



2012 PICES Science: A Note from the Science Board Chairman

PICES has continued to mark another successful year in achievements through organizing and co-sponsoring meetings and symposia, through its integrative science program FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems), through the exchange of ideas and information among scientists, and through international collaborations across disciplines, institutions, and national boundaries.



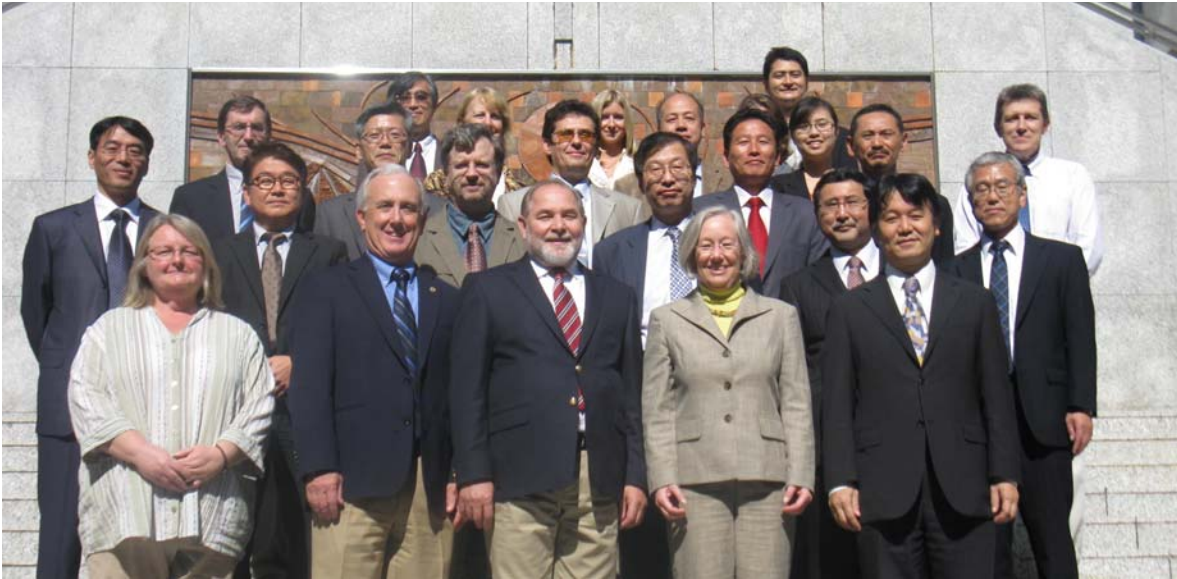
International Conference Center located at the Hiroshima Peace Memorial Park.

Since our last Annual Meeting in 2011, logistical and financial arrangements have been made for more than 20 inter-sessional symposia, workshops and meetings convened

at various locations around the North Pacific and beyond. PICES co-sponsored two landmark events in the first half of 2012. One was the PICES/ICES (International Council for the Exploration of the Sea) [Early Career Scientist \(ECS\) Conference on "Oceans of Change"](#) held in April, in Majorca, Spain. This conference provided an opportunity to foster a networking of future generations of ocean scientists working on the Northern Hemisphere early in their career. Only the second in what is anticipated to be a series of PICES/ICES ECS conferences, it was a tremendous success, with presentations from 130 participants selected from 550 applicants. We will soon start preparing a third conference, possibly in Asia, in 2017. The other major highlight, held less than a month later, was the 2nd International Symposium on the "Effects of Climate Change on the World's Oceans" held in Yeosu, Korea, in conjunction with Korea's hosting of the World Fair, Ocean Expo-2012, dedicated to the understanding the role of the ocean and its coasts and the challenge it faces through human development. Again, the major international co-sponsors were PICES and ICES, along with the IOC (Intergovernmental Oceanographic Commission of UNESCO). More than 300 scientists from 31 countries attended, and it is expected that a number of high-caliber papers will be published in various peer reviewed journals (for more information on the Symposium refer to the [previous issue of PICES Press](#)).

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Participants of the PICES-2012 Governing Council meeting (front row, from left): Darlene Smith (Canada), John Stein (USA), Lev Bocharov (Russia), Laura Richards (Canada), Yoshiaki Takahashi (Japan); (second row, from left) Guohui Cui (China), Chul Park (Korea), Hal Batchedler (USA), Tokio Wada (Japan), Ichiro Nakayama (Japan), Yukimasa Ishida (Japan); (third row, from left) Alexander Bychkov, Yong-Seok Kang (Korea), Vladimir Radchenko (Russia), Dosoo Jang (Korea), Hiroyuki Shimada (Japan), Igor Shevchenko (Russia); (fourth row, from left) Sinjae Yoo (Korea), Patricia Livingston (USA), Tatiana Semenova (Russia), Ningsheng Yang (China), Rui Zheng (China); (top) Kosuke Kiga (Japan).

A number of PICES-sponsored workshops and meetings were held throughout the summer. To name a couple, the GEOHAB (Global Ecology and Oceanography of Harmful Algal Blooms) Open Science Meeting on “*Progress in Interpreting Life History and Growth Dynamics of Harmful Algal Blooms in Fjords and Coastal Environments*” was convened in May 2012 in Victoria, Canada, and co-sponsored by PICES, IOC and SCOR (Scientific Committee on Oceanic Research). In September, a GLOBEC/PICES/ICES workshop on “*Forecasting Ecosystem Indicators with Climate-driven Models*” led by PICES’ Working Group on *North Pacific Climate Variability and Change* was held in Friday Harbor, USA (see a related article on pp. 10–15 in this issue).

High-quality publications are a standard way of documenting scientific progress. 2012 saw a number of special issues of peer-reviewed journals from meetings co-sponsored by PICES. Selected papers from the PICES-2010 Topic Session on “*Economic relation between marine aquaculture and wild capture fisheries*” were published in *Aquaculture Economic and Management* (Vol. 16, Is. 2). A May 2012 special issue of *ICES Journal of Marine Science* (Vol. 69, No. 3) contained papers from the [5th International Zooplankton Production Symposium](#) on “*Population Connections, Community Dynamics, and Climate Variability*” (Pucón, Chile, March 2011), and a September 2012 special issue of this journal (Vol. 69, No.7) was based on papers presented at the [2nd ESSAS \(Ecosystem Studies of Sub-Arctic Seas\) Open Science Meeting](#) on “*Comparative Studies of Climate Effects on Polar and Subpolar Ocean Ecosystems*” (Seattle, USA, May 2011). The [26th Lowell Wakefield Symposium](#) on

“*Ecosystems 2010: Global Progress on Ecosystem-Based Fisheries Management*” was held in Anchorage, Alaska, in November 2010, and proceedings of 18 peer-reviewed papers from the symposium that evaluated global progress towards ecosystem-based fisheries management were published by Alaska Sea Grant as an e-book. All these publications included PICES members as guest editors, and we are very grateful for their efforts.

Publications also came out in the PICES Scientific Report series. Our Study Group on *Human Dimensions* reviewed the role of social science practices applied in decision-making in marine sectors, namely in ecosystem-based fisheries management, around the world ([PICES Sci. Rep. No. 39](#)). The very successful Working Group (WG 20) on *Evaluations of Climate Change Projections* completed its term by accomplishing an evaluation of IPCC Global Climate Model projections ([PICES Sci. Rep. No. 40](#)). The PICES Advisory Report on the *Decline of Fraser River Sockeye Salmon in Relation to Marine Ecology*, prepared as a technical report for the federal government of Canada’s Cohen’s Commission of Enquiry, was published as [PICES Sci. Rep. 41](#).

A major enterprise of PICES is its second integrative scientific program FUTURE, launched at the 2009 PICES Annual Meeting in Jeju, Korea. It is considered PICES’ highest priority undertaking for the next decade. In May 2012, an inter-sessional workshop was held in Busan, Korea, to develop a roadmap for FUTURE. The workshop reviewed the terms of reference and activities of existing expert groups and discussed the gaps and needs for establishing new expert groups. It also considered

potential users and products, as directed in the FUTURE Implementation Plan. The workshop agreed to pursue an adaptive approach, with focus on products that can be made within two or three years. A draft FUTURE roadmap was put on the agenda for discussion at PICES-2012 and was tentatively approved. A FUTURE Open Science Meeting (OSM) was also discussed at the workshop, and later at the Annual Meeting. By 2014, FUTURE will be five years old, and there will be a need to assess where we stand and to adjust its direction at that time, if necessary. It has now been decided to hold the FUTURE OSM in the spring of 2014, in Hawaii. The first announcement of the meeting will be made soon, so stay tuned for the release.

PICES scientific events in 2012 culminated with the Annual Meeting, PICES-2012, held from October 12–21, in the peaceful city of Hiroshima, Japan. We thank Mr. Kenji Kagawa (Director-General, Resources Enhancement

Promotion Department, Fisheries Agency of Japan) and Dr. Toshihiko Matsusato (President, Fisheries Research Agency of Japan) for giving opening remarks on behalf of the Japanese Government. PICES-2012 covered a broad range of timely and very relevant marine science issues. Almost 470 scientists and managers from 22 countries attended the meeting. A full-day Science Board Symposium on *“Effects of natural and anthropogenic stressors in the North Pacific ecosystems: Scientific challenges and possible solutions”* was led by a keynote lecture entitled *“Resilience and sustainability of the human-ocean coupled system – Beyond the Great East Japan Earthquake”* given by Dr. Tokio Wada (Executive Director, Fisheries Research Agency of Japan), the previous Chairman of PICES. A total of 17 scientific sessions, 8 workshops and 25 business meetings of our committees and expert groups took place, and 263 talks and 150 posters were presented. Many of these [presentations](#) can be found on the PICES website.



A full house at the Opening Session (left) and joint FUTURE meeting (right) at PICES-2012.

As many of the scientific and capacity building issues addressed by PICES are not unique to the North Pacific, but concern the entire world, it is important to expand cooperation with other international scientific organizations and programs of regional and global scale, and with regional scientific and monitoring efforts in the North Pacific. At PICES-2012, four sessions and two workshops were co-sponsored by other international organizations or programs, such as CLIVAR (Climate Variability and Predictability Program), ESSAS, ICES, IMBER (Integrated Marine Biogeochemistry and Ecosystem Research), SCOR, and SOLAS (Surface Ocean - Lower Atmosphere Study). In addition, two sessions and one workshop were organized jointly with Japanese agencies and societies, such as FRA (Fisheries Research Agency of Japan), JSFO (Japanese Society of Fisheries Oceanography) and JSPS (Japanese Society for Promotion of Science). Thirty-four international and regional organizations and programs were present as observers at PICES-2012 and expressed their views on potential areas of collaboration with PICES (including specific proposals for 2013 and beyond) at the meetings of Science Board, Standing Committees and/or their

subsidiary bodies. I expect that collaboration with these organizations and programs will continue to be strengthened. In particular, a decision was made to develop a framework for greater scientific links between PICES and NPAFC (North Pacific Anadromous Fish Commission) using an approach similar to the one used for expanding cooperation between PICES and ICES.

Two PICES awards are presented at every PICES Annual Meeting to recognize the contribution made not only to PICES-related activities, but to marine science in general. One of these awards, the [Wooster Award](#), was given this year to Dr. Richard (Dick) Beamish (Canada) for his great contribution to marine science and PICES in particular. The 2012 PICES Ocean Monitoring Service Award ([POMA](#)) was presented to the long-term marine environmental monitoring program, the California Cooperative Fisheries Investigations (CalCOFI). For more on these two recipients, see the next article in this issue. We also awarded best papers and posters, and I encourage you to visit the PICES website and see who the worthy [recipients](#) were this year.



Robin Brown (left photo) and Mitsutaku Makino (right photo) accepting a PICES Certificate of Recognition for service as Chairs from Science Board Chairman, Sinjae Yoo.



PICES volunteer recruits being interviewed by a Fukuromachi Municipal Elementary School student (left photo) and learning the origami art of making cranes (right photo).



Capacity building with the school children of Fukuromachi Municipal Elementary School.

At PICES-2012, some changes were made in the leadership of Standing Committees and expert groups. Chuanlin Huo (China) was elected as the Chairman of the Marine Environmental Quality Committee (MEQ) to replace Steven Rumrill (USA), and Darlene Smith (Canada) was elected MEQ Vice-Chairman, replacing Matsutaku Makino (Japan). Phillip Mundy (USA) was appointed as the Chairman of the FUTURE Advisory Panel on *Status, Outlooks, Forecasts, and Engagement* (AP-SOFE), replacing Robin Brown (Canada). I thank the outgoing Chairmen

and Vice-Chairmen for their past dedicated service and welcome the new Chairmen on board.

One of the final touches to a successful Annual Meeting was two public relations events that took place. One was a visit by a group of PICES scientists to the Fukuromachi Municipal Elementary School to learn first hand from the students their important message of world peace. The other was a public lecture on “The state of the marine ecosystem of the North Pacific” given by Dr. Michael Dagg, co-editor

of PICES' second North Pacific Ecosystem Status Report. Both events provided an excellent opportunity for PICES scientists and the public to interact with each other.

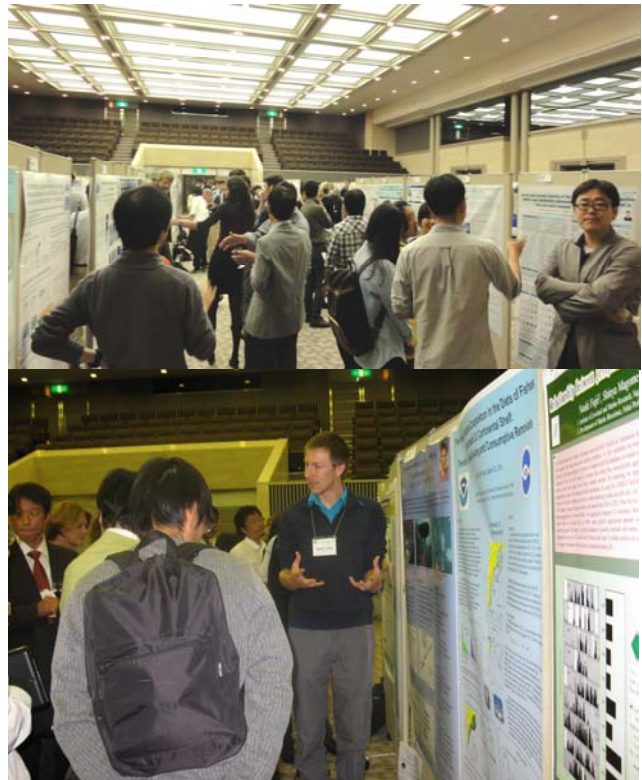
Providing effective support and implementation for the goals of the Organization is one of PICES' strategies. This year, a new online system was introduced for submission and evaluation of topic sessions and workshop proposals. The system is intended to make the process more transparent and efficient by streamlining the procedures. As is usual with any new approach, there was a delay in acknowledging the new system by the community in the beginning. However, at the end of the day, it proved a procedural improvement which made evaluation and selection of the proposals for topic sessions and workshops much more efficient. I expect this system will work perfectly by next year.



Hoisting brews at a "pollock party" at the end of a busy topic session day.



Group picture at the end of lively team competitions in futsal (top). For those who did not want to follow a ball around a playing court, the other host country event PICES guests could play was Ken-dama.



A time to mingle as well as discuss science at the Poster Session.

I already mentioned the PICES/ICES Early Career Scientists Conference held last April. PICES is very keen on capacity building: three PICES Summer Schools have been held since 2006, with the fourth PICES Summer School on "Ocean observing systems and ecosystem monitoring" slated from August 19–23, 2013, at the Hatfield Marine Science Center, Newport, USA. This summer school will teach many aspects related to ocean observing and monitoring, from lectures to field demonstration and data analysis. A wide range of sensors and sampling equipment to measure physical, biological and chemical properties of the ocean will be covered.

PICES is also a strong supporter of bi-annual summer schools organized by large-scale international ocean research projects, such as IMBER and SOLAS. In July 2012, PICES co-sponsored the IMBER ClimECO3 Summer School on "A view towards Earth System models: Human-natural system interactions in the marine world" in Ankara, Turkey, by providing travel funds and arranging additional support (through national programs/agencies) for 5 early career scientists from PICES member countries. This year, PICES will support a SOLAS Summer School to be held in August in Xiamen, China. We will also co-sponsor a training course on "Remote sensing data analysis" to be conducted in the autumn (dates to be determined) in Qingdao, China. This is a continuation of a training course series organized jointly by NOWPAP (Northwest Pacific Action Plan) and PICES.

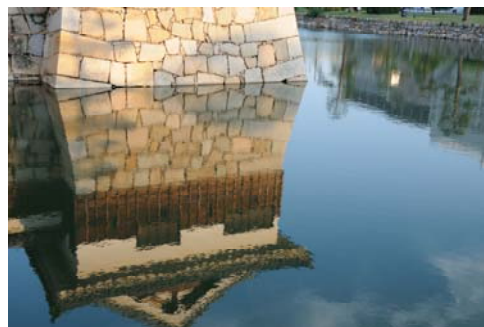
Another component of capacity building for PICES is to share methodologies and information by organizing workshops and training courses in developing countries around the Pacific Rim. With generous funding from the Ministry of Agriculture, Forestry and Fisheries of Japan for a 5-year (2007–2012) PICES project on “*Development of the prevention systems for harmful organisms’ expansion in the Pacific Rim*”, three successful training courses led by PICES’ Section on *Ecology of Harmful Algal Blooms in the North Pacific* have taken place, with the most recent in Indonesia (Jakarta and Lombok Island) in February 2012. The other sub-component of this project was conducted by

Working Group 21 on *Non-indigenous Aquatic Species*, which organized three workshops on rapid assessment survey methodologies and collector surveys, with the most recent in Japan (Nagasaki), also in February 2012. With the successful completion of the project, two outreach brochures have been produced detailing its goals and accomplishments. In addition, we are proud to announce that WG 21 has completed the immense task of developing a database of marine non-indigenous species and Atlas of Marine and Estuarine Species in the North Pacific. Special thanks to Drs. Henry Lee and Deborah Ruesser for undertaking this important task.



Outreach brochure products resulting from the PICES/MAFF project.

To conclude, I will give a brief preview of two FUTURE-related workshops to be convened in 2013. On May 22–24, a PICES/ICES Workshop on “*Global assessment of the implications of climate change on the spatial distribution of fish and fisheries*” will be held in St. Petersburg, Russia. This workshop will be organized by the joint [PICES/ICES Section \(Strategic Initiative\) on Climate Change and Marine Ecosystems](#), and will deal with one of the hot topics today – how will the distribution of marine species shift under the anticipated mode of climate change? The workshop will discuss many important issues related to this question, such as analytical methods for detecting changes in distributions, modeling approaches, uncertainty in projections, factors governing vulnerability to shifting distributions, and specifications for a global database. Products of this effort will be used to develop regional and latitudinal differences in the vulnerability of species or species groups to climate change induced shifts in ocean conditions. The synthesis will be used to inform future decisions regarding the governance and management of marine resources. In September, a workshop on “*Development and application of Regional Climate Models-II*” will be held in Busan, Korea. This event will be a follow-up of the meeting convened in October 2011, and will further stimulate activities of PICES Working Group 29 on *Regional Climate Modeling*, under the new framework for PICES-ICES scientific cooperation.



Reflections of Hiroshima Castle.

Finally, our next Annual Meeting, PICES-2013, will be held from October 11–20, 2013, in Nanaimo, Canada. The theme of the meeting is “*Communicating forecasts, uncertainty and consequences of ecosystem change*”, and many interesting sessions and workshops, covering a wide range of topics, are planned. The theme is new to the PICES community, yet very relevant to FUTURE. It will be interesting to see how FUTURE will explore the uncharted sea.

Sinjaee Yoo
Science Board Chairman

