlodinium*. The 2005 workshop was preceded by a ½-day laboratory demonstration on detection techniques for algal toxins, and the same approach will be used for the 2006 workshop. The SCOR/IOC GEOHAB Program is invited to co-sponsor future workshops of this series.

- A Topic Session on "*Harmful algal blooms in the PICES region: New trends and potential links with anthropogenic influences*" will be convened on October 18, 2006, at PICES XV.

OCEAN CARBON ACTIVITIES SUPPORTED BY SCOR

International Ocean Carbon Coordinated Project (IOCCP)

- IOCCP, co-sponsored by IOC and SCOR, is designed to interface with existing regional-scale research and observation groups that have an interest in ocean carbon. IOCCP is working to establish international agreements on observation methods, best practices, data management, and data sharing that will lead to the joint development of global data products and synthesis activities documenting the ocean carbon cycle. PICES, through its Working Groups on *CO_2 in the North Pacific* (WG 13, 1998-2001) and *Biogeochemical data integration and synthesis* (WG 17, 2002-2005), has been long acting as a regional coordinator for these activities. In 2005, PICES established a Section on *Carbon and Climate* (see http://www.pices.int/members/sections/CC.aspx for TOR and the report of its first meeting), which should provide clear channels of communication to IOCCP, and to SOLAS and IMBER.
- A joint PICES/IOCCP Topic Session on "*The impacts of climate change on the carbon cycle in the North Pacific*" was convened at PICES XIII. The PICES Section on *Carbon and Climate is* planning a Topic Session on "*Decadal changes in carbon and biogeochemical systems in the North Pacific*" at PICES XVI to be held in October 2007, in Victoria, Canada. IOCCP is invited to co-sponsor this session.
- IOCCP and PICES are co-sponsoring the preparation of the "*Guide to best practices for oceanic CO_2 measurements and data reporting*" (Dr. Andrew Dickson), and it was expected that the Guide will appear in the PICES Scientific Report Series in 2006. Unfortunately, this publication is delayed until 2007.

SCOR WORKING GROUPS

Working Group 119 on *Quantitative Ecosystem Indicators for Fisheries Management*

- Collaboration with WG 119 started with PICES' involvement in planning and organizing the International Symposium on "*Quantitative ecosystem indicators for fisheries management*" (March 31-April 3, 2004, in Paris, France). The project was completed in 2005 by the publication of a special issue (Guest Editor: N. Daan) in *ICES J. Mar. Res*., Vol. 62, No. 3, pp. 307-613.

- In October 2004, PICES established a new Working Group (WG 19) on *Ecosystem-based management science and its application to the North Pacific*. This Working Group will definitely benefit from activities of SCOR-IOC WG 119. One of terms of reference for PICES WG 19 directly states "Evaluate the indicators from the 2004 Symposium on "*Quantitative Ecosystem Indicators for Fisheries Management*" for usefulness and application to the North Pacific".
- In March 2005, a PICES proposal entitled "Integration of ecological indicators for the North Pacific with emphasis on the Bering Sea" was funded by the North Pacific Research Board. A 3-day workshop on "*Bering Sea indicators*" (June 1-3, 2006, in Seattle, U.S.A.) is the major component of this proposal. The goal of the workshop is to provide a report on the merits and recommendations for use of various classes of ecosystem indicators, through the application of selection criteria and their correspondence to operational objectives developed before and during the workshop. Participants are international and regional experts on resource management, climate, fisheries, and ecosystems. Dr. Villy Christensen, Co-Chairman of WG 119, was invited to summarise approaches and recommendations from this Working Group. The report of the workshop will be published in the PICES Scientific Report Series by the end of 2006.

Working Group 125 on *Global comparisons of zooplankton time series*

- At its 27th General Meeting in September 2004, SCOR approved a proposal to form a Working Group on "*Global comparisons of zooplankton time series*". PICES strongly supported formation of this Working Group and agreed to provide funding for one additional Associate Member from the North Pacific (Dr. Harold P. Batchelder, Oregon State University, U.S.A.) to participate in its activities. Some future meetings of the SCOR Working Group are planned to be held in conjunction with symposia organized by PICES (*e.g.*, in May 2007, immediately prior to the 4th International Zooplankton Production Symposium on "*Human and climate forcing of zooplankton populations*").

SCOR TRAVEL GRANTS FOR MEETINGS ORGANIZED/SPONSORED BY PICES

- At the 37th Executive Committee Meeting, SCOR approved two contributions of $7,500 US each for scientists from countries with "economies in transition" to attend (1) the PICES/GLOBEC Symposium on "*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*" (April 21-23, 2006, Honolulu, U.S.A.) and (2) sessions/workshops of interest to SCOR at PICES XV (October 13-22, 2006, Yokohama, Japan).
- Two requests are addressed to the 28th SCOR General Meeting:
  - GLOBEC and PICES request SCOR to cover the expenses for 3 to 5 scientists from countries with "economies in transition" to attend the 4th International Zooplankton Production Symposium on "*Human and climate forcing of zooplankton populations*" to be held May 28 - June 1, 2007, in Hiroshima, Japan;

- PICES requests support for scientists from countries with "economies in transition" from the Pacific Rim to attend sessions/workshops of interest to SCOR at PICES XVI to be held October 26 - November 4, 2007, in Victoria, Canada. The overall theme for PICES XVI is "*The changing North Pacific: Previous patterns, future projections, and ecosystem impacts*" The scientific program for PICES XVI will be finalized at the upcoming PICES Annual Meeting in October 2006.

6-14

North Pacific
Marine Science
Organization

May 15, 2006

Dr. Edward Urban
Executive Director
Scientific Committee on Oceanic Research
Department of Earth and Planetary Sciences
The Johns Hopkins University
Baltimore, MD 21218, USA

Re: Symposium on *Effects of Climate Change on the World's Oceans*

Dear Dr. Urban,

The International Council for the Exploration of the Sea (ICES), the Intergovernmental Oceanographic Commission (IOC) and the North Pacific Marine Science Organization (PICES) have agreed to hold a joint Symposium on "*Effects of Climate Change on the World's Oceans*" in May of 2008 in Gijón, Spain. Drs. Luis Valdés (ICES/Spain), John Church (IOC/Australia) and William T. Peterson (PICES/U.S.A.) have been identified as Co-Convenors of the Symposium. A Scientific Steering Committee of about 15 scientists will be formed to organize this event.

Although quantitative documentation of the effects of climate change on the functioning of marine ecosystems is beginning to be compiled, we lack the global-scale vision necessary to assess and predict these effects on time and with confidence. We expect that this Symposium will redress that situation. It is envisaged that the Symposium will cover a board range of scientific issues, including sea-level rise, thermohaline ocean circulation, acidification of shallow seas, oligotrophy of temperate seas, changes in species distribution and migratory routes, etc. The Symposium is aimed to bring together and interchange observations, results and models, and discuss on the possible chances to mitigate and protect the marine environment and living resources.

On behalf of ICES, IOC and PICES, I have the pleasure to extend an invitation to SCOR to join us as a co-sponsor of the Symposium. As this is an important global issue, SCOR's intellectual and financial contributions (nominating a member to the Symposium SSC and providing travel support for scientists from countries with economy-in-transition to attend) are important to ensure the success of this meeting.

Our experience with Gijón, as a venue for a global symposium was entirely positive during the ICES/PICES/GLOBEC *International Zooplankton Production*

Secretariat
c/o Institute of Ocean Sciences
P.O. Box 6000,
Sidney, B.C.,
Canada, V8L 4B2
Phone: (250) 363-6366
Fax: (250) 363-6827
E-Mail: secretariat@pices.int
Internet:
www.pices.int

Symposium in 2003 (also supported by SCOR), and we anticipate a similar experience in 2008.

We would be grateful if you could bring our invitation to the attention of the SCOR Executive Committee, at their Concepción meeting later this year.

We thank you in advance for your consideration and look forward to hearing favourably from you.

Yours sincerely,

Alexander Bychkov
Executive Secretary