PICES in transition:
The 3rd inter-sessional Science Board and Governing Council meeting

The 3rd inter-sessional Science Board meeting with the participation of Governing Council was hosted by the Alaska Fisheries Science Center and the Northwest Fisheries Science Center, and held at NOAA's Sand Point facilities in Seattle, U.S.A., from April 6-7, 2005. As PICES scientific activities have increased dramatically and its programs have expanded in recent years, the two senior bodies of PICES have recognized the need to communicate more frequently, to be up-to-date, and to chart the future of the Organization. Particularly, it is important to realize that PICES is in transition now as it completes its Climate Change and Carrying Capacity (CCCC) Program, which has been the main scientific activity of PICES so far. The CCCC Program is now moving towards synthesis, and will convene a symposium on "Climate variability and ecosystem impacts on the North Pacific: A basin scale synthesis" in Honolulu, U.S.A., from April 19-21, 2006. PICES is also making first steps in developing another major inter-disciplinary and integrative scientific program that will suit the interests of all member countries and their scientists. The 3rd inter-sessional meeting focused on implementing decisions and recommendations from PICES XIII in Honolulu (October 2004), and provided time for in-depth discussions on the PICES Strategic Plan, Committee Action Plans, up-coming symposia/workshops and publications, and the on-going activities of PICES. The highlights are described below.

Next major integrating program of PICES

Development of the next major integrative program of PICES was initiated effectively at the first inter-sessional Science Board and Governing Council meeting, held in April 2003, in Victoria, Canada (see PICES Press Vol. 11, No. 2). The Science Board reviewed progress made and recommended the establishment a new study group to develop recommendations for one or more new Integrative Scientific Program(s) to be undertaken by scientists in PICES member countries (this recommendation was later approved by Council. The entire PICES community, from individual scientists, PICES committees and groups, governments of member countries to international organizations, is expected to be engaged in the development of the next integrative program, with the PICES Strategic Plan and Committee Action Plans at hand. PICES member countries must share common interests in the program(s) and find the program relevant to their governments. At the same time the support from the scientific community is essential for active participations from scientists. The program should be strategic and provide an opportunity for PICES to become a world leader and to international respect beyond the North Pacific. The program should also bring "new blood" and fresh ideas into PICES to keep the Organization up-to-date and dynamic. The announcement of the new themes is planned for PICES XV (Yokohama, 2006).

Action and Strategic Plans

An Action Plan for each Committee will identify how to implement the ideas contained in the PICES Strategic Plan on the short (annual) to medium (~5 years) time scales. These Action Plans will be prepared using a standard template, and will be posted on the PICES website. Science Board will review all Action Plans, and circulate them to Council for approval by October 2005. Science Board will also develop a Strategic Plan template (based on the format of BIO's Strategic Plan) to be used for all committees.

High-priority PICES activities for external funding

At PICES XIII, Council asked Science Board to develop a list of high-priority PICES projects that are strong candidates for external funding. Upon this request, Science Board identified the next North Pacific Ecosystem Status Report (expected to be published in 2007) and activities related to the development of future integrative scientific program(s) as the highest-priority projects. Next in priority, in order of importance, are the PICES-ICES Young Scientists Conference, international exchange and capacity building, and GOOS integration.

Future of carbon cycle studies in PICES

The success of WG 13 on *CO_2 in the North Pacific* in 1998-2001 (chaired by Drs. R. Feely and Y. Nojiri) and WG 17 on *Biogeochemical data integration and synthesis* in 2002-2005 (chaired by Drs. A. Dickson and Y. Nojiri) are often cited as models of regional cooperation for the globally important scientific problem of carbon cycle studies. Recognizing the need for a regional group that has a longer lifetime than the typical Working Group, and that will allow the Organization to maintain its pre-eminence in this arena while ensuring that the important basin–scale problems of carbon cycling in the North Pacific are adequately addressed, Science Board supported a WG 17 proposal and recommended the establishment of a Section on *Carbon and Climate*, under the direction of POC and BIO. This recommendation was later approved by Council. It is expected that this Section will provide clear channels of communication between PICES and the SCOR-IOC International Ocean Carbon Coordinated Project (IOCCP), and large-scale IGBP programs such as SOLAS and IMBER.

Analysis of performance/input from past and existing PICES temporary groups

Upon a request from Council, Science Board initiated a review of temporary groups (Working Groups, Study Groups, Task Teams and Advisory Panels) established since the inception of the Organization. The purpose of the review is not to evaluate the performance of any single group, but to get an idea of whether the current approach of the formation and financing of these groups is working. It is expected that this analysis will assist in preparing guidelines for future temporary groups.

Committee Chairman and Vice-Chairman positions

At PICES XIII, a proposal to establish a Vice-Chairman position for each committee was discussed, but consensus was not reached. Science Board re-visited this issue and recommended an amendment to the PICES Rules of Procedure to provide flexibility in establishing a Vice-Chairman position (with a maximum term of 3 years) for committees. As with the position of the Vice-Chairman of Science Board, the Vice-Chairman of a Committee should

Participants at the 2005 interim meeting of Science Board and Governing Council: (left to right from back) Alexander Bychkov, Tokio Wada, Samuel Pooley, George Boehlert, Michael Foreman, Lev Bocharov, Vera Alexander, Laura Richards, Chul Park, Robin Brown, Jeffrey Napp, Jae Soo Park, Igor Shevchenko, Michael Dagg, Yukimasa Ishida, Suam Kim, Skip McKinnell, John Stein, Harold Batchelder, Dong Sil Park, and Kuh Kim.

Dr. Gary Stauffer of NMFS welcomes participants to the Sand Point facilities where the 2005 interim SB/GC meeting was held.

Drs. John Stein, George Boehlert and Vera Alexander wind down with a drink at the group dinner.

PICES staff Ms. Rosalie Rutka and Ms. Christina Chiu with Dr. and Mrs. Warren Wooster at the group dinner.

be from the opposite side of the Pacific as the Chairman, and should assist the Chairman with the duties of planning and running the committee business on an on-going basis throughout the year. Science Board also suggested that there needs to be flexibility for the extension of terms for committee Chairmen (their 3-year terms are not renewable or extendable under the current Rules of Procedure).

Climate Change and Carrying Capacity Program

The 2006 PICES/GLOBEC Symposium will be the major milestone towards the CCCC synthesis. The symposium is organized around three main themes (each day is devoted to a different theme): (1) Regime shifts, (2) Ecosystem productivity and structural responses to physical forcing and (3) Pan-Pacific comparisons. Closing perspective talks will be given by Drs. Makoto Kashiwai (Japan) and John Davis (Canada), who were asked to provide their impressions of success and failures of the CCCC Program, and if we had failures, what we might have done differently to achieve success. Selected papers from the symposium will be published in a *Progress in Oceanography* special issue, by the fall of 2007.

The CCCC Program will not end with the symposium and will likely be coupled with PICES activities for as long as GLOBEC activities continue, until 2009/2010. The CCCC synthesis activities will be carried out by two Task Teams. The CFAME Task Team, formed to look at large-scale aspects of climate forcing in ecosystems, had a workshop on "Developing a working plan for CCCC synthesis" in May 2005, in Victoria, Canada (see a separate article in this issue). The MODEL Task Team will convene a workshop in November 2005 in Tokyo, Japan, to extend NEMURO.FISH to fish stocks in other geographic locations. This workshop will be co-sponsored by the Fisheries Research Agency of Japan, APN, IAI, GLOBEC and PICES. Selected papers on NEMURO and NEMURO.FISH models will constitute a special issue of *Ecological Modelling* to be published in 2006.

Activities of Committees

BIO

The Advisory Panel on *Micronekton sampling inter-calibration experiment* completed its first field cruise off Hawaii just prior to PICES XIII, and data analysis is now taking place. Plans are under development for a follow-up experiment in the subarctic North Pacific. A workshop to discuss a proposal for a multi-national project entitled "**O**ceanic **E**codynamics **CO**mparison in the **S**ubarctic Pacific" took place in May 2005, in Corvallis, U.S.A. (see a separate article in this issue).

FIS

Working Group 16 on *Climate change, shifts in fish production, and fisheries management* has prepared a draft report that has to be finalized by PICES XIV. Input to this

report from the U.S. will be provided by the Alaska Fisheries Science Center.

MEQ

The Report of the Study Group on "Ecosystem-based Management Science and its Application to the North Pacific" was published as PICES Science Report No. 29 in January 2005. The Harmful Algal Blooms Section is working on developing and implementing annual HAB reporting procedures that will be consistent with those used in ICES. It is expected that event records will be compiled and stored in the IOC joint ICES/PICES Harmful Algae Event Data Base (HAE-DAT), in order to assess the impacts of HAB events globally, and to improve prediction capability. Introductions and spread of non-indigenous species is an area of considerable interest to MEQ both scientifically and for building collaboration with ICES. A joint PICES/ICES workshop on "Introduced species in the North Pacific" will be held at PICES XIV. The workshop aims to discuss the establishment of a Working Group on introduced species under MEQ.

POC

A report of the workshop on the "Understanding North Pacific carbon cycle change: Data synthesis and modeling" appeared in PICES Press (January 2005), and selected papers from the workshop will appear in a special issue of *Journal of Geophysical Research* in late 2005 or early 2006. Work continues on the "Guide to best practices for oceanic CO_2 measurements and data reporting" and should be completed this year. An international workshop on "East Asian Seas Time-series", which was proposed as part of the CREAMS/PICES Program at PICES XIII, will be held April 21-22, 2005, in Seoul, Korea (see a separate article in this issue). POC is planning to launch a new Working Group to evaluate climate change projections for the North Pacific and its marginal seas based on predictions from the latest global models submitted to the Inter-governmental Panel on Climate Change (IPCC) for their 4th assessment report, and to work with CFAME to apply the IPCC model to the biological components.

TCODE

TCODE will be carrying out a "federated search" pilot project to establish a federated sharing capability between the North Pacific Ecosystem Metadatabase and the Korean Ocean Data Center. This capability allows searches in multiple metadatabases with a single query. It is expected that findings from the project will be published as a PICES Scientific Report.

The PICES website is at your fingertips for up-to-date news and information about reports, projects, and meetings. Please visit the PICES website (http://www.pices.int) today and be part of it.

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Dr. Kuh Kim was elected Chairman of the PICES Science Board in October 2004, at PICES XIII in Honolulu, Hawaii, U.S.A. Kuh was born and raised in Seoul, Korea. In his childhood, he dreamed of being an inventor and natural scientist someday, after reading stories about Thomas Edison. Kuh's experiment with a home-made rocket that he made failed and caused a complete loss of his eyesight for a while when he was 13 years old, but fortunately he recovered with minor damage, and graduated from middle school with the highest honor. Kuh became interested in geometry in his high school days and entered the Department of Mathematics, College of Natural Sciences, Seoul National University in 1964. In his second year in college, he had a chance to take a boat, for the first time in his life, from one port to another along the southern coast of Korea, and found another world which had been yet unknown to him. This experience led him to transfer to the Department of Physics to study fluid mechanics under the late Prof. Chul-Soo Kim, his lifetime mentor. Kuh was advised to further his study on fluid mechanics at the Graduate School of Seoul National University. Kuh's research for his Master of Science degree on the instability of conducting fluid between two rotating, concentric cylinders was published in the Journal of Physical Society of Japan *in 1970 as his first scientific paper. Kuh wrote in his application to the Massachusetts Institute of Technology (M.I.T.)–Woods Hole Oceanographic Institution Joint Program of Oceanography, that our understanding of the ocean is far less than of the moon, and was admitted with a Whitney Fellowship from M.I.T in 1970. There, Kuh became fascinated in the dynamics of ocean currents as he participated in several cruises of the Mid-Ocean Dynamics Experiments, during which the complexity of meso-scale ocean currents was unravelled for the first time. He completed his PhD in 1975 on "Instability and Energetics in a Baroclinic Ocean", which was published in* Deep-Sea Research *in 1978.*

Kuh joined the Department of Oceanography, Seoul National University in 1978, and introduced new knowledge and methods which were emerging out of intense programs, such as MODE and POLYMODE, to investigate ocean currents around Korea and neighboring countries. In particular, Kuh recognized that international collaborations are essential for a complete understanding of ocean currents and circulation in Asian marginal seas and worked closely with the late Prof. Takashi Ichiye of the Texas A&M University (U.S.A.) and Prof. Kenzo Takano of the Tsukuba University (Japan) to organize the First JECSS (Japan/East and East China Seas Study) Workshop in 1981, at Tsukuba University. Since then, JECSS workshops have been held every two years, providing a unique forum for sharing scientific interests, knowledge, new findings and data among marine scientists from not only Asian countries, but also from the U.S.A., U.K., France, Italy and other countries. Over time, the area of common interests has expanded and interactions between Asian marginal seas and the North Pacific Ocean have become an important subject of many presentations. Thus the workshop became PAMS (Pacific-Asian Marginal Seas)/JECSS and its 13th Workshop has just been held July 13-15, 2005, in Bali, Indonesia. Kuh has been serving as Chairman of PAMS/JECSS Steering Committee since 1993.

Kuh also organized international expeditions called CREAMS (Circulation Research of the East Asian Marginal Seas) to investigate the circulation and its variability in the Japan/East Sea during 1993–1998 with Japanese and Russian colleagues. Precise CTD data together with direct observations of currents in the deep waters of the Japan/East Sea revealed, for the first time, that this sea resembles big basins such as the Pacific Ocean and the Atlantic Ocean in its hydrographic structures, proving that it is, indeed, a miniature ocean. Kuh gave an opening lecture on CREAMS as a model study for an international and interdisciplinary project at PICES VI, October 1997. In 1999-2004 CREAMS-II became the largest and most extensive project in the Japan/East Sea as more than 20 U.S. marine scientists from the Scripps Institution of Oceanography, Woods Hole Oceanographic Institution, University of Washington, University of Rhode Island, the Naval Research Laboratory and other institutions participated in the Japan/East Sea Program supported by the Office of Naval Research and other funding agencies in the U.S. A further evolution has produced CREAMS-III as the PICES Science Board endorsed the CREAMS/PICES Program at PICES XIII, which covers all disciplines of ocean sciences, including biological and fisheries oceanography.

Kuh is currently a professor at the School of Earth and Environmental Sciences (SEES), Seoul National University and is Director of "Brain Korea 21" for 1999–2006, funded by the Korean Ministry of Education and Human Resources to build a world-class school in Korea. He has been with PICES as member of the Physical Oceanography and Climate (POC) Committee since 1996, and served as Chairman of POC from 2002-2005. Kuh is also on the International Steering Team for the Argo project, which is deploying a global array of profiling floats to monitor the state of the ocean.

New and upcoming PICES publications

PICES Scientific Report Series, 2005

- King, J. (Ed.) 2005. Report of the Study Group on Fisheries and Ecosystem Responses to Recent Regime Shifts. PICES Sci. Rep. No. 28, 162 p.
- Jamieson, G. and Zhang, C.I. (Eds.) 2005. Report of the Study Group on Ecosystem-Based Management. PICES Sci. Rep. No. 29, 72 p.
- Brodeur, R. and Yamamura, O. (Eds.) 2005. Micronekton of the North Pacific (Working Group 14 Final Report). PICES Sci. Rep. No. 30, 115 p.
- Takeda, S. and Wong, C.S. (Eds.) 2005. Proceedings of the 2004 Workshop on *In Situ* Iron Enrichment Experiments in the Eastern and Western Subarctic Pacific. PICES Sci. Rep. No. 31.

PICES Special Publications, 2004-2005

- Marine ecosystems of the North Pacific. 2004. PICES Spec. Publ. No. 1, 280 p.
- Perry, R.I. and McKinnell, S.M. (Eds.) 2005. Marine life in the North Pacific Ocean: The known, unknown and unknowable. PICES Spec. Publ. No. 2, 46 p.

Special issues of primary journals, 2005-2006

- Linkages between open and coastal systems (Guest Editors: S. McKinnell and G. McFarlane) - *Deep-Sea Research II*. 2005. Vol. 52, Nos. 5-6, pp. 665-843.
- Mechanisms that regulate North Pacific ecosystems: Bottom up, top down, or something else? (Guest Editors: G. Hunt and S. McKinnell) - *Progress in Oceanography* (2006).
- Hot spots and their use by migratory species and top predators in the North Pacific (Guest Editors: W. Sydeman, A. Bychkov, R. Brodeur, C. Grimes and S. McKinnell) - *Deep-Sea Research II* (2006).
- Selected papers on NEMURO and NEMURO.FISH models (Guest Editors: S.I. Ito, M. Kishi, B. Megrey and F. Werner) - *Ecological Modelling* (2006).

Other publications, 2005

- PICES Advisory Report on Fisheries and ecosystem responses to recent regime shifts in the North Pacific. 2005, 12 p.
- Tjossem, S. 2005. The journey to PICES: Scientific cooperation in the North Pacific.