

## **6.0 RELATIONS WITH INTERGOVERNMENTAL ORGANIZATIONS**

- |            |   |                         |
|------------|---|-------------------------|
| <b>6.1</b> | <b>Intergovernmental Oceanographic Commission (IOC), p. 6-1</b>   | <i>Fennel</i>           |
| <b>6.2</b> | <b>International Council for Exploration of the Seas, p. 6-3</b>  | <i>Fennel</i>           |
| <b>6.3</b> | <b>Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP), p. 6-3</b> | <i>Urban</i>            |
| <b>6.4</b> | <b>North Pacific Marine Science Organization (PICES), p. 6-4</b>  | <i>Taguchi, Bychkov</i> |

## 6.0 RELATIONS WITH INTERGOVERNMENTAL ORGANIZATIONS

### 6.1 Intergovernmental Oceanographic Commission (IOC)

*Fennel*

SCOR and IOC cooperate on a variety of joint projects that have been discussed under previous agenda items, including

- 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<sub>2</sub> World

In April 2011, IOC organized and hosted an international expert meeting entitled “Understanding deep-water biodiversity in the South Atlantic: Options for conservation and sustainable use of resources in the high-seas”. The objectives of the workshop were (i) to identify potential ecologically and Biologically Significant Areas in the South Atlantic based on currently available information and on recently acquired data; (ii) to identify research and knowledge gaps in South Atlantic processes, biodiversity, and resources in order to prepare recommendations to be addressed during the upcoming South-South scientific collaboration programme fostered by IOC-UNESCO; and (iii) to promote a proposal for the creation of a 3-year SCOR Working Group in order to enhance networking activities and support continuing sampling in the Deep South Atlantic Ocean, which remains as a poorly studied area (see **Section 2.3.3**).

#### Ocean Biogeographic Information System (OBIS)

The last year has been one of big changes for OBIS: from a Sloan Foundation-sponsored project OBIS was turned in an intergovernmental activity, after its adoption by IOC, under IOC’s International Oceanographic Data and Information Exchange program. In October 2010, the first Census of Marine Life concluded in London; OBIS, originally created as the data-integration component of the Census, was mentioned by many as one of the main legacies of the Census. The OBIS Web site, including its search interface, was completely revised; it is now standards-compliant, and built with Open-Source tools. It is now possible in the search interface to specify search criteria based on physical and chemical oceanography, and to request results integrated over the taxonomic hierarchy. In the last year, the number of records available through the international OBIS portal grew to well over 30 million, extracted from nearly 1000 individual data sets, documenting more than 120,000 marine species. Several scientific papers were written based on OBIS data; one of the more visible ones documenting the gap of information on species distributions in the deep pelagic (Webb et al., 2010:

<http://www.plosone.org/article/info:doi/10.1371/journal.pone.0010223>).

## 6-2

Wolfgang Fennel and Ed Urban attended the IOC General Assembly in June 2011 to represent SCOR and ICSU. They made the following interventions:

### Regular Process for a Global Marine Assessment

Thank you, Mr. Chairman. SCOR is pleased that the Group of Experts will be assisted by a “pool of experts”. This is a large undertaking. As demonstrated by the IPCC process, the process will be judged, in large part, by the expertise and reputation of those involved. It is important for IOC Member States to nominate their best ocean scientists for the pool of experts. SCOR would be pleased to provide nominations for the pool of experts, as well.

Note: Alan Simcock, who make the presentation, informed the meeting after the interventions were completed that nominations would only be accepted from UN Member States (i.e., nominations would not be accepted directly from SCOR).

### WCRP

Thank you, Mr. Chairman. ICSU thanks Dr. Ryabinin for his excellent summary of WCRP’s activities. ICSU is pleased with the partnership it has had with IOC and WMO in co-sponsoring WCRP since 1993. ICSU thanks IOC for hosting WCRP-related meetings, most recently the CLIVAR Scientific Steering Group last month, and for joining with WCRP on issues such as the effects of sea-level variability and change. WCRP is the flagship global program on physical climate variability and change. WCRP is a major contributor to progress on IOC’s High-Level Objective 2, to UNESCO climate activities, and to the IPCC process. (Many of the ocean-related issues presented in the UNFCCC presentation earlier today are addressed by WCRP.) The work of WCRP has become increasingly important. ICSU looks forward to continued contributions to WCRP from IOC. Thank you.

### Framework for Ocean Observations (post-OceanObs’09 group)

Thank you, Mr. Chairman. As mentioned by Dr. Gunn, SCOR was a co-sponsor of the committee that developed the new framework that he described. We think the proposed framework will be very useful for the future of ocean observing, incorporating existing activities and suggesting the development of new ones, as important. The committee has wisely borrowed from the experience of climate science and other fields. The identification of Essential Ocean Variables will be an important process. SCOR looks forward to working with IOC and other organizations to implement the recommendations of the framework. Thank you.

### Intergovernmental Panel on Harmful Algal Blooms (IPHAB)

Thank you, Mr. Chairman. And thank you to IOC and IPHAB for co-sponsoring and co-managing GEOHAB with SCOR for more than 10 years. GEOHAB has been the major international research project on harmful algal blooms for the past decade, has stimulated new connections in the research community, and has published a series of foundational documents on research on HABs in different ecosystem types. We are committed to continued co-sponsorship of activities on harmful algal blooms with IOC after the completion of GEOHAB in 2013. However, we do not support a second phase of GEOHAB or revision of the GEOHAB *Science*

*Plan.* SCOR believes that it is important to limit the time of individual projects and to provide opportunities to develop new activities with new participants. We do not support second phases of the research projects we sponsor. We would prefer a more focused set of activities related to harmful algal blooms to be prioritized jointly by IPHAB and SCOR. Some may involve the continuation of newer GEOHAB activities such as modeling and the Core Research Project on Benthic Harmful Algal Blooms, whereas others may be entirely novel activities that we haven't envisioned yet. Thank you.

## **6.2 International Council for the Exploration of the Sea (ICES)**

*Fennel*

See appended report.

## **6.3 Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection (GESAMP)**

*Urban*

SCOR's most recent cooperative activity with GESAMP involved a small contribution for support of travel of developing country scientists to the first meeting of GESAMP Working Group 38 on The Atmospheric Input of Chemicals to the Ocean. Two papers have been published from this activity so far:

1. Hunter, K.A., P.S. Liss, V. Surapipith, F. Dentener, R. Duce, M. Kanakidou, N. Kubilay, N. Mahowald, G. Okin, M. Sarin, M. Uematsu, and T. Zhu. 2011. Impacts of anthropogenic SO<sub>x</sub>, NO<sub>x</sub> and NH<sub>3</sub> on acidification of coastal waters and shipping lanes. *Geophysical Research Letters* 38:L13602, doi:10.1029/2011GL047720, 2011.
2. Okin, G.S., A.R. Baker, I. Tegen, N.M. Mahowald, F.J. Dentener, R.A. Duce, J.N. Galloway, K. Hunter, M. Kanakidou, N. Kubilay, J.M. Prospero, M. Sarin, V. Surapipith, M. Uematsu, and T. Zhu. Impacts of atmospheric nutrient deposition on marine productivity: Roles of nitrogen, phosphorus, and iron. *Global Biogeochemical Cycles* 25:GB2022, doi:10.1029/2010GB003858, 2011.

Both papers credit SCOR's contribution. A third paper is in preparation.

# 6-4

## 6.4 North Pacific Marine Science Organization (PICES)

**SCOR and PICES: Continuing Connections**  
**Report for the 2011 SCOR Executive Committee Meeting**  
**September 12–15, 2011**  
**Helsinki, Finland**

The North Pacific Marine Science Organization (PICES) is an intergovernmental scientific organization established by an international convention in 1992, in order to promote and coordinate marine scientific research in the North Pacific and adjacent seas. Our current member countries are Canada, Japan, People's Republic of China, Republic of Korea, Russian Federation and the United States of America. Our goals are to (1) advance scientific knowledge and capacity available for the member countries, including information on human activities affecting, and affected by marine ecosystems, and (2) provide a mechanism for collaboration among scientists in addressing timely and critical scientific questions. In less than 20 years since its establishment, PICES has become a major forum for marine science in the North Pacific. Information on the organization and its activities can be found on the PICES website at <http://www.pices.int>.

SCOR and PICES are natural partners. Continuing and extending collaboration between the two organizations is based on the recognition that PICES can play an important role in bringing a North Pacific perspective to the global activities of SCOR, and that by participating in these activities, PICES can advance its own scientific agenda. PICES contributes to SCOR-sponsored international large-scale ocean research projects, to ocean carbon activities supported by SCOR, and to several SCOR Working Groups.

To discuss on-going and future collaborations between the two organizations, SCOR and PICES continue to regularly exchange observers at each others' annual meetings. In recent years, SCOR was represented at the 2009 PICES Annual Meeting (Jeju, Korea) by Drs. Wolfgang Fennel (President of SCOR) and Ed Urban (Executive Director of SCOR), and at the 2010 PICES Annual Meeting (Portland, USA) by Dr. Fennel. Dr. Alexander Bychkov (PICES Executive Secretary) attended the 2010 SCOR General Meeting (Toulouse, France) and is planning to participate in the 2011 SCOR Executive Committee Meeting (Helsinki, Finland).

### **LARGE-SCALE OCEAN RESEARCH PROGRAMS CO-SPONSORED BY SCOR**

#### ***Global Ocean Ecosystem Dynamics Programme (GLOBEC) - completed***

- The PICES Climate Change and Carrying Capacity (CCCC) Program provided a mechanism for integrating national GLOBEC or GLOBEC-like research programs in the North Pacific and was a regional component of the international GLOBEC effort. Results from the CCCC Program were included in several chapters of the GLOBEC Synthesis Book on "*Marine Ecosystems and Global Change*" published in 2010. A special issue of

*Progress in Oceanography* resulted from the PICES/GLOBEC Symposium on “*Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis*” (April 19–21, 2006, Honolulu, USA), which was published in June 2008 (Vol. 77, Nos. 2–3, pp. 83–268; Guest Editors: H. Batchelder and S. Kim) and is also considered as a part of GLOBEC synthesis effort.

- The PICES/ICES/GLOBEC special issue of *Deep-Sea Research II* on krill biology and ecology dedicated to Edward Brinton, based on selected papers from the 4th Zooplankton Production Symposium (Guest Editors: S. Kawaguchi and W. Peterson), was published in April 2010 (Vol. 57, Is. 7–8, pp. 493–692).
- GLOBEC co-sponsored the PICES/ICES Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile) by providing travel support (3,000 Euros) for early career scientists.

### ***Integrated Marine Biogeochemistry and Ecosystem Research (IMBER)***

- Issues in marine biogeochemistry and food webs are important components of the new integrative scientific program of PICES on *Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Ecosystems* (FUTURE).
- PICES and IMBER have convened joint Topic Sessions at every PICES Annual Meeting since 2008 (IMBER has provided travel funds for an additional invited speaker for each session):
  - “*End-to-end foodwebs: Impacts of a changing ocean*” (PICES-2008, Dalian, PR China);
  - “*Outlooks and forecasts of marine ecosystems from an earth system science perspective: Challenges and opportunities*” (PICES-2009, Jeju, Korea);
  - “*Anthropogenic forcing in North Pacific coastal ecosystems: Understanding changes in ecosystem structure and function*” (PICES-2010, Portland, USA);
  - “*How well do our models really work and what data do we need to check and improve them?*” (PICES-2011, Khabarovsk, Russia).
- PICES co-sponsored the IMBER-led Summer School on “*ClimECO2: Oceans, marine ecosystems, and society facing climate change - A multidisciplinary approach*” (August 23–27, 2010, Brest, France) by providing travel funds and arranging additional support (through national programs/agencies) for 9 early career scientists from all PICES member countries (1 from Canada, 1 from Japan, 2 from Korea, 2 from PR China, 1 from Russia, and 2 from USA).
- PICES co-sponsored the 2010 IMBER IMBIZO Conference on “*Integrating biogeochemistry and ecosystems in a changing ocean: Regional comparisons*” (October 10–14, 2010, Crete, Greece) by providing travel support for 3 invited speakers from the North Pacific.
- IMBER agreed to co-sponsor the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 15–19, 2012, Yeosu, Korea) by supporting invited speakers for IMBER-relevant sessions.

## 6-6

- PICES and ESSAS (*Ecosystem Studies of Sub-Arctic Seas*), a regional program initiated by GLOBEC in 2005 and placed under IMBER in 2009, share the goal of using a comparative approach in developing predictions of how climate variability and change affect, and will affect, the sustainability of goods and services obtained from the Sub-Arctic seas.
  - PICES provided organizational support (this included maintaining the meeting website, handling major finances, on-line registration and abstract submission, compiling the book of abstracts, and arranging the logistics for the venue) for the 2nd ESSAS Open Science Meeting on “*Comparative studies of climate effects on polar and sub-polar ocean ecosystems: Progress in observation and prediction*” (May 22–26, 2011, Seattle, USA). The meeting was attended by 195 scientists from 13 countries, and showcased the progress made in understanding the role of climate variability and change on the ecosystem structure and function within Sub-Arctic seas. A brief summary of the meeting was published in the summer 2011 issue of *PICES Press* ([http://www.pices.int/publications/pices\\_press/volume19/v19\\_n2/pp\\_9-13\\_ESSAS\\_OSM.pdf](http://www.pices.int/publications/pices_press/volume19/v19_n2/pp_9-13_ESSAS_OSM.pdf)).
  - Two PICES expert groups convened workshops at the 2<sup>nd</sup> ESSAS Open Science Meeting: The PICES/ICES Working Group on *Forecasting Climate Change Impacts on Fish and Shellfish* organized a 1-day workshop on “*Biological consequences of a decrease in sea ice in Arctic and Sub-Arctic seas*”; and the PICES Advisory Panel on *Marine Birds and Mammals* held a 0.5-day workshop on “*Comparative analyses of marine bird and mammal responses to climate change*”, which focused on how to best integrate on-going and new research on marine birds and mammals into long-term PICES and ESSAS programs and objectives.
  - The objective of the Marine Ecosystem Model Inter-comparison Project (MEMIP), initiated by PICES and ESSAS in 2008, is to compare the performance of various lower trophic level marine ecosystem simulation models in predicting the abundance and distribution of coastal zooplankton functional groups. A series of joint MEMIP workshops has been organized in conjunction with PICES Annual Meetings since 2008.
- IMBER and ESSAS are normally present as observers at PICES Annual Meetings.

### ***Surface Ocean-Lower Atmosphere Study (SOLAS)***

- The main areas for cooperation between PICES and SOLAS include (1) the impact of iron on biogeochemistry and marine ecosystems [PICES Advisory Panel on *Iron Fertilization Experiment in the Subarctic Pacific Ocean* (1999–2007) and WG 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* (2007–2010) and SOLAS Implementation Group 1 on *Biogeochemical Interactions and Feedbacks between Ocean and Atmosphere*], and (2) carbon cycle research studies [PICES WG 13 on *CO<sub>2</sub> in the North Pacific* (1998–2001), WG 17 on *Biogeochemical*

*Data Integration and Synthesis* (2002–2005) and Section on *Carbon and Climate* (2006–present), and SOLAS Implementation Group 3 on *Air-Sea Flux of CO<sub>2</sub> and Other Long-Lived Radiatively-Active Gases*].

- Since 2006, several joint PICES/SOLAS workshops and Topic Sessions have been convened at PICES Annual Meetings (SOLAS provided travel funds for an additional invited speaker for each event):
  - “*Modeling iron biogeochemistry and ocean ecosystems*” (workshop at PICES-2006, Yokohama, Japan);
  - “*Natural supplies of iron to the North Pacific and linkages between iron supply and ecosystem responses*” (workshop at PICES-2009, Jeju, Korea);
  - “*Understanding the role of iron in regulating biogeochemical cycles and ecosystem structures in the North Pacific Ocean*” (session at PICES-2010, Portland, USA).
- PICES co-sponsored the 5th SOLAS Summer School (August 29–September 10, 2011, Cargèse, Corsica, France) by providing travel funds for 3 students/early career scientists from PICES member countries (Canada, PR China and USA).
- SOLAS is normally present as an observer at PICES Annual Meetings.

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

- PICES communicates with various international HAB programs, including GEOHAB and IPHAB (IOC-UNESCO Intergovernmental Panel on Harmful Algal Blooms), through the Section on *Ecology of Harmful Algal Blooms in the North Pacific* (HAB-S) established in 2003.
- In June 2005, PICES joined the IPHAB-led **Harmful Algal Event Database** (HAE-DAT), a partnership in systematically compiling, storing, and presenting on-line records on harmful algal events. Building a common data resource allows inter-comparison of HAB species composition and the magnitude of their environmental and economic impacts.
- Since 2005, a series of workshops has been conducted at PICES Annual Meetings to (1) document the existing knowledge on the eco-physiology of HAB species that impact all, or most, countries in the North Pacific and (2) review techniques for monitoring HAB species and the environmental factors associated with their occurrence. These workshops are preceded by a laboratory demonstration on cell/toxin identification and detection methods/techniques.
  - Dr. Raphael Kudela, GEOHAB SSC Chairman, will be an invited speaker for this year’s workshop on “*Remote sensing techniques for HAB detection and monitoring*”.
  - This series will continue, and GEOHAB is invited to play an active role in future workshops.

## 6-8

- Since 2006, HAB-S has been convening Topic Sessions at PICES Annual Meetings.
  - Dr. Wolfgang Fennel, GEOHAB Modelling Committee member, gave an invited talk at the PICES-2010 Topic Session on “*Conceptual and numerical models of HAB dynamics*” (Portland, USA);
  - Dr. Raphael Kudela, GEOHAB SSC Chairman, was invited to give a talk at the PICES-2011 Topic Session on “*Harmful algal blooms in a changing world*” (Khabarovsk, Russia).
  - GEOHAB is invited to propose topics and play an active role in organizing future sessions.
- A 5-year PICES Seafood Safety Project, funded by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan, was initiated in 2007 in order to (1) assist in the prevention of impacts of harmful aquatic organisms on fisheries and ecosystems, and (2) build the capacity of scientists studying this topic in developing countries in the Pacific Rim. The Project focuses on teaching country-specific training courses most required to ensure seafood safety in Pacific countries outside the PICES region (*i.e.*, in Southeast Asia and Central/South America), and PICES has partnered with IOC to determine [through a questionnaire distributed *via* the IOC network] countries which have the greatest need and a strong interest in improving HAB monitoring and testing, and a commitment to sustainability. The following training courses were conducted or are planned:
  - Manila, Philippines, January 15–23, 2009: training in screening methods for testing shellfish for PSP toxins (14 participants) and phytoplankton identification, with specific focus on harmful species in the Philippines (33 participants), and introduction to on-line HAB databases;
  - Guatemala City (31 participants) and San José (17 participants), Guatemala, February 15–19, 2010: training in screening methods for testing shellfish for PSP toxins and phytoplankton identification, with specific focus on harmful species in Guatemala, and introduction of basic concepts in oceanography, as there is no oceanography program at all in Guatemala;
  - Guatemala City, Guatemala (8 participants), April 26–29, 2010: training on High Performance Liquid Chromatography and Mass Spectrometry for detection of domoic acid and saxitoxins; a follow up workshop to review collected data on marine toxins will be held in early spring 2012;
  - Southeast Pacific or Indonesia, late winter or early spring of 2012: training with focus on ciguatoxins and ciguatoxic cells, a devastating problem to Pacific Island fisheries.

### ***International Study of Marine Biogeochemical Cycles of Trace Elements and their isotopes (GEOTRACES)***

- Common opportunities and challenges in interactions between GEOTRACES and PICES still have to be discussed.

### OCEAN CARBON ACTIVITIES SUPPORTED BY SCOR

The International Ocean Carbon Coordinated Project (IOCCP), co-sponsored by SCOR and IOC-UNESCO, promotes the development of a global network of ocean carbon observations for research through technical communication and communications services, international agreements on standards and methods, and advocacy and links to global observing systems. This should lead to the joint development of global data products and synthesis activities documenting the ocean carbon cycle. PICES, through its Working Groups on *CO<sub>2</sub> in the North Pacific* (WG-13; 1998–2001) and *Biogeochemical Data Integration and Synthesis* (WG-17; 2002–2005), and now through the Section on *Carbon and Climate* (CC-S; 2006–present), has been long acting as a regional coordinator for these activities. CC-S provides a channel of communication to IOCCP. IOCCP is normally represented as an observer at PICES Annual Meetings. Dr. Christopher Sabine (IOCCP SSC Chairman and CC-S member) serves as a liaison between these two groups.

- CC-S data synthesis:
  - The PACIFICA data synthesis project is the most ambitious and significant undertaking of CC-S. PACIFICA has collected biogeochemical data (DIC, TA, nutrients, oxygen, salinity) from more than 200 cruises in the Pacific Ocean and implemented a set of algorithms for crossover analysis that permits the construction of a basin-wide, consistently calibrated data set. It contains several important innovations relative to previous efforts such as GLODAP and CARINA. Most of the cruises are recent (post-WOCE), and data quality is generally higher than in the WOCE era, especially for total alkalinity. In addition, the inclusion of time-series programs from Lines P and 137°E means that an unprecedented amount of temporal information has been included, which creates opportunities for interdisciplinary studies of future ocean change in the context of past variability and change. The project has progressed very rapidly over the past two years, through a series of workshops (3) on “*Carbon data synthesis*”, and the target is to have the final PACIFICA data products completed in 2011. These broadly accessible products, as well as publications based on the data, will be an important legacy of CC-S and PICES for the Pacific Ocean scientific community. Scientific analyses of the data are expected to be presented at the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 15–19, 2012, Yeosu, Korea).
  - While PACIFICA focuses primarily on the open ocean, a similar data synthesis effort will be undertaken for the North Pacific marginal seas and possibly the Pacific sector of the Arctic Ocean.
- CC-S contribution to PICES integrative science program FUTURE: Ocean acidification, de-oxygenation and productivity will be key scientific issues for FUTURE and for Pacific Ocean science over the next 5–10 years. In PICES, much of the scientific expertise on these issues—particularly acidification—resides within CC-S. The Section anticipates a shift in focus from carbon biogeochemistry toward biological impacts of ocean acidification.

# 6-10

- CC-S scientific sessions:
  - Two theme sessions, “*Changes in the marine carbon cycle*” and “*Trend and impacts of de-oxygenation in oceanic and coastal ecosystems*”, will be convened at the PICES/ICES/IOC Symposium on “*Effects of climate change on the world’s oceans*” (May 15–19, 2012, in Yeosu, Korea). Dr. James Christian, CC-S Co-Chairman, serves as a member of the Symposium Scientific Steering Committee.
  - CC-S is also planning to sponsor a theme session at the 3<sup>rd</sup> International Symposium on the “*Ocean in a high-CO2 world*” to be held September 24–27, 2012, in Monterey, USA. Dr. Richard Feely, CC-S member, serves on the Symposium Scientific Steering Committee. [By invitation of the organizers, PICES, jointly with ICES, convened a theme session on “*The effects of ocean acidification on fisheries and ecosystems*” at the 2nd International Symposium on “*The ocean in a high CO2 world*” (October 6–9, 2008, Monaco)].

## SCOR WORKING GROUPS

- SCOR WG 125 on *Global Comparisons of Zooplankton Time Series*:
  - PICES strongly supported the formation of SCOR WG 125 and funded an associate member from the North Pacific (Dr. Harold Batchelder, Oregon State University, USA) to participate in its activities.
  - In 2005–2008, this WG carried out a variety of comparisons among many of the earlier and longer time series, and developed and applied new visualization and statistical tools. As a follow-up of this activity, a workshop on “*Updates and comparisons of zooplankton time series*”, co-convened by David Mackas (Canada) and Martin Edwards (UK), was held at the PICES/ICES Zooplankton Production Symposium on “*Population connections, community dynamics, and climate variability*” (March 14–18, 2011, Pucón, Chile). The workshop was intended to provide updates on recent progress, and also to develop new research directions, tools, and comparisons for the future. The workshop summary is posted at [http://www.pices.int/publications/pices\\_press/volume19/v19\\_n2/pp\\_25-27\\_ZPS\\_wsh-3.pdf](http://www.pices.int/publications/pices_press/volume19/v19_n2/pp_25-27_ZPS_wsh-3.pdf).
- SCOR WG 130 on *Automatic Plankton Visual Identification*:
  - A workshop on “*Automated visual plankton identification*”, co-convened by Co-Chairmen of WG 130, Phil Culverhouse (UK) and Mark Benfield (USA), was also held at the PICES/ICES Zooplankton Production Symposium, and was well attended by users of *in situ* and laboratory automated systems and by people who are interested in adopting these new technologies. The workshop summary is posted at [http://www.pices.int/publications/pices\\_press/volume19/v19\\_n2/pp\\_30\\_ZPS%20\\_wsh-5.pdf](http://www.pices.int/publications/pices_press/volume19/v19_n2/pp_30_ZPS%20_wsh-5.pdf).

- SCOR WG 131 on *The Legacy of in situ Iron Enrichment: Data Compilation and Modeling*:
  - Terms of reference for PICES WG 22 on *Iron Supply and its Impact on Biogeochemistry and Ecosystems in the North Pacific Ocean* include compiling and synthesizing available iron biogeochemistry data in the North Pacific, and data sets of iron and related parameters in the North Pacific will be included in the WG 22 final report to be published in 2011. These activities are closely linked to the mandate of SCOR WG 131 to develop a database for open access of the completed iron-enrichment experiments.
- SCOR WG 137 on *Patterns of Phytoplankton Dynamics in Coastal Ecosystems: Comparative Analysis of Time-Series Observations*:
  - There are many phytoplankton data sets from diverse parts of the globe that warrant a comparative examination, and SCOR WG 137 was seen as a logical methodological continuation of WG 125. PICES strongly supported the establishment of SCOR WG 137 and agreed to finance an associate member from the North Pacific (Dr. Sinjae Yoo, Korea Ocean Research and Development Institute, Republic of Korea) to participate in its activities.
- A list of SCOR working groups proposed for 2011 was reviewed at the inter-sessional Science Board meeting (April 29–30, 2011, Honolulu, USA) in order to determine if any are relevant to PICES and if any Committee would be interested in nominating an associate member. It was agreed that Science Board members will inform the Science Board Chairman on this matter by July 31.

## CAPACITY BUILDING

- PICES appointed a liaison, Dr. George Boehlert (U.S. national delegate to PICES Governing Council), to the SCOR Committee on Capacity Building, who attended the SCOR-led conference on “*Developing a global strategy for capacity building in the ocean sciences*” (August 16–18, 2010, Bremen, Germany) and the 2011 meeting of the SCOR Committee on Capacity Building (April 19–21, 2011, Izmir, Turkey).
- SCOR continues to provide travel support for scientists from countries with “economies in transition” to participate in SCOR-relevant sessions/workshops at PICES Annual Meetings and international symposia led/co-organized by PICES.
  - In 2010, US\$5,000 from the SCOR/NSF fund was provided to each of the following two events: (1) PICES/ICES/FAO Symposium on “*Climate change effects on fish and fisheries: Forecasting impacts, assessing ecosystem responses, and evaluating management strategies*” (April 26–29, 2010, Sendai, Japan; attended by 337 scientists from 37 countries), and (2) 2010 PICES Annual Meeting (October 22–31, 2010, Portland, USA).
  - A grant of US\$5,000 was approved to support participation of scientists from countries with “economies in transition” in SCOR-relevant sessions and/or workshops at the 2011 PICES Annual Meeting to be held from October 14–23,

# 6-12

2011, in Khabarovsk, Russia, under the theme “*Mechanisms of marine ecosystem reorganization in the North Pacific Ocean*”.

- PICES joined a group of organizations (SCOR, POGO, IOC-UNESCO) that sponsor capacity development activities related to ocean science in providing information for a portal recently launched and maintained by the International Oceanographic Data and Information Exchange (IODE) of IOC, a single site where students and early career scientists can go to find out what is available (<http://www.oceansummerschools.org>).
- The following capacity development events are supported by PICES in 2011–2012:
  - PICES/IOC-WESTPAC Demonstration Workshop on “*Rapid assessment survey methodologies for detecting marine non-indigenous species*”, July 19–21, 2011, Phuket Marine Biological Center, Thailand (26 participants, mostly from Southeast Asian countries); funding for the workshop was from a PICES project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*” supported by the Ministry of Agriculture, Forestry and Fisheries (MAFF) of Japan;
  - 5<sup>th</sup> SOLAS Summer School, August 29–September 10, 2011, Cargèse, Corsica, France; PICES supported participation of 3 students/early career scientists from PICES member countries (Canada, PR China and USA);
  - NOWPAP/PICES/IOC-WESTPAC training course on “*Remote sensing data analysis*”, October 8–12, 2011, Vladivostok, Russia, immediately prior to PICES-2011; Dr. Raphael Kudela (UC Santa Cruz), GEOHAB SSC Chairman, will be a PICES lecturer at this training course. PICES will also support participation of 3 students/early career scientists from PICES member countries (Japan, Korea and PR China);
  - 3<sup>rd</sup> PICES Harmful Algal Bloom training course, late winter or early spring of 2012, in the Southeast Pacific or Indonesia; the focus of the training course, supported by funding from MAFF, will be on ciguatoxins and ciguatoxic cells, a devastating problem to Pacific Island fisheries;
  - Workshop to review data on marine toxins collected by HPLC (High Performance Liquid Chromatography) and MS (Mass Spectrometry) methods, spring 2012, Guatemala; this workshop is a follow up of the second PICES Harmful Algal Bloom training course conducted in Guatemala in early spring 2010;
  - 2<sup>nd</sup> ICES/PICES Conference for Early Career Scientists on “*Oceans of change*”, April 24–27, 2012, Palma de Majorca, Spain (<http://www.ices.dk/marineworld/oceans/index.asp>).

## REQUESTS FOR CONSIDERATION BY SCOR

- On behalf of PICES:  
Travel support at a level of US\$5,000–7,500 is requested for scientists from countries with “economies in transition” from the Pacific Rim to attend SCOR-relevant sessions/workshops at the 2012 PICES Annual Meeting to be held October 12–21, 2012,

in Hiroshima, Japan, under the theme “*Effects of natural and anthropogenic stressors in North Pacific ecosystems: Scientific challenges and possible solutions*”. The scientific program for this event will be finalized in October at PICES-2011.

- On behalf of symposium organizers:

Travel support at a level of US\$7,500–10,000 is requested for scientists from countries with “economies in transition” to participate in the 2nd International Symposium on “*Effects of climate change on the world’s oceans*”

(<http://www.pices.int/climatechange2012.aspx>) to be convened May 15–19, 2012, in Yeosu (Korea), as one of the official events related to the Ocean Expo-2012 to be held from May 12–August 12, under the theme “*The Living Ocean and Coast: Diversity of Resources and Sustainable Activities*” (<http://eng.expo2012.or.kr/eng/main.asp>). The first symposium in this series took place in May 2008, in Gijón, Spain, and attracted 400 scientists from 48 countries.