

**NORTH PACIFIC MARINE SCIENCE ORGANIZATION
(PICES)**

ANNUAL REPORT

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North Pacific Marine Science Organization (PICES)
c/o Institute of Ocean Sciences
P.O. Box 6000,
Sidney, British Columbia,
Canada. V8L 4B2
e-mail: secretariat@pices.int
Home Page: www.pices.int

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REPORT OF OPENING SESSION

The Opening Session was called to order on October 13, 2003, at 9:00 a.m. The Chairman, Dr. Vera Alexander, welcomed delegates, observers and researchers to the PICES Twelfth Annual Meeting, and noted that due to unforeseen circumstances, the officials from the People's Republic of China were not present at the Opening Session.

Welcome address on behalf of the Government of the Republic of Korea

Dr. Alexander asked Mr. Young-Nam Kim, Acting Minister of the Ministry of Maritime Affairs and Fishery, to welcome participants on behalf of the host country (*OP Endnote 1*).

Remarks by representatives of Contracting Parties and the Chairman of PICES

Dr. Alexander called upon Dr. Laura Richards (Regional Director of Science, Pacific Region, Fisheries & Oceans Canada) to make a statement on behalf of the Canadian Government. Dr. Richards addressed the session and her remarks are appended to the report in *OP Endnote 2*.

Dr. Alexander invited Dr. Tokimasa Kobayashi (Director, Resources Enhancement Promotion Department, Fisheries Agency, Japan) to speak on behalf of the Japanese Government. Dr. Kobayashi addressed the session and his remarks are appended to the report in *OP Endnote 3*.

Dr. Alexander then asked Dr. Lev N. Bocharov (Director, TINRO-Center, State Committee of Fisheries, Russian Federation) to speak on behalf of the Russian Government. Dr. Bocharov addressed the session and his remarks are appended to the report in *OP Endnote 4*.

Dr. Alexander called upon Dr. Richard J. Marasco (Director, Resource Ecology &

Fisheries Management Division, Alaska Fisheries Science Center, National Marine Fisheries Service, U.S.A.) to make a statement on behalf of the U.S. Government. Dr. Marasco addressed the session and his remarks are appended to the report in *OP Endnote 5*.

Dr. Alexander invited Mr. Choon-Sun Kim (Director General, Marine Policy Bureau, Ministry of Maritime Affairs and Fisheries, Republic of Korea) to speak on behalf of the Korean Government. Mr. Kim addressed the session and his remarks are appended to the report in *OP Endnote 6*.

Dr. Alexander thanked Mr. Young-Nam Kim, Mr. Choon-Sun Kim and all the delegates for their remarks and spoke on behalf of PICES. The text of her address is appended to the report in *OP Endnote 7*.

Wooster Award presentation ceremony

Dr. Alexander invited Dr. Ian Perry, the Science Board Chairman, to conduct the Wooster Award presentation ceremony.

Dr. Perry reminded the audience that in October 2000, PICES announced a new award that will be given annually to an individual who has made significant contributions to North Pacific marine science, such as understanding and predicting the role of human and climate interactions on marine ecosystem production. The award was named in honour of Dr. Warren S. Wooster, the principal founder and first Chairman of PICES, and world-renowned researcher and statesman in the area of climate variability and fisheries production. The award consists of a commemorative plaque and travel support to attend the following PICES Annual Meeting in order to receive the award. A permanent plaque identifying Wooster Award winners resides at the PICES Secretariat in Sidney, British

Columbia, Canada. Dr. Perry also noted that the late Professor Michael M. Mullin (U.S.A.) and Dr. Yutaka Nagata (Japan) were honoured with the Wooster Award in 2001 and 2002, respectively, and quoted the following citation from Science Board for the 2003 Wooster Award:

The Wooster Award is to be given annually to an individual who:

- *has made significant contributions to North Pacific marine science;*
- *has achieved sustained excellence in research, teaching, administration or a combination of these in the area of North Pacific;*
- *has worked to integrate the various disciplines of the marine sciences; and*
- *preferably someone who is, or has been, actively involved in PICES activities.*

PICES Science Board is pleased to confirm Dr. William (Bill) Pearcy as the recipient of the 2003 Wooster Award.

Dr. William Pearcy is a world-renowned authority on many aspects of biological oceanography, in particular his extensive work on fishes and squids in the North Pacific. He has made significant contributions to many areas of marine research, including fisheries oceanography, the ecology of deep-sea and open ocean fishes and squids, the trophic dynamics of marine fishes, and pollution and trace metals in the marine environment. He is perhaps best known recently for his contributions to understanding all aspects of Northeast Pacific salmon during their ocean phase. He has over 150 publications in many of the major scientific journals, including Science and Nature. He has demonstrated sustained excellence in teaching during his years as a professor in the College of Oceanic and Atmospheric Sciences at Oregon State University, where he was major advisor for over 30 graduate students and a committee member for at least 50 more. He has served on numerous international committees, including those of PICES. He was involved with PICES and its committees very early on, and he gave

the keynote address at the 1997 PICES Annual Meeting on his work on salmon in the North Pacific. Since his retirement, he has worked tirelessly on a State panel to examine ways to restore natural runs of salmon to Oregon. Science Board is very pleased to name him as the recipient of the PICES Wooster Award for 2003.

Then Dr. Alexander read a note from Dr. Warren Wooster:

I cannot remember when I first met Bill Pearcy, but twenty years ago we first interacted on the question of environmental variability and its effects on fisheries. In May 1983, we convened a workshop at the University of Washington to review existing knowledge on ocean and fish variability and to develop a strategy for investigation of the interactions. In November that year, Bill Pearcy at Oregon State University held another workshop, on the influence of ocean conditions on the production of salmonids in the North Pacific. These two workshops and the resulting publications focused attention on the importance of environmental influence on marine ecosystems.

Bill Pearcy has been a pioneer in what I like to call "salmon oceanography". Students of these charismatic fish have had a curious fixation on the fresh water phase of their life, after which the fish just disappeared into the black box we call the ocean. As an oceanographer, Bill knew that life in the black box was important to salmon, and was interesting, and complex, as he, with his students and colleagues have successfully demonstrated. This work has exemplified the spirit of PICES where fishery science is intimately linked with the other disciplines necessary for ecosystem studies - meteorology and climatology, oceanography of the several flavors (physical, chemical, biological) and ecology in the broader sense. Of course, as the Science Board citation makes clear, Bill Peary's interests are by no way limited to salmon or even to fish. His scientific perspective, both broad and deep, makes him a worthy recipient of the PICES Wooster Award for 2003.

Dr. Alexander presented a commemorative plaque to Dr. George Boehlert who read a brief acceptance from Dr. William Pearcy.

This is indeed a great honor! And I deeply regret not being here. Grape harvest and a visit from distinct friends have intervened.

This is not just a prestigious honor for me - it is for all my colleagues, students and friends that have inspired, collaborated and helped me throughout my years in science. This includes many PICES scientists, including many here today. It includes colleagues on PICES and SCOR Working Groups, and my Japanese friends from the University of Tokyo and Hokkaido University, and the crews aboard many cruises of the Oshoro Maru.

And I especially thank my loyal friend, Papa Wooster, father of PICES, for this award and for a number of other reasons. Warren prompted me to give the lectures for his series on recruitment fishery oceanography at the University of Washington. This resulted in my little book on "Ocean Ecology of North Pacific Salmonids", published in this series by Washington Sea Grant. He also encouraged my participation in workshops and subsequent publications in "Interannual Variability of the Environment and Fisheries of the Gulf of Alaska and the Eastern Bering Sea" (1983) and "El Niño North, Niño Effects in the Eastern

Subarctic Pacific Ocean" (1985). The 1982-83 El Niño was a nail in the coffin that the ocean had an unlimited carrying capacity for salmonids and as a result stimulated a surge in research on the importance of the ocean lives of anadromous salmonids—research that is prolific today.

I consider Warren to be the venerable, world renowned fishery oceanographers of the 20th and now the 21st centuries. He has made grand contributions to the world organization and community of oceanographers and marine biologists. He is an inspiration for all of us. Banzai, Warren!

PICES "Year-in-Review" 2003

Dr. Perry reviewed PICES' scientific accomplishments since the Eleventh Annual Meeting (*OP Endnote 8*).

Keynote lecture

The Science Board Chairman introduced the keynote speaker, Prof. Suam Kim (Pukyong National University). Prof. Kim gave a keynote lecture titled "Application of otolith chemistry to interpret some issues on oceanic variability and fisheries". The abstract of his presentation is appended to the report in *OP Endnote 9*.

The Opening Session closed at 11:00 a.m.

OP Endnote 1

Welcome address on behalf of the Government of the Republic of Korea by Mr. Young-Nam Kim

Madam Chairman, distinguished delegates, ladies and gentlemen:

I am honored to make this welcoming address to you at the Twelfth Annual Meeting of PICES. On behalf of the Government of the Republic of Korea, let me extend a warmhearted welcome to each and every one of you participating in this event.

The importance of the oceans is emphasized in the 21st century, because the oceans are regarded

as the solution to humankind challenges, such as possible scarcities of food and resources and threats to the environment. It goes without saying that we should continue to conduct research on the oceans and develop marine science and technology. At the same time, we need to manage our marine affairs in order to reduce pollution levels and ecological destruction. This involves instituting proper controls over the use and development of marine resources.

Also, we need to establish a system that facilitates joint international research and cooperation. That is essential if we are to efficiently manage oceanic issues such as protecting the environment, and conserving and developing marine resources. But we can be optimistic about these challenges when we reflect on the activities fostered by PICES since its establishment in 1992. The Organization has set examples for others to follow.

The PICES member countries have come a long way in collecting and exchanging information on the marine environment in the North Pacific. At the same time it has collected valuable information through joint international research on marine life, ecological system and changes in the global climate.

I would like to take this opportunity to express my sincere respect and gratitude for the member countries and scientists. They have made many

valuable contributions to the development of PICES, despite many difficulties that came along with that progress.

My Ministry plans to continue to increase our investment in the marine science sector and push ahead with diversified policies conducive to sustainable use and conservation of the oceans. We are also committed to faithfully fulfilling our obligations as a member country by positively taking part in the various activities of PICES, including joint international research. I hope that this Annual Meeting will facilitate the exchange of useful information and ideas.

Finally, I would like to thank the officials concerned, including the PICES Secretariat, who spared no effort in setting up this Annual Meeting.

I hope your stay in Korea will be a pleasant and rewarding experience. Thank you.

OP Endnote 2

Remarks at the Opening Session by Dr. Laura Richards (Canada)

Madame Chairman, distinguished guests and colleagues:

On behalf of Canada and the Canadian delegation, I would like to thank the Government of the Republic of Korea, the Ministry of Maritime Affairs and Fisheries and the Korea Ocean Research and Development Institute (KORDI) for inviting us here to Seoul.

It is my great pleasure to offer best wishes to KORDI on the occasion of KORDI's 30th anniversary. This is a special year since it marks the 40th anniversary of Canada's formal diplomatic relations with the Republic of Korea. We also look forward to working with Korea as a new member this year of the Convention for the Conservation of Anadromous Stocks in the North Pacific Ocean.

Last week, I had the honor of visiting Pukyong National University and the National Fisheries

Research and Development Institute in Busan, where I was able to see, first hand, Korea's remarkable progress in marine science. This progress bodes well for our continuing work together within PICES.

International collaboration is essential for addressing global problems like climate change and the sustainability of marine ecosystems. I know that all of you are aware of the need for strong international collaboration. The progress that PICES has made on the North Pacific Ecosystem Status Report is a testament to the willingness to collaborate within PICES.

Earlier this year at the interim Governing Council meeting, we agreed to develop a strategic plan to help us prepare for an organization well placed for the future. I look forward to these discussions over the next week. Let's build on our successes to ensure a vibrant PICES organization!

OP Endnote 3

Remarks at the Opening Session by Dr. Tokimasa Kobayashi (Japan)

Chairperson, distinguished delegates, guests, colleagues, ladies and gentlemen:

First of all, on behalf of the Japanese delegation, I would like to express sincere thanks to the Government of the Republic of Korea, the Ministry of Maritime Affairs and Fisheries, the Local Organizing Committee, and all those who have worked so hard to host this meeting and organize all the events. We are sure that all your diligent and excellent efforts will make this meeting a great success.

I want to say how pleased we are to participate in this PICES Twelfth Annual Meeting in Seoul, and to give our thanks for providing us with this wonderful opportunity to interact with all PICES colleagues.

Over the time past, since PICES was established in 1992, the Organization has been challenging important issues on marine science by establishing the functional standing scientific committees, task teams, working groups, and *ad hoc* groups. The activities of PICES have multiplied and extended in depth through developing collaborations with many international scientific organizations. And of course, I would like to emphasize that the efforts of member countries of PICES have pushed up its activities and make PICES a splendid and flexible body.

Last year, in the opening remarks, I mentioned that the role of fisheries production is getting bigger and bigger for human beings, and more suitable and sustainable utilization of marine living resources is required. Recently a

shocking report was released that marine living resources, particularly industrially important species have decreased to one tenth in the last fifty years in the world. Under this situation PICES is expected to lead the scientific investigation on this issue to clarify the mechanism of fluctuation of marine living resources from the scientific view, particularly based on the relationship between the ocean environmental change and the marine ecosystem in the North Pacific and its adjacent seas. And it is also expected to promote the research on the human activities that may affect marine ecosystem and living resources such as over fishing or excessive protection. I believe that to grapple with these issues will be a scope of PICES activities when we consider the PICES Strategic Plan.

In Japan, reformation of the national scientific organization has been proceeding, and national universities are going to be outstanding executive agencies, independent from direct connection with the government, from next April. And just 12 days ago, the Japan Fisheries Research Agency has combined two corporations, such as the Japan Marine Resources Developing Center and the Japan Sea Farming Association. By taking advantage of this opportunity, Japan would also like to encourage the mutually beneficial collaboration through many joint activities with PICES member countries.

Finally, I am sure this Twelfth Annual Meeting will be highly successful through the efforts of all of the participants who will be working together. Thank you for your attention.

OP Endnote 4

Remarks at the Opening Session by Dr. Lev N. Bocharov (Russian Federation)

Distinguished Acting Minister, Mr. Young-Nam Kim, distinguished Madam Chairman, Vera Alexander, esteemed participating national

representatives, esteemed members of the local Meeting organizing committee, participants, ladies and gentlemen:

First of all let me thank you on behalf of the Russian delegation for the opportunity to take part in this Annual Meeting, and also for the opportunity to visit Seoul once again, in this beautiful country of Morning Freshness.

I would like to emphasize the excellent work of the Local Organizing Committee (Ministry of Maritime Affairs and Fisheries and KORDI), and appreciate their tremendous efforts made to successfully host this meeting.

Over the past eleven years, the scope of PICES activities has multiplied. Extensive and elaborate work is being done now even between the Annual Meetings. PICES is being more and more attentively regarded by the international scientific community. The proof is the presence of many observers from international scientific and public organizations concerned with the exploration of the Oceans, who are here today.

I am very glad to see here the scientists who recently visited Vladivostok in June 2003, and took part in the Third PICES Workshop on "The Okhotsk Sea and adjacent areas". More than a hundred scientists from Russia, Canada, United States of America and Japan participated in it.

During this last workshop, many questions about the recent state of the Okhotsk Sea's ecosystems were discussed.

I would like to make a special note of the tight cooperation between PICES and the North Pacific Anadromous Fish Commission. Complex research work in areas including the Bering Sea is conducted under NPAFC's BASIS Program, and I believe close cooperation between PICES' CCCC Program and NPAFC's BASIS Program will be mutually beneficial to both organizations.

In the opinion of the Russian delegation, the integration of scientists' efforts from various countries in important ocean research projects is very crucial. It is also essential to integrate efforts of international organizations in this context. The World Ocean is great and many-sided. Here is enough work for everyone.

We have a lot of tasks to accomplish during this Annual Meeting. It will take too much time to list them now. Let's keep the time and our strength for finding successful solutions. Good luck to the Meeting and thank you.

OP Endnote 5

Remarks at the Opening Session by Dr. Richard Marasco (U.S.A.)

Chairperson, distinguished delegates, ladies and gentlemen:

On behalf of the United States and the United States delegation, I would like to thank the Government of the Republic of Korea, MOMAF and KORDI for inviting us to Seoul. The United States delegation is very appreciative of both our hosts' efforts to organize this meeting and their wonderful expressions of hospitality.

The theme of this PICES Twelfth Annual Meeting "Human dimensions of ecosystem variability" is a very timely one. That humans are components of the ecosystems they inhabit and use seems obvious, but it is often

overlooked. Frequently, in discussions of ecosystems the world is divided into "the ecosystem" and "the users of the ecosystem". Such a division is artificial and can lead to the absurd conclusion that the best way to achieve sustainability of an ecosystem is to keep people out of it. Humans are integral parts of the ecosystems they inhabit and use. Their actions on land and in the oceans affect the ecosystems, just as changes in those ecosystems affect humans.

Society over the last two decades has increasingly recognized the importance of marine ecosystems, the need to sustain them, and the vital links between terrestrial and marine

systems. The value of the world's ecosystem services has been estimated at 16 to 54 trillion dollars U.S. per year, with over half of the value being derived from marine ecosystems.

During the first decade of the 21st century, a large challenge will be to implement a truly integrated ecosystem management approach for living marine resources. Within this context, the United States is working to achieve a balance between the use and protection of coastal and marine resources to ensure their health, sustainability, and vitality for today's and tomorrow's generations. To achieve this difficult goal, it is necessary to predict how the levels of goods and services provided by an ecosystem might change when a variety of ecosystem characteristics change naturally or are altered by human action. Such predictions need more field information and better models.

The PICES Science Board Symposium this year directly addresses this theme of "human

dimensions of ecosystem variability" and highlights the scientific efforts the international community is making to understand and separate climate variability from human-induced sources. Other topic sessions and workshops will also provide more detailed examinations of various aspects of human and climate influences on ecosystems of the North Pacific. The North Pacific Ecosystem Status Report will provide an important summary of the status and trends of our marine ecosystems and will help us move towards a common understanding of the factors influencing ecosystem change. It is important that PICES scientists continue these efforts to provide advice that will assist PICES member nations in designing management strategies that take ecosystem factors into account. A traditional Asian coastal proverb used to guide traditional fishing activities still applies today, "Where there is water there is fish; if we take care of the water, the fish will take care of us.

Thank you.

OP Endnote 6

Remarks at the Opening Session by Mr. Choon-Sun Kim (Republic of Korea)

Chairperson, distinguished delegates, ladies and gentlemen:

I am deeply honored to speak on behalf of the Korean delegation. As you may know, this is the second Annual Meeting of PICES to be held in Korea.

I would like to express a warmhearted welcome to all of you on behalf of the Government of the Republic of Korea and the Korean delegation. And I would like also to thank those at the PICES Secretariat for their efforts in setting up this Annual Meeting.

In the past decade, PICES has made great strides in enhancing the marine research conducted by its member countries. Much good work has been done through the Annual Meetings, workshops and symposia, as well as the facilitation of international cooperation in

marine affairs. Through such activities of PICES, humankind is now in a much better position to understand the oceans and matters related to them.

However, this summer, as typhoon "Maemi" inflicted severe damage on Korea's southeastern coast, I realized how the sea remains a mostly unknown world. Korea suffered considerable loss of life and property, despite our best efforts to minimize the losses. This experience makes us remember that we have a long way to go in understanding marine phenomena and taking proper measures to deal with them.

In this regard, the future activities of PICES should be carried out so that we can meet the new demand for marine research. We will need to set up programs to ensure sustainable marine development. We will need to focus on the sector of operational oceanography that

comprises the provision of oceanic and meteorological materials.

I want to take this opportunity to promise, on behalf of the Government and the people of the Republic of Korea, that we will actively participate in the Annual Meeting and programs dealing with the future directions and activities of PICES. I sincerely hope that this Annual

Meeting in Seoul will be an arena for all of you to freely exchange your opinions and information.

Again, I welcome each and every one of you to Seoul and hope you will have opportunities to enjoy the best season of the year in Korea. Thank you.

OP Endnote 7

Welcome Address by Dr. Vera Alexander, Chairman of PICES

Acting Minister, Mr. Young-Nam Kim, distinguished participants, ladies and gentlemen:

I am here to welcome the PICES community to the Organization's Twelfth Annual Meeting, to thank our hosts for their hospitality and hard work, and to celebrate the progress that PICES has been making in advancing our understanding of the North Pacific Ocean system.

I feel very humble. The confidence and trust placed in me by the PICES delegates requires, in turn, a high degree of responsibility. Not only to them, but also to our PICES ancestors. Let me spend a few minutes on this topic. Even since the celebrated Tenth Anniversary Meeting, PICES has been making progress. For example, we are about to produce a Status of the North Pacific Ecosystem report, a living document that will evolve along with PICES scientific advances. We are developing a Strategic Plan. Yet it all hangs on the momentum afforded by the founders, and, in particular, Dr. Warren Wooster, who had the dream. It is now up to us to fulfill this dream. Let me put it into my own words:

The vast Pacific Ocean laps against the shores of all PICES nations, which are magically united together to pursue its secrets – the details on how and why it functions. This powerful union produces results far beyond the reach of individual nations, and yet produces the information each and every one will need to manage its marine affairs.

Herein lies the relevance of PICES. Our understanding of the factors that control fish stocks, recruitment, ecosystem structure and function, responses to climatic variability and the driving forces and scales of change themselves is being turned upside down. We are undergoing a regime shift in knowledge - essential knowledge to our contracting parties. The human and economic benefits are enormous. I separate the two, because they are not always synonymous.

Dr. Warren Wooster and many others, some with us today, spent more than ten years incubating and hatching PICES, and as the first Chairman, he guided it through its early development. His excellent leadership was followed by Chairmen who perpetuated and advanced the development – first Dr. William Doubleday, and, most recently, Dr. Hyung-Tack Huh. PICES has been blessed with excellent leaderships at all levels – Governing Council, Science Board, F&A, Committees, Working Groups. We have an excellent Secretariat. The future looks rosy.

PICES is a scientific organization, and I believe that the most important activities are those carried out by the Scientific Committees, their Working Groups, but also the proceedings during the scientific sessions at the Annual Meeting. The Science Board plays the role of consolidating this activity as well as leading it. The job of the Governing Council is to make these activities possible through oversight and

responsible management. It is our responsibility to see that the work of PICES proceeds smoothly and effectively. Delegates must work together towards this end, always keeping in mind the purpose of PICES.

As we continue developing strategy for the future, we will keep in mind that the contracting parties, the PICES nations, deserve an organization that is responsive and relevant, one that provides knowledge and understanding in a timely way.

OP Endnote 8

PICES “Year-in-Review” 2003 by Dr. Ian Perry, Chairman of Science Board

PICES continued its high rate of productivity in 2003, with publications, meetings, and extended contacts with other international marine science organizations. Primary publications were produced with papers presented at PICES meetings over the past two years: in the *Canadian Journal of Fisheries and Aquatic Sciences* from the 2001 FIS Topic Session on “Migration of key ecological species in the North Pacific Ocean”; in *Deep-Sea Research II* on “North Pacific biogeochemical processes”; in *Journal of Oceanography* from the 2002 Symposium on “North Pacific transitional areas”; in *Progress in Oceanography* from the 2001 BIO Topic Session on “Plankton size classes, functional groups and ecosystem dynamics” which was dedicated to the memory of the late Prof. Michael Mullin; and in *Marine Environmental Research*, with the studies from the 1999 MEQ Practical Workshop on “Interdisciplinary assessment of marine environmental quality in Vancouver Harbour”. Two reports were published in the PICES Scientific Report Series, from Working Group 13 on *CO₂ in the North Pacific* to summarize the research and technical activities that have been conducted by member nations of PICES, and to synthesize CO₂ data and provide a comprehensive picture of the anthropogenic CO₂ distribution in the North Pacific; and from BASS and MODEL Task Teams of the CCCC Program to summarize efforts on trophic modelling of the Subarctic Pacific Basin ecosystems. An external review of the PICES publication program counted 65 publications (14 peer-reviewed) in six different publication series over the history of PICES, and concluded that this was exceptional, in particular for such a small Secretariat staff.

In addition to the Twelfth Annual Meeting in Korea this year, PICES co-sponsored 5 “significant” other meetings (in which “significant” is defined as lasting more than 3 days). These included a MODEL workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model”, which took place in Japan and was co-sponsored by the Nakajima Foundation; a 5-day inter-comparison workshop on “Underway and drifting/moored pCO₂ measurement systems” also in Japan, which was co-sponsored with other Japanese agencies; a major symposium on “The role of zooplankton in global ecosystem dynamics: comparative studies from the world oceans”, held in Spain with the co-sponsorship of GLOBEC and ICES; the 3rd PICES workshop on “The Okhotsk Sea and adjacent areas”, held in Russia; and a workshop on “The development of the North Pacific Ecosystem Status Report”, held in Canada. In addition, a number of shorter workshops were convened, several in conjunction with the Annual Meeting in Seoul. These are identified in the Report of Science Board later in this Annual Report.

The North Pacific Ecosystem Status Report Working Group continued to develop its report, and a draft was presented at the Annual Meeting for review and comments by the various PICES Scientific Committees and CCCC Program, and PICES scientists at large. One of the issues identified in this report is that of data availability and exchange. TCODE has been active in this regard, supporting and encouraging scientists to submit information about their data (“meta-data”) to the North Pacific Ecosystem Metadata Base (<http://www.pmel.noaa.gov/np>).

In April 2003, PICES held its first ever joint meeting of Science Board and Governing Council. The report of this meeting is published elsewhere in this Annual Report. To highlight two items: the position of Vice-Chairman of Science Board was created, with the duties of assisting the Science Board Chairman in representing PICES at meetings, preparation of meeting materials, and in decisions that must be made between meetings of Science Board. Dr. Vladimir Radchenko (Russia) was elected as the first Vice-Chairman of Science Board. A Study Group on *PICES Strategic Issues* was formed consisting of members from both Science Board and Governing Council, and charged with developing a draft Strategic Plan which will map the future directions for PICES, and eventually lead to development of an Action Plan. This draft Strategic Plan is noteworthy by advocating an “advice” function for PICES: not advice about “tactical” short-term issues such as fisheries management quotas, but advice about “strategic” issues such as productivity regimes. In fact, PICES received a formal request for such advice in September of this year.

PICES continues to build strong relationships with other international marine science organizations by attending their meetings and promoting collaborative activities. These

OP Endnote 9

Application of otolith chemistry to interpret some issues on oceanic variability and fisheries Extended abstract of the keynote lecture by Prof. Suam Kim (Pukyong National University)

Recently, the issues on climate change become not only scientific interests but also societal, economical and political importance. In the last 50 years, air-temperature in Seoul has increased. The rate of increase was 0.23 degree Celsius per decade, and the sharpest increase is since the 1980s. Temperature increase is not a phenomenon confined to Korea only. The temperature record since the mid-19th century indicated the increasing pattern of world air-temperature. Such climate changes have caused the changes in terrestrial as well as marine ecosystems. For example, growth, species composition, distribution, and abundance are

include the International Council for the Exploration of the Seas (ICES), the Intergovernmental Oceanographic Commission (IOC), the International Geosphere-Biosphere Program (IGBP), the Scientific Committee on Oceanic Research (SCOR), the North Pacific Anadromous Fish Commission (NPAFC), and the Climate Variability (CLIVAR) program of the World Climate Research Program (WCRP).

The current success of PICES is built upon scientific excellence such as publications, working group activities, workshops and symposia; scientific capacity, including the willingness and commitment of the scientists and others interested in the North Pacific (and elsewhere) to devote time and effort to the work of PICES, and a strong PICES Secretariat; and scientific advice which, as mentioned, is not short-term advice on fisheries management issues such as quotas, but advice on broad issues of concern to North Pacific marine science, whether specifically requested or not.

A PICES built fully on these three pillars will be a substantial, active, and exciting organization now and into the future.

always changing due to abiotic variability. Scientists have searched any evidence for detecting climate and ocean changes, and fish otolith was regarded as one of the best tools to interpret oceanic variability.

With the advance of instrumental technology, chemical analysis of fish otolith has been in the spotlight of ocean sciences. Otolith is the stone-like material in the inner ear that plays a role in the balancing and hearing sense of animals. The major component of an otolith is calcium carbonate, but some minor and trace elements including stable isotopes occupy around 3% of

the otolith. It grows continuously from birth. Because its components, mainly derived from water, are chemically inert after formation, scientists use the micro-chemistry of the otolith as a chronological recorder. Thus otolith contains information about the whole life of the animal as an environmental recorder and timekeeper. The changes in chemical composition might reflect the environmental variability of the animal's habitat and its behavioral characteristics.

Otolith chemistry research can be broken down into two fields: isotope analysis and trace element analysis. Stable carbon isotopes are generally precipitated in isotopic disequilibrium with the ambient seawater, but are influenced by metabolic processes, somatic growth and food changes. It is well known in marine science that the difference in stable isotope contents in otolith indicates the difference in oceanic productivity, status in trophic level, spawning grounds, and habitat temperature. Also, stock identification, fish migration route, and physiological changes with age can be inferred by the changes in the trace element ratios. In particular, strontium has a good potential to reveal information about fish habitats. Recent advances in Laser Ablation Inductively Coupled Plasma Mass Spectrometry (LA-ICPMS) have allowed fine scale examination of trace elements in otolith. Pacific salmon are noted for their extensive ocean migrations and successful homing to their natal rivers. Salmon are important to the economies, cultural activities, and heritage of the people of the North Pacific Rim. Chum salmon otoliths were collected from four sites along the Pacific Rim: Korea, Japan, Canada, and the USA during 1997-1999. Whole otoliths of adult salmon were ground, and the oxygen and carbon stable isotope analysis indicated that those four stocks had different values of stable isotopes. In general, the Asian and the American salmon can be separated by isotope values. The Asian salmon always shows a high oxygen stable isotope and a low carbon stable isotope. Because the high oxygen stable isotope means low habitat temperature, the habitat temperature of Asian salmon is lower

than that of American salmon. For carbon stable isotope, there are some different views in interpreting. However, if we could accept its difference as productivity difference, we might say that the habitat of American salmon is more productive than that of Asian salmon. Also, the content of stable isotope varies with life stage. In addition to the adult salmon otolith, we collected fry otolith at hatchery and juvenile otolith from scientific cruises at sea. Stable isotopes tend to increase as they grow.

The laser-beam technology with ICPMS shows the profiles of elemental concentration in otolith. Profile starts from the nucleus of the otolith to the rim. From this profile, the age and residence areas of salmon might be identified. Some elements showed the increasing trend with age, but others were in opposite. For chum salmon, strontium and zinc showed the reverse way in cyclic pattern.

Research results at spawning areas indicated that each hatchery's water has a different concentration of trace elements, and the chemical composition of water seemed to influence fry otolith. The relationship between strontium concentrations in freshwater and otolith at each hatchery was noted. Also, some amounts of otolith extracted from the nucleus of adult chum salmon were chemically analyzed. The result of statistical test with 23 elements on otolith nuclei identified each stock.

Walleye pollock, as a single species, is the most abundant commercial species in the world, therefore important ecologically and economically. Pollock otoliths were collected during the early winters of 1997-2000. Whole ground otolith showed different values of oxygen stable isotope. Otolith collected in 1998 had the highest, and those from 1997 had the lowest values. The water temperature at the resident area of pollock population was high in 1997, and low in 1998, which correspond with the isotopic values. Chemical analysis with fractions detached from each age-band of otolith also indicated the same result: the cold

temperature of 1998 caused the higher oxygen isotope, and vice versa.

As a concluding remark, otolith chemistry has only just started, however it shows a lot of promise for ocean and fishery sciences. Through micro-chemistry research of otolith, as Professor Warren Wooster said, we might find meaningful ways to bring oceanography and fisheries together, and the meaningful way developed in the form of studying the effect of

climate variation on marine ecosystem inhabited by fish.

Acknowledgements: I would like to thank my friends in Canada, Japan, Korea and the United States who helped with this research. Also, this research cannot be conducted without my students (Sukyung Kang, Dong-Hwa Sohn and Yoon-Sun Yang) involvement. I appreciate their efforts on this research. Also, I appreciate supports from the Korean and the United States Governments.

REPORT OF GOVERNING COUNCIL MEETING



The Governing Council met from 9:00-13:00 on October 15, October 17 and October 18, under the chairmanship of Dr. Vera Alexander. Dr. Alexander S. Bychkov served as rapporteur. All Contracting Parties but the People's Republic of China were represented at the three sessions (*GC Endnote 1*). The Chairman of the Science Board, Dr. R. Ian Perry, was in attendance during the last session.

Agenda Item 1. Opening remarks

At the first session, the Chairman welcomed the delegates and noted that for this Annual Meeting, Mr. Robin Brown represented Dr. Joan Kean-Howie (Canada).

Agenda Item 2. Adoption of agenda

The Chairman welcomed members and called the meeting to order. The agenda was reviewed and adopted as presented, with the addition of several items under "Other business" (*GC Endnote 2*). This report summarizes the treatment of each agenda item during the course of the three sessions.

Agenda Item 3. Preliminary Report on Administration

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES XI (*GC Endnote 3*).

Agenda Item 4. Report of 2003 interim Science Board/Governing Council meeting

At PICES XI, Council strongly supported a proposal by Science Board to hold an interim Science Board meeting, with the participation of Governing Council, in spring 2003 (Decision 02/A/4(iv)). The two senior bodies of PICES met jointly, for the first time in the over 10-year history of the Organization, from April 7-9 (noon), 2003, in Victoria, Canada. The meeting was a success, and met its objectives of

engaging both groups in discussions of broad and long-term importance to PICES. It is hoped that the actions taken during this meeting will provide guidance to the many initiatives of PICES, and will result in new directions and further involvement in PICES activities of scientists from all our member countries.

An exclusive Council meeting was convened on the last day, in the afternoon of April 9, 2003, and all Contracting Parties were represented at this meeting. The Executive Secretary was instructed to include the report of this interim Council meeting as a part of the 2003 Annual Report (*GC Endnote 4*).

The reports of both meetings and summaries of recommended actions were circulated to the participants and Science Board and Council members in early May 2003. An article entitled "PICES Science Board and Governing Council hold their first joint meeting" was prepared by Dr. Ian Perry, and published in PICES Press in July 2003 (Vol. 11, No. 2).

Following the success of the 2003 interim Science Board/Governing Council meeting, a second inter-sessional Science Board meeting for 2004, with possible participation of Council members, was recommended and approved (Decision 03/A/5(iv)). The necessity of having an exclusive interim Council meeting at the same time will be decided at a later date by correspondence.

Agenda Item 5. Membership and observers from other countries

The Secretariat did not receive proposals from any country to accede to the PICES Convention in 2003.

Mexico

At the 2003 interim meeting, Council discussed future actions to accelerate the process in having

Mexico accede to the PICES Convention and approved the following actions:

- To continue contacts with the Mexican National Oceanographic Committee, including a meeting of PICES representatives with Ing. Marco Polo Bernal, Subsecretario de Educación e Investigación Tecnológicas and national Mexican representative on the Intergovernmental Oceanographic Commission (IOC), at the 22nd Session of the IOC Assembly;
- To encourage the Directors of Mexican marine research institutes represented at the joint meeting in La Paz, to send letters to the National Oceanographic Committee expressing their interest for Mexico to join PICES;
- To send a formal letter inviting Mexico to join PICES through the Embassy of Mexico in Canada;
- To explore the practical value of another visit of a PICES delegation to Mexico.

The Executive Secretary reported on the implementation of these recommendations. The PICES Chairman (Dr. Vera Alexander), the former PICES Chairman (Dr. Hyung-Tack Huh), representatives from the Canadian (Dr. Joan Kean-Howie) and US Governments (Ms. Elizabeth Tirpak), and the Executive Secretary (Dr. Alexander Bychkov) met with Ing. M.P. Bernal at the IOC Assembly in June 2003, to discuss mutual benefits of Mexico joining PICES. It was then agreed that formal letters be sent by PICES, Canada and the United States, to high-level Mexican government officials to start the procedures.

On July 24, the PICES Chairman wrote a letter to Ing. M.P. Bernal encouraging Mexico to join the Organization and inviting official observers to PICES XII. Supporting letters were also sent by Canada's delegate to PICES, Dr. Kean-Howie, to Ing. Bernal in late July, and by Ms. Margaret F. Hayes of the US State Department to Mr. Gerardo Lozano (Director of Mexican Institute for International Cooperation, Secretariat of Foreign Relations) in mid-August. Subsequent to these letters, the Secretariat sent a complete package with a copy of the PICES Handbook, which contains the PICES

Convention and other important official documents, to both Ing. Bernal and Mr. Lozano. No response was received and no official observers from Mexico came to PICES XII, even though several Mexican scientists attended the meeting.

Council members believe that the Mexican scientific community has a strong interest for Mexico to join PICES. The lack of official response from Mexico was not considered as a sign of failure, and it was suggested that efforts in bringing Mexico to PICES should continue. Council instructed the Chairman and the Executive Secretary to further pursue actions recommended at the 2003 interim meeting. National delegates were requested to facilitate the process in having Mexico accede to the PICES convention through bilateral discussions between Mexico and their countries.

Democratic People's Republic of Korea

At PICES XI, the Republic of Korea advocated that the Annual Meeting in Seoul is a perfect opportunity to involve scientists from the D.P.R. Korea in PICES activities. At the 2003 interim meeting, due to the current political tension in the region, Council agreed to defer sending invitation letters to the D.P.R. Korea until a more appropriate time.

Agenda Item 6. Relations with relevant international organizations

The Science Board Chairman and Executive Secretary reported on communication with the relevant organizations and programs since last year's meeting (details can be found in *GC Endnote 3*). Council noted a steady progress in the integration and coordination of activities with other international organizations and major international programs of regional and global scale, and commended Science Board and the Secretariat for their efforts.

Council reviewed and approved the revised Standing List of International Organizations and Programs as recommended by Science Board (*SB Endnote 10*), and agreed with the identified priorities for interaction in 2003-2004 (Decision 03/S/6).

Letters of invitation to attend the Twelfth Annual Meeting were sent to inter-governmental and non-governmental organizations/programs

on the agreed 2002 Standing List, and the following confirmed their intention to send observers:

Climate Variability and Predictability Program (CLIVAR)
Global Ocean Ecosystem Dynamics (GLOBEC)
Global Ocean Observing System (GOOS)
Gulf Ecosystem Monitoring Program (GEM)
International ARGO Science Team (IAST)
International Council for the Exploration of the Sea (ICES)
Intergovernmental Oceanographic Commission (IOC)
International Wailing Commission (IWC)
Northwest Pacific Action Plan (NOWPAP)
North Pacific Anadromous Fish Commission (NPAFC)
North East Asian Regional GOOS (NEAR-GOOS)
North Pacific Research Board (NPRB)
Sir Alister Hardy Foundation for Ocean Science (SAHFOS)
Scientific Committee on Oceanic Research (SCOR)
IOC Sub Commission for the Western Pacific (WESTPAC)

Dr. Kelvin Richards
Dr. Francisco Werner
Dr. Thomas Malone
Dr. Phillip Mundy
Dr. Kuh Kim
Dr. David Griffith
Dr. Henrik Enevoldsen
Dr. Hidehiro Kato
Dr. Keiko Ide
Dr. Richard Beamish
Dr. Vyacheslav Lobanov
Dr. Phillip Mundy
Dr. Sonia Batten
Dr. Akira Taniguchi
Dr. Hyung-Tack Huh

Time was reserved at the Governing Council meeting for representatives of ICES, NPAFC and SCOR, to express their views on potential areas of collaboration with PICES.

ICES

At the recommendation of Council (Decision 01/S/6(ii)), Science Board developed potential areas of cooperation between the two organizations, and at the 2002 ICES Annual Conference, Dr. R. Ian Perry presented a PICES proposal that included four “themes” (teleconnections, ecosystem reporting, ecosystem-based approaches to the management of marine resources, and harmful algal blooms) which might be of interest for enhanced interactions between ICES and PICES. These themes were further discussed by the Scientific Committees and the CCCC Program at PICES XI (October 2002), and throughout the entire year, and specific recommendations were summarized in the attached document submitted to ICES in June 2003 (see *GC Endnote 3* for details).

In his presentation, Dr. David Griffith, General Secretary of ICES, informed Council that the suggested “themes” and specific proposals are seen by ICES as excellent opportunities for fruitful cooperation. He provided additional information on ICES’ activities related to the

“themes”, and extended an invitation for PICES to (1) co-sponsor a symposium on “Marine bioinvasions” in spring 2006; (2) co-convene theme sessions on “Fishery, ecology, and life history of small pelagic fish” and “Comparing and contrasting the scientific strategies and output of regional ecosystem pilot projects” at the ICES Annual Science Conference in September 2005; (3) actively participate in a number of CCC workshops; and (4) jointly organize a Young Scientists Conference or Workshop that would bring together “early career” scientists from around the globe. All these proposals were directed to Science Board for discussion and recommendations.

Council noted the impressive progress in the integration and coordination of activities between PICES and ICES. To further facilitate this cooperation, it was suggested that the feasibility of having an interim meeting of PICES Science Board and ICES Consultative Committee be considered.

NPAFC

PICES and NPAFC signed a Memorandum of Understanding in 1998 that identified ways in which both organizations could work cooperatively to improve the understanding and stewardship of North Pacific marine ecosystems. Dr. Richard Beamish, Chairman of NPAFC’s

Committee on Scientific Research and Statistics, informed Council about on-going and planned joint activities (see *GC Endnote 3* for details). He also provided some insights of the BASIS (Bering-Aleutian Salmon International Survey) Program of NPAFC, which is a 5-year study of factors affecting Pacific salmon production in the Bering Sea. This program involves cooperative use of ships and timely exchange of data. PICES was invited to consider participating in BASIS discussions.

Council thanked NPAFC for their contribution to the North Pacific Ecosystem Status Report, and invited NPAFC to present a report on the status of North Pacific salmon at each PICES Annual Meeting. Council also agreed to co-sponsor a joint NPAFC-PICES Symposium on “State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems” to be held in fall 2005, in conjunction with the NPAFC Annual Meeting in Korea (Decision 03/S/1).

SCOR

Dr. Akira Taniguchi (Vice-President of SCOR) reviewed and discussed existing and future cooperation between the two organizations. He informed Council that the report from PICES at the 36th SCOR Executive Committee meeting was well received and clearly indicated the important role of PICES in bringing a regional perspective to SCOR’s global activities. He specifically mentioned PICES’ contribution in GLOBEC and JGOFS projects, in organizing the Symposium on “Quantitative ecosystem indicators for fisheries management” to be held in spring 2004, and in improving the quality of oceanic CO₂ measurements and resolving CO₂ data synthesis issues (see *GC Endnote 3* for details). Dr. Taniguchi also advised that SCOR hoped that PICES will play an important role in the implementation of SOLAS, GEOHAB and IMBER.

Council thanked SCOR for their continuing support of PICES activities and providing travel grants for scientists from countries with “economies in transition” to attend annual and special meetings of PICES.

Agenda Item 7. Report of Study Group on PICES Strategic Issues

Last year, the PICES Review Committee identified the importance of developing a long-term “vision” or Strategic Plan for the Organization. At the 2003 interim meeting, Council and Science Board recognized the value of such a plan and agreed that a Study Group on *PICES Strategic Issues* should be formed under the direction of the Governing Council (Decision 03/S/5(iv)) to develop a Strategic Plan which has the following elements:

- A PICES vision statement;
- The purposes of PICES (including identifying the emerging issues in marine science of interest to PICES member countries);
- Long-term goals;
- Steps to implement the vision, purposes, and goals of PICES (which would consider regional as well as thematic approaches).

This task will be accomplished by:

- Reviewing Strategic Plans and Vision Statements of similar organizations;
- Examining the existing Strategic Plans of the Scientific and Technical Committees of PICES;
- Requesting input from Governing Council and Science Board members for regional issues.

The membership of this Study Group consists of Dr. Vera Alexander (Chairman), Dr. Ian Perry and Dr. Vladimir Radchenko representing Science Board, and Dr. Laura Richards (Canada), Mr. Qian-Fei Liu (China), Dr. Tokimasa Kobayashi (Japan), Dr. Hyung-Tack Huh (Korea) and Dr. George Boehlert (U.S.A.) representing Governing Council. It is expected that the Study Group will work primarily by correspondence.

Dr. Alexander reported on the status and activities of the Study Group. The first draft of the PICES Strategic Plan was distributed in September 2003. This document designates the PICES Mission with five central themes: (A) Building a foundation of science; (B) Producing the scientific basis for decision-making;

(C) Fostering partnerships; (D) The added value of PICES; and (E) Informing the public; and specific goals, identified within each of these themes. It also includes an implementation strategy with several next steps.

The draft PICES Strategic Plan was briefly discussed by the Standing Committees and the CCCC Program at PICES XII. Specific comments were requested by November 20. The next draft is anticipated by spring 2004, and will be reviewed at the interim Science Board/Governing Council meeting (if approved). The final product is expected by the next Annual Meeting.

It was noted that once the PICES Strategic Plan has been developed, the Scientific and Technical Committees of PICES will be asked to discuss and examine this plan to determine how it might be implemented by each Committee. The current Committee Strategic Plans will need to be revised. It was suggested that there should be an open discussion on the PICES Strategic Plan and its implementation in one of evenings at PICES XIII, and a Topic Session, perhaps at PICES XIV.

Agenda Item 8. Report of Study Group on PICES Capacity Building

At PICES XI, Council established a Study Group on *PICES Capacity Building* under the direction of the Science Board to develop a capacity building strategy and an implementation plan for the Organization (Decision 02/S/5 and 2002 GC Appendix B).

A draft report of the Study Group was presented and extensively discussed at the interim Science Board/Governing Council meeting in April 2003. The final draft was circulated to the Chairmen of the Standing Committees and the CCCC Program on August 21, 2003, with a request to have this item included in their agenda at PICES XII for discussion.

Council reviewed the document and comments from various PICES groups, and supported key elements that have been included in the PICES capacity building initiative. It was noted that

PICES is already involved in various capacity building activities, and that the current budget limits any additional demands placed on the Organization. The funding issue was widely recognized, and the discussion that followed focused on potential monetary sources for this initiative, such as (i) increasing the annual dues, with increases going directly towards PICES capacity building; (ii) special allocations from member countries, government agencies and private foundations; and (iii) partnering with some other entities (ICES, IOC, WESTPAC, etc.) to jointly support capacity building activities in the North Pacific, or jointly apply for funding for educational/training/outreach projects. It was unanimously agreed that Council and Science Board need to evaluate the priority of capacity building proposals, in relation to resources available. In addition, Council members were asked to provide information on funding opportunities for capacity building within their member countries.

At PICES XII, Science Board had only a brief discussion of the Study Group report, and further comments were requested by the end of November. Subsequently, Science Board approved the report (*SB Endnote 14*) by correspondence in November 2003. The Study Group members were commended for their work, and the Study Group was disbanded (Decision 03/S/4).

Agenda Item 9. PICES Intern Program

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. In 2000-2003, young scientists from three countries worked as interns at the Secretariat: Mr. Gong-Ke Tan (First Institute of Oceanography, State Oceanic Administration, People's Republic of China), Dr. Jung Hwa Choi (Pukyong National University, Republic of Korea) and Ms. Natalya Bessmertnaya (TINRO-Center, Russian Federation). Mr. Chuanlin Huo (National Marine Environmental Monitoring Center, State Oceanic Administration, People's Republic of China) started his term in May 2003 and is expected to continue until April 2004. Council reviewed the results from the first four years of the Program and concluded that the

Organization and member countries are benefiting from the Program, and that it should be continued.

Guidelines for application/selection procedure

At the 2003 interim meeting, Council approved the following changes to the *Guidelines for application and selection procedure* section for the Intern Program (*GC Endnote 4*):

- To advertise the Intern Program on the PICES web site;
- To encourage national delegates to take additional measures to advertise the Intern Program within their countries;
- To require that applicants also send a copy of their application to the PICES Secretariat.

The revised document was posted on the PICES web site in early May 2003.

2004 PICES Internship

No nominations for the 2004 PICES Internship were received by the date of the first Governing Council meeting at PICES XII (October 15, 2003), but Korea indicated a desire to submit nominations. Council approved to have the deadline for applications extended to December 31, 2003 (Decision 03/A/8(i)).

Financing for the Intern Program

The Intern Program has not been budgeted for, and over the years has been financed solely by voluntary contributions. Council commended Canada and the United States for their contributions (\$10,000 and \$17,200, respectively) to the Trust Fund to support the 2003 Intern Program, and instructed the Executive Secretary to send letters inviting member countries to provide voluntary contributions to support the Program in 2004 and beyond (Decision 03/A/8(ii)).

At PICES X, Council approved the use of registration fees collected from the Annual Meetings to finance the Program (Decision 01/A/4(iv)), but noted that this will limit the ability of the Organization to support high priority projects identified by Science Board.

Council confirmed that this practice should continue, and supported the recommendation of transferring a part of the fees from PICES XII (\$11,600) to the Trust Fund to finance the 2004 Intern Program (Decision 03/A/3(iii)).

At PICES XII, F&A reviewed the level of stipends for the interns and discussed whether this stipend is sufficient to cover the cost of living in Canada. It was recommended that the stipend be kept at the current level of \$2,000 per month, and given the modest stipend, F&A advised Contracting Parties to consider whether personal circumstances of interns warrant supplementation. Council supported this recommendation (Decision 03/A/8(iii)).

The Study Group on *PICES Capacity Building* suggested extending the Intern Program. Reviewing this recommendation at the interim meeting, Council agreed that the extended Intern Program that includes scientific interns in addition to administrative interns might be valuable, and funding opportunities for such an extension have to be explored by national delegates and the Secretariat. In the mean time, it was recommended that Contracting Parties give equal consideration to both administrative and scientific staff when making nominations (Decision 03/A/8(iv)).

Agenda Item 10. PICES Visiting Scientist Program

The PICES Visiting Scientist Program was approved at PICES X (Decision 01/A/6), and was seen as an opportunity to improve the functioning of the Organization without increasing annual contributions. The Program was not budgeted for, and it was expected that national agencies from member countries and/or international science organizations will contribute human resources to support key projects of the Organization which are also of specific interest for that agency/organization. The secondment of experienced scientists was suggested as the most reliable approach. The anticipation was to commence the Visiting Scientist Program in 2002, and link it to the development of the North Pacific Ecosystem Status Report. While attractive to PICES, the

Visiting Scientist Program has not drawn interest elsewhere, and no national agency/organization has taken advantage of the Program to date.

Council requested Dr. Laura Richards and the Secretariat to work together to re-write the description of the Visiting Scientist Program using suggestions from the 2003 interim Council meeting (*GC Endnote 4*). National delegates were asked to watch out for possible candidates for the Program in their countries. Council also supported the F&A recommendation that Science Board develop specific project proposals for the Program that will not necessarily require the relocation of the “visiting scientist” to the PICES Secretariat.

Agenda Item 11. Improvement of participation and productivity of PICES committees and groups

In 1996, when PICES was approaching its Fifth Annual Meeting and the election of a new Chairman, Dr. Warren S. Wooster, the principal founder and the first Chairman of PICES, prepared a paper on “PICES perspective” (see pp. 21-23 in the 1996 PICES Annual Report) that, among other issues, outlined problems in the participation in PICES activities. Many of these problems still exist. The discussion of this item focused on two issues:

Agency participation

Within the member countries, different agencies have the principal responsibility for interaction with PICES. Often the lead agencies do not seem to represent the interests of others, or are not inclined to coordinate PICES-related activities with them. At PICES V, Council recommended that all Contracting Parties be encouraged to establish an inter-agency coordinating committee to facilitate the coordination of broad participation in PICES activities within each member country (Decision 96/S/6). Last year, the PICES Review Committee discussed this issue again and reiterated that Contracting Parties should consider the formation of national committees to enhance

and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance. National delegates were requested to follow up on this recommendation (Decision 03/S/7(i)).

Appointed scientists

At the recommendation of Science Board, Council approved that all national membership lists be confirmed prior to each Annual Meeting and be included as Appendices in the Annual Report. This will help maintain a historical record of PICES membership, and may help to improve participation in activities of the Organization (Decision 03/S/7(ii)). It was noted that appointed members often tend to represent their agencies’ interests, and not national interests. Council suggested that national delegates clarify the responsibilities of members at the time of their appointment. Council also instructed the Executive Secretary to regularly prepare terms of reference and other relevant information for new members, and circulate these documents to national delegates (Decision 03/S/7(iii)).

Although some of the work of PICES Committees and other groups is conducted by correspondence, their main activities take place at meetings, and especially during the Annual Meetings. While it is obviously important for appointed scientists to attend, and it is even stated in Rule of Procedure 1(iii), that each Contracting Party shall pay the expenses of its own Delegation to all meetings held pursuant to the PICES Convention, there appears to be an increased frequency of PICES member countries failing to support attendance of their appointed experts at the Annual Meetings and in the work of various groups. The work of these groups is thereby seriously impaired. This is particularly a problem when the lead agency is reluctant to support other than its own people. A potential solution is that in budgeting for PICES, member countries should include the costs of participation of appointed scientists in PICES activities.

Agenda Item 12. Schedule and financing of future Annual Meetings of the Organization

At PICES XI (Qingdao, People's Republic of China), Council approved the proposal of the United States of America to hold the Thirteenth Annual Meeting in Honolulu, Hawaii, U.S.A., from October 15-23, 2004 (Decision 02/A/4(i)). In consideration of the Annual Meeting being held in Hawaii, the overall theme for PICES XIII is "*Beyond the continental slope – complexity and variability in the open North Pacific Ocean*". The US delegation and the Executive Secretary provided brief information on the current status of arrangements for PICES XIII. It was pointed out that the United States has no intention to ask PICES to transfer any funds from the Organization to partially cover costs. Dr. Marasco noted that at this year's meeting, F&A again discussed Canada's proposal to discontinue the practice of transferring funds from PICES to member countries to partially cover Annual Meeting costs, but no recommendation was made.

Council approved the proposal of the Russian Federation to host the Fourteenth Annual Meeting in Vladivostok, Russia, from September 30-October 5, 2005 (Decision 03/A/5(i)), and requested that sufficient budgetary information be provided as soon as possible, to facilitate *FY* 2005 budget planning.

In keeping with the six-year rotation cycle, Council invited Japan to explore the feasibility of hosting PICES XV in October 2006, and inform the Secretariat on this matter by May 31, 2004 (Decision 03/A/5(ii)).

Canada indicated an interest to hold the Annual Meeting in 2008, to link it to the celebration of the centennial anniversary of the Pacific Biological Station. This would mean an alteration to the existing rotation cycle. No action was taken, and it was agreed that this issue would be discussed at the 2004 interim Council meeting or at PICES XIII.

Council confirmed that the practice of charging a registration fee for future PICES Annual Meetings should continue, and adopted the

registration fee structure recommended by F&A (Decision 03/A/5(iii)).

Council approved holding a second interim Science Board meeting, again with possible participation of the Governing Council, in spring 2004 (Decision 03/A/5(iv)). The PICES Chairman, Vice-Chairman and F&A Chairman are required to attend the meeting. Even though discussions at Science Board and Council meetings clearly indicated the importance of rotating the venue for interim meetings, the Executive Secretary was instructed to select the meeting venue based on the recommendation of F&A to keep the costs for the Organization at the minimal possible level. The necessity of having a separate interim Council meeting, in conjunction with the Science Board meeting, will be decided at a later date by correspondence.

Agenda Item 13. North Pacific Ecosystem Status Report

Developing a North Pacific Ecosystem Status Report (NPESR) as a high-priority scientific project was first suggested by Science Board at PICES X in 2001. A conceptual model of the report was introduced a year later, at PICES XI. Following a discussion of this pilot report, Council established a Working Group under the direction of Science Board to oversee the development and completion of the NPESR (Decision 02/S/5 and 2002 *GC Appendix B*).

The major responsibilities of the Working Group included: (1) to prepare the final NPESR; (2) to prepare a report for the PICES - CoML project on "*Marine life in the North Pacific Ocean: The known, unknown and unknowable*"; (3) to recommend mechanisms to facilitate the data management requirements of the NPESR; and (4) to recommend on how to implement the production of the NPESR as a regular activity of PICES.

The Executive Secretary informed Council that the Alaska Fisheries Science Center (National Marine Fisheries Service/NOAA, U.S.A.) and Gulf of Alaska Ecosystem Monitoring and

Research Program (Exxon Valdez Oil Spill Trustee Council, U.S.A.) strongly supported this project, and allocated US \$36,700 (from US *FY* 2001-2003) and US \$42,600 (from US *FY* 2002-2004), respectively, for the development of the NPESR. PICES was also awarded a grant of US \$45,000 from the Alfred P. Sloan Foundation to produce a report for the Census of Marine Life. The work necessary to prepare the report is complementary to the material presented in the NPESR.

The Science Board Chairman provided an update on the current status of the report. Major activities to prepare the draft NPESR during 2003 included:

- Identifying and appointing Lead Authors for regional chapters;
- Convening a 3-day PICES/TINRO/CoML Workshop on “Okhotsk Sea and adjacent areas” (June 4-6, 2003, in Vladivostok, Russia). The workshop included 41 oral presentations and 54 posters on various aspects of the ecology of the Okhotsk Sea. A half-day was used to discuss the most important and relevant contributions to the NPESR;
- Producing (at the Secretariat) the near-complete first draft NPESR for distribution to the Working Group and Lead Authors in mid-August;
- Organizing a 3-day Workshop (Working Group meeting with Lead Authors) from August 25-27, 2003, in Victoria, Canada, to review and discuss the contents of the draft NPESR, to develop a synthesis/integration of the regional results, and to plan for the development of the final NPESR;
- Assigning of editing and writing tasks for developing the final NPESR – September 2003;
- Holding a 2-day workshop on “Status of Yellow Sea and East China Sea ecosystems” at PICES XII (October 9-10, 2003, Seoul, Korea) to develop the Yellow Sea/East China Sea chapter, and discuss the relationship between issues there and the rest of the North Pacific;
- Convening a 2-day workshop at PICES XII, organized by the MONITOR Task Team and co-sponsored by EVOS/GEM, to “Examine

and critique a North Pacific Ecosystem Status Report” (October 10-11, 2003). The report of this workshop is expected to recommend a process for future production of this report;

- Distribution of the draft NPESR to the Scientific Committees and the CCCC Program before PICES XII for information and comments.

The NPESR Workshop in August 2003 laid the foundation for completing the NPESR in a timely fashion. Upcoming activities related to this objective include:

- Implementing comments on the draft NPESR from the Scientific Committees and the CCCC Program (requested by the end of November 2003);
- Editing, designing and structuring of the final report for publication;
- Editing, designing and structuring of the final report for publication on the PICES Home Page;
- Developing a plan to produce timely updates of the NPESR;
- Convening a 3-day workshop to produce the PICES/CoML Report on “Marine life in the North Pacific: The known, unknown and unknowable”.

It is anticipated that the final NPESR will be presented at the interim Science Board meeting in spring 2004.

During the discussion Japan brought up the issue of the name for the body of water surrounded by the Japanese Archipelago and the Korean Peninsula, which is currently in dispute between the countries concerned. Japan’s position is that the only name “Sea of Japan” should be used in the international arena, as this name is historically and geographically established (*GC Endnote 5*). Korea responded that their position is that the names “East Sea” and “Japan Sea (Sea of Japan)” should be used simultaneously, until a final resolution is agreed upon between the relevant countries (*GC Endnote 5*).

The Chairman reminded Council about the discussion on this issue at last year’s Annual Meeting (see 2002 Annual Report, p. 20), and

advised that PICES, as a scientific organization, should not focus on diplomatic problems. No actions were taken.

Agenda Item 14. Report of Science Board

The Science Board met under the chairmanship of Dr. R. Ian Perry, who presented the report to the Governing Council (see Science Board Report for text). Council approved the Science Board Report. Details are given in *Appendix A* (Decisions 03/S/1 – 03/S/7).

Agenda Item 15. Proposed changes to PICES' Rules of Procedure and Financial Regulations

Vice-Chairman of Science Board

At the 2003 interim meeting, by the recommendation of the Science Board, Council established a position of the Vice-Chairman of Science Board, and approved the following rules for this position:

- (i) The Vice-Chairman of the Science Board shall be elected from the members of the Board;
- (ii) The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman;
- (iii) Duration of the appointment shall be for 1 year (18 months for the first Vice-Chairman). Re-election for an additional term is permitted;
- (iv) When the position of Science Board Chairman becomes (or will become) vacant, the incumbent Vice-Chairman does not automatically succeed the Chairman, and elections will proceed according to regulations;
- (v) The Vice-Chairman will prepare meeting materials and chair the meetings of the Science Board in the absence of the Chairman, as required;
- (vi) The Vice-Chairman will assist the Science Board Chairman with the coordination of the scientific activities of PICES by: preparing material for meetings (Science Board, PICES Annual Meetings, etc.); representing PICES at meetings and

conferences of other organizations; consulting on Science Board Chairman's decisions that must be taken between normal meetings of PICES Standing Committees; and representing the interests of scientists in the countries on his continent.

To identify the new position, Council approved the following changes in the Rules of Procedure (Decision 03/A/6):

- add new Rule 14 (ii)
“The Vice-Chairman of the Science Board shall be elected from amongst the members of the Board for a term of one year and shall be eligible for re-election for a successive term. The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman. The Vice-Chairman shall act as Chairman whenever the Chairman is unable to act, but in the event of the office of Chairman becoming vacant, the Vice-Chairman shall not automatically succeed the Chairman, and the Science Board shall elect a new Chairman at its next meeting”.
- re-numerate the current Rules 14 (ii) and 14 (iii) to 14 (iii) and 14 (iv) respectively.

In addition, the detailed responsibilities of the Vice-Chairman of Science Board will be identified in the PICES Chairmen's Handbook.

Proposed changes to PICES' Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v))

At PICES XI, to ensure timely payment of annual contributions, F&A recommended, and Council approved, that *“starting from the next Annual Meeting, Council will consider and adopt the budget for the ensuing and subsequent financial years”* (Decision 02/A/2(iii)). This action requires changes to the Rules of Procedure (Rule 15(c)) and the Financial Regulations (Regulation 3(v)), and the Executive Secretary was requested to develop the appropriate wording changes for consideration at PICES XII.

Dr. Marasco reported that in the process of preparing budgets for consideration at PICES

XII, a serious problem was discovered as a result of the previous year's decision to have budgets for ensuing and subsequent financial years approved, and explained the infeasibility of the implementation of Decision 02/A/2(iii). F&A recommended, and Council agreed to re-consider this decision (Decision 03/A/2(ii)); see also F&A Report for details).

Agenda Item 16. Report of Finance and Administration Committee

The Finance and Administration Committee (F&A) met under the chairmanship of Dr. Richard J. Marasco, who presented the report to the Governing Council (see F&A Report for text). Council approved the report.

16.1 Audited accounts for fiscal year 2002

At the recommendation of F&A, Council accepted the audited accounts of *FY 2002* (Decision 03/A/1(i)). At the 2003 interim Council meeting, *Flader & Hale* was selected as the auditor for *FY 2003-2005* (*GC Endnote 4* and Decision 03/A/1(ii)).

16.2 Annual contributions

Council discussed the payment schedule of annual fees to the Organization (*F&A Endnote 4*), and following F&A, expressed serious concern over the increased frequency of partial payments of annual fees, especially if they are remitted without explanation or an indication of when the outstanding balance will be paid. Council instructed the Executive Secretary to send a letter commending some Contracting Parties for improved performance in submitting annual contributions in 2003, and describing the difficulties partial payment causes the Organization (Decision 03/A/2(i)).

Council also approved the recommendation that last year's Decision 02/A/2(iii) be re-considered, returning to the previous budget preparation practice, currently reflected in the Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v)), when at each Annual Meeting, Council adopts its budget for the ensuing fiscal year, and considers, but not adopt, the forecast

budget for the subsequent fiscal year (Decision 03/A/2(ii)). Council confirmed that for planning purposes, Contracting Parties should continue to use the guideline generally accepted at the Eighth Annual Meeting (Decision 99/A/2(ii)), which states that the annual contributions will increase at the rate of inflation (about 3%) in Canada.

16.3 Fund-raising activities

Grants and voluntary contributions received this year for various activities initiated by PICES are reflected in *F&A Endnote 5*. Council noted the significant increase in the level of external funding, and thanked the Science Board Chairman and the Secretariat for their efforts. At the same time, Council is seriously concerned about the increased workload of the Secretariat related to the growing number of projects, as all external funding offers have specific product/service requirements. It was re-iterated that funding constraints resulting from the current practice of an increase in annual contributions only at the rate of inflation, can impede improvement and development of the Organization, and therefore, fund-raising continues to be an important component of PICES activities. Delegates were requested to determine the possibility of obtaining additional funding to support PICES (Decision 03/A/4(i)).

Council also directed Science Board to develop a prioritized list of PICES activities that are strong candidates for external funding (Decision 03/A/4(ii)). This list could be used by delegates and F&A members to raise funds.

16.4 Budget

16.4a Estimated accounts for fiscal year 2003

The estimated accounts for *FY 2003* were reviewed by F&A and approved by Council (Decision 03/A/3(i)).

16.4b Proposed budget for fiscal year 2004

Council approved the proposed *FY 2004* budget of \$679,000 (*F&A Endnote 7*). The amount of \$79,000 will be transferred from the Working

Capital Fund to the General Fund to reduce the total annual contribution to \$600,000, setting the 2003 fee at \$100,000 per Contracting Party (Decision 02/A/3(ii)).

16.4c Forecast budget for fiscal year 2005

The *FY* 2005 forecast budget of \$725,000 was examined by F&A and presented to Council for information only. It will be further discussed at PICES XIII. Per the guideline adopted in 1999 (Decision 99/A/2(ii)), the 2005 annual fee would be set at \$103,000 per Contracting Party. Then, a transfer of about \$107,000 from the Working Capital Fund would be required to balance funds. A transfer of this magnitude will only be possible if additional funds can be raised.

16.4d Working Capital Fund

The balance in the Working Capital Fund is forecast to be about \$218,600 at the end of 2003. Council approved a transfer of \$79,000 from the Working Capital Fund to the General Fund for 2004. This amount includes external funds, \$67,500, allocated for PICES projects that will be completed in 2004. Council also approved a transfer of \$11,600 from the Working Capital Fund to the Trust Fund to restore the Trust Fund to the level of \$110,000. After all inter-fund transfers (Decision 02/A/3(iii)), the Working Capital Fund will total approximately \$128,000.

16.4e Home Leave and Relocation Fund

The status of the Home Leave and Relocation Fund was reviewed. In *FY* 2003, expenditures were offset by interest earned by the Fund and, in part, by the foreign staff tax levies. The Fund will be at its required level of \$110,000 by the end of the fiscal year.

16.4f Trust Fund

In *FY* 2003, the Trust Fund was used to finance the Intern Program, and to bring young scientists from PICES member countries and scientists from countries with “economies in transition” to scientific meetings. These expenditures were compensated only partly by voluntary contributions from Canada and U.S.A. for the

Intern Program, and by travel grants from the Scientific Committee of Oceanic Research. As a result, the Trust Fund would be approximately \$98,400 at the end of 2003. Council approved a transfer of \$11,600 from the Working Capital Fund to the Trust Fund to recover all 2003 expenditures and restore the Trust Fund to the level of \$110,000.

Agenda Item 17. Appointment of F&A Committee Chairman

According to the Rules of Procedure (Rule 15), “*The Chairman of the Finance and Administration Committee shall be appointed by the Council from amongst the Committee’s members for a term of two years and shall be eligible for re-appointment only once for a successive term.*” Dr. Richard J. Marasco of U.S.A. was appointed as the F&A Chairman at PICES VII in 1998 (Fairbanks, U.S.A.), and re-appointed at PICES IX in 2000 (Hakodate, Japan). At PICES XI, at the recommendation of the Finance and Administration Committee, Council extended his term for one year (Decision 02/A/7). This issue was discussed again by F&A, and it was highly recommended that the term of Dr. Richard J. Marasco (U.S.A.) be extended for one more year. The motion was supported by all Contracting Parties and approved by Council (Decision 03/A/7).

Agenda Item 18. Other business

Publication of PICES Review Committee Report

At PICES XI, Council endorsed the Review Committee Report and its recommendations (Decision 02/A/9). Pending full consideration of the Review Committee Report by the Science Board, action on its disposition was postponed until the 2003 interim Science Board/Governing Council meeting. At the recommendation of F&A, Council approved that the Review Committee Report be included in this year’s PICES Annual Report (Decision 03/A/9).

Request for scientific advice

A letter was received from the United States requesting scientific advice on recent (1998-1999) climate-ocean changes in the North Pacific and their implications for fisheries (*SB*

Endnote 15). This is the first request ever for PICES to provide scientific advice to a member nation. In discussion, it was noted that the request is a clear recognition of PICES' expertise and scientific leadership on the topic of ecosystem regime shifts. It is also evidence that governments are open to strong (and independent) scientific input regarding ecosystem variability, and the development of robust management strategies. Council found this request as both timely and important, and agreed to accept.

At the recommendation of Science Board, Council approved the establishment of a Study Group under Science Board titled (tentatively) "Potential implications of recent regime shifts in

the North Pacific for fisheries", with a 1-year duration (Decision 03/S/5). The Study Group would assess the request, assemble the information and data relevant to responding to this request, and develop a draft document for discussion. It would also develop plans for a workshop to be held in late June 2004, to discuss this document and to gather broader input. Following the workshop, the Study Group would finalize the report, which would then be circulated within PICES for review. It would be completed and delivered to the United States by PICES XIII in October 2004.

The Terms of Reference for this Study Group are described in *GC Appendix B*.

GC Appendix A. Decisions

03/A/1: Auditor

- i. Council accepted the audited accounts for 2002
- ii. Council selected *Flader & Hale* as the auditor for *FY 2003-2005*.

03/A/2: Annual contributions

- i. Council instructed the Executive Secretary to send a letter commending some Contracting Parties for improved performance in submitting annual contributions in 2003, and describing the difficulties partial payment causes the Organization.
- ii. Council re-considered last year's Decision 02/A/2(iii), and agreed to return to the previous budget preparation practice, currently reflected in the Rules of Procedure (Rule 15) and Financial Regulations (Reg. 3(v)), when at each Annual Meeting, Council adopts its budget for the ensuing fiscal year, and considers, but not adopt, the forecast budget for the subsequent fiscal year. For planning of their funding requests for annual contributions, Contracting Parties should continue to use the guideline generally accepted at the Eighth Annual Meeting (Decision 99/A/2(ii)).

03/A/3: Budget

- i. Council accepted the estimated accounts for 2003.
- ii. Council approved the 2004 budget at the level of \$679,000. The amount of \$79,000 will be transferred from the Working Capital Fund to reduce the total annual contribution to \$600,000, setting the 2003 fee at \$100,000 per Contracting Party.
- iii. Council approved the following inter-fund transfers:
 - A transfer of \$79,000 from the Working Capital Fund to the General Fund for 2004. This amount includes external funds, \$67,500, allocated for PICES projects that will be completed in 2004;
 - A transfer of \$11,600 from the Working Capital Fund to the Trust Fund to recover all 2003 expenditures and to restore the Trust Fund to the level of \$110,000.

03/A/4: Fund-raising

- i. National delegates were requested to determine the possibility of obtaining additional funding to support PICES activities.

- ii. Council directed Science Board to develop a prioritised list of PICES activities that are strong candidates for external funding.

03/A/5: Schedule and financing future Annual Meetings

- i. Council approved the proposal of the Russian Federation to hold the Fourteenth Annual Meeting from September 30 - October 8, 2005, in Vladivostok, Russia.
- ii. Council requested Japan to explore the possibility of hosting the Fifteenth Annual Meeting in 2006, and inform the Secretariat on this matter by May 31, 2004.
- iii. Council accepted the following registration fee structure for 2004:

Type	CDN \$
Registration fee	225
Early registration fee	150
Students	50

- iv. Council approved the holding of an interim Science Board meeting, with participation of the Governing Council, in spring 2004.

03/A/6: Changes to Rules of Procedure

Council approved the following changes in the Rules of Procedure:

- add new Rule 14 (ii)

“The Vice-Chairman of the Science Board shall be elected from amongst the members of the Board for a term of one year and shall be eligible for re-election for a successive term. The Vice-Chairman will normally reside on the opposite side of the Pacific to the Science Board Chairman. The Vice-Chairman shall act as Chairman whenever the Chairman is unable to act, but in the event of the office of Chairman becoming vacant, the Vice-Chairman shall not automatically succeed the Chairman, and the Science Board shall elect a new Chairman at its next meeting”.
- re-numerate the current Rules 14 (ii) and 14 (iii) to 14 (iii) and 14 (iv) respectively.

The detailed responsibilities of the Vice-Chairman of Science Board should be identified in the PICES Chairmen’s Handbook

03/A/7: Appointment of Finance and Administration Committee Chairman

Council extended the term of Dr. Richard J. Marasco (U.S.A.), the current Finance and Administration Committee Chairman, for one year.

03/A/8: Intern Program

- i. Council approved that the deadline for applications for the 2004 Intern Program be extended to December 31, 2003.
- ii. Council instructed the Executive Secretary to invite member countries to provide voluntary contributions to support the Program in 2004 and beyond.
- iii. Council confirmed that the stipend should be kept at the current level of \$2,000 per month, and given the modest stipend, advised Contracting Parties to consider whether personal circumstances of intern warrant supplementation.
- iv. Council recommended that Contracting Parties give equal consideration to both administrative and scientific interns when making nominations.

03/A/9: Review Committee Report

Council approved that the Review Committee Report be published in this year’s PICES Annual Report.

03/S/1: Inter-sessional meetings, Working Group and CCCC Program Workshops

The following inter-sessional meetings, Working Group and CCCC Program Workshops are to be convened/co-sponsored in 2003-2004 and beyond (see Acronym List at the end of the Annual Report):

- A PICES/CoML *Regional marine life expert* workshop, November 17-19, 2003, Victoria, Canada (approved in 2002);
- A PICES/PaCOS/AOOS/GEM workshop on “Development of pilot coastal monitoring

- program(s) in the NE Pacific”, November 20-22, 2003, Victoria, Canada;
- A MODEL workshop to further manuscript development for a special issue of *Ecological Modeling* devoted to NEMURO and NEMURO.FISH, December 2003, Yokohama, Japan (funded by the Fisheries Research Agency of Japan);
 - A IOCCP/PICES workshop on “Ocean surface p(CO₂), data integration and database development”, January 14-17, 2004, Tsukuba, Japan (approved in 2002, postponed from 2003);
 - A meeting of the PICES Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries*, January 2004, on the west coast of Canada or the United States;
 - A PICES-IFEP workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific”, February 11-13, 2004, Victoria, Canada (approved in 2002, postponed from 2003);
 - A Canada-SOLAS/PICES-IFEP Session on “Response of the upper ocean to mesoscale iron enrichment” at the TOS/ASLO 2004 Ocean Research Conference, February 15-20, Honolulu, U.S.A.;
 - A SCOR/IOC/PICES/GLOBEC Symposium on “Quantitative ecosystem indicators for fisheries management”, March 31-April 3, 2004, Paris, France (approved in 2002);
 - A 3-day interim Science Board meeting, spring 2004, location TBD;
 - A NOAA/GCP/PICES workshop on “Understanding North Pacific carbon-cycle change: Data synthesis and modeling”, June 2004, Seattle, U.S.A.;
 - A MODEL workshop on “The development of a model on coupled responses of lower and higher trophic levels for climate variability in the North Pacific” (partial funding from Japan Fisheries Research Agency), August 2004, Seattle, U.S.A. Purpose is to document and distribute the NEMURO model code, and to edit *Ecological Modeling* manuscripts;
 - A PICES/NOAA workshop to discuss issues relating to the request for advice to PICES from the United States, June 2004, likely on the west coast of the United States;
 - A 1-day MEQ Workshop on “Developing a North Pacific HAB data resource - II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 2-day PICES-CLIVAR Workshop on “Scale interactions of climate and marine ecosystems”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day MBM-AP Workshop on “Combining data sets on diets of marine birds and mammals - Phase II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day MIE-AP Workshop to review preliminary results from the first inter-calibration cruise, and discuss the goals, objectives, and status of the experiment and the future field program, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 2-day CCCC Workshop on “Linking open ocean and coastal ecosystems II”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day CCCC/REX Workshop on “Seasonal cycles of plankton and nutrients around the North Pacific Rim”, October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 4-day CCCC/MODEL Workshop on “Climate interactions and marine ecosystems: Effects of climate on the structure and function of marine food webs and implications for marine fish production in the North Pacific Ocean and marginal seas” (funded by APN, if approved), October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A 1-day CCCC/MODEL Workshop to prepare a strategy and products for future NEMURO and NEMURO.FISH training sessions (if the APN proposal is successful, this workshop will not be necessary), October 2004, Honolulu, U.S.A. (in conjunction with PICES XIII);
 - A symposium, co-sponsored with GLOBEC, on “Climate variability and sub-Arctic marine ecosystem”, spring 2005, Victoria, Canada;
 - A CREAMS/PICES workshop (with training component) on “Japan/East Sea

circulation: What we know and how well can we forecast?”, summer 2005, near Vladivostok, Russia;

- A symposium, co-sponsored with NPAFC, on “State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems”, fall 2005, Seoul, Korea;
- A joint theme session on “Fisheries, ecology and life history of small pelagic fish” at the ICES Annual Science Conference, September 2005, Aberdeen, Scotland;
- A symposium, co-sponsored with ICES, on “Marine bioinvasions”, spring 2006, likely on the east coast of the United States;
- A 3-day symposium on CCCC Synthesis, April 2006, Honolulu, U.S.A.;
- A 4th International Zooplankton Production Symposium (co-sponsors TBD), spring 2007, Hiroshima, Japan.

03/S/2: Travel support

PICES will provide travel support for:

PICES XIII

- Invited speakers for Topic Sessions at the PICES Thirteenth Annual Meeting (the normal allocation is \$5,000 per Scientific Committee, and additional requests are subject to fund availability);
- Two invited speakers to the CCCC Topic Session on “The impacts of large-scale climate change on North Pacific marine ecosystem”;
- Two invited speakers to the PICES/CLIVAR Workshop on “Scale interactions of climate and marine ecosystems”;
- Two invited speakers to the CCCC Workshop on “Linking open ocean and coastal ecosystems II”;
- Two Canadian scientists to attend the CCCC/MODEL APN Workshop (if APN grant approved).

Inter-sessional meetings

- PICES representative to attend the NPAFC Annual Meeting (October 2003, Honolulu, U.S.A.);
- MONITOR Co-Chairman to represent PICES at POGO-5 (November 2003, Tokyo,

Japan);

- One scientist to participate in the joint IOCCP/PICES workshop on “Ocean surface p(CO₂) data integration and database development” (January 2004, Tsukuba, Japan);
- PICES representative to attend the annual meetings of the ICES Working Group on *Introductions and transfers of marine organisms* and the ICES/IOC/IMO Working Group on *Ballast waters and other ship vectors* (March 2004, Italy);
- PICES invited speaker to the symposium on “Quantitative ecosystem indicators for fisheries management” (April 2004, Paris, France);
- MONITOR member to represent PICES at the meeting of ICES/IOC Steering Group for GOOS (April 2004, Tenerife, Spain);
- PICES representative to participate in NEAR-GOOS activities in conjunction with the 6th WESTPAC Symposium (April 2004, Hangzhou, People’s Republic of China);
- Co-Chairmen of CCCC-IP to attend the 2nd interim Science Board meeting (spring 2004);
- TCODE member from Russia to attend the meeting of the ICES Study Group on *Development of Marine Data Exchange Systems using XML* (May 2004, Oostende, Belgium);
- One scientist to participate in the joint NOAA/GCP/PICES workshop on “Understanding North Pacific carbon cycle change: Data synthesis and modeling” (June 2004, Seattle, U.S.A.);
- One scientist to attend the MODEL Workshop on “The development of a model on coupled responses of lower and higher trophic levels for climate variability in the North Pacific”, August 2004, Seattle, U.S.A.;
- PICES representative to participate in the SCOR General Meeting (September 2004, Venice, Italy);
- Two scientists to participate in the CREAMS/PICES workshop on “Japan/East Sea circulation: What we know and how well can we forecast?”, summer 2005, near Vladivostok, Russia.

Trust Fund

- One Russian scientist to participate in the MBM-AP Workshop on “Combining data sets on diets of marine birds and mammals II” at PICES XIII;
- One Russian and one Chinese scientist to attend the workshop on “Developing a North Pacific HAB data resource II” at PICES XIII;

Science Board Chairman

- Science Board Chairman to attend the Symposium on “Quantitative ecosystem indicators for fisheries management” (April 2004, Paris, France), 2nd interim Science Board Meeting (spring 2004), the ICES Annual Science Conference (September 2004, Vigo, Spain), and PICES Thirteenth Annual Meeting (October 2004, Honolulu, U.S.A.).

The Science Board Chairman and Executive Secretary are instructed to use the following criteria suggested by the Science Board in prioritising additional requests:

- Consider whether the proposed activity will contribute to the strategic plans of PICES;
- Balance travel support requests among PICES Committees and Programs; and
- Use PICES funds to bring people to PICES rather than for sending them to other meetings.

03/S/3: Publications

The following publications were approved:

PICES Scientific Report Series in 2004

- Report for the Census of Marine Life on “Marine life in the North Pacific Ocean: The known, unknown and unknowable”;
- Report from the MONITOR workshop on “Examine and critique a North Pacific Ecosystem Report”;
- Final report of WG 14 on *Effective sampling of micronekton*;
- Proceedings of the 3rd PICES workshop on “Okhotsk Sea and adjacent areas”;
- Guide of best practices for oceanic CO₂ measurements and data reporting (WG 17);
- Proceedings of the 2004 IFEP workshop.

PICES Scientific Report Series in 2005

- Final report of WG 16 on *Climate change and fisheries management*.

Special issues of primary journals in 2003

- *Marine Environmental Research* - papers resulting from the 1999 MEQ Practical Workshop (Guest editors: Richard F. Addison and John E. Stein);
- *Journal of Oceanography* - selected papers from the 2002 PICES Symposium on *North Pacific transitional areas* (Guest editors: Michio J. Kishi, Daniel Lluch-Belda, Stewart M. McKinnell, Arthur Miller and Yoshiro Watanabe);
- *Progress in Oceanography* - selected papers from the 2001 BIO Topic Session on *Plankton size classes, functional groups and ecosystem dynamics* (Guest editors: Alexander S. Bychkov and Angelica Peña);
- *Fisheries Oceanography* - selected contributions to the joint PICES/GLOBEC sessions at the GLOBEC Open Science Meeting.

Special issues of primary journals in 2004 and beyond

- *Journal of Oceanography* (2004)- invited papers on *Synthesis of JGOFS North Pacific Process Study* (jointly with JGOFS) (Guest editors: Toshiro Saino, Alexander Bychkov, Chen-Tung A. Chen and Paul J. Harrison);
- *Journal of Marine Systems* (2004) - selected papers from the 2002 BIO/POC/FIS Topic Session on “The importance of biophysical coupling in concentrating marine organisms around shallow topographies” (Guest editors: Richard D. Brodeur and John Dower);
- *Progress in Oceanography* (2004) - selected papers from the PICES/CREAMS workshop on *Recent progress in studies of physical processes and impact to the Japan/East Sea ecosystem* (Guest editors: Stewart M. McKinnell, Alexander Bychkov, Kyung-Ryul Kim and Makoto Terazaki);
- *ICES Journal of Marine Research* (2004) - selected papers from the 3rd Zooplankton Production Symposium on “Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans”

(Guest editors: Roger Harris, Tsutomu Ikeda, William Peterson and Luis Valdez);

- *Ecological Modelling* (2005) – selected papers on NEMURO and NEMURO.FISH models (Guest editors: Shin-ichi Ito, Michio Kishi, Bernard Megrey and Francisco Werner).

Other

- North Pacific Ecosystem Status Report;
- Book on History of PICES.

03/S/4: Future of current Working Groups

- WG 14 on *Effective sampling of micronekton* will continue its activities and produce a final report in 2004;
- WG 15 on *Ecology of harmful algal blooms in the North Pacific* has completed its terms of reference and will be disbanded (see also Decision 03/A/5 below);
- WG 16 on *Climate change, shifts in fish production and fisheries management* will continue its activities and produce a final report in 2005;
- Study Group on *PICES Capacity Building* has completed its report (*SB Endnote 14*) and will be disbanded.

03/S/5: New PICES Groups

- A Section on *Harmful algal blooms and their impacts* will be formed under MEQ, with the Terms of Reference described in *SB Endnote 7*. This also implies that WG 15 on *Ecology of harmful algal blooms in the North Pacific* will be disbanded.
- A Working Group on *Mariculture in the 21st century – The intersection between ecology, socio-economics and production*, will be established under the direction of MEQ and FIS, with the Terms of Reference described in *SB Endnote 6*.
- A Study Group on *Ecosystem-based management science and its application to the North Pacific* will be formed under the direction of FIS and MEQ, with the Terms of Reference described in *SB Endnote 5*.

- A Study Group on *PICES Strategic Issues* was established (at the 2003 interim Science Board/Governing Council meeting) under the direction of the Governing Council to develop a Strategic Plan for the Organization.
- A Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries* will be established under the direction of Science Board to deal with the request for scientific advice received from the United States. The Terms of Reference are provided in *GC Appendix B*.

03/S/6: Relations with other organizations and programs

Council approved the revised Standing List of International Organizations and Programs, and agreed with the identified priorities for interaction in 2003 (*SB Endnote 10*).

03/S/7: Improvement of participation in PICES activities

- i. Council requested national delegates to follow up on Decision 96/S/6 and the recommendation of the PICES Review Committee, and consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance.
- ii. Council approved that national membership lists be confirmed prior to each Annual Meeting and be included as Appendices in the Annual Report. This will help maintain a historical record of PICES membership, and may help to improve participation in activities of the Organization.
- iii. Council instructed the Executive Secretary to regularly prepare terms of reference and other relevant information for new members, and circulate these documents to national delegates. National delegates are encouraged to clarify the responsibilities of members at the time of their appointment.

GC Appendix B

Terms of Reference for Study Group on *Potential implications of recent regime shifts in the North Pacific for fisheries*

1. Examine the request from the United States on the potential effects of recent climate-ocean changes in the North Pacific on fisheries, and clarify what can be delivered by PICES;
2. Gather appropriate information to respond to the request, develop a draft document for discussion, and develop plans for a workshop to be held in late June 2004 to discuss this document and to gather broader input;
3. Conduct the workshop and provide a final written report by summer 2004, for review by PICES.

GC Endnote 1

Participation List

Canada

Robin Brown (alternate delegate)
Laura Richards

Japan

Junzo Fujita (advisor, October 18 only)
Tatsu Kishida (advisor)
Tokimasa Kobayashi
Motobumi Manabe (advisor)
Tokio Wada (advisor)

People's Republic of China

Not presented

Republic of Korea

Keun-Oh Kim (advisor)
Yong-Ju Lee
Hyun-Churl Lim

Russia

Lev N. Bocharov
Igor I. Shevchenko (advisor)
Pavel Vorobyov (advisor)

U.S.A.

George Boehlert
Richard J. Marasco
Elizabeth J. Tirpak (advisor)

Other

Vera Alexander (Chairman, PICES)
Alexander S. Bychkov (Executive Secretary)
Hyung-Tack Huh (Past-Chairman, PICES)
R. Ian Perry (Science Board Chairman,
October 18 only)

GC Endnote 2

Governing Council Meeting Agenda

1. Opening remarks
2. Adoption of agenda and meeting procedures
3. Preliminary report on administration
4. Report of Science Board/Governing Council 2003 interim meeting
5. Membership and observers from other countries
6. Relations with relevant international and regional organizations/programs
7. Report of Study Group on *PICES Strategic Issues*
8. Report of Study Group on *PICES Capacity Building*
9. PICES Intern Program
10. PICES Visiting Scientist Program
11. Improvement of participation and productivity of PICES committees and groups
12. Schedule and financing of future Annual Meetings of the Organization
13. North Pacific Ecosystem Status Report
14. Report of Science Board
15. Proposed changes to PICES' Rules of Procedure and Financial Regulations

16. Report of Finance and Administration (F&A) Committee

17. Appointment of F&A Chairman
18. Other business

GC Endnote 3

Report on Administration for 2003

I. Annual contributions

According to Financial Regulations 5(ii), all national contributions to PICES are payable by

U.S.A.-----December 6, 2002
Japan -----December 11, 2002
Canada -----January 13, 2003
Russian Federation-----April 2, 2003 (96.5%) and July 18, 2003 (3.5%)
Republic of Korea-----May 5, 2003
People's Republic of China-----October 3, 2003 (78%)

the first day of the financial year (January 1) to which they relate. The initial request was sent on November 8, 2002, and a reminder on March 4, 2003. Dues for 2003 were paid as follows:

II. External and additional funding

Serious efforts were made this year to get external and additional funding for various activities initiated by PICES. The following reflects special contributions and grants received:

- The remainder of the Nakajima Foundation grant, approved in 2001, was used this year to finance a MODEL workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model” (March 3-6, 2003, Yokohama, Japan).
- A grant of \$69,480 (US \$45,000) from the Alfred P. Sloan Foundation, approved in 2002, will be used this year to produce a report entitled “Marine life in the North Pacific Ocean: The known, unknown and unknowable”.
- The North Pacific Research Board (NPRB, U.S.A.) agreed to fund the sample collection and analysis for the east-west transect the PICES Continuous Plankton Recorder (CPR) survey of the North Pacific and southern Bering Sea, at the level US \$185,000 for two years, from July 2003 to June 2005.
- The Gulf of Alaska Ecosystem Monitoring and Research Program (GEM) of EVOS (Exxon Valdez Oil Spill Trustee Council, U.S.A.) agreed to fund the sample collection

and analysis for the north-south transect of the PICES CPR survey from 2004 to 2006, at the level of US \$120,000 per year.

- Alaska Fisheries Science Center (National Marine Fisheries Service, NOAA, U.S.A.) contributed US \$12,450 to finance the development of the North Pacific Ecosystem Status Report.
- The EVOS/GEM Program contributed US \$16,000 to support the development of the North Pacific Ecosystem Status Report in US *FY 2003* (October 1, 2002 - September 30, 2003) and US \$16,600 for the continuation of this work in US *FY 2004* (October 1, 2003-September 30, 2004).
- Southwest Fisheries Science Center (National Marine Fisheries Service, NOAA, U.S.A.) offered US \$18,200 to facilitate the gathering and coordination of potential international PaCOS (Pacific Coastal Observing System) contributions and to design basic governance structure options for coordinating biological observations between the United States, Canada and Mexico.
- The Japan Fisheries Research Agency provided a grant of JPY 6,000,000 (from April 2003 to March 2006) to support international collaboration on the development of a model on coupled response of lower and higher trophic level ecosystems for climate variability in the

North Pacific. This grant will be used to convene 3 workshops – 2 in Japan (2003 and 2005) and 1 in the United States (2004).

- The Scientific Committee on Oceanic Research (SCOR) approved two grants to support travel of scientists from countries with “economies in transition” to scientific meetings organized by PICES: US \$7,000 for the joint PICES/GLOBEC/ICES Zooplankton Production Symposium (May 19-23, 2003, in Gijón, Spain) and US \$5,000 for PICES XII (October 10-18, 2003, in Seoul, Korea).
- IOC (Intergovernmental Oceanographic Commission) provided US \$6,000 to PICES for the publication of the “Guide of best practices for oceanic CO₂ measurements and data reporting” being prepared by the PICES WG 17 on *Biogeochemical data integration and synthesis*, to ensure a large print run. This publication is expected in 2004.
- GLOBEC contributed about \$4,630 to finance the production of a special joint PICES/GLOBEC issue of PICES Press that focused on results of the PICES Eleventh Annual Meeting and the Second GLOBEC Open Science Meeting, held sequentially in Qingdao, People’s Republic of China, in October 2002.
- In addition to their annual fees, Canada and U.S.A. contributed \$10,000 and \$17,200, respectively, to finance the 2003 PICES Intern Program.

III. Inter-sessional meetings

The following inter-sessional meetings were convened/co-sponsored, for which financial, travel and logistical arrangements were made:

- A 2-day Fifth Annual Workshop on *Coastal ocean ecosystem*, February 11-12, 2003, in Newport, U.S.A.;
- A 4-day MODEL Workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model” (co-sponsored by the Nakajima Foundation), March 3-6, 2003, in Yokohama, Japan;
- A 5-day international inter-comparison of underway and drifting/mooring-based pCO₂ measurement systems (co-sponsored by several Japanese agencies/institutes), March

10-14, 2003, in Hazaki, Japan;

- A 3-day interim meeting of Science Board/Governing Council, April 7-9, 2003, in Victoria, Canada;
- A 4-day PICES/GLOBEC/ICES Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans” (co-sponsored by SCOR), May 20-23, 2003, in Gijón, Spain (the largest and most exciting zooplankton meeting that has ever been convened, with 333 participants from 38 countries from 6 continents);
- A 1-day Workshop on “Climate variability, zooplankton abundance and distribution – comparative opportunities from the world’s oceans” was held immediately prior to the Zooplankton Production Symposium to develop suggestions for follow-up collaborative projects with ICES and GLOBEC, May 19, 2003, in Gijón, Spain;
- A 3-day Third PICES Workshop on “Okhotsk Sea and adjacent areas” (co-sponsored by TINRO-Center and CoML), June 4-6, 2003, in Vladivostok, Russia;
- A 3-day “North Pacific Ecosystem Status Report” Workshop, August 25-27, 2003, in Victoria, Canada.

The following workshops are to be convened in conjunction with PICES XII in Seoul, Republic of Korea:

- A 2-day Workshop on “Status of Yellow Sea and East China Sea ecosystems” (co-sponsored by CoML), October 9-10, 2003;
- A 2-day MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” (co-sponsored by EVOS/GEM), October 10-11, 2003;
- A 1½-day WG 15/TCODE Workshop on “Harmful algal blooms - harmonization data” (co-sponsored by IOC), October 10-11, 2003;
- A 1-day MBM-AP Workshop on “Combining data sets on distribution and diets of marine birds and mammals”, October 10, 2003;
- A 1-day BASS Workshop to “Examine linkages between open and coastal systems”, October 15, 2003;

Preparation and arrangements are in progress for:

- A 3-day PICES/CoML “Regional marine life expert” Workshop, November 17-19, 2003, in Victoria, Canada;
- A 3-day Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (co-sponsored by EVOS/GEM, SWFSC/NMFS), November 20-22, 2003, in Victoria, Canada;
- A 4-day MODEL Workshop on “Summary and synthesis of contributions from NEMURO and NEMURO.FISH” (funded by a grant from Japan Fisheries Research Agency), December 14-18, 2003, in Yokohama, Japan;
- A 5-day IOCCP/PICES Workshop on “Ocean surface pCO₂, data integration and database development” (co-sponsored by several Japanese agencies), January 13-17, 2004, in Tsukuba, Japan;
- A 3-day IFEP Workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific”, February 10-12, 2004, Victoria, Canada;
- A 1-day joint Canadian-SOLAS/PICES-IFEP session on “Response of the upper ocean to mesoscale iron enrichment” at the TOS/ASLO Ocean Research Conference, February 15-20, 2004, in Honolulu, U.S.A.;
- A 4-day International Symposium on “Quantitative ecosystem indicators in fisheries management”, March 31-April 3, 2004, in Paris, France.

IV. Publications

Publications produced after PICES XI or still in progress include:

PICES Reports:

- PICES 2002 Annual Report;
- PICES Scientific Report No. 24 (July 2003): *CO₂ in the North Pacific*; this report is the final effort of PICES WG 13 and summarizes the research and technical activities that have been conducted by member nations of PICES to synthesize CO₂ data in the North Pacific, and provides a comprehensive picture of the distribution of anthropogenic CO₂ in this region;

- PICES Scientific Report No. 25 (July 2003): *Climate Change and Carrying Capacity Program / Report of BASS/MODEL on Trophic models of the subarctic Pacific basin ecosystems*;
- PICES Scientific Report No. 26 (in progress): *Climate Change and Carrying Capacity Program / Report of the 2003 MODEL workshop to “Develop a marine ecosystem model of the North Pacific Ocean including pelagic fishes”*;
- PICES Scientific Report No. 27 (in progress): *Climate Change and Carrying Capacity Program / Report of the 2002 MONITOR Workshops on “Requirements and methods for early detection of ocean change and Monitoring from moored and drifting buoys”*;
- PICES Scientific Report No. 28 (in progress): *Marine life in the North Pacific Ocean: The known, unknown and unknowable* (report for the Census of Marine Life).

Special issues of primary journals:

- *Canadian Journal of Fisheries and Aquatic Sciences* (December 2002, section in Vol. 59, No. 12) - selected papers from the 2001 FIS Topic Session on “Migration of key ecological species in the North Pacific Ocean” (Guest editor: J. Irvine); the section includes 4 papers by authors from Canada, Japan and Mexico;
- *Deep-Sea Research Part II* (December 2002, Vol. 49, Nos. 24-25) on “North Pacific Biogeochemical Processes” - a collection of contributed papers from JGOFS-related field programs in the North Pacific (Guest editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison); the issue includes an overview and 27 papers by authors from Canada, Japan, Russia and China-Taipei, but majority of papers (21) are from Japan;
- *Journal of Oceanography* (August 2003, Vol. 59, No. 4) - selected papers from the 2002 PICES Symposium on “North Pacific transitional areas” (Guest editors: S. McKinnell, M. Kishi, D. Lluch-Belda, A. Miller and Y. Watanabe); the issue includes 10 papers by authors from Japan, Mexico, U.S.A.) and PICES;

- *Progress in Oceanography* (September 2003, Vol. 57, Nos. 3-4) - selected papers from the 2001 BIO Topic Session on “Plankton size classes, functional groups and ecosystem dynamics” dedicated to the memory of the late Prof. Michael M. Mullin (Guest editors: A. Peña and A. Bychkov); the issue includes 11 papers by authors from Canada, Chile, Japan, Korea and U.S.A.;
- *Marine Environmental Research* (September 2004, Vol. 57, Nos. 1-2) - papers resulting from the 1999 MEQ Practical Workshop (Guest editor: R. Addison); the issue includes 9 papers from all PICES member countries.

Peer-review process was initiated for four special issues to be published in 2004:

- *Progress in Oceanography* - selected papers from the 2002 PICES/CREAMS workshop on “Recent progress in studies of the Japan/East Sea ecosystem” (Guest editors: S. McKinnell, K.-R. Kim, M. Terazaki and A. Bychkov); 13 papers have been submitted by authors from Japan, Korea, Russia and U.S.A.;
- *Journal of Oceanography* – a collection of invited papers on *JGOFS North Pacific Synthesis* (Guest editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison);
- *Journal of Marine Systems* - selected papers from the 2002 BIO/POC/FIS Topic Session on “The importance of biophysical coupling in concentrating marine organisms around shallow topographies” (Guest editors: R. Brodeur and J. Dower); 5 papers have been submitted by authors from Israel, Japan, Mexico and U.S.A.;
- *ICES Journal of Marine Research* - selected papers from the PICES/GLOBEC/ICES Zooplankton Production Symposium on “Role of zooplankton in global ecosystem dynamics: Comparative studies from the world oceans” (Guest Editors: R. Harris, T. Ikeda, S. McKinnell, L. Valdes and W. Peterson); 42 papers have been submitted.

PICES Press - Newsletters

- Vol. 11 No. 1 - joint PICES/GLOBEC issue that focused on the results of PICES XI and the 2nd GLOBEC Open Science Meeting

held sequentially in Qingdao, People’s Republic of China, in October 2002;

- Vol. 11, No. 2 – regular issue.

Other publications

- CD-ROM with PICES Scientific Report No. 23 on *Harmful algal blooms in the PICES region of the North Pacific* was published by IOC for UNESCO training courses for harmful algal bloom scientists and managers in developing countries.
- Final announcement for PICES XII was printed and distributed in April;
- A Book of Abstracts for the 3rd PICES/GLOBEC/ICES Zooplankton Production Symposium on *The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Oceans* was compiled and distributed at the meeting in May;
- A Book of Abstracts for PICES XII was compiled and distributed at the meeting in October.

Review of current publication practices of PICES

Publication activities of the Organization have expanded significantly in the last several years. The Review Committee recommended an external review of current publication practices of PICES. The review was conducted from September 16-19, 2003, by two experts from the National Marine Fisheries Service (U.S.A.). The results were presented at PICES XII and included elsewhere in the Annual Report.

V. Travel and representation at other organization meetings

- Drs. Ian Perry (Science Board Chairman), Makoto Kashiwai (CCCC Co-Chairman) and Alexander Bychkov (Executive Secretary) participated in the Open Science Meeting on “Ocean biogeochemistry and ecosystems”, in Paris, France, in January;
- Dr. Skip McKinnell (Deputy Executive Secretary), attended the Fifth Annual Workshop on “Coastal ocean ecosystem”, in Newport, U.S.A., in February;
- Dr. Alexander Bychkov participated in a conference on “Multilateralism and

international ocean-resources law”, in Berkeley, U.S.A., in February;

- Dr. Skip McKinnell attended a planning meeting for the U.S. CLIVAR-Pacific Decadal Variability project (paid by US CLIVAR) in Washington, DC, U.S.A., in February;
- Dr. F.J.R. “Max” Taylor (WG 15 Co-Chairman) represented PICES at the annual meeting of the ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors*, in Vancouver, Canada, in March;
- Dr. John Stein (MEQ Chairman) represented PICES at the annual meeting of the ICES WG on *Introductions and transfers of marine organisms* in Vancouver, Canada, in March (paid by NMFS);
- Dr. Phillip Mundy (MONITOR member) represented PICES at three sequential ICES meetings (Regional Ecosystem Study Group for the North Sea, the ICES-EuroGOOS Planning Group on the North Sea Pilot Project, and the ICES/IOC Steering Group for GOOS) related to monitoring activities in Nantes, France, in April;
- Full travel support was provided to Dr. Vera Alexander (PICES Chairman), Dr. Ian Perry (Science Board Chairman) and two members of Science Board to attend the PICES interim Science Board / Governing Council Meeting, in Victoria, Canada, in April;
- Ms. Christina Chiu attended the International Fisheries Commission Pension Society Meeting in Halifax, Canada, in May;
- Dr. Alexander Bychkov participated in the Third JGOFS Open Science Conference and the JGOFS SSC meeting, in Washington, DC, U.S.A., in May (paid by JGOFS);
- Dr. Elizabeth Logerwell (FIS member) represented PICES at the NPAFC Research Planning and Coordinating Meeting, in Seattle, U.S.A., in May;
- Drs. Ian Perry, David Mackas and members of the Secretariat travelled to Gijón, Spain, in May, for the PICES/GLOBEC/ICES Zooplankton Production Symposium; Drs. Tsutomu Ikeda (Japan, PICES co-convenor for the Symposium), William Peterson (U.S.A., PICES co-coordinator for associated workshops and Poster Session),

Harold Batchelder (U.S.A., PICES co-convenor for a special workshop) attended the Symposium with their own funding;

- Partial travel support was provided to 27 scientists from countries with “economies in transition” (11 paid by the Trust Fund and 16 by a SCOR travel grant) to attend the Zooplankton Production Symposium;
- Drs. Skip McKinnell (PICES representative and discussion leader on the development of the Okhotsk Sea ecosystem status report) and Tokihiro Kono (Japan, invited speaker) attended the 3rd PICES Workshop on the “Okhotsk sea and adjacent areas”, in Vladivostok, Russia, in June;
- Drs. Michio Kishi (Japan), Bernard Megrey (U.S.A., PICES funding) and Francisco Werner participated in the first Workshop of the Study Group on *Extending ecosystem models to the basin scale*, in Cambridge, UK, in May. The second workshop was planned at the same venue in October 2003.
- Drs. Vera Alexander and Alexander Bychkov represented PICES at the 22nd session of the IOC (Intergovernmental Oceanographic Commission) Assembly, in Paris, France, in June;
- Dr. Alexander Bychkov traveled to Seoul, Republic of Korea, to participate in the CREAMS-III planning workshop and to discuss preparations for PICES XII with the Local Organizing Committee (partly paid by the Seoul National University);
- Full or partial travel support was provided to 11 participants (1 from Canada, 1 from China, 3 from Japan, 3 from Korea, 2 from U.S.A. and 1 from Mexico) to attend the “North Pacific Ecosystem Status Report” Workshop, in Victoria, Canada, in August;
- Dr. Skip McKinnell (invited participant) attended the U.S./NMFS PaCOS (Pacific Coastal Observing System) planning meeting, in Seattle, U.S.A., in September;
- Dr. Vladimir Radchenko (Science Board Vice-Chairman) represented PICES at the 36th SCOR Executive Committee, in Moscow, Russia, in September (paid by Russian government);
- Dr. Ian Perry represented PICES at the ICES Annual Conference, in Tallinn, Estonia, in September;

- Drs. Vera Alexander and Ian Perry and members of the Secretariat travelled to Seoul, Republic of Korea, in October, for PICES XII;
- Full or partial travel support (paid by PICES and co-sponsoring programs and organizations) was provided to 3 invited speakers for the Science Board Symposium, and 15 invited speakers for scientific sessions and workshops at PICES XII, in Seoul, Republic of Korea, in October;
- Partial travel support (paid by the Trust Fund and a SCOR travel grant) was provided to 33 scientists (1 Canadian, 11 Chinese, 1 Japanese, 4 Korean, 15 Russian and 1 U.S.A.) to attend PICES XII. The majority of these scientists are younger than 35 year of age;
- Dr. Skip McKinnell will represent PICES at the CoML Ocean Life Symposium and associated events, in Washington, DC, U.S.A., in October;
- Dr. Elizabeth Logerwell will represent PICES at the NPAFC Eleventh Annual Meeting, in Honolulu, U.S.A., in October;
- Dr. Sei-ichi Saitoh (MONITOR Co-Chairman) will represent PICES at the POGO Fifth Annual Meeting, in Tokyo, Japan, in November;
- Dr. Alexander Bychkov will travel to Japan in November, to participate in the final meeting of the JGOFS North Pacific Synthesis Group in Nagoya (paid by JGOFS), and represent PICES at the First Argo Science Symposium in Tokyo;
- Full or partial travel support will be provided to 2 scientists to attend the workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific”, in Victoria, Canada, in November;
- Full or partial travel support will be provided to 2-3 scientists to participate in the PICES/CoML “Regional marine life expert” Workshop, in Victoria, Canada, in November.

VI. Relations with international scientific organizations and programs

The following reflects expanding relationships with international scientific organizations and

programs that are considered to have the highest priority for PICES with respect to cooperation and facilitation of ecosystem research in the North Pacific during this year:

International Geosphere-Biosphere Program (IGBP)

- Discussion on the role PICES, as a regional organization, can play in implementing marine aspects of the IGBP Phase II continued at the IGBP Congress in June 2003 (Banff, Canada), where PICES was represented by the Science Board Chairman, Dr. Ian Perry.

IGBP 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.
- A joint PICES/GLOBEC issue of PICES Press (Vol. 11, No. 1) was published in February 2003. The issue is focused on the results from PICES XI and the 2nd GLOBEC Open Science Meeting held sequentially in Qingdao, People’s Republic of China, in October 2002.
- PICES and GLOBEC worked together to organize the 3rd Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Ocean” (May 20-23, 2003, Gijón, Spain).
- The GLOBEC Focus 3 Working Group on *Linking biophysical and upper trophic level models* and PICES MODEL Task Team are the key players in the Study Group on *Extending ecosystem models to the basin scale*. The first workshop of this Study Group was held May 28-June 2, 2003, in Cambridge, UK. The second workshop is planned at the same venue in October 2003. It is expected that this activity will result in publication of a background/review paper in *Science* in 2004.
- The objectives of the Science Board Symposium on “Human dimensions of ecosystem variability” at PICES XII

(October 10-18, 2003, Seoul, Republic of Korea) are highly relevant to activities of the GLOBEC Focus 4 Working Group on *Feedbacks from the changes in marine ecosystem structure*, and by the invitation from PICES, GLOBEC agreed to co-sponsor the Symposium by supporting a keynote speaker, Dr. Lawrence Hamilton (U.S.A.).

- PICES will co-sponsor a GLOBEC/SPACC Workshop to compare long-term data on small pelagic fishes from the Kuroshio/Oyashio system with those of other ecosystems in the Pacific and Atlantic Oceans to better understand mechanisms which govern regime shifts (December 8-10, 2003, Tokyo, Japan).
- PICES scientists were, and will continue to be, active participants of planning meetings for a new program on *Ecosystem Studies of Subarctic Seas* (ESSAS). The first meeting was held May 25-28, 2003, in Bergen, Norway; and the second meeting is planned for the coming November. ESSAS is being developed as an international comparative field program that may eventually become a regional GLOBEC program. Planning for ESSAS would benefit from efforts to synthesize current knowledge, and as a first step in this direction, PICES proposed that GLOBEC, PICES and ICES hold a joint workshop in 2004-05 on the comparison of factors controlling the biomass, species composition, and fate of zooplankton (including micro-zooplankton, gelatinous zooplankton, and micronekton such as euphausiids) in the Bering and Barents Seas.

IGBP Joint Global Ocean Flux Study (JGOFS)

- A collection of contributed papers from JGOFS-related field programs in the North Pacific was published as a special JGOFS/PICES issue of *Deep-Sea Research II on North Pacific Biogeochemical Processes* (Guest editors: T. Saino, A. Bychkov, C.-T. Chen and P. Harrison). The issue includes an overview and 27 papers by authors from Canada, Japan, China-Taipei and Russia.
- Selected papers from the PICES/JGOFS Topic Session on “Plankton size classes, functional groups and ecosystem dynamics:

Causes and consequences” at PICES X comprise a special issue of *Progress in Oceanography* (Guest editors: A. Peña and A. Bychkov) published in September 2003. The issue includes 11 papers by authors from Canada, Chile, Japan, Korea and U.S.A.

- A collection of invited papers on *JGOFS North Pacific Synthesis* will be published in a special issue of *Journal of Oceanography* (Guest Editors: T. Saino, A. Bychkov, C.T.A. Chen and P. Harrison) in spring 2004. A CD-ROM with data sets obtained during the *North Pacific Process Studies* will be prepared by the Japan Oceanographic Data Center (JODC) and circulated at the same time.
- Posters summarizing activities of the PICES WG 13 on *CO₂ in the North Pacific* and WG 17 on *Biogeochemical data integration and synthesis* were presented at the 3rd JGOFS Open Science Conference, held May 5-8, 2003, in Washington, DC, U.S.A.

IGBP Surface Ocean-Lower Atmosphere Study (SOLAS)

- Iron enhancement experiments are an important part in the agenda of both SOLAS and PICES. All initial planning for iron enhancement experiments in the subarctic Pacific was made under the PICES umbrella. Recommendations from the PICES Workshop on “Iron Fertilization Experiment in the Subarctic Pacific Ocean” (October 2000, Tsukuba, Japan) were used to design the Japanese Subarctic Pacific Iron Experiment for Ecosystem Dynamics Study (SEEDS) in the western North Pacific (summer 2001) and the Canadian Subarctic Ecosystem Response to Iron Enrichment Study (SERIES) in the eastern North Pacific (summer 2002). The results of these experiments will be published as special issues of primary journals in 2004.
- A PICES IFEP Workshop on “*In situ* iron enrichment experiments in the eastern and western subarctic Pacific” will be held February 10-12, 2004, in Victoria, Canada.
- A 1½-day joint Canadian-SOLAS/PICES session on “Response of the upper ocean to mesoscale iron enrichment” will be held at

the ASLO (American Society of Limnologists and Oceanographers) meeting, February 15-20, 2004, in Honolulu, U.S.A.

IGBP Ocean Biogeochemistry and Ecosystem Analysis Program (IMBER or OCEANS)

- PICES is interested in the development of a new project on ocean biogeochemistry and ecology, and sent representatives to the International Open Science Meeting on “Ocean Biogeochemistry and Ecosystems”, held in January 2003, in Paris, France.

WCRP Climate Variability and Predictability (CLIVAR) Programme

- A 1-day PICES/CLIVAR Workshop on “Climate variability in the Pacific and its impact on the marine ecosystem” was held October 20, 2002, in Qingdao, People’s Republic of China (in conjunction with PICES XI). A follow-up PICES/CLIVAR Workshop on “Scale interactions of climate and marine ecosystems” will be convened in October 2004, in conjunction with PICES XIII (Honolulu, U.S.A.). A planning meeting for the workshop was held in October 2003, at PICES XII.

Scientific Committee on Oceanic Research (SCOR)

- PICES and SCOR have many coinciding interests, and PICES scientists have been important contributors to certain SCOR activities. In 2002, presentations by Dr. Alexander Bychkov (PICES Executive Secretary) at the 26th SCOR General Meeting, and by Dr. Edward Urban (SCOR Executive Director) at PICES XI clearly demonstrated the positive benefits of interactions between SCOR and PICES. This year, Dr. Vladimir Radchenko (PICES Science Board Vice-Chairman) attended the 36th SCOR Executive Committee meeting, and Dr. Akira Taniguchi (SCOR Vice-President) participated in PICES XII, to review and discuss existing and future cooperation between the two organizations. Relationships with GLOBEC, JGOFS and SOLAS are reflected above. Other on-going collaborations between PICES and scientific projects and programs, working groups and

activities established/co-sponsored by SCOR are listed below.

- The overlapping scientific interests of PICES and SCOR-IOC WG 119 resulted in PICES’ involvement in planning and organizing the International Symposium on “Quantitative ecosystem indicators for fisheries management”, to be held March 31-April 3, 2003, in Paris, France. PICES is represented on the Scientific Steering and Organizing Committees for this symposium and provides the use of its web site for on-line registration and abstract submission.
- The SCOR-IOC Advisory Panel on Ocean CO₂ recognized activities of the PICES WG 17 on *Biogeochemical data integration and synthesis* (as well as its predecessor, PICES WG 13 on *CO₂ in the North Pacific*) as essential for improving the overall quality of oceanic CO₂ measurements and resolving data synthesis issues, and adopted PICES as a regional coordination group for Pacific carbon work.
 - To foster international cooperation towards the integration and synthesis of the global CO₂ survey data, IOCCP (International Ocean Carbon Coordinated Project) and PICES collaborate on developing the global database for CO₂ and CO₂-related data, and work on involving other regional groups such as CARINA and the CLIVAR Pacific Panel in this project.
 - A report on *CO₂ in the North Pacific* published in the *PICES Scientific Report Series* (No. 24) in June 2003, summarizes the research and technical activities that have been conducted by member nations of PICES, to synthesize CO₂ data in the North Pacific, and to provide a comprehensive picture of the anthropogenic CO₂ distribution in this region. The report was circulated using both PICES and the SCOR-IOC Advisory Panel mailing lists.
 - A joint IOCCP/PICES Workshop on “Ocean surface pCO₂ data integration and database development” will be held January 13-17, 2004, in Tsukuba, Japan.
 - IOCCP provided US \$6,000 to PICES for the publication of the “Guide of best

practices for oceanic CO₂ measurements and data reporting” being prepared by the PICES WG 17 on *Biogeochemical data integration and synthesis*, to ensure a large print run. Publication is expected in 2004 in the *PICES Scientific Report Series*.

- SCOR-IOC Advisory Panel Ocean CO₂ and IOCCP are invited to participate in the planning and co-sponsor a session on “The impacts of climate change on the carbon cycle in the North Pacific”, to be convened in conjunction with PICES XIII (October 2004, Honolulu, U.S.A.).
- Activities and products of the PICES WG 15 on *Ecology of Harmful Algal Blooms in the North Pacific* are complementary to the efforts of the SCOR-IOC GEOHAB Program. PICES is prepared to discuss involvement in the development/realization of the GEOHAB Implementation Plan by assisting with the coordination of national efforts in the North Pacific.
- SCOR provided two grants to support the travel of scientists from countries with “economies in transition” to scientific meetings organized by PICES: US \$7,000 for the 3rd Zooplankton Production Symposium (May 19-23, 2003, Gijón, Spain); and US \$5,000 for PICES XII (October 10-18, 2003, Seoul, Republic of Korea).

Intergovernmental Oceanographic Commission (IOC)

- IOC and PICES agreed to cooperate on four fronts: (i) ecosystem monitoring (see description under GOOS); (ii) ecosystem indicators (see description under SCOR); (iii) CO₂ data integration and synthesis (see description under SCOR); and (iv) harmful algal blooms (see below).
- A CD-ROM with the PICES Scientific Report No. 23 on *Harmful algal blooms in the PICES region of the North Pacific* was prepared for IOC/UNESCO training courses for harmful algal bloom scientists and managers in developing countries.
- The IOC HAB Programme has already invited PICES to become an equal partner in

HAE-DAT, a IOC/ICES Harmful Algal Event meta-Database which has already compiled 15 years of data from the Western Atlantic, with an idea to build one single global database on HAB occurrences and impacts. A PICES-IOC Workshop on “Harmful algal blooms - harmonization of data” at PICES XII was convened to explore and discuss the interest of PICES member countries in establishing a common database and integrating this database with HAE-DAT.

Global Ocean Observing System (GOOS)

- PICES and GOOS started a dialogue in order to explore the possibility of developing a joint GOOS and PICES approach to ocean observations in the North Pacific, and to define the direction that PICES should take in integrating its regional interests with GOOS.
- PICES has initiated several projects of direct relevance to GOOS: development of the North Pacific Ecosystem Status Report, North Pacific Continuous Plankton Recorder Program, inter-laboratory method comparisons of measurement technique for carbonate parameters in seawater, etc.
- A MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” at PICES XII (October 10-11, 2003, in Seoul, Republic of Korea) and a joint PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (November 20-22, 2003, in Victoria, Canada) are of direct relevance to GOOS.

International Council for the Exploration of the Sea (ICES)

- PICES and ICES worked together to organize the 3rd Zooplankton Production Symposium on “The role of zooplankton in global ecosystem dynamics: Comparative studies from the World Ocean” (May 20-23, 2003, Gijón, Spain).
- At the 2002 ICES Annual Conference, Dr. Ian Perry presented a PICES proposal that included four “themes” which might be of interest for enhanced interactions between ICES and PICES: (i) *teleconnections* -

investigations of whether there is a similarity of forcing and then comparisons of responses in the Atlantic and Pacific Oceans; (ii) *ecosystem reporting* - evaluating, summarizing and conveying the state of marine ecosystems; (iii) *ecosystem-based approaches to the management of marine resources*; and (iv) *harmful algal blooms*. These “themes” were recognized by ICES as affording opportunities for fruitful cooperation.

- To initiate co-operation in specific areas, PICES representatives attended annual meetings of the ICES *Cod and Climate Change* (CCC) Program (April 2002, Copenhagen, Denmark), the ICES/GOOS Steering Group (April 2003, Nantes, France), the ICES WG on *Introductions and transfers of marine organisms* and the ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors* (March 2003, Vancouver, Canada).
- Teleconnections:
 - PICES proposed that PICES, ICES and GLOBEC co-convene a workshop (or series of workshops) in 2004/05, to develop comparisons of zooplankton population variability among the world’s oceans, in particular between the North Pacific and North Atlantic;
 - PICES proposed that PICES, ICES and GLOBEC co-convene a joint workshop that focuses on the comparison of the factors controlling the biomass, species composition, and fate of zooplankton (including microzooplankton, gelatinous zooplankton, and micro-nekton such as euphausiids) in the Bering and Barents Seas. The workshop could be the precursor of a larger, more comprehensive examination of the full ecosystems of all of the sub-arctic seas.
- Ecosystem reporting:
 - The ICES-GOOS Steering Group and PICES’ MONITOR Task Team should work together to identify opportunities for common sampling approaches and techniques (to facilitate North Pacific – North Atlantic comparisons), and in that context, collaborate on implementation of ferry box systems for continuous

underway observations, and the development of biophysical models of these marine systems;

- A 2-day MONITOR Workshop at PICES XII was intended to identify what should be addressed in the North Pacific Ecosystem Status Report, using relevance to management decisions and relation to other pieces in other areas of the North Pacific as selection criteria. Dr. Keith Brander (ICES) was invited to participate in this workshop at PICES’ expense.
- Ecosystem-based management science:
 - ICES accepted PICES’ invitation to co-sponsor a Topic Session on “Ecosystem-based management science and its application to the North Pacific” at PICES XII, by identifying and supporting the travel expenses of a keynote speaker, Dr. Chris Frid (Chairman of the ICES Working Group on *Ecosystem effects of fishing activities*);
 - A new Working Group on ecosystem-based management issues is expected to be established by PICES. Cooperation between this PICES Working Group and the ICES Working Group on *Ecosystem effects of fishing activities* should be advanced by exchanging representatives and organizing joint meetings and workshops;
 - The overlapping scientific interests of ICES and PICES in this area resulted in their involvement (jointly with SCOR, IOC, FAO, GLOBEC, etc.) in planning and organizing the International Symposium on “Quantitative ecosystem indicators for fisheries management”, to be held March 31-April 3, 2004, in Paris, France.
- Species introductions:

The following steps are suggested to further collaboration between the two organizations:

 - Participation of PICES representatives in the annual meetings of the ICES WG on *Introductions and transfers of marine organisms* (WGITMO) and ICES/IOC/IMO Study Group on *Ballast waters and other ship vectors*

- (SGBOSV) in March 2004, in Italy;
- Participation of representatives of WGITMO (and/or SGBOSV) in the meeting of PICES WG 15 (or HAB Section, if formed) and a Topic Session on “Natural and anthropogenic introductions of marine species” to be held during PICES XIII (October 15-23, 2004, Honolulu, U.S.A.);
- A joint ICES/PICES workshop on scientific issues related to *introductions and transfers of marine organisms* in 2005 (possibly in conjunction with the annual meetings of WGITMO and SGBOSV).

North Pacific Anadromous Fish Commission (NPAFC)

- In March 2002, NPAFC and PICES, along with NASCO (North Atlantic Salmon Conservation Organization), IBSFC (International Baltic Sea Fishery Organization) and ICES, co-sponsored an international symposium on “Causes of marine mortality of salmon in the North Pacific and North Atlantic Ocean and in the Baltic Sea”. A proposal was received to consider holding an international scientific symposium on “Factors affecting mortality of salmon at sea” in 2005 or 2006, in Europe, with the same group of sponsors.
- Dr. Douglas M. Eggers attended the PICES North Pacific Ecosystem Status Report Workshop in August 2003, and presented a report on the status of North Pacific salmon on behalf of NPAFC, as a contribution to the *North Pacific Ecosystem Status Report*.
- At a meeting between the Chairman of PICES Science Board and the Chairman of NPAFC CSRS Committee, it was recommended that (i) PICES issue a “formal invitation” to NPAFC to present a report on the status of North Pacific salmon at each PICES Annual Meeting (the most appropriate venue within PICES for presentation of this report was left for discussion in PICES); and (ii) NPAFC consider an invitation to PICES to present the North Pacific Ecosystem Status Report to NPAFC Annual Meetings.
- It is proposed that a 3-day joint NPAFC-

PICES Symposium with the working title “State of Pacific salmon and their role as indicators of the health of North Pacific ecosystems” be held in 2005, in conjunction with the NPAFC Annual Meeting in Korea, in part to celebrate Korea becoming a member of NPAFC.

Other regional International Fisheries Organizations

- The Inter-American Tropical Tuna Commission (IATTC) and the International Pacific Halibut Commission (IPHC) provided information on species of their concern for the first PICES *North Pacific Ecosystem Status Report*.

Census of Marine Life program (CoML)/Sloan Foundation

- In 2002, PICES was awarded a grant of US \$45,000 from the Alfred P. Sloan Foundation to produce (by December 31, 2003) a report for the Census of Marine Life entitled *Marine life in the North Pacific Ocean: The known, unknown and unknowable*.
- As a part of the process of developing this report, as well as for a PICES North Pacific Ecosystem Status Report, PICES and CoML held in 2003, two regional workshops: “Okhotsk Sea and adjacent areas” (June 4-6, Vladivostok, Russia) and “Status of the East China Sea and Yellow Sea ecosystems” (October 9-10, Seoul, Korea), to summarize and review available information in each region of interest.
- A PICES/CoML *Regional marine life expert Workshop* will be held in November 2003 (Sidney, Canada) to discuss the final draft of the report for CoML.

EVOS Gulf of Alaska Ecosystem Monitoring and Research Program (GEM)

- EVOS/GEM agreed to fund the sample collection and analysis for the north-south transect of the PICES Continuous Plankton Recorder (CPR) survey from 2004 to 2006, at the level of US \$120,000 per year.
- EVOS/GEM contributed US \$16,000 for the development of the *North Pacific Ecosystem Status Report* in US FY 2003 (October 1,

2002-September 30, 2003) and US \$16,600 for the continuation of this work in *US FY 2004* (October 1, 2003-September 30, 2004). These grants include support for the MONITOR Workshop to “Examine and critique a North Pacific Ecosystem Status Report” (October 10-11, 2003, Seoul, Korea), and the PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” (November 20-22, 2003, Victoria, Canada).

North Pacific Research Board (NPRB)

- The North Pacific Research Board (U.S.A.) agreed to fund the sample collection and analysis for the east-west transect of the PICES Continuous Plankton Recorder survey of the North Pacific and southern Bering Sea at the level of US \$185,000 for two years, from July 2003 to June 2005.

Pacific Coastal Observing System (PaCOS)

- Southwest Fisheries Science Center (National Marine Fisheries Service/NOAA, U.S.A.) offered US \$18,200 to facilitate the gathering and coordination of potential international PaCOS (Pacific Coastal Observing System) contributions, and to design basic governance structure options for coordinating biological observations between the United States, Canada and Mexico.
- A joint PICES/PaCOS Workshop on “Development of pilot coastal monitoring program(s) in the NE Pacific” will be held in November 20-22, 2003, in Victoria, Canada. The workshop will be co-sponsored by EVOS/GEM.

VII. PICES Intern Program

See GC Agenda item 9 for details.

VIII. PICES database

The general functions of the PICES database are to hold and update information of all the people who attended meetings, members of PICES groups, libraries and organizations, meetings, abstract submissions, meeting finances (the tracking of registration fee payments, financial

support grants, etc.), as well as to generate various printouts such as participation lists, lists of papers sorted by session/country/speakers, confirmation letters to meeting participants regarding their presentations, meeting schedules, registration fee payment summaries, mailing list labels, poster session labels, nametags etc.

The database was constructed after PICES X, and tested for the first time at PICES XI in October 2002 (Qingdao, People’s Republic of China). The database was subsequently updated, improved and cleaned from duplication and programming errors in 2003. Some tables and functions in the database were modified to improve on-line registration and abstract submission for various meetings. The improved database was tested at the PICES/GLOBEC/ICES Zooplankton Production Symposium in May 2003 (Gijón, Spain).

A new utility was written to create the “Index of Authors” table. This table is a part of every “Book of Abstracts” prepared for meetings organized or co-sponsored by PICES. Before this new function, the “Index of Authors” was created manually, which was tedious. Now it is generated automatically, and that assures accuracy and allows easy update due to last minute changes. This utility has been successfully tested during the preparation for PICES XII.

IX. PICES web site

This form of communication is extremely important, and should be a priority within PICES. Unfortunately, due to the lack of expertise at the Secretariat and the limited financial resources, the current PICES web site is badly out-dated and in need of a major overhaul. At the 2003 interim Science Board/Governing Council meeting, the Secretariat was requested to develop a plan to improve the web site for discussion at PICES XII. This plan includes three important aspects: (1) immediate updating of material and ongoing maintenance of the web site; (2) longer-term re-design of the web site; and (3) determining and providing information for the web site.

Immediate updating and ongoing maintenance of the web site

- Ms. Julia Yazvenko, PICES' Administrative Assistant, was tasked with the responsibility of maintaining the web site on a regular basis;
- Additional funds need to be allocated every year under "Contractual Services" to assist in maintaining the web site;
- All Annual Reports, Scientific Reports and Newsletters will be added to the web site immediately after its re-design.

Re-design of the web site

In July 2003, PICES signed a 6,000-dollar contract with *Sage Internet Solutions Ltd.* to re-design the PICES web site. The re-design will:

- Improve the web site esthetically
 - Templates, Style Sheets and/or server-side includes will be used to maintain a consistent look and feel throughout the entire site;
- Make the web site user-friendly
 - Local search engine will provide easy access to all of the key areas of the site, while not hiding or burying any important information;
 - When searching the site by designated fields, matching results will be listed on a smaller page, eliminating lengthy scrolling and making the pages more printer-friendly;
 - On-line meeting registration and abstract submission will be advanced by using a common registration area;
- Enhance communication within various groups

- Each Committee, Working Group, Project and the CCCC Program will have their Pages on the web site;
- The "*Discussion Club*" feature will allow members of the Committees, Working Groups and CCCC Program to edit their products on-line;
- The "*ListServ*" system will improve distribution of information within the group.

Determining and providing information for the web site

- The Secretariat cannot be responsible for determining what information goes onto the web site;
- Members of Science Board and Governing Council were requested to provide the Secretariat with suggestions of the information that is necessary on the uppermost levels of the website by June 10 (This Action item #16.4 of the 2003 interim Science Board/Governing Council meeting was not implemented);
- All Committees and the CCCC Program, including Working Groups, Task Teams and Advisory Panels, were requested to discuss and identify what information should be included in the PICES web site, in particular for their group page, and how this information should be provided to the website (i.e. the "flow" of information from Committee. Responses to the Secretariat and Science Board were expected by August 1, for circulation prior to PICES XII (This Action item #16.3 of the 2003 interim Science Board/Governing Council meeting was not implemented).

GC Endnote 4

Report of 2003 interim Governing Council meeting

The Governing Council met from 13:30-17:30 on April 9, 2003, immediately after the first joint interim Science Board/Governing Council meeting. All Contracting Parties were represented at the meeting. The Chairman, Dr. Vera Alexander, also invited Science Board members to attend. She welcomed the participants (*GC-IM Endnote 1*) and reviewed the provisional agenda. One addition – approval of the report of interim Science Board/Governing Council meeting - was made as Agenda Item 1. Canada proposed the adoption of the agenda (*GC-IM Endnote 2*), seconded by the Republic of Korea.

Agenda Item 1. Report of 2003 interim Science Board/Governing Council meeting

The Chairman noted that the first interim Science Board/Governing Council meeting (April 7-9, 2003) was very worthwhile, and that all member countries and Standing Committees and Scientific Programs profited from the experience of having Science Board meet with Governing Council. Council approved the report and complimented the Science Board Chairman, Dr. Ian Perry, on his excellent work in preparing for and convening the meeting.

Agenda Item 2. Preliminary Report on Administration for 2003

The Executive Secretary summarized the activities of the Organization and the Secretariat since PICES XI. The Chairman noted further improvements in the timeliness of payments of annual fees to the Organization from most member countries, and thanked the United States, Japan, Canada and Russia for their performance. The Republic of Korea reported that they will pay the 2003 annual fee within their second fiscal quarter. The People's Republic of China stated that they will attempt to pay the 2003 annual dues and the outstanding balance from 2002 by September 2003.

Council reviewed the external funding and voluntary contributions received since PICES

XI, and thanked Science Board and the Secretariat for their efforts. Dr. Richard Marasco noted that funding constraints can impede the improvement of the Organization, and therefore fund-raising is an essential function of the Finance and Administration Committee (F&A). However, various foundations in the United States are more inclined to fund specific projects, and for F&A to proceed effectively, proposals developed by the Science Board and/or Scientific Committees are needed.

The discussion that followed focused on potential funding sources for specific activities initiated by PICES. Dr. George Boehlert suggested that the expertise in micronekton in PICES could form the focus of a workshop followed by a pilot project for the Census of Marine Life. There are no pilot projects that target the mid-water regions of the world ocean, and PICES could organize this effort. He also recommended contacting NOAA Global Programs about helping to fund the publication of the "Guide of best practices for oceanic CO₂ measurements and data reporting". Dr. Alexander suggested the communication and cooperation with regional scientific research efforts in the North Pacific such as the North Pacific Research Board. She also indicated that PICES should consider pairing with some other entities to apply for funding for educational/training/outreach projects.

Agenda Item 3. Membership and observers from other countries

Mexico

At PICES VIII (October 1999, Vladivostok, Russia), Council adopted a resolution reflecting a strong interest in having Mexico accede to the PICES Convention (Decision 99/A/5). This interest was confirmed at PICES IX (October 2000, Hakodate, Japan), and during a visit of a PICES delegation to Mexico (La Paz) in May 2001 (Decision 00/A/6). Progress in developing PICES-Mexico relations since PICES X is reflected in the 2002 Annual Report.

At last year's Annual Meeting, Council discussed future actions to accelerate the process in having Mexico accede to the PICES Convention. It was noted that even though the Mexican scientific community has a strong interest for Mexico to join PICES, implementing recommendations from the 2001 joint PICES/Mexico meeting in La Paz is going slower than expected.

One of the recommendations at PICES XI was to send a formal invitation letter to the Mexican Ministry of Foreign Affairs, but another suggestion was that PICES should continue its effort through contacts with the Directors of Mexican marine research institutes and the Mexican National Oceanographic Committee. Council instructed the Chairman and Executive Secretary to explore both approaches.

The Executive Secretary reported on the correspondence with Dr. Patricio A. Bernal (IOC Executive Secretary and Assistant Director-General of UNESCO) and Dr. Daniel-Lluch-Belda (organizer of the 2001 joint meeting in La Paz). They both suggested that the National Oceanographic Committee is the right Mexican body to approach to coordinate Mexico's intention to join PICES. Dr. Bernal indicated that it is the only body that represents the Mexican Government above all institutions, agencies and universities in ocean research and related matters, and the coordination offered by the National Oceanographic Committee would be extended to other areas, including, especially, the environment and fisheries.

After a lengthy discussion, Council approved the following actions:

- To send a formal letter inviting Mexico to join PICES through the Embassy of Mexico in Canada;
- To continue contacts with the Mexican National Oceanographic Committee, including a meeting of PICES representatives with Ing. Marco Polo Bernal (Undersecretary of State on Education and Investigation Technologies and Mexican representative on IOC) at the 36th Session of the IOC Executive Council and/or the 22nd Session of the IOC Assembly, in June 2003;

- To encourage the Directors of Mexican marine research institutes represented at the joint meeting in La Paz to send letters to the National Oceanographic Committee expressing their interest for Mexico to join PICES;
- To explore the practical value of another visit of a PICES delegation to Mexico.

Democratic People's Republic of Korea

At PICES XI, the Republic of Korea advocated that the Twelfth Annual Meeting in Seoul is a good opportunity to involve scientists from the D.P.R. Korea in PICES activities. The Executive Secretary was requested to find an appropriate way of sending invitation letters and information about PICES XII.

A preliminary list of contacts was prepared with assistance from the Center for East Asian Studies (Monterey Institute of International Studies, U.S.A.). More information on potential contacts and appropriate contact procedures with the D.P.R. Korea is needed and will be requested from the Ministry of Maritime Affairs and Fisheries (Republic of Korea) and the State Oceanic Administration (People's Republic of China). Considering the current political situation in the region, Council agreed to defer sending invitation letters to the D.P.R. Korea until a more appropriate occasion arose.

Agenda Item 4. PICES Intern Program

The PICES Intern Program was approved in 1999 (Decision 99/A/7) and commenced in 2000. At PICES XI, Council examined the results from the first three years of the Intern Program, and concluded that the Organization and member countries are benefiting from the Program, and that it should be continued.

Ms. Natalya Bessmertnaya (TINRO-Center, Russian Federation) completed her term on March 21, 2003, and Mr. Chuanlin Huo (National Marine Environmental Monitoring Center, State Oceanic Administration, People's Republic of China) is expected to start his term in April 2003.

The Intern Program was not budgeted for in the years 2000-2002, and has been financed solely by voluntary contributions. At PICES X, Council approved the use of registration fees collected from the Annual Meetings to finance the Program (Decision 01/A/4(iv)), but noted that this will limit the ability of the Organization to support high priority projects identified by Science Board. The Executive Secretary reported that according to the instructions from Council, letters were sent (March 3, 2003) to invite voluntary contributions from member countries to support the Intern Program in 2003 and beyond. At the meeting, Mr. Douglas Bancroft confirmed that in addition to the annual fee, Canada agreed to provide \$10,000 in support of the 2003 Intern Program. Council commended Canada for its contribution and requested other member countries to examine the possibility of making voluntary contributions to the Intern Program, and inform the Secretariat on this matter by May 31, 2003.

At PICES XI, Council decided to re-visit the guidelines for recruiting and selecting interns, methods of advertising, as well as the level of stipend provided to the intern. Dr. Laura Richards worked with the Executive Secretary on these issues. The following recommended changes were accepted by Council:

- To advertise the Intern Program on the PICES web site;
- To encourage national delegates to take additional measures to advertise the Intern Program within their countries;
- To require that applicants send a copy of their application to the PICES Secretariat.

These changes are to be included in the *Guidelines for application and selection procedure* section for the Intern Program, and the revised document posted on the PICES web site by April 30, 2003.

The Executive Secretary presented (see table below) a comparison between the stipend (maximum 1-year term) for PICES interns and fellowships (2-3 year term) provided by the National Science and Engineering Research Council of Canada (NSERC). It was agreed that F&A will review this information and discuss

the level of stipend for the interns at PICES XII.

Stipend/Fellowship	Per year before tax	Per year after tax
PICES Internship	\$24,000	\$24,000
Postdoctoral Fellowship	\$35,000	\$27,838
NATO Science Fellowship	\$33,000	\$26,061
Visiting Fellowship for Canadian Government Labs	\$39,000	\$30,878

It was also suggested that an expanded Intern Program that includes scientific interns, in addition to administrative interns, might be valuable. Funding opportunities for such extension have to be explored by national delegates and the Secretariat.

Agenda Item 5. PICES Visiting Scientist Program

In the last 2-3 years, Science Board has recommended, subsequently approved by Governing Council, an increasing variety and number of activities for scientists working toward achieving PICES scientific goals. Evidence of rapid growth is apparent in the number of events in which the Organization is involved, and in the scope and variety of its publications. Increasing activity in PICES reflects a growing interest among scientists of member countries to look beyond their own national jurisdictions for solutions and answers to many of society's pressing questions about the health and functioning of marine ecosystems. Despite these growing societal pressures on marine ecosystems, there has been no consensus among member countries on the level of financial or human resources required to sustain the cooperative activities of their scientists. Council has endorsed increasing staffing levels at the PICES Secretariat, but only if it can be implemented within the inflation adjusted annual contribution.

At PICES X, Council approved the PICES Visiting Scientist Program (Decision 01/A/6) with two main objectives: (i) to provide professional development of marine scientists and managers from PICES member countries; and (ii) to strengthen the capacity of the Organization to develop and implement projects that have high priority for PICES and member countries. The Program is seen as an opportunity to improve the functioning of the Organization without increasing annual contributions. It provides an opportunity for member countries and/or national agencies to contribute human resources to support key projects of the Organization, which are also of specific interest for country/agency, e.g. such as the development of the North Pacific Ecosystem Status Report. The expectation was to commence the Visiting Scientist Program in 2002, but despite this opportunity, no member country or national agency has taken advantage of the Program.

At PICES XI, Council reviewed the Program and discussed ways for implementing it in 2003 and beyond. It was noted that the Program should be more widely advertised, the description re-formulated and alternative mechanisms to fund the Program be considered. Dr. Laura Richards worked with the Executive Secretary on these issues. A draft report was presented to Council for review:

Advertising

It was generally accepted that the Visiting Scientist Program should be advertised on the PICES web site, and that national Delegates should be encouraged to take additional measures to advertise the Program within their countries.

Funding

Council also agreed that the Visiting Scientist Program should be open for funding from various sources, such as:

- *Secondment of experts by national agencies or other international organizations:*

An example of an existing arrangement is the secondment of experts by the National Marine Fisheries Service (NMFS) of NOAA

to the Intergovernmental Oceanographic Commission (IOC). The secondment is governed by an MOU developed between IOC and NMFS/NOAA. The MOU spells out the terms of reference for the tasks, responsibilities, duration, as well as the legal terms. Dr. Hyung-Tack Huh also informed Council that KORDI is using the same approach to send their experts to IOC. The PICES Visiting Scientist Program was designed using the IOC Visiting Scientist Program as example, and currently includes the secondment from national agencies as the only mechanism to deploy a member of their staff to the Secretariat. Dr. George Boehlert noted that a variant of this is the NMFS/NOAA rotational assignment program (4-6 months) to advance agency and career, when home institute pays the salary and the NMFS Central Office pays living and travel expenses. Dr. Tokimasa Kobayashi reported that the Japanese Research Agency is establishing a program that will allow Japanese scientists to take such opportunities for overseas appointments, and he will provide Council with details.

- *Voluntary financial contributions from member countries and/or organizations (governmental or non-governmental) with interests in North Pacific marine ecosystem science:*

An example of an existing arrangement is the external funding provided to support the ICES/GLOBEC Coordinator position at the ICES Secretariat. According to the ICES Annual Report for 2001, this position was funded by voluntary contributions by 3 of 19 ICES member countries (Canada, Norway and the United States). The budget for FY 2003, based on current exchange rates, was at a level of CDN\$181,000, of which 94% was salary and benefits. The responsibilities of the office include maintaining information flow among scientists, pace and coordination of the Cod and Climate Change project within the ICES/GLOBEC context, enhancing collaboration between ICES and other organizations that contribute to the

ICES Vision, and attracting a broad range of scientists who might not otherwise participate in ICES workshops, working groups, and theme sessions. In the original prospectus for the ICES/GLOBEC Project Coordinator, regional project coordination, data management, and newsletter preparation were anticipated tasks as well.

- *Research grants from agencies for a specific task that require international cooperation to complete, and could not be done without the expertise and guidance of the scientist residing at PICES:*

For example, a visiting scientist from the western Pacific with knowledge of data sources would be invaluable for comparative studies with eastern data sources that might be more readily accessible, and conversely. The potential partners are: North Pacific Research Board, Exxon Valdez Trustee Council, etc.

Council requested Dr. Laura Richards and the Secretariat to work together to re-write the Visiting Scientist Program by the end of August. Council also asked member countries to keep track of opportunities for the Program that might be available.

Agenda Item 6. Improvement of participation and productivity of PICES committees and groups

The Executive Secretary noted that national delegates are responsible for appointing scientists with relevant expertise to various PICES subsidiary bodies, supporting attendance of these experts at the Annual Meetings and in the work of their groups, and monitoring their performance. He provided examples when member countries failed to nominate or replace their appointed experts, or support their participation at the Annual Meetings. He also reminded Council that the Review Committee discussed this issue and recommended that Contracting Parties should consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities

within PICES that have high national interest and relevance. The Chairman requested national delegates to follow up on this recommendation.

Responding to Dr. Igor Shevchenko's comment that Committee members often tend to represent their agencies' interests and not national interests, the Chairman suggested that the responsibilities of members have to be clarified at the time of their appointment. Council approved Dr. George Boehlert's recommendation that terms of reference and other relevant information for new members should be prepared by the Secretariat and circulated to national delegates.

Agenda Item 7. Audited accounts for fiscal year 2002

The Auditor's Report for *FY* 2002 was circulated by e-mail to all Contracting Parties on March 31, 2003. In the auditor's opinion, the financial statements are an accurate representation of the financial position of the Organization as of December 31, 2002. At the meeting, it was agreed that audited accounts for *FY* 2002 should be reviewed by F&A and presented to Council for approval at PICES XII.

According to the recommendation of F&A at PICES XI, bids were solicited from three auditing firms for PICES' annual external audit. One company did not respond and two bids for the annual audit fee were received: \$3,500 from *Flader & Hale*, and in the range of \$3,800-4,300 from *Moore, Roberts & Co.* Council selected *Flader & Hale* as the auditor for *FY* 2003-2005.

Agenda Item 8. Other business

Review of current publication practices

Publication activities of the Organization have expanded significantly in the last several years. The Review Committee recommended an external review of the current publication practices of PICES. At PICES XI, F&A supported this action and requested that the Executive Secretary explore the costs of having an external review of these activities, and report on the potential costs at the interim meeting of

Science Board/Governing Council. With assistance from Fisheries & Oceans Canada and the Alaska Fisheries Science Center (U.S.A.), two bids were received: at the level \$4,000-4,500 from the Canadian expert, and about \$3,500 from the US expert. Council decided to proceed with the review as soon as possible and instructed the F&A Chairman and the Executive Secretary to review the submitted proposals and select an expert for this activity.

Public outreach

Dr. Vladimir Radchenko noted that PICES has grown into a major international scientific forum in the North Pacific and now it must become more ambitious. PICES is doing a good job exploring new ideas, building cooperative approaches to key scientific questions, and communicating scientific information around the

North Pacific basin and globally. However, there is a perception that communication with the general public and decision makers is not adequate. He suggested that there is a need to do more advertising using various approaches: popular articles for newspapers and journals (University Presses, Fisheries Oceanography, EOS, Sea Grant publications were mentioned in the discussion), interview on radio and TV, news releases, distribution of PICES Press to Embassies of member countries, or even postage stamp series. Some funds are needed for this public outreach and perhaps a special budget should be set aside. Council supported his view but no decision was made. Dr. Laura Richards suggested that a set of recommendations may flow naturally from the work of the Study Group on *PICES Strategic Issues*.

GC-IM Endnote 1

Participation List

Canada

Laura Richards
Douglas Bancroft (advisor)

U.S.A.

George Boehlert
Richard Marasco

Japan

Tokimasa Kobayashi

Other

Vera Alexander (Chairman, PICES)
Harold P. Batchelder (Co-Chairman, CCCC-IP)
Alexander Bychkov (Executive Secretary)
Yukimasa Ishida (Chairman, FIS)
Stewart (Skip) M. McKinnell (Deputy Executive Secretary)
R. Ian Perry (Chairman, Science Board)
Vladimir I. Radchenko (Vice-Chairman, Science Board)

People's Republic of China

Qian-Fei Liu (alternate Delegate)
Jin Ping Zhao (advisor)

Republic of Korea

Hyung-Tack Huh (alternate Delegate)

Russia

Igor Shevchenko (alternate Delegate)

GC-IM Endnote 2

Governing Council Interim Meeting Agenda

1. Report of 2003 interim Science Board/Governing Council meeting
2. Preliminary Report on Administration for 2003
3. Membership and observers from other countries
4. PICES Intern Program
5. PICES Visiting Scientist Program
6. Improvement of participation and productivity of PICES committees and groups
7. Audited accounts for fiscal year 2002
8. Other business

GC Endnote 5

Statement on the naming of “the Sea in dispute” by Mr. Junzo Fujita (Japanese advisor)

We understand that this meeting is not a place to discuss about individual issues such as the naming of certain areas like the “Sea of Japan”. However, we have to claim our position every time we find the name “Sea of Japan” used in a document of PICES together with another name, such as “Japan/East Sea”. Our position on this issue is very simple. We are just asking the PICES Secretariat to change the incorrect name “Japan/East Sea” to the correct name “Sea of Japan”.

It is needless to say that the name “Sea of Japan” is geographically and historically, as well as internationally well established. Some countries argue that the name “Sea of Japan” became widely used from the beginning of the 20th century, as a result of Japan’s expansionism and

colonialism. But it is not true. Historically, the name “Sea of Japan” was first established in Europe from the late 18th century to the early 19th century, and has been used for more than 200 years. The results of our research undertaken last year at the British Library and at the University of Cambridge on this issue showed that 86% of the maps made in Europe since the 18th century use the name “Sea of Japan”.

If a firmly established sea name were to be changed for the political intentions of only a few countries without a valid reason, such an action would not only bring confusion in the world’s geographical orders, but also would leave a bad precedent for generations to come.

Statement on the naming of the Sea in dispute by Mr. Hyun-Churl Lim (Korean delegate)

Let me first express my gratitude to Dr. Vera Alexander and other Governing Council members for providing me with the opportunity to speak before such an esteemed group of scientists.

I would like to address the issue of naming the sea area between the Korean peninsula and the Japanese archipelago. In principle, my government holds the view that this meeting is not an appropriate forum to discuss geographical designations, even an issue of great importance to Korea such as this. However, since our Japanese colleague has presented the Japanese point of view on this, we feel it is necessary to provide you with the Korean position.

Korea is of the view that, considering the historical background to the naming of the sea area in question, as well as international practices for the designation of geographical names, it is the most reasonable solution at this stage to use both names, the East Sea and the Sea of Japan, while the countries concerned make efforts to reach an agreement on a common name. Indeed, this is in accordance with international standardization rules.

We, therefore, believe that the description of the sea area in question in the draft of the North Pacific Ecosystem Status Report appropriately reflects the current stage of development with respect to this issue, and is fully in line with the international norms and practices of cartography. The description is also in conformity with the long-standing practice of PICES when naming the sea area in question. As all of you are fully aware, PICES has been consistent in the use of both names since 1995 when describing the sea area between Korea and Japan.

PICES is an eminent scientific body, which has contributed greatly to the promotion of marine science research in the North Pacific region. We are afraid that a discussion on geographical names within PICES could adversely affect its original functions and activities. We sincerely hope that PICES will focus on its deliberations in marine scientific issues. Korea, therefore, calls upon PICES to maintain its position of using both names in its future publications, including the North Pacific Ecosystem Status Report, until such time as Korea and Japan agree on a common name. This, in turn, will help to

avoid unnecessary and time-consuming discussions on geographical names within PICES.

In closing, I wish all the participants a very productive and successful meeting, thus advancing the work of PICES as a whole.

GC Endnote 6

Tenth Anniversary PICES Organization Review

Preamble

After completing its task, the Review Committee concluded that PICES has grown into an internationally renowned Organization. It has become the major forum for advancing and coordinating marine sciences in the North Pacific, for communication among its scientists of the member countries, for exploration of new ideas and building cooperative approaches to key scientific questions. Scientists from all over the world attend its Annual Meetings, Symposia and Workshops. Publications produced by the Organization are considered to be of the highest quality. Therefore, recommendations contained in this document should be considered “course adjustments” that will hopefully lead to even greater recognition in the scientific community and the global community at large.

Introduction

In October 2001, the North Pacific Marine Scientific Organization (PICES) held its Tenth Anniversary Meeting. At the meeting, the Governing Council decided that it was time to perform an internal audit of the Organization. The view was that such an examination would determine if the original purpose of the Organization is being realized and if the structure is appropriate to achieve the defined objectives. The Governing Council approved the establishment of a Review Committee (Decision 01/A/7) that was charged with tasks specified in *Appendix A*. Review Committee membership is shown in *Appendix B*.

This report of the Review Committee contains a brief description of global scientific issues and how they have changed since the creation of PICES. This discussion is followed by a review of objectives, functions and roles of the Organization, a discussion of the integration of

multiple disciplines, a review of rules of procedure, and an identification of possible changes.

Background

Global scientific issues have changed and expanded during the first ten years of PICES. Principal issues of significance include:

- Broader recognition of the potential for multiple factors affecting ecosystem change:
 - Climate change has been a major focus of PICES, but there are other agents of ecosystem change, *e.g.* fishing, eutrophication, habitat destruction, exotic species introductions, and contaminants;
 - Better recognition of differences of “scale” - i) climate change and fishing are perceived to have basin/global scales, and ii) habitat destruction, eutrophication, species introductions, and contaminants are perceived to impact local or regional scales;
 - MacDonald *et al.* (PICES Scientific Report No. 22, 2002) suggest an integrated and systematic approach to studying these multiple factors of change, including box models, case studies, time series, and development of a “warning system” based on indicators.
- Ecosystems
 - Understanding of the present state of marine ecosystems, the factors causing changes in marine ecosystems, and attempts to manage or mitigate human-caused changes within the context of natural variation;
 - Understudied organisms - non-commercial species; hard-to-sample species; etc.

- Ocean observation networks / ocean operational modeling
 - Emphases are now placed on ocean observing systems, data distribution and integration, syntheses and forecasts – all in a timely manner.
- Ocean–atmosphere coupling
 - Understanding the interactions between atmosphere and ocean in climate variability and change – *e.g.* improved representations of oceans and ocean-atmosphere interactions in global climate models.
- Fisheries issues
 - Fluctuations of (commercial) fish stocks and their causes;
 - New trends, *e.g.*, aquaculture (coastal and offshore within exclusive economic zones);
 - Collection and exchange of fisheries data in a timely manner are problematic.
- Human dimensions
 - The human dimensions of global changes, both as causes and consequences, are becoming recognized and are being incorporated into large international programs.

Review of objectives, functions and roles of PICES

Objectives

- The purpose of the Organization (Article III) is:
- (a) to promote and coordinate marine scientific research in order to advance scientific knowledge of the area concerned and of its living resources, including but not necessarily limited to research with respect to the ocean environment and its interactions with land and atmosphere, its role in and response to global weather and climate change, its flora, fauna and ecosystems, its uses and resources, and impacts upon it from human activities; and
 - (b) to promote the collection and exchange of information and data related to marine

scientific research in the area concerned.

After examining these objectives, the Review Committee concluded that, while broad, they are still relevant.

The Review Committee also considered suggestions to expand the Area Concerned (Article II) to include possibly the entire Pacific Ocean. Scientific arguments in support of this suggestion include the importance of processes occurring in the tropics to conditions in the North Pacific, and comparisons between systems such as the California and Humboldt (Peru-Chile) Currents. The Review Committee does not support formal expansion at this time, as this would require opening the PICES Convention for negotiations and changes. The Review Committee noted that the scientific points in favor of expansion are valid, and that scientific initiatives, discussions, and studies between regions of the North, Tropical, and South Pacific can occur without formal changes to the PICES Convention.

Functions

Functions of the Organization are:

- (1) Identify and prioritize relevant scientific research;
- (2) Promote and coordinate scientific research that facilitates an integrated evaluation of the status of the North Pacific and its ecosystems;
- (3) Promote the collection and synthesis of data;
- (4) Promote the exchange of scientific information and data; and
- (5) Capacity building

The results of the review of how effectively these functions have been carried out by the Organization are reported below:

Function (1)

Each Scientific Committee is charged with the responsibility of developing and reviewing Strategic Plans. Existing documents have emphasized what has been done and have given little attention to the identification of future activities. Further, an explicit prioritization of

issues is currently lacking. The Science Board also has its own Strategic Plan that contains an identification of issues that require attention. However, little attention has been given to the prioritization of issues, identification of associated research activities, and coordination among scientific committees.

Function (2)

An integrated evaluation of the status of the North Pacific and its ecosystems requires the conduct of research activities in a variety of disciplines. The Standing Committees have been created to advance the understanding of critical issues in their associated disciplines and, therefore, their activities have been largely disciplinary in focus by design. While the Committees have promoted scientific research in their associated disciplines, minimal effort has been devoted to the formal identification of issues that would benefit from an integrated approach. In recent years, however, there has been an increase in the number of multi-disciplinary sessions at annual meetings co-sponsored by the Scientific Committees. In keeping with the point identified above under Function (1), co-sponsorship of these sessions has been rather *ad-hoc*, with little attempt to prioritize or follow a strategic direction. The CCCC Program is currently the main mechanism for the coordination of scientific activities that are holistic in character. The focus of this Program has been largely on climate change as a driver in marine ecosystem change. The Review Committee noted that in general there has been little effort devoted to discerning the impacts of human activities. This will change in the future as the overall theme for PICES XII (2003) is "*Human Dimensions of Ecosystem Variability*", and a 1-day Science Board Symposium will be convened on this theme to discuss the many ways that humans interact with marine ecosystems and the scientific efforts required to quantify and predict human impacts on such dynamic systems.

Function (3)

As the Organization progresses in the development of its North Pacific Ecosystem

Status Report, data collection and synthesis will become increasingly important. The collection and synthesis of data are considered broad charges and, therefore, the responsibility of all Committees and Working Groups. Little effort has been made to develop or maintain time series of critical data sets. This could possibly be due to the lack of effort on the part of Scientific Committees to identify relevant data sets and different data exchange policies. Further, limited effort has been made to follow up on findings and recommendations of most Working Groups.

Function (4)

The Technical Committee on Data Exchange (TCODE) is charged with identifying the data management requirements of PICES and developing a strategic plan to meet them. Responsibility for data exchange also rests with the Scientific Committees and programs. To date, there have been exchanges of physical and chemical data. While some biological data have been exchanged, there is a need to expand these activities, especially for fisheries data. Progress on this issue has been slow perhaps because of its complexity, standardization problems and different inter- and intra-data exchanges policies in member countries. PICES has supported Working Groups to foster these activities (*e.g.* WG 17 on *Biogeochemical data integration and synthesis*) and the creation of a Meta-database of marine data sources.

Function (5)

Capacity building is defined as the enhancement of the intellectual capital available to the Organization. To support its goals of promoting and coordinating marine scientific research, PICES must recognize the importance of capacity building. Scientific sessions convened by PICES and the work of its Scientific Committees and other groups, are important contributions to capacity building. PICES has also engaged in activities to support the transfer of knowledge to scientists new to PICES, *e.g.* the Intern Program and travel support for scientists new to PICES to attend Annual Meetings. There is a need to development an

Organizational strategy for capacity building and an Implementation Plan to facilitate this activity.

Integration of multiple disciplines

The discussion began by addressing the question, “Should there be disciplinary Committees?” Experience indicates that Committees work best when they have a disciplinary focus. Effective operation of these Committees is critical to viewing issues in a holistic manner. By providing information needed for analyses, disciplinary Committees facilitate the operations of groups that are charged with working on multi-disciplinary issues. Feedback from multi-disciplinary Working Groups and Scientific Programs to the Committees is considered to be critical to the successful operation of the Organization. The development of the North Pacific Ecosystem Status Report will necessitate input from each of the Committees.

Several Working Groups have been formed to address multi-disciplinary issues, in particular during the early years of PICES. The Bering Sea Working Group (WG 5) and Sub-Arctic Gyre Working Group (WG 6) are two examples. More recently, the Science Board has assigned multi-disciplinary issues to the CCCC Program. The success of the CCCC Program (*e.g.* Perry *et al.* PICES Scientific Report No. 22, 2002) indicates that progress is being made in addressing issues in a multi-disciplinary manner. The accomplishments of this program are considered to be due to the Program’s thematic focus (climate change as a driver in marine ecosystem change) and the development of Science and Implementation Plans. Currently, however, there is little feedback from the CCCC Program to the Committees. Several Annual Meetings have had symposia and sessions that were multi-disciplinary in character, but the follow-up or integration of the findings of these sessions into the further work of PICES has generally been lacking.

Review of existing structure

The current Organizational structure is depicted schematically in *Appendix C*. The Organization

consists of: (a) the Governing Council, (b) permanent or *ad hoc* scientific groups and committees as deemed necessary, and (c) a Secretariat.

Perceived problems

The following are some possible problems that have been identified:

Proliferation of “subsidiary bodies”

The number of “subsidiary” bodies recognized by the Organization has increased in recent years. BIO has an Advisory Panel on Marine Birds and Mammals (MBM); POC has an Advisory Panel on Data Buoys; BASS has an Advisory Panel on the Iron Fertilization Experiment (IFEP) and MONITOR has an Advisory Panel on the Continuous Plankton Recorder Survey (CPR). The duration of these Advisory Panels is frequently unclear. Further, there is no agreement on the number of such panels that should be in existence during any given period of time. “Study Groups” have also been formed to examine specific issues relating to the establishment of new activities or substructures, *e.g.*, the North Pacific Ecosystem Status Report.

Possible reasons for the proliferation of “subsidiary” bodies include:

- A need to facilitate PICES initiation, coordination, and support for specific field data collection and exchange programs (*e.g.* IFEP and CPR Advisory Panels), and
- A necessity to oversee specific activities that are perhaps too detailed for direct supervision by parent Committee, as the membership of the parent Committee is not the most appropriate for the specific task (*e.g.*, BIO and MBM Advisory Panel).

Working Groups

Scientific Committees would like to have more than one Working Group operating at the same time and/or extend the duration of Working Groups beyond three years. Three years is often considered too short if a Working Group gets a slow start or if not all members are able to attend

each meeting. Most Working Groups have indicated that they were just getting productive when their three-year term ended.

Scientific mandates

Some Committees are considered to have very broad mandates, while others believe that their mandate is too narrow. BIO's mandate, for example, spans from microbes to mammals and birds. It has dealt with this problem by establishing an Advisory Panel on Marine Birds and Mammals. FIS believes that, because of the scope of fishery issues and the stated goals of PICES, the profile of the Committee should be elevated. They would like to establish other bodies to deal with aquaculture and small pelagics issues, for example. MEQ has struggled with implementing its mandate because of the "scale" issue. Many human activities have direct effects at the local scale, whereas basin-wide effects may be non-existent or difficult to quantify.

Participation

There appears to be an increased frequency of PICES member countries failing to support attendance of their appointed experts at meetings and in the work of the Scientific Committees. Proliferation of subsidiary bodies and long duration of Working Groups implies greater costs, and perhaps even less willingness by member countries to support participation of appointed members. Lack of support by member countries may indicate marginal interest in particular activities. The Review Committee believes that Contracting Parties should consider the formation of national committees to enhance and coordinate involvement of their scientists in PICES activities, and to promote activities within PICES that have high national interest and relevance.

Some disciplines are under-represented at present, for example, meteorologists within POC, aquaculture scientists within FIS, and social scientists within the CCCC Program.

Although the intent was to nominate national GLOBEC representatives on the CCCC

Implementation Panel, recently this Panel has moved to being composed of predominantly Task Team Co-Chairmen who are not necessarily representatives of national GLOBEC Programs. This may have reduced the links of CCCC back to the national GLOBEC Programs and to the interests of member countries.

Communication

There is a general sense that PICES is doing a good job with communication, particularly with communicating science information among scientists around the North Pacific basin and globally (PICES publications have increased exponentially). A plan is in place to capture information presented at scientific sessions that is not published in the literature. However, there is a perception that PICES has not done as good a job in communicating with the general public and decision makers.

Discussion

Science Board and associated bodies

The Science Board is responsible for providing the Governing Council with recommendations on various issues of scientific interest and carrying out scientific work, including giving guidance to the Scientific Committees and Programs. It is critical that the members of the Science Board understand the goals of PICES to fulfill this charge. The Science Board should take an active role in ensuring that Scientific Committees and *ad hoc* groups are addressing issues of continued relevance to PICES. They should also take an active role in identifying opportunities to promote multi-disciplinary activities. The Science Board's Strategic Plan should provide a section on activities that facilitate addressing issues in a holistic fashion where appropriate.

Scientific Committees are responsible for keeping under review and coordinating scientific investigations in the subject or area defined by their assigned responsibilities. These groups are important because they provide PICES with an information base that is critical to the realization of its goals. Scientific Committees provide a

vehicle for national designees to bring to the attention of the Organization important issues and to mobilize expertise needed to address these issues. They also facilitate the dissemination of information to scientific counterparts in their respective member countries. This latter task and the bi-directional nature of these Scientific Committee responsibilities have perhaps not been adequately recognized.

The issue of the creation of additional disciplinary committees was also discussed, for example, Geosciences, and Social science. There is recognition that these disciplines are under-represented at present. PICES should be open to the formation of new Scientific Committees. However, the formation of additional committees should wait until the need is clearly demonstrated.

Scientific Committees should have the ability to form subsidiary bodies other than Working Groups, with the approval of the Science Board. These bodies should be formed only if the needed expertise is lacking on the parent committee. Work of these bodies should be periodically reviewed by the parent committee and recommendations made to the Science Board concerning their continued existence. Historically, two types of Advisory Panels have been formed. The first type is made up of experts that are not well-represented on the Scientific Committee (*e.g.* Marine Birds and Mammals Advisory Panel). The second type is a group of experts brought together to advise on a field study of limited duration (*e.g.* Advisory Panel on Iron Fertilization Experiment and Advisory Panel on Continuous Plankton Recorder Survey). It is suggested that the first type be renamed a "Section" of the parent committee. The duration of sections should be ongoing, with periodic review. The number of designated participants from member countries for the "Section" should not normally exceed three. The duration of Advisory Panels should be determined by the length of time required to complete the field study, and they may include as many members as is necessary to coordinate the field program and as nations are willing to support.

Working Groups are groups of experts that are established by the Governing Council with specific terms of reference based on the recommendations of the Science Board. They are expected normally to complete their work in three years. While it is believed that the existence time should be limited, it is important that the durations of these groups be flexible to facilitate their work. Further, past practice has limited the number of Working Groups in existence to one at anytime for each Scientific Committee. The Review Committee believes that there should be some flexibility in the number of Working Groups that a Scientific Committee is allowed at any one time. If there is a desire to have multiple Working Groups, the concerned Committee should make its request to the Science Board. Furthermore, there is a need for Scientific Committees to follow-up on the findings and recommendations of their Working Groups. Some of the concerns about additional costs of having more than one Working Group concurrently may be mitigated by using novel methods of operating, for example by electronic correspondence.

The Science Board has also facilitated the creation of Scientific Programs. Experience with the CCCC Program has indicated that this mechanism provides flexibility of addressing issues that are multi-disciplinary in character. Given the desire to address issues in a holistic manner, continued use of this mechanism appears appropriate. It is critical, when these programs are used, that feedback is given to the relevant Scientific Committees and that follow-up occurs on recommendations. In-addition, formation of such programs may be made clearer with the development of Science and Implementation Plans.

The Technical Committee on Data Exchange (TCODE) requires special treatment since it is a service committee. It is charged with: 1) identifying the data management requirements of PICES; 2) developing strategic plans to meet these requirements; 3) recommending establishment of *ad hoc* task groups to deal with specific functions of TCODE; 4) reviewing the progress of task groups and providing Annual Reports to the

Science Board on the work of TCODE; and 5) advising the PICES Secretariat on its data exchange activities. A review of these charges indicated that only item 5 has been adequately addressed. It was determined that the charges given to TCODE are still relevant and important to PICES especially given the desire to develop a North Pacific Ecosystems Status Report.

The Publication Committee was created in 1998. It was charged with reviewing: 1) questions of publication policy; 2) the question of translation policy; 3) the desirability of establishing a fully peer reviewed publication; 4) the desirability of establishing a PICES editorial board; and 5) other matters concerning PICES publications. At its Tenth Annual Meeting, the Committee was disbanded because it had not conducted substantive business in its last two years and because its terms of reference were viewed as outdated. The Science Board agreed to review the need for such a committee in two years. The Secretariat is tasked presently with implementing Council decisions on publication policy: e.g. utilizing peer-reviewed journals on an ongoing basis and maintaining publication of PICES Press and the Scientific Report Series. The creation and distribution of publications is critical to the success of the Organization. The view of PICES by the community at-large is heavily dependent upon the way products are made available. The PICES Scientific Report Series creates serious problems for the Secretariat, as in general: documents for publication in this series are received in poor shape, requiring staff to spend significant time editing and making revisions.

Finance and Administration Committee

At each ordinary meeting of the Governing Council, the Finance and Administration Committee (F&A) is charged with examining: 1) the audited accounts of the Council for the preceding financial year; 2) the preliminary accounts for the current financial year; 3) a budget for the ensuing financial year and a forecast budget for the following year; and 4) the administrative effectiveness of the Secretariat in particular, and the Organization in

general. While the Review Committee did not engage an in-depth examination of this Committee, it was concluded that F&A was operating satisfactorily. It was suggested that members of the Committee be requested to intensify their external fund raising activities to enhance the operations of the Organization. Lastly, it was pointed out that scheduling of meetings of the Governing Council and of the Finance and Administration Committee at the same time as scientific sessions makes it impossible for their members to attend these activities.

Secretariat

It is stated in Article VIII of the PICES Convention that, "The Council shall appoint an Executive Secretary on such terms and with such duties as it may determine." Further, it states that "the staff of the Secretariat shall be appointed by the Executive Secretary in accordance with such rules, procedures, and requirements as may be determined by the Council." At present, the staff includes the Executive Secretary, Assistant Executive Secretary, Administrative Assistant and Office Secretary.

Scientific activities sponsored and/or conducted by PICES have increased significantly since its inception in 1992 (for details see *Appendixes D and E*). PICES has grown into an internationally renowned organization and has to anticipate and plan for even further growth. The ability of the Organization to expand its activities and products is an indication of staff dedication. The size of the Secretariat has not expanded with the increased level of activity, and the structure of the Secretariat has remained unchanged since its inception. While annual contributions have increased, they have not increased at the same rate as the growth in workload (*Appendix F*). Further, the inflation-adjusted contributions have decreased for Canada, China, Japan, and the United States; remained about constant for Russia since making its initial contribution in 1995; and increased slightly for Korea since making its initial contribution in 1996 (see *Appendix G*).

The Review Committee believes that the increase in staff responsibilities warrants serious consideration of the addition of a new staff member, if it can be accommodated within the inflation adjusted annual contributions. The person occupying this position would serve as the Organization's Scientific Officer (or Science Coordinator) and be responsible for the coordination of scientific projects/programs identified by the Science Board (e.g., North Pacific Ecosystem Status Report) and capacity building. His/her specific tasks would include: (i) soliciting, compiling and editing scientific project/program reports; (ii) participation in workshop development of scientific projects/programs; and (iii) assisting in fund-raising and coordination for training and capacity building efforts. A scientist from one of the contracting parties would occupy the position. This action would allow the Assistant Executive Secretary to focus more on Secretariat operations, information management, data exchange, and web development.

The need for these actions is made apparent by the increased workload being experienced by Secretariat staff. During the past year alone, in addition to the Annual Meeting, eight inter-sessional symposia/workshops were held. Publications included three special issues of peer-reviewed journals, five PICES Scientific Reports and "A Historical Atlas of the North Pacific".

It is also recommended that some of the existing positions at the Secretariat be re-named as follows provided the act is budget-neutral:

- Assistant Executive Secretary - Deputy Executive Secretary
- Administrative Assistant - Deputy Executive Secretary on Administration
- Office Secretary - Administrative Assistant

Review of rules of procedure

The Review Committee identified three items that require change:

- Rule 1 (i) - A definition of "formal meeting" is required;
- Rule 1 (iii) - This rule should be clarified to indicate that it is the responsibility of the

contracting party to pay the expenses of its own Delegation. Delegation includes Delegates on the Council and Alternate Delegates, and experts, advisers and observers appointed to attend each formal meeting;

- Rule 18 (iii) - Meetings of the Science Board may be attended by persons other than the members only on the invitation of the Chairman of the Science Board.

The Review Committee recommends that the following wording changes be made:

- Rule 1 (i) - replace "formal meeting" with "meeting authorized by Council";
- Rule 1 (iii) - replace "its own Delegation" with "its Delegates and other nationally designated participants" or more simply "its nationally designated participants";
- Rule 18 (iii) - replace "Chairman of the Council" with "Chairman of the Science Board".

Identification of possible changes

Objectives and area of concern

No changes in the purpose of the Organization and no formal extension of the PICES area of concern are recommended at this time.

Functions

Strategic Plans

Strategic Plans of Scientific Committees and the Science Board need to be more forward-looking. The Science Board's Strategic Plan should incorporate a vision statement and objectives that include looking at issues in a holistic fashion. The document also should include the identification of issues that will become important in the next five to ten years. Prioritization of important issues should be done in these plans. More Science Board feedback to Scientific Committees is needed and this should be highlighted in the Strategic Plan. A mid-session Science Board meeting, with participation of members of the Governing Council, is needed to provide time for the Science Board to discuss direction and

prioritization of issues to stimulate the work of the Scientific Committees and Working Groups and, in general, to maintain momentum between Annual Meetings.

Collection and synthesis of data

Working Groups are the primary collectors and synthesizers of data. Each Working Group should include in its Terms of Reference a data collection/archival element and coordinate with TCODE as necessary. The Scientific Committees also have an important role to play in synthesizing and summarizing data relevant to their expertise and reporting to the Science Board or to activities such as the North Pacific Ecosystem Status Report.

Data exchange

It appears TCODE has not met its objectives as outlined in its Terms of Reference. The Science Board needs to review TCODE Terms of Reference and activities. Development of a Strategic Plan for TCODE during this year needs to be ensured. Differences in data exchange policies should be addressed in the development of the plan. Membership in TCODE should be examined to guarantee that there are strong links to national/regional data centers. A position in the Secretariat that would oversee data exchange efforts is recommended to keep this activity on track. The Ecosystem Status Report development and CCCC Program data archival will require the assistance of TCODE.

Data exchange is also the responsibility of Scientific Committees and more of this activity needs to occur on an annual basis. Strategic Plans of the Scientific Committees should address data exchange, management, and archival.

Capacity building

PICES needs a more pro-active approach for capacity building. The development of an Organizational strategy for capacity building and an Implementation Plan to facilitate this activity should be undertaken.

Integration of multiple disciplines

Integration of multiple disciplines would be facilitated by: (i) the Science Board taking an active role in the guidance of Committees and Program activities, (ii) increased feedback among multi-disciplinary groups and disciplinary Committees and vice-versa, and (iii) annually scheduled mid-session meetings of the Science Board.

Structure

Science Board

As mentioned earlier, the Science Board needs to revise its Strategic Plan. It should play a more active role in getting committees to specify and prioritize important issues, and in identifying how PICES should deal with multi-disciplinary issues. A mid-session Science Board meeting is recommended to facilitate progress in this area.

Scientific Committees

As with the Science Board, Scientific Committees also need to revise their Strategic Plans to be more forward-looking and to provide a prioritization of issues to be addressed. It is recognized that the formation of disciplinary Sections within a committee (*e.g.*, Marine Birds and Mammals within BIO) may be needed to ensure adequate representation of these disciplinary areas in PICES. After formation, the committee to guarantee an ongoing need for its existence should subject activities of the Section to periodic review.

Committees should also improve communication with their scientific counterparts elsewhere/outside of PICES through periodic reports in the PICES Press. Committees could better facilitate communication by having their own web page on the PICES web site.

There is recognition that some disciplines, such as geosciences, are not represented in PICES at present. It is suggested that PICES should be open to the formation of new Scientific Committees. However, such action should wait

until a clear interest on the part of these disciplines to be represented is expressed.

Working Groups

The Review Committee re-emphasized the need for an initial workshop or session to clearly define the issues before a Working Group is formed. Scientific Committees should have flexibility in the number of active Working Groups maintained at a particular time. Scientific Committees need to follow-up more on the findings and final recommendations of Working Groups and should consider novel ways for working groups to operate (*e.g.*, through correspondence).

Advisory Panels

It is recommended that the present definition of Advisory Panel be revised to emphasize their role in providing the scientific advice and coordination needed for specific field programs. Duration of advisory panels should be determined by the parent committee based on the duration of the field study that is under consideration.

Secretariat

The Review Committee believes that the increase in staff responsibilities warrants serious consideration of the addition of a new staff member, if it can be accommodated within the inflation adjusted annual contributions. The person occupying this position would serve as the Organization's Scientific Officer (or Science Coordinator) and be responsible for the coordination of scientific projects/programs identified by the Science Board and capacity building. A scientist from one of the contracting parties would be occupy the position. This action would allow the Assistant Executive Secretary to focus more on Secretariat operations, information management, data exchange, and web development.

It is also recommended that some of the existing Secretariat positions be re-named as follows:

- Assistant Executive Secretary - Deputy Executive Secretary,

- Administrative Assistant - Deputy Executive Secretary on Administration, and
- Office Secretary - Administrative Assistant.

Publications

Scientific Committees and the CCCC Program should assume more responsibility for editing and finalizing Working Group and CCCC Program annual reports, and their publications that appear in the PICES Scientific Report Series. Publication guidelines need to be communicated to these groups to ensure the documents meet specified standards. It is suggested strongly that an outside expert examine how the Organization currently handles the publication and distribution of scientific information, and make recommendations on how to improve the process.

Rules/Procedures

The following changes to the PICES Rules of Procedure are recommended:

- Rule 1 (i) - replace "formal meeting" with "meeting authorized by Council";
- Rule 1 (iii) - replace "its own Delegation" with "its Delegates and other nationally designated participants" or more simply "its nationally designated participants";
- Rule 18 (iii) - replace "Chairman of the Council" with "Chairman of the Science Board".

Awards

PICES has been a success because of tremendous efforts on the part of participants. Currently, there is no mechanism to recognize individuals who have contributed significantly to PICES. The Review Committee, therefore, suggests the creation of the following awards:

PICES Builder's Award

- to be awarded to those individuals who have made substantial contributions to the organization and/or the science of PICES, *e.g.*, who changed the direction of PICES, that contributed substantially to increasing its scientific reputation and/or public awareness of PICES;

- would be distinct from the Wooster Award, which is targeted more generally to individuals making significant contributions to North Pacific marine science (not necessarily to PICES);
- the award would be expected to be normally, but not exclusively, given to someone who is or has been active within PICES;
- the award is not expected to be awarded every year;
- the award would consist of a small plaque to be kept by the recipient and a large plaque with names added to be kept by the Secretariat;
- nominations would be forwarded to the Secretariat by May 15 outlining clearly the nominee's substantive contributions made to PICES;
- the Governing Council would be responsible for selecting the recipient upon recommendation of the Science Board

PICES Service Awards

- Outgoing Chairmen of Scientific and Technical Committees, Scientific Programs, and of Working Groups be recognized with a "Certificate of Service to PICES" upon completion of their term.

APPENDICES

Appendix A

Terms of Reference for Review Committee

- a. Review the objectives, functions and role of PICES in the context of changing requirements for scientific information;
- b. Consider how to integrate the multiple disciplines that make up PICES;
- c. Analyze and review the existing structure of PICES and the nature of change required to meet the needs identified in a) and b);
- d. Develop specific proposals for change, as necessary, and a plan for implementation;
- e. Review the Rules of Procedure.

Appendix B

Membership of the Review Committee

The membership of the Review Committee includes: the Chairman of the Finance and Administration Committee (Dr. Richard J. Marasco), the Chairman of the Science Board (Dr. R. Ian Perry), most recent outgoing Chairman of the Science Board (Ms. Patricia Livingston), Dr. Warren Wooster (founder and first Chairman of PICES) and one member each

from the People's Republic of China, Japan, Republic of Korea, and Russian Federation. Countries not specifically mentioned are represented by the Science Board Chairman (Canada) and the F&A Chairman (U.S.A.). Contact information for all members (alphabetical order) is listed below:

Dr. Lev N. Bocharov
 Director, Pacific Scientific Research Fisheries Center
 (TINRO-Center)
 4 Shevchenko Alley,
 Vladivostok, Primorski,
 Russia. 690950
 Phone: (7-4232) 257-921
 Fax: (7-4232) 300-752
 E-mail: bocharov@tinro.ru

Mr. Zhi-Xin Chen
 Deputy Division Director
 Ministry of Agriculture
 11 Nongzhanguan Nanli,
 Beijing,
 People's Republic of China. 100026
 Phone: (86-10) 6419-2452
 Fax: (86-10) 6419-2466
 E-mail: chenzhixin@agri.gov.cn

Mr. Young-Suk Kim
 Director, Marine Development Division Marine
 Policy Bureau
 Ministry of Maritime Affairs & Fisheries
 Donga Building 139 Chungjongno 3-Ga,
 Seodaemun-Gu,
 Seoul,
 Republic of Korea. 120-715
 Phone: (82-2) 3148-6530 ext.5
 Fax: (82-2) 3148-6536
 E-mail: hisglorykim@momaf.go.kr

Dr. Richard J. Marasco (Chairman)
 Resource Ecology & Fisheries Management Division
 Alaska Fisheries Science Center
 National Marine Fisheries Service, NOAA
 7600 Sand Point Way NE,
 Seattle, WA
 U.S.A. 98115-6349
 Phone: (1-206) 526-4242
 Fax: (1-206) 526-6723
 E-mail: Rich.Marasco@noaa.gov

Dr. Tokimasa Kobayashi
 Resources Enhancement Promotion Dept.
 Fisheries Agency of Japan
 1-2-1 Kasumigaseki, Chiyoda-ku,
 Tokyo,
 Japan. 100-8907
 Phone: (81-3) 3502-8111 ext. 7316
 Fax: (81-3) 3591-5314
 E-mail: tokikoba@affrc.go.jp

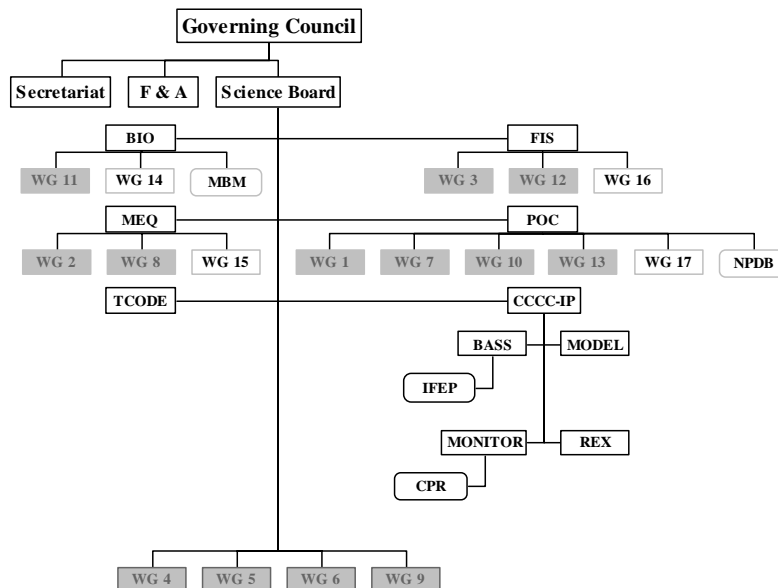
Dr. R. Ian Perry
 Fisheries & Oceans Canada
 Pacific Biological Station
 3190 Hammond Bay Road,
 Nanaimo, B.C.,
 Canada. V9R 5K6
 Phone: (1-250) 756-7137
 Fax: (1-250) 756-7053
 E-mail: PerryI@pac.dfo-mpo.gc.ca

Ms. Pat Livingston
 Alaska Fisheries Science Center
 National Marine Fisheries Service, NOAA
 7600 Sand Point Way NE,
 Seattle, WA
 U.S.A. 98115-6349
 Phone: (1-206) 526-4172
 Fax: (1-206) 526-6723
 E-mail: Pat.Livingston@noaa.gov

Dr. Warren S. Wooster
 University of Washington
 School of Marine Affairs
 3707 Brooklyn Avenue,
 Seattle, WA
 U.S.A. 98105-6715
 Phone: (1-206) 685-2497
 Fax: (1-206) 543-1417
 E-mail: wooster@u.washington.edu

Appendix C

North Pacific Marine Science Organization (PICES) - Organization Chart



Appendix D

PICES-sponsored inter-sessional symposia/workshops and workshops held in conjunction with Annual Meetings (excludes Working Group meetings), 1992-2002

Inter-sessional symposia/workshops

Year	Dates	Meeting	Co-Sponsors	Location
1993	September 19-23	Workshop on <i>Western subarctic circulation</i>	STA, JFA, Nemuro-city	Nemuro, Japan
1995	June 19-24	1 st Workshop on <i>The Okhotsk Sea and adjacent areas</i>	RAS, TINRO, FESU,	Vladivostok, Russia
1996	June 23-28	Workshop on <i>Conceptual/theoretical studies and model development</i>	Nemuro-city	Nemuro, Japan
1998	November 9-12	2 nd Workshop on <i>The Okhotsk Sea and adjacent areas</i>	Nemuro-city	Nemuro, Japan
1999	April 20-22	1 st Technical Workshop on <i>CO₂ method inter-comparison</i>	NIES, KEEC, JAMSTEC	Tsukuba, Japan
	May 24 – June 7	MEQ Practical Workshop on <i>Environmental assessment of Vancouver Harbour</i>		Vancouver, Canada
	August 10-14	WG 12 (Crabs and shrimps) Workshop	NMFS	Qingdao, China
2000	Jan. 31 – Feb. 3	CCCC/MODEL Workshop on <i>Lower trophic level modeling</i>	Nemuro-city	Nemuro, Japan
	March 23-26	<i>Beyond El Niño: A conference on Pacific climate variability and marine ecosystem impacts, from the Tropics to the Arctic</i>	IATTC, IPHC, ISC, NPAFC and SCOR	La Jolla, U.S.A.
	April 17-19	ICES/PICES Workshop on <i>Zooplankton ecology of the North Atlantic and North Pacific</i>	ICES	Honolulu, U.S.A.
	May 15-16	CREAMS 2000 International symposium on <i>Oceanography of the Japan/East Sea</i>	CREAMS, ONR	Vladivostok, Russia
	October 18-21	Symposium/Workshop on <i>North Pacific CO₂ data synthesis</i> (incl. 2 nd Technical Workshop on <i>CO₂ method inter-comparison</i>)	CREST/JST, MIRC and JGOFS	Tsukuba, Japan
	October 29	Workshop on <i>Factors affecting production of juvenile salmon: Comparative studies on juvenile salmon ecology between east and west North Pacific Ocean</i>	NPAFC	Tokyo, Japan
2001	January 22-24	Test Workshop on <i>CO₂ data integration</i>		Sidney, Canada
	Jan. 31 – Feb. 1	Third Annual Workshop on <i>Salmon ecology in coastal ecosystem</i>		Nanaimo, Canada
	March 5-6	BASS/MODEL Workshop on <i>Quantification of a food web model for the subarctic gyre systems</i>		Honolulu, U.S.A.
	March 7-9	Workshop on <i>Impact of climate variability on observation and prediction of ecosystem and biodiversity changes in the N. Pacific</i>	Census of Marine Life and IPRC	Honolulu, U.S.A.
	March 20-22	International Argo Science Team Meeting	Argo	Sidney, Canada
	July 30 – Aug. 1	Implementation Workshop on <i>CO₂ data integration</i>	NIRE and MIRC	Tokyo, Japan
	August 27-30	<i>NEAR-GOOS Forecasting Workshop</i>	IOC, WESTPAC	Seoul, Korea

Year	Dates	Meeting	Co-Sponsors	Location
2001	November 14-17	<i>Pacific climate – fisheries</i> Workshop	IRI, IOC, GLOBEC, and IPRC	Honolulu, U.S.A.
2002	January 24-27	MODEL/REX Workshop to <i>build a “nutrient-phytoplankton-zooplankton-fish” version of the PICES NEMURO model</i>	Nakajima Foundation and Nemuro-city	Nemuro/Yokohama, Japan
	March 13-14	Symposium on <i>Causes of marine mortality of salmon in the North Pacific and North Atlantic Oceans and in the Baltic Sea</i>	NPAFC, NASCO, IRSFC, ICES	Vancouver, Canada
	April 5-6	MONITOR Workshop on <i>Voluntary observing systems</i>	EVOS	Seattle, U.S.A.
	April 21-22	BASS/MODEL Workshop on <i>Using models to test hypothesis on effects of climate change on the North Pacific subarctic gyre system</i>		La Paz, México
	April 23-25	Symposium on <i>North Pacific transitional areas</i>	CIBNOR, CICIMAR	La Paz, México
	June 5-7	Advisory Panel on North Pacific Data Buoys	WMO/IOC/PICES	Victoria, Canada
	August 22-24	Symposium/Workshop on <i>Recent progress in studies of physical processes and their impact to the Japan/East Sea ecosystem</i>	CREAMS	Seoul, Korea
	October 1-2	JGOFS/PICES Session on <i>Carbon cycle in the North Pacific (in conjunction with the 2002 SCOR General)</i>	JOS	Sapporo, Japan

Workshops held in conjunction with PICES Annual Meetings

Year	Dates	Meeting	Co-Sponsors	Location
1993				
1994	October 15-17	PICES-GLOBEC Workshop on <i>Climate Change and Carrying Capacity</i>	Fisheries Agency of Japan (JFA)	Nemuro, Japan
	October 22-23	PICES-STA Workshop on <i>Monitoring Pacific subarctic variability</i>	STA	Nemuro, Japan
1995				
1996				
1997	October 17-18	CCCC Workshop on <i>Development of cooperative research in coastal regions of the North Pacific</i>		Pusan, Korea
1998	October 14-15	MODEL Workshop on <i>Lower trophic level modeling and nutrient data bases</i>		Fairbanks, U.S.A.
	October 16-17	REX Workshop on <i>Small pelagic species and climate change in the North Pacific Ocean</i>		Fairbanks, U.S.A.
1998	October 16-17	MONITOR Workshop on <i>Monitoring activities in the North Pacific</i>		Fairbanks, U.S.A.
	October 18	PICES-CREAMS Workshop on <i>Recent progress in studies of the Japan/East Sea</i>		Fairbanks, U.S.A.
1999	October 8-10	REX Workshop on <i>Herring and euphausiids population dynamics</i>		Vladivostok, Russia
	October 8-9	MONITOR-GOOS Workshop on <i>Monitoring efforts in the North Pacific</i>		Vladivostok, Russia
	October 12 & 14	TCODE Workshop on <i>Application of scientific visualization to marine ecosystem analysis</i>		Vladivostok, Russia

Year	Dates	Meeting	Co-Sponsors	Location
2000	October 19-20	Planning Workshop on <i>Designing the iron fertilization experiment in the subarctic Pacific</i>	CRIEPI and MIRC	Tsukuba, Japan
	October 20	Workshop on <i>Basis for estimating the abundance of marine birds and mammals, and the impact of their predation on other organisms</i>	Fisheries Agency of Japan (JFA)	Hakodate, Japan
	October 20-21	BASS Workshop on <i>Development of a conceptual model of the subarctic Pacific basin ecosystem(s)</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	MODEL Workshop on <i>Strategies for coupling higher and lower trophic level models</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	MONITOR Workshop on <i>Progress in monitoring the North Pacific</i>	Ministry of Education of Japan	Hakodate, Japan
	October 20-21	REX Workshop on <i>Trends in herring population dynamics and trophodynamics</i>	Ministry of Education of Japan	Hakodate, Japan
2001	October 5-6	WG 15 Workshop on Taxonomy and identification of HAB species		Vancouver, Canada
	October 5	BASS/MODEL Workshop on <i>Ecosystem models for the Subarctic Pacific Gyres</i>		Victoria, Canada
	October 5	REX Workshop on <i>Temporal variations in size-at-age for fish species in coastal areas around the Pacific Rim</i>		Victoria, Canada
	October 6	MONITOR Workshop on <i>Progress in monitoring the North Pacific</i>		Victoria, Canada
	October 6	REX/MODEL Workshop on <i>Higher trophic levels in the PICES NEMURO Model</i>		Victoria, Canada
2002	October 19	MONITOR Workshop on <i>Requirements and methods for early detection of ocean change</i>		Qingdao, China
	October 19	PICES/GLOBEC Data Management Workshop on <i>Exchange, inventory and archival of GLOBEC data</i>	GLOBEC	Qingdao, China
	October 20	CCCC Integration Workshop		Qingdao, China
	October 20	PICES/CLIVAR Workshop on <i>Implementation of CLIVAR in the North Pacific</i>	WCRP, NASA, NOAA and NSF	Qingdao, China
	October 23	MONITOR Workshop on <i>Monitoring from moored and drifting buoys</i>		Qingdao, China
	October 25	PICES/CKJORC Workshop on <i>Regional cooperation and management of the marine environment and resources in the Yellow Sea</i>		Qingdao, China

Appendix E

PICES publications in 1992-2003

Year	Publication
1992	1992 Annual Report
	Proceedings of PICES Scientific Workshop
1993	1993 Annual Report
	PICES Press Vol. 1 No. 1
	PICES Scientific Report No.1 Part 1: Coastal Pelagic Fishes Part 2: Subarctic Gyre
1994	1994 Annual Report
	PICES Press Vol. 2 No. 1
	PICES Press Vol. 2 No. 2
	The PICES Papers: Reports of Meetings Leading to the Establishment of the North Pacific Marine Science Organization (PICES), 1978-1992
	Proceedings of Nemuro Workshop on "Western subarctic circulation"
1995	1995 Annual Report
	PICES Press Vol. 3 No. 1
	PICES Press Vol. 3 No. 2
	PICES Scientific Report No. 2 The Okhotsk Sea and the Oyashio Region
	PICES Scientific Report No. 3 Monitoring Subarctic North Pacific Variability
1996	1996 Annual Report
	PICES Press Vol. 4 No. 1
	PICES Press Vol. 4 No. 2
	PICES Scientific Report No. 4 Science Plan, Implementation Plan, Report of the PICES-GLOBEC International Program on Climate Change and Carrying Capacity
	PICES Scientific Report No. 5 Modelling of the Subarctic North Pacific Circulation
	PICES Scientific Report No. 6 Proceedings of the Workshop on the Okhotsk Sea and Adjacent Areas
1997	1997 Annual Report
	PICES Press Vol. 5 No. 1
	PICES Press Vol. 5 No. 2
	PICES Scientific Report No. 7 Summary of the Workshop Conceptual/Theoretical Studies and Model Development and the 1996 MODEL, BASS and REX Task Team Reports. PICES-GLOBEC International Program on Climate Change and Carrying Capacity
1998	1998 Annual Report
	PICES Press Vol. 6 No. 1
	PICES Press Vol. 6 No. 2
	PICES Scientific Report No. 8 Multilingual Nomenclature of Place and Oceanographic Names in the Region of the Okhotsk Sea
	PICES Scientific Report No. 9 PICES Climate Change and Carrying Capacity Workshop on the Development of Cooperative Research in Coastal Regions of the North Pacific
1999	1999 Annual Report
	PICES Press Vol. 7 No. 1
	PICES Press Vol. 7 No. 2

Year	Publication
1999	PICES Scientific Report No. 10 Proceedings of the 1998 Science Board Symposium on the Impacts of the 1997/98 El Niño Event on the North Pacific Ocean and its Marginal Seas
	PICES Scientific Report No. 11 PICES-GLOBEC International Program on Climate Change and Carrying Capacity. Summary of the 1998 MODEL, MONITOR and REX Task Team Workshops and Task Team Reports
	PICES Scientific Report No. 12 Proceedings of the Second PICES Workshop on the Okhotsk Sea and Adjacent Areas
	Progress In Oceanography Vol. 43 Nos. 2-4 1999 (special issue) Ecosystem Dynamics in the Eastern and Western Gyres of the Subarctic Pacific
	Dynamics of the Bering Sea
	2000 Annual Report
	PICES Press Vol. 8 No. 1
2000	PICES Press Vol. 8 No. 2
	PICES Scientific Report No. 13 Bibliography of the Oceanography of the Japan/East Sea
	PICES Scientific Report No. 14 Predation by Marine Birds and Mammals in the Subarctic North Pacific Ocean
	PICES Scientific Report No. 15 PICES-GLOBEC International Program on Climate Change and Carrying Capacity. Report on the 1999 MONITOR and REX Workshops, and the 2000 MODEL Workshop on Lower Trophic Level Modelling
	Progress in Oceanography Vol. 47 Nos. 2-4 2000 (special issue) North Pacific Climate Regime Shifts
	2001 Annual Report
	PICES Press Vol. 9 No. 1
	PICES Press Vol. 9 No. 2
2001	PICES Scientific Report No. 16 Environmental Assessment of Vancouver Harbour. Data Report for the PICES Practical Workshop
	PICES Scientific Report No. 17 PICES-GLOBEC International Program on Climate Change and Carrying Capacity Report of the 2000 BASS, MODEL, MONITOR, and REX Workshops, and the 2001 BASS/MODEL Workshop
	PICES Scientific Report No. 18 Proceedings of the PICES/CoML/IPRC Workshop on "Impact of Climate Variability on Observation and Prediction of Ecosystem and Biodiversity Changes in the North Pacific"
	PICES Scientific Report No. 19 Commercially Imported Crabs, Shrimps and Lobsters of the North Pacific Ocean
	Progress in Oceanography Vol. 49 Nos. 1-4 2001 (special issue) Pacific Climate Variability and Marine Ecosystem Impacts
	Historical Atlas of the North Pacific Ocean (Anniversary Book)
	2002 Annual Report
	PICES Press Vol. 10 No. 1
	PICES Press Vol. 10 No. 2
	PICES Scientific Report No. 20 PICES-GLOBEC International Program on Climate Change and Carrying Capacity Report of the 2001 BASS/MODEL, MONITOR and REX Workshops, and the 2002 MODEL Workshop
PICES Scientific Report No. 21 PICES-GLOBEC International Program on Climate Change and Carrying Capacity Report of the PICES 2002 <i>Volunteer Observing Ship</i> Workshop	
PICES Scientific Report No. 22 PICES Science: The first ten years and a look to the future	

Year	Publication
2002	PICES Scientific Report No. 23 Harmful algal blooms in the PICES region of the North Pacific (national reports)
	Journal of Oceanography, Vol. 58, No. 5 (special issue) Physics and biology of eddies, meanders and rings in the PICES region
	Progress in Oceanography, Vol. 55, Nos. 1-2 (special issue) Variability in the Bering Sea ecosystem
	Canadian Journal of Fisheries and Aquatic Sciences, Vol. 59, No. 12 (special issue) Migration of key ecological species in the North Pacific Ocean
	Oceanographic Atlas of the Okhotsk Sea, Bering Sea and Japan/East Sea (CD ROM version)
	2003 Annual Report
	PICES Press Vol. 11 No. 1 (jointly with GLOBEC)
2003	PICES Press Vol. 11 No. 2
	PICES Scientific Report No. 24 CO ₂ in the North Pacific Ocean (Working Group 13 Final Report)
	PICES Scientific Report No. 25 PICES-GLOBEC International Program on Climate Change and Carrying Capacity The BASS/MODEL Report on Trophic Models of the Subarctic Pacific Basin Ecosystems.
	Journal of Oceanography, Vol. 59, No. 4 (special issue) Transitional areas in the North Pacific
	Progress in Oceanography, Vol. 57, Nos. 3-4 (special issue) Plankton size classes, functional groups, and ecosystem dynamic
	North Pacific Ecosystem Status Report

Appendix F

History of national contributions¹

Year	Annual fee per country	WCF transfer	Total budget	Notes
1992 ²	88,000		352,000	4 member countries
1993	88,000 ³	24,000	376,000	
1994	90,000 ³	80,000	440,000	
1995	88,000		440,000	5 member countries
1996	84,800		509,000 ⁴	6 member countries
1997	84,800		509,000	
1998	84,800 ³	12,000	521,000	
1999	86,000 ³	58,000	574,000	
2000	88,600 ³	58,400	590,000	
2001	91,300 ³	58,200	606,000	
2002	94,000 ³	59,000	623,000	

¹ all amounts are in Canadian dollars

² partial year from March 23- December 31, 1992

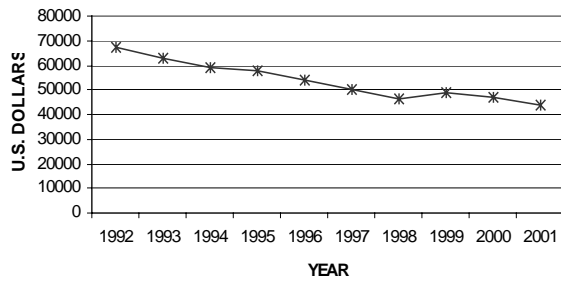
³ after transfer from the Working Capital Fund

Appendix G

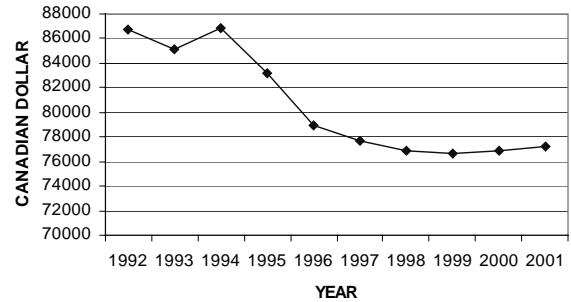
Inflation-adjusted annual contributions were calculated by converting the annual contributions listed in Appendix F to each contracting parties contribution. The inflation-adjusted contributions that appear in the figures

were calculated by dividing annual contributions by the Consumers Price Index. Data were obtained from the IMF International Financial Data Base (<http://ifs.apdi.net/imf>).

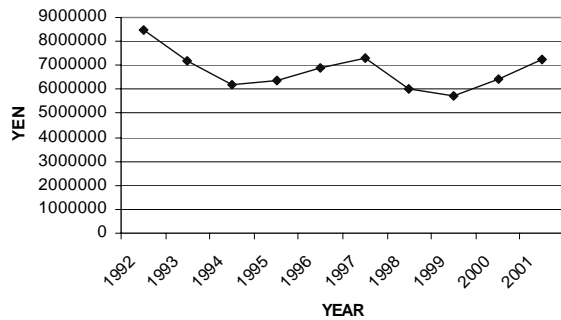
UNITED STATES CONTRIBUTIONS IN REAL U.S. DOLLARS



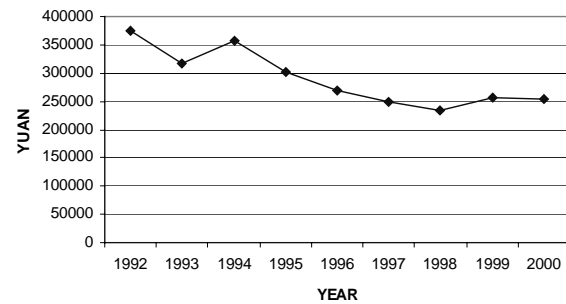
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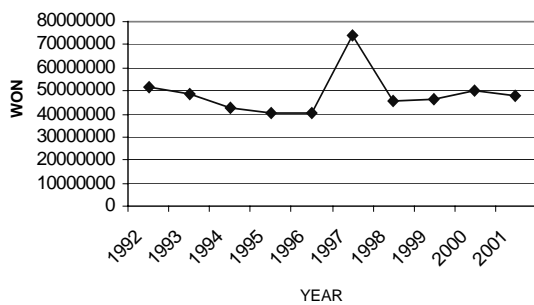
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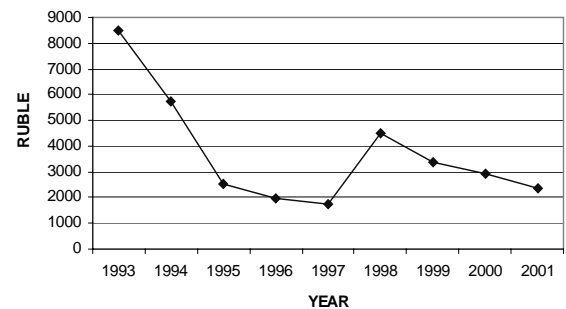
CHINA CONTRIBUTIONS IN REAL YUAN



KOREA CONTRIBUTIONS IN REAL WON



RUSSIA CONTRIBUTIONS IN REAL RUBLES



*Korea's first contribution was made in 1996

*Russia's first contribution was made in 1995

REPORT OF THE FINANCE AND ADMINISTRATION COMMITTEE

3

8

The Finance and Administration Committee (F&A) met from 09:30-13:00 hours on October 12, from 09:00-13:00 on October 14, and from 13:30-14:30 on October 16, under the chairmanship of Dr. Richard J. Marasco. Dr. Alexander S. Bychkov acted as rapporteur.

Agenda Item 1. Welcome and opening remarks

The Chairman called the meeting to order, welcomed participants and requested an introduction of members for each delegation. All Contracting Parties except the People's Republic of China were represented at all sessions (*F&A Endnote 1*).

Agenda Item 2. Adoption of agenda

The Committee reviewed and adopted the agenda (*F&A Endnote 2*).

Agenda Item 3. Audited accounts for fiscal year 2002

The Auditor's Report for *FY 2002* (*F&A Endnote 3*) was circulated to all Contracting Parties on March 31, 2003, and distributed again at the 2003 interim Governing Council meeting on April 9. In the auditor's opinion, the financial statements are an accurate representation of the financial position of the Organization as of December 31, 2002. The Report was reviewed and adopted by the Committee. The Committee recommends that Council approve the Report. The Committee was informed that Council selected *Flader & Hale* as the auditor for *FY 2003-2005*.

Agenda Item 4. Annual contributions

National contributions for 2003 and beyond

The Executive Secretary provided historical statistics on the payment schedule of annual fees

to the Organization and reported on the 2003 annual fee payment dates. As stated in Financial Regulation 5(ii), all national contributions to PICES "*shall be considered due as of the first day of the financial year (January 1) to which they relate*". Unfortunately, every year in the last 11 years, some national contributions were not received until the second, third, or even the fourth, quarter of our fiscal year (*F&A Endnote 4*). Following the instruction of Council (Decisions 02/A/2(i)), the Executive Secretary sent a letter to member countries advising on the benefits of timely payments and requesting the payment of contributions by January 1. Nevertheless, for *FY 2003* only two contributions (U.S.A. and Japan) arrived prior to this date, one payment (Canada) was received in the first part of January, one partial (~96.5%) payment in early April (Russia; the remainder was paid in July), one payment (Korea) in early May, and a partial contribution (~78%, plus the remaining \$4,000 of 2002 fee) from China was received in early October.

The Chairman noted that there has been an overall improvement in the timeliness of payment. He also asked members to advise on problems they are facing in remitting the annual contribution on time. The Committee is concerned over the increased frequency of partial payments of annual fees. In some cases, these partial payments are remitted without explanation or an indication of when the outstanding balance will be paid. The operation of the Secretariat is structured around the receipt of full annual due payments at the beginning of the PICES fiscal year. Late payments cause the Secretariat to function conservatively to avoid cash flow problems. This approach could adversely affect its operations.

The Committee recommends that Council instruct the Executive Secretary to send a letter to each Contracting Party commending them for their improved performance in submitting

annual contributions in 2003. In addition, the letter should describe the difficulties that partial payments cause for the Secretariat.

Proposed changes to PICES' Rules of Procedure and Financial Regulations

At PICES XI, to ensure timely payment of annual contributions, F&A recommended, and Council approved, that *starting from the next Annual Meeting, Council will consider and adopt the budget for the ensuing and subsequent financial years* (Decision 02/A/2(iii)). This action requires changes in the Rules of Procedure (Rule 15) and the Financial Regulations (Regulation 3(v)), and the Executive Secretary was requested to develop the appropriate wording changes for consideration at PICES XII.

In the process of preparing budgets for consideration at PICES XII, a serious problem was discovered as a result of the previous year's decision to have budgets for ensuing and subsequent financial years approved. The preparation of realistic budgets requires knowledge of programmatic activities. This is difficult enough for a coming year and would be highly speculative for the succeeding year, with the end result being inaccurate funding requests made to the Contracting Parties.

The Committee recommends returning to the previous practice, currently reflected in the Rules of Procedure and Financial Regulations, where Council will adopt its budget for the ensuing fiscal year, and only consider the forecast budget for the subsequent fiscal year. For planning purposes, Contracting Parties should continue to use the guideline generally accepted at the Eighth Annual Meeting (Decision 99/A/2(ii)), which states that the annual contributions will increase at the rate of inflation (about 3%) in Canada.

Inflation-adjusted annual contributions from 1992-2002

At PICES XI, the F&A Chairman introduced an analysis of inflation-adjusted contributions since 1992. The adjusted contributions were

calculated by dividing annual contributions by the Consumers Price Index (CPI) for each member country (data were obtained from the IMF International Financial Data Base at <http://ifs.apdi.net/imf>). This analysis indicated that the inflation-adjusted contributions in national currency have actually decreased for Canada, China, Japan and the United States, remained about constant for Russia, and increased slightly for Korea. The Committee requested that the inflation-adjusted annual contribution tables be updated regularly.

Agenda Item 5. Fund-raising

PICES has grown into an internationally renowned organization and has to anticipate and plan for even further growth. The current practice of a 3% increase in annual contributions covers inflation only. Funding constraints can impede improvement and development of the Organization. Therefore, fund-raising is becoming an important component of PICES activities. Additional resources could include extra-budgetary contributions from member states, and grants from international organizations and private foundations. The Committee noted the significant increase in the level of external funding for various activities initiated by PICES since 2000, but all these funding offers have specific product/service requirements. Serious concern was expressed about how the Secretariat, the size and structure of which have remained unchanged for the last 10 years, can handle the extra workload related to the growing number of projects. The Committee recommends that Council request delegates to determine the possibility of obtaining additional funding to support PICES activities.

The Executive Secretary reported on fund-raising efforts in 2003. External and additional funding received for various activities initiated by PICES is reflected in F&A *Endnote 5*. The Committee commended the Science Board Chairman and the Secretariat for their efforts. The Committee suggests that future reports on external funding activity contain information on costs (both staffing and non-staffing) incurred by PICES for undertaking these projects.

Further, serious attempts should be made to recover PICES' expenses that are associated with involvement in the activity.

At PICES X, Council assigned fund-raising functions to the Finance and Administration Committee. The Committee recommends that Science Board should identify and prioritize activities that are strong candidates for external funding. The list could be used by members of the PICES family to raise funds. Such an attempt, if successful, would make it possible for PICES to expand its programmatic content.

Agenda Item 6. Completion of items from the report of PICES Review Committee

Upon analyzing the draft Review Committee Report at PICES XI, F&A indicated that a few items might have budgetary implications:

Interim Science Board/Governing Council Meeting

Council strongly supported a proposal by Science Board to hold an interim Science Board meeting, with participation of Governing Council, in spring 2003 (Decision 02/A/4(iv)). F&A concluded that the interim meeting would have minimal budgetary implications for the Organization, since member countries will cover travel expenses for Council and Science Board members. This joint meeting was convened April 7-9 (noon), 2003, in Victoria, Canada, followed immediately by a ½-day Governing Council meeting in the afternoon of April 9.

The Executive Secretary reported that the overall expenses for the 2003 interim meeting were at a level of \$10,000. The interim meeting was a success and met its objectives of engaging Science Board and Council in discussions of broad and long-term importance to PICES. The reports of both meetings and summaries of recommended actions were circulated to participants and Council members in early May 2003. An article entitled "PICES Science Board and Governing Council hold their first joint meeting" was prepared by the Science Board Chairman, Dr. Ian Perry, and published in PICES Press (Vol. 11, No. 2) in July 2003. The

Committee supports a second inter-sessional meeting to be held in spring 2004, provided that Science Board and Council concur. Costs should be carefully considered in selecting a venue for the interim meeting.

Review of current publication practices of the Organization

Publication activities of the Organization have expanded significantly in the last several years. The Review Committee recommended an external review of current publication practices of PICES. At PICES XI, F&A supported this action and requested the Secretariat to explore the potential costs of having such a review. At the 2003 interim Governing Council meeting, the Executive Secretary reported that with the assistance from Fisheries & Oceans Canada and the National Marine Fisheries Service (U.S.A.), two bids were received: at the level of \$4,000-4,500 from the Canadian expert, and about \$3,500 from the US team. Council agreed to proceed with the review, and it was conducted by two NMFS experts from September 16-19, 2003. PICES' expenses for the review were about \$2,000, as some of the costs were covered by the Alaska Fisheries Science Center.

The Report (see *F&A Endnote 6*), which contains a number of recommendations, was circulated to all Contracting Parties on October 1. The addition of a full time professional editor was the report's main recommendation. While supporting this recommendation in principle, the Organization's funding situation cannot support this action at the present time. In the interim, F&A recommends the use of contract services.

Re-naming of positions at the PICES Secretariat

At PICES XI, F&A supported the re-naming of staff positions at the PICES Secretariat if the action is budget-neutral, and requested the Secretariat and Canada to explore this issue. Discussions between the Executive Secretary and Canadian Delegate, Dr. Laura Richards, indicated that the re-naming of positions would cause no changes in the salary levels.

Publication of Review Committee Report

Pending full consideration of the Review Committee Report by the Science Board, action on its disposition was postponed until the 2003 interim Science Board meeting. F&A recommends that the Review Committee Report be included in this year's PICES Annual Report.

Agenda Item 7. Budget

a. Estimated accounts for fiscal year 2003

The Committee reviewed the estimated accounts for *FY* 2003 and recommends their acceptance by Council.

b. Interest and other income

During a fiscal year, the amount of funds in PICES accounts may be increased by miscellaneous income, voluntary contributions and grants. Miscellaneous income (tax rebates, income tax levies from foreign staff, bank interest and registration fees for PICES XII) in 2003 is estimated to be about \$77,500. The Committee noted significant external funding (\$99,000) and additional contributions (\$27,200) for various activities initiated by PICES.

c. Home Leave and Relocation Fund

The status of the Home Leave and Relocation Fund was reviewed. It was noted that expenditures (\$7,540) will be offset by interest earned by the Fund and, in part, by the foreign staff tax levies. The Fund will be at its required level of \$110,000 by the end of the fiscal year. No relocation expenses are expected in *FY* 2004.

d. Trust Fund

In *FY* 2003, approximately \$71,700 from the Trust Fund will be used to finance the Intern Program, to bring young scientists from PICES member countries and scientists from countries with "economies in transition" to scientific meetings. These expenditures are compensated for partly by the voluntary contributions from Canada and the United States for the Intern Program (totaled \$27,200), and by travel grants

from SCOR (\$14,900). A transfer of \$11,600 from the Working Capital Fund to the Trust Fund is recommended. With this transfer, the Trust Fund balance will be \$110,000 at the end of the fiscal year.

e. Working Capital Fund

The balance in the Working Capital Fund is expected to be about \$218,600 at the end of 2003. The Committee recommends a transfer of \$79,000 from the Working Capital Fund to the General Fund for 2004. This amount includes external funds, \$67,500, allocated for PICES projects that will be completed in 2004. The Committee also recommends that \$11,600 be transferred to the Trust Fund. After these transfers, the Working Capital Fund will total approximately \$128,000.

f. Budget for fiscal year 2004

The Committee reviewed the proposed *FY* 2004 budget of \$679,000 (*F&A Endnote 7*) and recommends its approval by Council. A transfer of \$79,000 from the Working Capital Fund is recommended to reduce the total annual contribution to \$600,000, setting the 2004 fees at \$100,000 per Contracting Party. A modest increase of about 3% in annual fees over the previous year is consistent with the guideline generally accepted at the PICES Eighth Annual Meeting (Decision 99/A/2(ii)).

g. Forecast budget for fiscal year 2005

The *FY* 2005 forecast budget of \$725,000 was examined by the Committee and is submitted to Council for information only. Per the guideline adopted in 1999, the 2005 contributions would be set at \$103,000 per Contracting Party. A transfer of about \$107,000 from the Working Capital Fund would be required to balance funds. A transfer of this magnitude will only be possible if additional funds can be raised.

Agenda Item 8. Report of Study Group on PICES Capacity Building

At PICES XI, Council established a Study Group on *PICES Capacity Building* under the

direction of Science Board to develop a capacity building strategy and an implementation plan for the Organization (Decision 02/S/5). The report of the Study Group (*SB Endnote 14*) was circulated to the Chairmen of the Scientific Committees and CCC Program on August 21, 2003. F&A reviewed the document and noted that PICES is currently engaged in numerous capacity building activities. While agreeing in principle to the need to expand capacity building activities, the Committee cautions that the current budget warrants careful consideration of the demands placed on the Organization before initiating additional activities.

Agenda Item 9. PICES Intern Program

The Committee reviewed the current status of the Intern Program and recommends that interested Contracting Parties give equal consideration to both administrative and scientific staff when making nominations. It was also suggested that all Contracting Parties should advertise the Program broadly to ensure the selection of high quality candidates.

The Committee recommends keeping the stipend at the current level of \$2,000 per month, and given the modest stipend, advises that Contracting Parties consider whether personal circumstances warrant supplementation.

Agenda Item 10. PICES Visiting Scientist Program

The Visiting Scientist Program, while attractive to the Organization, has not drawn interest. F&A suggests that Science Board be requested to develop specific project proposals. These proposals should be sent to each Contracting Party. When circulating these proposals, it should be pointed out that relocation to the Secretariat may not be required.

Agenda Item 11. Schedule and financing of future Annual Meetings

At PICES XI, Council requested that the Russian Federation explore the possibility of holding the Fourteenth Annual Meeting in 2005, and inform the Secretariat on this matter by May

31, 2003 (Decision 01/A/4(ii)). A letter from Dr. Lev Bocharov indicated Russia’s willingness in hosting PICES XIV, and further proposed that the meeting be held in Vladivostok. The Committee concurs and recommends that the meeting be scheduled from September 30 to October 8, 2005.

F&A recommends that in keeping with the six-year rotation cycle, Japan be invited to explore the feasibility of hosting PICES XV in 2006, and inform the Secretariat on this matter by May 31, 2004.

Canada indicated a preference to hold the Annual Meeting in 2008, to link it to the celebration of the centennial anniversary of the Pacific Biological Station. This would require an alteration to the existing rotation cycle.

F&A reviewed the current registration fee structure and recommends that fees for the next Annual Meeting be set at the following level:

Type	CDN \$
Registration fee	225
Early registration fee	150
Students	50

The Committee believes that this increase is warranted by the growing monetary needs of the Organization. Fees will be collected by the Secretariat and credited to the Working Capital Fund. These funds will be used to support the Intern Program and other high priority projects.

Canada re-iterated its proposal from PICES XI to discontinue the practice of transferring funds from PICES to member countries to partially cover Annual Meeting costs. The proposal was discussed, but no recommendation was made.

Agenda Item 12. Space, facilities and services for the Secretariat

Space and general administrative services are provided to the Secretariat by the Government of Canada through Fisheries and Oceans Canada (DFO). The original agreement commenced on April 1, 1992, and continues indefinitely with a review every three years. In 2001, PICES and

DFO signed a new agreement that covers the period between April 1, 2001, and March 31, 2004. Considering a rise in postage fees and a substantial increase in the size of PICES mail-outs, PICES and DFO consented to adjust the agreement, effective April 1, 2002. According to the amended agreement, PICES is to pay an annual sum of \$28,000 (in quarterly payments of \$7,000), which includes \$23,500 for postage. Figures for telephone and fax lines (\$2,500) and janitorial/ maintenance services stay the same.

In June 2001, PICES registered “*pices.int*” as its domain name to maintain the Home Page and e-mail addresses. The initial cost of equipment and installation was \$2,700. The monthly cost of operation is about \$140.

Agenda Item 13. Administrative matters

Tax levy for Canadian personnel

Tax levies are an important source of alternative “revenue” for PICES, but this practice currently extends only to the foreign personnel. It was noted that other international organizations with headquarters in Canada, like NAFO and INPFC, have had such a practice for all staff members. Adoption of such a practice by PICES would greatly increase PICES’ revenue (with the current level of salaries, to about \$70,000 per year). Canada was requested to explore the feasibility of an amendment to the Headquarters Agreement that will allow the extension of the tax levy practice to all staff of the Secretariat.

Tax exemption for PICES in member countries

Tax rebates from the federal and provincial governments in Canada are another important source of alternative “revenue” for PICES (*e.g.*, about \$10,000 in 2001 and \$14,000 in 2002). It would be beneficial for PICES’ financial status if the Organization could be exempt from sales tax in some of our other member countries, especially the US. The United States will explore the possibility of tax exemption for PICES.

Canadian “Acceptance” for foreign personnel

From the first foreign staff being hired at the Secretariat, they and members of their families have been granted a special “Acceptance” status

by the Canadian Department of Foreign Affairs and International Trade. Unfortunately, such a status is only granted on an annual basis, even though there is proof that the foreign staff are offered a 3-year or 5-year term of office. The process of having to renew this status every year creates great personal and administrative inconvenience, because not only is the staff and family without any personal identification during the process, but the provincial medical insurance also promptly discontinues medical coverage on the day the “Acceptance” expires, and it takes 3-6 months to re-instate the coverage. Canada will inform the Secretariat of the process required to request a change in the term of “Acceptance” status.

US Visa for foreign personnel

The United States recognizes PICES as an international organization, yet treats PICES’ Russian staff as a “Russian diplomat” instead of an international organization employee when issuing visas. The United States was requested to resolve this problem.

Agenda Item 14. Appointment of Finance and Administration Committee Chairman

According to the Rules of Procedure (Rule 15), “*The Chairman of the Finance and Administration Committee (F&A) shall be appointed by the Council from amongst the Committee’s members for a term of two years and shall be eligible for re-appointment only once for a successive term.*” Dr. Richard J. Marasco of U.S.A. was appointed as the F&A Chairman at PICES VII in 1998 (Fairbanks, U.S.A.), and re-appointed at PICES IX in 2000 (Hakodate, Japan). At PICES XI, at the recommendation of F&A, Council extended his term for one year (Decision 02/A/7). Russia stated that Dr. Marasco is doing an excellent job as the F&A Chairman and suggested that Council extended his term for one more year. This motion was supported by all countries.

Agenda Item 15 Adoption of F&A report and recommendations to Council

The Committee approved the F&A Report and its recommendations to Council.

F&A Endnote 1

Participation List

Canada

Robin Brown (advisor)
Laura Richards

Japan

Tatsu Kishida (advisor)
Tokimasa Kobayashi
Motobumi Manabe (advisor)
Tokio Wada (advisor)

People's Republic of China

Not represented

Republic of Korea

Keun-Oh Kim (advisor)
Yong-Ju Lee (advisor)
Hyun-Churl Lim

Russia

Igor I. Shevchenko

U.S.A.

Elizabeth J. Tirpak

Other

Richard J. Marasco (Chairman, F&A)
Alexander Bychkov (Executive Secretary)

F&A Endnote 2

F&A Committee Meeting Agenda

1. Welcome and opening remarks
2. Adoption of agenda and meeting procedures
3. Audited accounts for fiscal year 2002
4. Annual contributions
 - a. National contributions for 2003 and beyond
 - b. Proposed changes to PICES' Rules of Procedure and Financial Regulations
 - c. Analysis of inflation-adjusted annual contributions from 1992-2002
5. Fund-raising activities
6. Completion of items from the report of PICES Review Committee
 - a. Interim Science Board/Governing Council Meeting
 - b. Review of current publication practices of the Organization
 - c. Re-naming of positions at the PICES Secretariat
7. Budget
 - a. Estimated accounts for fiscal year 2003
 - b. Interest and other income
 - c. Home Leave and Relocation Fund
 - d. Trust Fund
 - e. Working Capital Fund
 - f. Proposed budgets for fiscal year 2004 and fiscal year 2005
8. Report of Study Group on *PICES Capacity Building*
9. PICES Intern Program
10. PICES Visiting Scientist Program
11. Schedule and financing of future Annual Meetings of the Organization
12. Space, facilities and services for the Secretariat office
13. Administrative matters
 - a. Tax levy for Canadian personnel
 - b. Tax exemption for the Organization in member countries
 - c. Canadian "Acceptance" status for foreign personnel
 - d. US visa for foreign personnel
14. Appointment of F&A Chairman
15. Adoption of F&A report and recommendations
16. Other business

Auditor's report (2002) to the Organization



To the Council of the
North Pacific Marine Science Organization

We have audited the statement of financial position of North Pacific Marine Science Organization as at December 31, 2002 and the statement of operations and changes in fund balances for the year then ended. These financial statements are the responsibility of the organization's management. Our responsibility is to express an opinion on these financial statements based on our audit.

We conducted our audit in accordance with Canadian generally accepted auditing standards. Those standards require that we plan and perform an audit to obtain reasonable assurance whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation.

In our opinion, these financial statements present fairly, in all material respects, the financial position of the organization as at December 31, 2002 and the results of its operations and changes in fund balances for the year then ended in accordance with generally accepted accounting principles.

Flader & Greene
Chartered Accountants
9768 Third Street
Sidney, B.C.,
Canada. V8L 3A4

Sidney, B.C.
March 13, 2003

**STATEMENT OF FINANCIAL POSITION
AS AT DECEMBER 31, 2002**

ASSETS	2002	2001
CURRENT ASSETS		
Cash and short term deposits	\$ 637,748	\$ 559,620
Accounts receivable	21,387	36,240
Prepaid expenses	5,253	2,350
	\$ 664,388	\$ 598,210

LIABILITIES		
CURRENT LIABILITIES		
Accounts payable	\$ 9,624	\$ 14,401
Funds held for contracting parties (Note 3)	194,000	188,000
	203,624	202,401

FUND BALANCES		
WORKING CAPITAL FUND	223,264	180,809
TRUST FUND	127,500	105,000
HOME LEAVE RELOCATION FUND	110,000	110,000
	460,764	395,809
	\$ 664,388	\$ 598,210

**STATEMENT OF OPERATIONS AND CHANGES IN FUND BALANCES
FOR THE YEAR ENDED DECEMBER 31, 2002**

	General Fund	Working Capital Fund	Trust Fund	Home Leave Relocation Fund	2002 Total	2001 Total
FUND BALANCES , beginning of year	-	\$ 180,809	\$ 105,000	\$ 110,000	\$ 395,809	\$ 425,560
SOURCES OF FUNDS						
Contributions from Contracting Parties	560,000	-	-	-	560,000	574,800
Budgeted transfer to General Fund	59,000	(59,000)	-	-	-	-
Additional transfer to General Fund	4,000	(4,000)	-	-	-	-
Voluntary contributions and grants (Note 4)	-	115,210	35,301	-	150,511	93,872
Interest and other income (Note 5)	-	110,810	326	2,053	103,189	63,221
FUND BALANCES , before expenditures	623,000	333,829	140,627	112,053	1,209,509	1,157,453
EXPENDITURES						
Personnel services	304,000	17,113	-	-	321,113	307,604
Travel	82,152	-	31,873	-	114,025	104,513
Communication	30,753	-	-	-	30,753	29,879
Contractual services	14,719	-	-	-	14,719	10,490
Printing	68,901	-	-	-	68,901	63,871
Supplies	7,447	-	-	-	7,447	5,720
Equipment	6,512	1,701	-	-	8,213	5,849
Annual Meeting	45,866	4,124	-	-	49,990	113,807
Workshops	58,992	9,058	-	-	68,050	65,756
Relocation	-	-	-	-	-	4,830
Miscellaneous	3,563	-	-	-	3,563	2,912
PICES X Anniversary	-	31,144	-	-	31,144	33,680
Intern program	-	-	26,986	-	26,968	17,512
Ecosystem Status Report	-	10,581	-	-	10,581	-
Unrealized losses on foreign exchange	(6,722)	-	-	-	(6,722)	(4,689)
	616,183	73,721	58,841	-	748,745	761,644
NET FUNDS AVAILABLE	6,817	260,108	81,786	112,053	460,764	395,809
TRANSFER TO WORKING CAPITAL FUND (Note 6)	(6,817)	8,870	-	(2,053)	-	-
INTERFUND TRANSFERS (Note 7)	-	(45,714)	45,714	-	-	-
FUND BALANCES , end of year (Note 8)	-	\$ 223,264	\$ 127,500	\$ 110,000	\$ 460,764	\$ 395,809

**NORTH PACIFIC MARINE SCIENCE ORGANIZATION
NOTES TO THE FINANCIAL STATEMENTS
DECEMBER 31, 2002**

1. PURPOSE OF ORGANIZATION

The North Pacific Marine Science Organization (PICES) is an intergovernmental non-profit scientific organization whose present members include Canada, Japan, the People's Republic of China, the Republic of Korea, the Russian Federation and the United States of America. The purpose of the organization is to promote and coordinate marine scientific research in order to advance scientific knowledge of the North Pacific and adjacent seas.

2. ACCOUNTING POLICIES

The financial statements are prepared in accordance with the North Pacific Marine Science Organization's Financial Regulations and are prepared in accordance with Canadian generally accepted accounting principles. The following is a summary of the significant accounting policies used in the preparation of these financial statements:

(a) Fund Accounting

The Working Capital Fund represents the accumulated excess of contributions provided from Contracting Parties over expenditures in the General Fund. The purposes of the General Fund and Working Capital Fund are established by Regulation 6 of the Organization Financial Regulation.

The Trust Fund was established in 1994 for the purpose of facilitating participation of a broad spectrum of scientists in activities of the Organization.

The Home Leave Relocation Fund was established in 1996 to pay relocation and home leave expenses of new employees and their dependents to the seat of the Secretariat and removal after period of employment has ended, and to provide home leave for international staff. This fund is set at \$110,000.

(b) Capital Assets

Capital assets acquired by the Organization are expensed in the year of acquisition.

(c) Income Tax

The Organization is a non-taxable organization under the Privileges and Immunities (International Organizations) Act (Canada).

(d) Foreign Exchange

Transactions originating in foreign currencies are translated at the exchange rate prevailing at the transaction dates. Assets and liabilities denominated in foreign currency are translated to equivalent Canadian amounts at the current rate of exchange at the statement of financial position date.

3. FUNDS HELD FOR CONTRACTING PARTIES

The funds held for contracting parties are advance contributions from Japan (\$97,000) and U.S.A. (\$97,000) for their 2003 fees.

4. VOLUNTARY CONTRIBUTIONS AND GRANTS

	Working Capital Fund	Trust Fund
NMFS contribution to NPESR/VSP	\$ 22,976	-
GEM/EVOS contribution to NPESR/VSP	13,691	-
GEM/EVOS contribution to VOS Workshop	6,006	-
GLOBEC contribution to Gijon Symposium	3,052	-
Grant from Alfred P. Sloan Foundation	69,485	-
Grant from SCOR for PICES X	-	7,840
Contributions to Intern Program:		
Fisheries and Ocean Canada	-	10,000
Alaska Fisheries Science Center, NMFS	-	15,164
TINRO - Center	-	2,297
	\$ 115,210	35,301

5. INTEREST AND OTHER INCOME

	Working Capital Fund	Trust Fund	Home Leave Relocation Fund
Interest income	\$ 1,974	326	2,053
Income tax levies	28,670	-	-
GST, PST & WCB rebates	14,334	-	-
Other Income	98	-	-
Douglas & McIntyre Rebate	18,488	-	-
Registration fees	37,246	-	-
	\$ 100,810	326	2,053

6. TRANSFER TO WORKING CAPITAL FUND

Pursuant to Financial Regulation 6 (iii), the Working Capital Fund is to be increased by the surplus in the General Fund.

Pursuant to the decision of the Governing Council, \$2,053 was transferred to the Working Capital Fund to restore the Home Leave Relocation Fund to a maximum level of \$110,000.

7. INTERFUND TRANSFERS

Pursuant to decision 02/A/3(iii) of the Governing Council, an amount to keep the Trust Fund at the level of \$100,000 was transferred from the Working Capital Fund. In addition, Council approved the transfer of \$27,500 to bring the Trust Fund balance to \$127,500.

8. WORKING CAPITAL FUND SURPLUS

Pursuant to decision 02/A/3(ii) of the Governing Council, \$110,500 of the funds held in the Working Capital Fund will be transferred to the General Fund to reduce 2003 contributions.

9. COMMITMENTS

General administrative and communications services are provided to the Secretariat of the Organization by the Government of Canada through the Department of Fisheries and Oceans. The agreement was amended April 1, 2002 and continues until March 31, 2004. The fixed cost for services is \$28,000 per year which are paid quarterly as invoiced.

10. FINANCIAL STATEMENTS

A statement of cash flows has not been presented, as the required information is readily apparent from the other financial statements presented and the notes to the financial statements.

F&A Endnote 4

Payment Schedule of National Contributions

	Canada	China	Japan	Korea	Russia	U.S.A.
1992 ¹	June 9, 92	Sept. 29, 92	March 23, 92			April 24, 92
1993	Dec. 14, 92	July 30, 93	March 12, 93			Jan. 8, 93
1994	Feb. 22, 94	March 14, 94	Jan. 28, 94			Feb. 14, 94
1995	Jan. 4, 95	May 29, 95	March 4, 95		July 18, 95	March 21, 95
1996	Feb. 21, 96	May 23, 96	Jan. 12, 96	July 9, 96	Feb. 21, 96	Feb. 29, 96
1997	Dec. 20, 96	March 27, 97	April 21, 97	May 6, 97	Oct. 8, 97	Jan. 20, 97
1998	Feb. 3, 98	May 8, 98	Jan. 13, 98	Dec. 5, 98; Jan. 6, 99²	July 22, 98	May 7, 98
1999	Nov. 30, 98	Nov. 26, 99	March 29, 99	Aug. 16, 99	Dec. 13, 99	Jan. 27, 99
2000	Feb. 9, 00	Aug. 29, 00	Nov. 30, 99	June 1, 00	Nov. 2, 00	Jan. 18, 00
2001	Jan. 24, 01	Dec. 10, 01	Dec. 13, 00	Aug. 23, 01	May 18, 01	Jan. 3, 01
2002	Jan. 21, 02	Oct. 8, 02⁴	Nov. 27, 01	Aug. 26, 02	June 10, 02³	Dec. 24, 01
2003	Jan 13, 03	Oct. 2, 03⁵	Dec. 11, 02	May 5, 03	Apr. 2, 03⁶	Dec. 6, 02

- ¹ partial year from March 23-December 31, 1992;
² partial payment in 1998, remainder paid in 1999;
³ partial payment (72%), remainder paid October 10, 2002;
⁴ partial payment (95.7%), remainder paid October 3, 2003;
⁵ partial payment (78%), remainder still unpaid;
⁶ partial payment (96.5%), remainder paid July 18.

F&A Endnote 5

External funding and special contributions for various PICES projects in 2003

Continuous Plankton Recorder (CPR) Program

- A grant of US \$185,000 from the North Pacific Research Board (U.S.A.) was received to maintain the east-west transect of the PICES Continuous Plankton Recorder (CPR) survey of the North Pacific and the southern Bering Sea from July 2003 to June 2005.
- The Gulf of Alaska Ecosystem Monitoring and Research Program (GEM) of EVOS (Exxon Valdez Oil Spill Trustee Council,

U.S.A.) agreed to fund the sample collection and analysis for the north-south transect of the PICES CPR survey from 2004 to 2006, at a level of US \$120,000 per year.

North Pacific Ecosystem Status Report

- Alaska Fisheries Science Center (AFSC) of National Marine Fisheries Service (NMFS, NOAA, U.S.A.) and EVOS/GEM Program contributed US \$12,450 and US \$32,600 (\$16,000 from US FY 03 and \$16,600 from

US FY 04) respectively, to support the development of the North Pacific Ecosystem Status Report.

Reminder: Earlier AFSC contributed US \$24,260 (US \$9,260 in 2001 and US \$15,000 in 2002), and EVOS/GEM provided US \$10,000 to finance the production of a pilot North Pacific Ecosystem Status Report.

Census of Marine Life Report

- A grant of US \$45,000 from the Alfred P. Sloan Foundation (approved in 2002), will be used in 2003 to produce a report for the Census of Marine Life entitled “Marine life in the North Pacific Ocean: The known, unknown and unknowable”. This report is closely linked to the North Pacific Ecosystem Status Report.

Ecosystem modeling

- A grant from the Nakajima Foundation (approved in 2001) was used to finance a MODEL/REX Workshop on “Improvements to the PICES NEMURO model” (January 24-27, 2002, Nemuro/Yokohama, Japan) and a MODEL workshop to “Embed NEMURO and NEMURO.FISH into a 3-D circulation model” (March 3-6, 2003, Yokohama, Japan).
- Japan Fisheries Research Agency provided a grant of JPY 6,000,000 (from April 2003 to March 2006) to support international collaboration on the development of a model on the coupled response of lower and higher trophic level ecosystems for climate variability in the North Pacific. This grant will be used to convene 3 workshops – two in Japan (2003 and 2005) and one in the United States (2004).

Biogeochemical data integration and synthesis

- IOC (Intergovernmental Oceanographic Commission) provided US \$6,000 to PICES for the publication of “Guide of best practices for oceanic CO₂ measurements and data reporting” being prepared by the PICES WG 17 on *Biogeochemical data integration*

and synthesis to ensure a large print run. This publication is expected in 2004.

Intern Program

- In addition to their annual fees, Canada and U.S.A. contributed \$10,000 and \$17,200, respectively, to finance the 2003 PICES Intern Program.

Reminder: So far, 3 countries have contributed to the Trust Fund to support the Intern Program: Canada - \$27,500 (2000-2002), the Russian Federation - \$2,300 (2002), and the United States - \$34,500 (2000-2002).

Travel grants for scientists from countries with “economies in transition”

- SCOR (Scientific Committee on Oceanic Research) approved two grants to support the travel of scientists from countries with “economies in transition” to scientific meetings organized by PICES: US \$7,000 (US \$5,285 was expensed through PICES) for the PICES/GLOBEC/ICES Zooplankton Production Symposium (May 19-23, 2003, Gijón, Spain) and US \$5,000 for PICES XII (October 10-18, 2003, Seoul, Republic of Korea).

Other

- The Southwest Fisheries Science Center (National Marine Fisheries Service, NOAA, U.S.A.) offered US \$18,200 to facilitate the gathering and coordination of potential international PaCOS (Pacific Coastal Observing System) contributions, and to design basic governance structure options for coordinating biological observations between the United States, Canada and Mexico.
- GLOBEC contributed about \$4,630 to finance the production of a special joint PICES/GLOBEC issue of PICES Press that focused on results from the PICES Eleventh Annual Meeting and the Second GLOBEC Open Science Meeting, held sequentially in Qingdao, People’s Republic of China, in October 2002.

Review of PICES Publication Program

Executive Summary

At the request of PICES, a review of the PICES publication program was conducted from September 16-19, 2003. During its first 10+ years, PICES has published a growing number of documents now totaling more than 65 (14 peer-reviewed) in six different publication series and 22 issues of the newsletter, PICES Press. Considering the very small PICES Secretariat staff (4 plus an intern), the publication record of high-level scientific materials is exceptional, and the staff has made creative use of co-publishing ventures to advance the Organization's publishing program. However, the workload for the Secretariat staff has become a serious burden that must be addressed and alleviated. Most important is the addition to the Secretariat staff of a professional editor to assume control of editorial production duties, and who can introduce up-to-date editorial methods and new desktop publishing technology to the Organization. Also important will be an updating of the PICES website so PICES publications can be made broadly available worldwide on it. This may necessitate utilizing a contract webmaster and, in the future, perhaps a part-time staff webmaster. Additionally, PICES staff, when augmented with a full-time editor, can take several steps to emphasize PICES identity and recognition of its publications. In the future, PICES may need to hire a second full-time staff member who would attend to website management as well as assisting with editorial duties.

Background

The North Pacific Marine Science Organization (PICES) was established in 1992 to promote international cooperative research efforts to solve key scientific problems in the North Pacific Ocean. In slightly over 10 years, PICES has become a recognized and major international science organization, and its publication activities have expanded significantly in recent years to advance and support its goals.

Accordingly, in 2002, the PICES Review Committee recommended an external review of current publication practices and needs of PICES. At the 2002 Annual Meeting, the Finance and Administration Committee supported this action and requested that the Executive Secretary secure the external review of these activities and examine both the financial and technological aspects of PICES's approach to publishing. The review was to examine:

- PICES Publications -- Annual Report, newsletter, Scientific Report Series, primary journal publications, meeting announcements/flyers, and abstract books;
- Costs, methods, and efficiencies of distributing these publications;
- The human, financial, and technological resources used to produce and distribute PICES publications;
- Efficiencies in each of these areas that could be achieved via new or altered technology;
- Plans (and costs) for the Executive Secretary on the implementation of such changes.

PICES Publications Review Team

At the request of PICES, a critical review of the Organization's publication program was conducted from September 16-19, 2003 by two officials with the U.S. Department of Commerce's National Marine Fisheries Service (NMFS): W. L. Hobart, Chief, NMFS Scientific Publications Office, and G. J. Duker, Director, Publications Program, NMFS Alaska Fisheries Science Center. The NMFS has been involved in the editing and publication of peer-reviewed marine science literature since its founding in 1871.

The review team has examined PICES' publications and publishing procedures developed in the first 10 years of service, and has identified strengths that can be reinforced and needs that must be addressed as PICES moves into its second decade of growth.

PICES Publications

PICES regularly publishes seven categories of general, scientific, and technical information in the following publications:

1) **PICES ANNUAL REPORT** – This document provides detailed reports of both the administrative and scientific components of the Organization. Reports from the Governing Council, Finance & Administration Committee, and planning reports from Scientific and Technical Committees, Scientific Programs, and Working Groups are included.

2) **PICES SCIENTIFIC REPORTS** – This information series includes PICES workshop proceedings, data reports, planning reports, etc. Issues are usually reviewed by convenors or committee members and have full-color graphics.

3) **SPECIAL ISSUES** – These publications (approximately four per year) are published cooperatively with peer-reviewed scientific journals. Individual manuscripts provide extensive detail and research findings.

4) **BOOKS** – These hard-bound volumes are peer-reviewed or journal quality publications that are produced for PICES by recognized professional publishing houses.

5) **PICES PRESS** – This semi-annual newsletter highlights current PICES research, describes the general activities of PICES, and lists new PICES publications. It is published in full color.

6) **COLLECTED MEETING ABSTRACTS** – This series provides abstracts of oral presentations and posters from meetings organized and sponsored by PICES. This information lacks extensive detail and may be preliminary or partial, but it is an unofficial record of information planned for the meetings.

7) **PICES ECOSYSTEM STATUS REPORTS** – These reports summarize the

current state or knowledge on different topics by North Pacific region and also receive peer reviews.

In slightly over 10 years the PICES Secretariat has published 27 Scientific Reports (25 of them in the PICES Scientific Report Series), coordinated and edited 10 Special Issues (5 in *Progress in Oceanography*, 2 in *Journal of Oceanography*, 1 in *Deep-Sea Research II*, 1 in *Marine Environmental Research* and 1 in the *Canadian Journal of Fisheries and Aquatic Sciences*; 3 more Special Issues are in progress and will be published in early 2004). PICES has also produced 2 books, published 11 Annual Reports, 16 volumes of collected abstracts (12 for Annual Meetings and 4 for large inter-sessional symposia), and 22 issues of the PICES Press newsletter. The current cost to PICES for printing these publications is about CD\$ 90,000 per year.

PICES Staffing

The entire staff of the PICES Secretariat includes four regular members: Executive Secretary, Deputy Executive Secretary, Deputy on Administration, and Administrative Assistant. In addition, an intern is on staff via the PICES Intern Program. Given such a small staff, the editorial production that they have been able to achieve, without a full-time editor, is phenomenal. Because the PICES Secretariat serves also as PICES editors, the increasing level of editorial production has taken over an inordinate amount of their time.

Complicating and aggravating this development is the problem that all science editors have authors for whom English is a second language. These manuscripts require 4-5 times more editorial attention and effort to prepare them for publication. And because PICES is an international organization, a large percentage of the manuscripts it publishes fall into this category. This growing editorial load, which cannot be avoided, has become a serious drain on the time of the PICES Secretariat that needs to be resolved.

PICES Publishing

PICES utilizes two methods for publishing its documents: direct publishing and co-publishing. In direct publishing, PICES has established contracts with local (British Columbia) printers to produce its Annual Reports, PICES Scientific Report series, newsletter (PICES Press), and abstract volumes.

Co-publishing has been developed by the PICES Secretariat to utilize the expertise of recognized book and/or journal publishers and reduce the unit cost of publishing its peer-reviewed science. This type of arrangement both increases the distribution of Special Issues and adds prestige to the journal publisher that works with PICES. Co-publishing, for PICES, has proven to be an effective way to off-load some editorial work (onto journal and book editors) and editorial production and distribution costs (onto journal publishers). To ensure publication within 12-16 months, the PICES Executive and Deputy Executive Secretary routinely serve as coordinating guest editors with these journals.

Review Observations

The reviewers were surprised to learn, given the large output of high-quality science publications, that PICES did not have a professional editorial staff, and that routine editorial work (including the extensive re-writing and revision of many manuscripts prepared by scientists for whom English is a second language) had to be performed by the PICES executives. They certainly deserve commendation for coping effectively with a difficult and growing editorial workload and for finding creative and successful ways to deal with those tasks. We firmly believe, however, that PICES is at an editorial crossroads, and that it must add more resources to handle the increasing editorial needs of the North Pacific community. The alternative, reduction in the output of important North Pacific science, would be a poor option.

The extent and variety of PICES publications and the volume of contributions published seem very well adapted to the mission and goals of the organization, to the scope of its activities, and to

PICES geographical range. The newsletter, PICES Press, is an effective tool for communication to PICES constituents. Likewise, the Scientific Reports, Annual Reports, and Annual Meeting Abstracts well serve PICES needs.

Co-publishing, the utilization of outside agencies (i.e., university or Sea Grant presses) and private publishers (peer-reviewed scientific journals) to publish and disseminate PICES science has been very creative and efficient and should be continued and expanded if possible. Using such outlets brings greater recognition and prestige to both the publisher and to PICES. Perhaps of equal importance is that it shifts large publishing costs to those outside organizations and thereby allows PICES to reach a broad audience at a much lower cost than if it had to do the publishing itself in separate publications.

The current use of guest editors and outside peer-reviewed journals is a most appropriate way to publish PICES science, and we were impressed with the extent to which the PICES Secretariat has successfully employed this technique. Likewise, the use of hard-cover books, published by private organizations, has been successfully used to make special topics readily available to the scientific community. The acceptance of these PICES initiatives by the private sector is a fine testament to the high level of PICES scientific communications and to the Organization itself.

We were further impressed with the judicious use of historical materials. Science is not conducted in a vacuum; rather, it is a continuous process whose foundations can be traced back in time through earlier publications. And the review of those early foundational works and initiatives often stimulates the creative thoughts that lead to further scientific advancements.

The proposed North Pacific Ecosystem Status Report is also an exceptionally ambitious project that will require a considerable investment in editorial work. The concept is an excellent one, and it is somewhat analogous to the "Our Living Oceans" (OLO) publications of the U.S. National Marine Fisheries Service. The OLO

began as a biological report (on the fisheries status) (<http://spo.nwr.noaa.gov/olo99.htm>), and it has been extended into an Economic Report and now (in press) a report on the Status of Marine Habitats. However, the PICES North Pacific Status Report covers a vastly broader realm and additional aspects that the OLO does not address, and it will provide a fine benchmark that can be used to chronicle and track North Pacific environmental issues.

Recommendations

PICES editorial needs and practices have obviously grown over time, and there are some important steps that can be taken now that will help update PICES editorial practices and allow it to cope effectively with future publishing needs.

PICES Staff and Management

It quickly became obvious in our review that the current professional staff of PICES is seriously overloaded with editorial duties required by the very large volume of materials (both informal and peer reviewed) that are generated by scientists for whom English is a second language at best. These contributions are extremely valuable, but they require an immense amount of time to put them into readable form while not changing the intent of the author.

This overloading of the PICES Secretariat seriously limits its participation in other activities, and PICES is long overdue to add at least one professional editor to coordinate and perform these and other important editorial duties. PICES has several options to obtain the needed editorial expertise.

1) The obvious step would be to hire a full-time professional editor with a strong background in the biological sciences. The cost would likely be in the salary range of US\$45,000-70,000, not including benefits (retirement, health program, etc.). Not only would such a staff person be able to strengthen PICES editorial work and products, but they would very likely be able to achieve significant cost savings in publications production.

- 2) Alternatively, PICES could establish an official “PICES Editorial Board” of volunteer scientists/editors and charge them with editing manuscripts and providing them in publishable form (a stipend might be provided for such work). However, we do not view this as a good option because few scientists have the time to spend on such “extra” work unless their agency grants them the time to perform such duties. In most cases, scientists are heavily taxed already in preparing their own manuscripts.
- 3) PICES could seek out local (Victoria or Vancouver, B.C.) university students to perform editorial duties at low or no cost as part of their university studies. Our experience with such an option, however, is that this is only a short-term “answer” to a large editorial workload, and it also does not give an organization the needed editorial continuity.
- 4) PICES could hire professional contract editors to perform the needed editorial duties. This has been done by the CalCOFI organization, but they only have one publication per year, generally, whereas PICES has many. It is also likely that there would be little cost savings with this option, but it could greatly ease the editorial demands now placed on the PICES Secretariat.
- 5) PICES could also establish a contract with a company that provides professional editorial work for a fee. Again, there would be little cost savings and insufficient editorial continuity (the company would likely assign different editors to different editorial projects). Our experience with this option is that it can be used to process a one-time editorial overload (or backlog), but that it is not the best long-term solution.

Finally, our experiences over the years with each of these alternatives to solve editorial needs that have grown over the years leaves no doubt that the most appropriate option to handle PICES’ extremely high editorial workload is to hire a full-time editor for the PICES staff. This would give the further benefit of allowing PICES to plan for future publications, handle its now-large publishing enterprise, bring consistency to its

editorial products, and achieve appropriate recognition for PICES publications and programs.

Additionally, a publications professional on the PICES staff could redesign some of the PICES publications and find ways to reduce the use of 4-color printing, both of which together could reduce the costs of some PICES publications as much as 50-70%. Further, such an individual could explore the use of 3- to 5-year renewable printing contracts. Seeking such bids on printing contracts would also help reduce PICES printing costs. Managing such printing procurement processes is a laborious one that PICES current staff does not have time to conduct.

Publication Standards

PICES does not have a “Style Manual” for use internally (in manuscript editing) and externally (for authors to follow). All editorial offices have such a manual or follow one of the standard ones. Standard style guides and other important reference materials are listed in Appendix 1, and PICES can augment them by adapting its own style guide to serve its needs. Use of a manual will also help authors prepare their manuscripts in a format that will require less editorial work. Examples of specialized style manuals are available from many sources (e.g, Alaska Fisheries Science Center and the Council for Biological Editors) and these can be customized to meet the PICES needs. We therefore recommended that the PICES Secretariat develop an online style manual for its authors, editors, and contributors, and this would be a first task for a new editor.

Another practice that saves time is editing in manuscript form (double-spaced, page width text). Once edited, the manuscripts should then be put into page format. It is far more difficult and time consuming to try to edit text when it is already set into a publication’s format.

Publication Identity and Recognition

Agency recognition is an important issue in scientific publishing. Many PICES publications,

from Scientific Reports to the hardbound books and journal articles, lack sufficient PICES identity. While there is nothing wrong with this, “per se”, it does not accord PICES full credit for the work it has generated or supported. In some cases, PICES-generated articles have a “contribution number” for a different organization which gives most credit to the other organization, and readers do not know of PICES’ involvement.

For PICES own publications, pertinent information, such as mission statement, a list of PICES publications, contact information, etc. should be featured consistently in a common place. Another recognition item to include would be a short statement of “How to cite this document”.

Examples of these identity signatures or statements used by other agencies are given in Appendix 2.

In many of the peer-reviewed Special Issues co-published by PICES and private journals, authors have not always acknowledged PICES, and this should be done. It can be as simple as a footnote or as an acknowledgment paragraph, and PICES should recommend inclusion of such recognition by authors of publications that it funds or sponsors.

The visibility and prestige of PICES or any scientific organization is linked to how many times its name is published – this is especially true of the times where a Google “simple search” is a primary means of finding literature. Many agencies or societies ensure receiving proper credit by assigning a “contribution number” to each of their publications. We recommend that PICES explore an appropriate way to place a similar tag onto its related publications (i.e., “This paper is PICES Symposium Contribution Number X” or similar wording).

There are additional ways to achieve greater recognition of PICES goals and accomplishments. For example, a PICES Style Guide should also specify the consistent use of the PICES logo on all of its publications—

where, when, and how it is to be used—so readers will become familiar with its use and placement and will automatically recognize PICES publications. We also recommend that the Secretariat explore the possibility of having related marine science organizations put a link on their websites to the PICES website.

Publication Archiving

Because of the continuing growth and demand for PICES publications, online archiving (posting PICES publications on the PICES website) was identified as a key issue. The ability of the PICES Secretariat to produce Adobe pdf versions of all of its publications is supported by the reviewers. It is recommended that PICES work with their existing printers to produce pdf files of its publications for use on the PICES website. It is also recommended that PICES contract a commercial vendor (e.g., Ikon Office Solutions) to scan documents that do not currently exist in a pdf format.

The cost of this service varies (e.g., US\$100 minimum at US0.25 per page up to 2,000 pages) and is subject to a number of set-up charges – similar to a printer. Emphasis should be placed on providing a high quality, tagged, searchable pdf for Web use. The cost (>US\$15,000) of purchasing the appropriate hardware (e.g., Canon ImageRunner 5000) and software (e.g., ‘ecopy’) to do this function in-house is not supported at this time. Additional staffing would also be required to fully utilize and justify this type of system.

Additional Issues

The Worldwide Web now serves as the major avenue for international dissemination of information products (e.g., PICES publications). Unfortunately, the PICES website is currently out-of-date and the lack of timely information is undoubtedly frustrating for those seeking information. Our discussions indicated that a re-design is underway but it must be considered that any re-design will require considerable effort by the staff of the Secretariat to make the web site a valuable resource. A crucial step may be to “appoint” a webmaster and provide the

training needed for this position. The emphasis should be on selecting someone who is interested in web development and management and who already possesses some of the skills needed for the position. Based on the current workload of the PICES Secretariat, the more obvious step would be to hire (or contract) a part-time web developer (<US\$5,000 per year) to manage the PICES web site. This outsourcing would be similar to the current practice for the creation of the PICES Press.

The issue of PICES “content management” also needs to be addressed by the PICES Secretariat. The content of both the PICES Press and the Annual Reports may provide the foundation for providing up-to-date website content. An example of this type of system can be found on the Alaska Fisheries Science Center’s website (<http://www.afsc.noaa.gov>) where much of the web content is derived from the Center’s “Quarterly Report”.

During our review it became clear that the PICES Secretariat staff relies heavily on Microsoft WORD, a word processing program, for the lay-out (design) and production of its internally produced publications. While effective for long text-intensive documents, MS WORD has several shortcomings when compared to full-fledged desktop publishing (DTP) software programs. Fundamentally, MS WORD lacks the fine control over kerning or linespacing and graphic placement that is available in DTP programs. The time spent in work-around issues with MS WORD could be eliminated with the integration of a true DTP program into the PICES publications program. Examples of state-of-the-art DTP programs include Adobe FrameMaker or PageMaker (US\$500), Corel Ventura (US\$630), and QuarkXPress (US\$650). Adobe InDesign has added more long-document publishing capabilities, but those options are still new and it is still primarily considered a program for short documents.

Due to their complexity, these programs have a steep learning curve. However for book length publications (e.g., some PICES Scientific Reports, Abstract Books, or other complex,

structured documents), these DTP programs offer features to cope with repeating elements (e.g., headers and footers), table of content and index generation, page numbering, and integration of graphics and perhaps other elements including spreadsheet and database elements that are characteristic of PICES publications. An up-to-date DTP system would be needed by a new PICES editor, and this individual would already have the knowledge to integrate PICES editorial products into it.

Once a PICES editor is on staff, thought should be given to publishing the PICES Press quarterly, rather than twice a year. The additional issues would give the organization better and more timely communication with its constituents. This would not be an option without additional staff, however.

Summary

This review has identified several strengths in PICES editorial operations, particularly the use of co-publication with outside publishers and the achievement of a high rate of publication with a limited staff. However, PICES editorial workload now requires the addition of another full time staff position to manage its editorial program and to inaugurate a new and modern desktop publishing system. PICES' ongoing efforts to upgrade its website, and particularly to place its publications on its website will be beneficial and should be expedited as time and funding permit. The goal should be to eventually have all PICES publications available online. In addition, special efforts should be made to better identify appropriate publications as PICES Contributions so the organization gets full credit for its published science.

APPENDICES

Appendix 1

Editorial offices use a variety of reference books to ensure publication and editorial consistency. NMFS offices generally use the CBE Style Manual and the GPO Style Manual, along with other specialized publications. Below is a list of resources that are used for different aspects of scientific writing and editing.

Below is an itemized list of our recommendations for strengthening and augmenting PICES publication program:

- Hire a full-time professional editor to manage the PICES publication program.
- Establish or modify an existing editorial style manual for contributors and editors to follow.
- Update the PICES website.
- Have printers provide pdf files so new PICES publications can be placed on its website.
- As time and money allow, contracts to have earlier PICES publications scanned at high resolution, so all will eventually be posted and accessible on the PICES website.
- Utilize a contract or part-time webmaster to re-design and update the PICES website.
- Continue development of co-publishing and guest editor arrangements.
- Direct the new PICES editor to make publication design modifications to save printing costs.
- Employ up-to-date desktop publishing programs to save time and funds in publication editing and production.
- Direct the new PICES editor to explore use of long-term (3-5 years) printing contracts and put them out for competitive bids to achieve cost savings.
- Task the new PICES editor with developing a standard identification and recognition program for PICES publications and contributions.
- Explore the possibility of having other marine science organizations put links on their web pages to the PICES web page.

Recommended Reference Books

Writing

- Hunter, J. (editor). 1990. Writing for fishery journals. American Fisheries Society, 5410 Grosvenor Lane, Bethesda, MD. 102 p.
- Strunk, W., Jr., and E. B. White. 1979. The elements of style, 3rd edition. Macmillan Publishing Co., New York.
- Tichy, H. J. 1967. Effective writing: For engineers-managers-scientists. John Wiley & Sons, Inc., New York.

Word Usage

- Bernstein, T. M. 1965. The careful writer: A modern guide to English usage. Atheneum, New York. 487 p. (A common sense approach to the English language. Unfortunately this book is out of print).
- Copperud, R. H. 1980. American usage and style: the consensus. Van Nostrand Reinhold Company, New York, NY.

Dictionaries

- Webster's third international dictionary, unabridged. 1964. Merriam-Webster, Inc., Springfield, MA.
- Webster's ninth new collegiate dictionary, desk top. 1983. Merriam-Webster, Inc., Springfield, MA. (This dictionary is revised periodically and is considered an update of the larger Webster's third international.)

Style Manual

- Council of Biological Editors (CBE) Style Manual Committee. 1995. CBE style manual: a guide for authors, editors, and publishers in the biological sciences, 6th edition. Cambridge University Press, Cambridge UK. 825 p. (In addition to serving as the standard style manual for many biological journals, this book includes useful information on writing scientific papers.).
- Government Printing Office style manual. 1984. Superintendent of Documents, U.S. Gov. Print. Office, Washington, DC.
- Sabin, W. A. 1992. The Gregg reference manual, 7th edition, 502 p.

Scientific Names

- Rice, D. W. 1998. Marine mammals of the world: Systematics and distribution. Soc. Mammal. Spec. Publ. 4, 231 p.
- Robins, C. R. (Chairman), R. M. Bailey, C. E. Bond, J. R. Booker, E. A. Lachner, R. N. Lea, and W. B. Scott. 1991. A list of common and scientific names of fishes from the United States and Canada. Am. Fish. Soc. Spec. Publ. 20, 183 p.
- Turgeon, D. D. (Chair), A. E. Bogan, E. V. Coan, W. K. Emerson, W. G. Lyons, W. L. Pratt, C. F. E. Roper, A. Scheltema, F. G. Thompson, and J. D. Williams. 1988. Common and scientific names of aquatic invertebrates from the United States and Canada: Mollusks. Am. Fish. Soc. Spec. Publ. 16, 277 p.
- Williams, A. B. (Chair), L. G. Abele, D. L. Felder, H. H. Hobbs, Jr., R. B. Manning, P. A. MacLaughlin, and I. Pérez Farfante. 1989. Common and scientific names of aquatic invertebrates from the United States and Canada: Decapod crustaceans. Am. Fish. Soc. Spec. Publ. 17, 77 p.

Appendix 2

Mock-ups of “identity” information that can be provided in PICES Scientific Reports.

Appendix 2A – Recommended example of how to provide a PICES mission statement and identify PICES publications on the back cover of PICES publications (e.g., Scientific Report Series).

Appendix 2B – Recommended example on how to provide contact information and a list of recent publications on the inside back cover of PICES publications.

Appendix 2C – Recommended example of how to provide contact and “how to cite” details on the inside of the front cover of a PICES Scientific Report.

Appendix 2A

PICES SCIENTIFIC AND TECHNICAL PUBLICATIONS (Recommendation for PICES Scientific Reports back cover information)

The North Pacific Marine Science Organization (PICES) was established in 1992 to promote international cooperative research efforts to solve key scientific problems in the North Pacific Ocean.

PICES regularly publishes various types of general, scientific, and technical information in the following kinds of publications:

PICES ANNUAL REPORT – This document provides detailed reports of both the administrative and scientific components of the Organization. Reports from the Governing Council, Finance and Administration Committee and planning reports from Scientific and Technical Committees, Scientific Programs, and Working Groups are included.

PICES SCIENTIFIC REPORTS – This information series includes PICES workshop proceedings, data reports, planning reports, etc.

SPECIAL ISSUES – These are peer-reviewed publications (approximately four per year) published in conjunction with scientific journals. Individual manuscripts provide extensive detail and research findings.

BOOKS – These are peer-reviewed or journal quality publications.

PICES PRESS – This semi-annual newsletter highlights current PICES research, describes the general activities of PICES, and lists new PICES publications.

ANNUAL MEETING ABSTRACTS – This series provides abstracts of oral presentations and posters given at PICES Annual Meetings. This information lacks extensive detail and may be preliminary or partial.

PICES ECOSYSTEM STATUS REPORTS – These reports summarize research on different topics by North Pacific region.

Appendix 2B

RECENT PICES SCIENTIFIC REPORTS (Recommendation for inside back cover)

Copies of this and other PICES Scientific Reports are available from
PICES Secretariat
c/o Institute of Ocean Sciences
P.O. Box 6000,
Sidney, British Columbia
Canada. V8L 4B2
E-mail: secretariat@pices.int
On-line versions of most PICES Scientific Reports can also be found at
<http://www.pices.int/Library/scireps.asp>.

PICES SCI. Rep. – List all current reports (Provide names of editors, etc.).

1
2

23 Taylor, F.J.R., and V.L. Trainer (editors). 2002. Harmful algal blooms in the PICES region of the North Pacific. PICES Sci. Rep. 23, 152 p.

Appendix 2C

PICES SCIENTIFIC REPORTS (Recommendation for inside front cover)

Published since 1993, the PICES Scientific Report series includes workshop proceedings, data reports, planning reports, etc.

A limited number of copies are available from
PICES Secretariat
c/o Institute of Ocean Sciences
P.O. Box 6000,
Sidney, British Columbia,
Canada. V8L 4B2
E-mail: secretariat@pices.int
Online versions of most PICES Scientific Reports can also be found at
<http://www.pices.int/Library/scireps.asp>.

Publication in the PICES Scientific Report series does not preclude later publication in scientific journals in a revised form.

This document should be cited as follows:

Taylor, F.J.R., and V.L. Trainer (editors). 2002. Harmful algal blooms in the PICES region of the North Pacific. PICES Sci. Rep. 23, 152 p.

F&A Endnote 7**Budget for fiscal year 2004**

Category	Allotment
Personnel Services	352,000
Annual Meeting	20,000
Special Meetings	68,000
Travel	85,000
Printing	77,000
Communication	32,000
Equipment	10,000
Supplies	7,500
Contractual Services	24,000
Miscellaneous	3,500
Total	679,000

Source	Contribution
Contributions from six Contracting Parties	600,000
External funds for PICES projects with completion in 2004	67,500
Transfer of Working Capital Fund surplus	11,500
Total	679,000

2004 Annual Fee for each Party	100,000
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REPORT OF SCIENCE BOARD/GOVERNING COUNCIL INTERIM MEETING

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The first PICES Interim Science Board meeting, with the participation of Governing Council, was held at the Victoria Conference Center, Victoria, Canada, from April 7-9, 2003. The Science Board Chairman, Dr. Ian Perry, welcomed participants and thanked them for their dedication and commitment to PICES for participating in the meeting. He noted that despite the 10-year history of PICES, this was the first joint meeting between Science Board and Governing Council. It is an important meeting, as it provides an opportunity to discuss larger issues for PICES, in particular relating to future directions of the Organization. It also provides the PICES Chairman and Governing Council with an opportunity to improve their understanding of the basis for discussions and recommendations of Science Board. The participants are identified in *SB-IM Endnote 1*, and the agenda is provided in *SB-IM Endnote 2*.

Agenda Item 1. Updates from the Committees and Programs

BIO Committee

The BIO Chairman, Dr. Vladimir Radchenko, presented his Committee's interim report (full BIO report is included elsewhere in this Annual Report). The main items were related to the development of the BIO Strategic Plan, preparations for BIO sessions at PICES XII, progress of Working Group 14 on *Effective sampling of micronekton*, and the Advisory Panel on *Micronekton sampling inter-calibration experiment*, membership concerns with the Advisory Panel on *Marine birds and mammals* (MBM-AP), and a proposal for a workshop on the ecosystems of subarctic seas.

In discussion, it was noted that the membership of the MBM-AP significantly lacks participation from Russia, Korea and China. It was recommended that the MBM-AP Co-Chairmen contact Dr. Jinping Zhao (China) and Dr.

Hyung-Tack Huh (Korea) to seek suggestions for members from China and Korea; Dr. Radchenko will provide suggestions from Russia. Council members were requested to help support the participation of scientists nominated from their countries.

FIS Committee

The FIS Chairman, Dr. Yukimasa Ishida, presented his Committee's interim report (full FIS report is included elsewhere in this Annual Report). The main points were related to preparations for PICES XII scientific sessions, activities of Working Group 16 on *Climate change, shifts in fish production, and fisheries management*, and possible future working group topics. There is a strong interest among FIS members and other committees to establish a working group on ecosystem-based management. An action item on this topic is described under the MEQ Committee report below.

MEQ Committee

The MEQ Chairman, Dr. John E. Stein, presented his Committee's interim report (full MEQ report is included elsewhere in this Annual Report). The main points were related to topic sessions for PICES XII and ICES' interest in participating in these sessions, development of the MEQ Strategic Plan, and activities of Working Group 15 on *Ecology of harmful algal blooms (HABs) in the North Pacific*.

It was agreed that the description of the roles and responsibilities of a proposed Section on Harmful Algal Blooms (to replace WG 15) need to be discussed by MEQ and presented to Science Board for consideration at PICES XII.

As this is the final year for Dr. Stein as MEQ Chairman, the Committee needs to discuss and nominate a new Chairman, for election at PICES XII.

Interest was expressed, particularly by Korea and China, in expanding PICES involvement in the science associated with North Pacific aquaculture issues. Participants at the meeting recognized that many of the issues associated with the role of aquaculture in marine ecosystems are currently shared or will be shared by all PICES member countries. This is an important issue with several aspects which are not addressed by PICES at present. This topic was discussed later in this meeting under Agenda Item 4.5.

As with FIS, MEQ expressed a strong interest in ecosystem-based management approaches. At least two options were considered: (1) a Working Group co-sponsored by more than one Scientific Committee (or possibly under Science Board), or (2) multiple Working Groups sponsored by individual committees which would each consider specific aspects of ecosystem-based management. Dr. Perry noted that this topic could potentially serve as the basis for a new Scientific Program in PICES. The PICES Chairman suggested that POC might also be interested in this issue. PICES Committees/Programs interested in ecosystem-based management were requested to discuss their interest and the potential format for such a Working Group among their committee members, and develop draft Terms of Reference prior to PICES XII. These suggestions would then be circulated for decision at PICES XII.

POC Committee

Dr. Michael G. Foreman presented the POC interim report on behalf of the POC Chairman, Dr. Kuh Kim (full POC report is included elsewhere in this Annual Report). The main points were related to preparations for PICES XII and suggested sessions for PICES XIII, and activities of Working Group 13 on *CO₂ in the North Pacific Ocean*, Working Group 17 on *Biogeochemical data integration and synthesis*, and the North Pacific Data Buoy Advisory Panel (NPDB-AP).

It was noted that the NPDB-AP needs a Co-Chairman from the western Pacific. As with the MBM-AP, the Technical Coordinator of the Panel was requested to contact Drs. Zhao

(China), Huh (Korea), Shevchenko (Russia) and Ishida (Japan) to seek their help in identifying potential members for this Panel. Council members are requested to help support the participation of scientists nominated from their countries.

For the proposed PICES-CLIVAR workshop on “Scale interaction of climate and marine ecosystems” at PICES XIII, the POC Chairman (or Dr. Foreman) was requested to circulate the draft workshop description to the Chairmen of the other Committees and Programs to invite their co-sponsorship (this includes the CCCC Program and in particular the MONITOR Task Team). In addition, a PICES biologist, preferably from the western Pacific, is being sought to act as co-convenor of this workshop. Suggestions are invited from Committee Chairmen.

For the proposed session on “ Application of global ocean observing systems to physics, fisheries and ecosystems” at PICES XIII, again the POC Chairman (or Dr. Foreman) was requested to circulate the draft session description to the Chairmen of the other Committees and Programs to invite their co-sponsorship.

TCODE

The TCODE Chairman, Dr. Igor Shevchenko, presented his Committee’s interim report (full TCODE report is included elsewhere in this Annual Report). The main points were related to expanding the Bering Sea metadatabase to cover the North Pacific, updating the keywords for this metadatabase, preparations for PICES XII, and updates to the data inventory on the TCODE web page (<http://tcode.tinro.ru/>).

In the discussion that followed, it was noted that TCODE has done an excellent job with assembling a list of web links to databases for meteorological, oceanographic, and biological information in the North Pacific. It was recommended that member countries periodically check and update changes in these web links. Scientific Committees and the CCCC Program were requested to help TCODE in identifying keywords prior to PICES XII. The

TCODE Chairman will e-mail the other Committee and Program Chairmen with examples and a request for help.

TCODE was requested to verify the web links to the data sources, and to include links to the Argo Project as necessary. Scientific Committees and the CCCC Program were asked to check these links on the TCODE web page and to provide TCODE with suggestions for new links prior to PICES XII.

CCCC Program

The CCCC Co-Chairman and Chairman of NEXT (NEMURO Experimental Planning Team), Dr. Harold P. Batchelder, presented the report on NEXT (full CCCC and NEXT reports are included elsewhere in this Annual Report). A draft NEXT plan was developed by the Chairman and circulated to NEXT members in late January 2003. The draft was intended to be provocative (or controversial) so that NEXT members would react strongly in favour or in opposition, but in either case would react and respond to the plan. For whatever reasons, the initial responses were few, although those who did respond generally favoured most elements of the plan. Subsequently, the Chairman learned that some members of NEXT and other scientists that had read the plan had difficulties with some suggestions of the plan. Those scientists have agreed to provide specific written responses to the plan, and the Chairman is currently awaiting these more specific responses and suggestions for modifying the plan. NEXT will complete the task as outlined in the terms of reference prior to PICES XII. The NEXT recommendations will be forwarded to the CCCC Program for distribution to the Task Teams prior to PICES XII, and will be one of several considerations used in developing the CCCC Integration Plan.

Dr. Perry felt that NEXT is an initiative of the CCCC Program, which should report to the CCCC Executive Committee (CCCC-IP/EC). The Committee should then use these recommendations to build towards the integration of the CCCC Program. In the discussion, it was agreed that NEXT should report to the CCCC-IP/EC at PICES XII. A

report on implementing the NEXT recommendations and program integration would then be presented at either the Science Board meeting during PICES XII, or at the next interim Science Board meeting.

The discussion following the presentation considered whether to have a major symposium on integrated/synthesized results of CCCC studies in spring 2005, or in spring 2006. The Executive Secretary noted that time was very short if the symposium would be held in spring 2005. Dr. Batchelder expressed a preference for having the meeting in spring 2006, but noted that he would solicit input on the timing of this meeting from CCCC-IP/EC members by correspondence, and respond to the PICES Secretariat with a recommendation.

The term of the CCCC Co-Chairman from the western Pacific is expiring and a new Co-Chairman must be identified at PICES XII.

Agenda Item 3. Updates on interactions with other organizations

Details on the interaction between PICES and relevant international organization and programs can be found in the Science Board Annual report and Report on Administration (*GC Endnote 3*) included elsewhere in this Annual Report.

Specific recommendations from the interim meeting are listed below:

- PICES should invite the Chairman of the NPAFC Committee on Scientific Research and Statistics to make a presentation on the status of salmon at the PICES North Pacific Ecosystem Status Report workshop in August 2003.
- PICES has a general interest in a symposium on the marine mortality of salmon in 2005/06, but would favour a minor role, letting NPAFC and NASCO develop the specifics and invite PICES to comment.
- The MEQ Chairman was requested to contact the appropriate ICES Working Group regarding a proposal to co-convene a workshop or topic session at PICES XIII on harmful bio-invasions. The MEQ Chairman was also asked to discuss with WG 15 the

potential for ICES participation in the workshop on “Harmful algal blooms - harmonization of data” at PICES XII.

- The PICES Secretariat was requested to send a letter to the ICES Secretariat inviting ICES to send representatives to participate in the sessions on “Ecosystem-based management science and its applications in the North Pacific” and on “Aquaculture in the ocean ecosystem” at PICES XII (in particular suggesting Dr. Stefan Gollasch for the latter).
- The BIO Chairman was requested to advise the Co-Chairmen of the Advisory Panel on *Micronekton sampling inter-calibration experiment* to re-assess the costs of their proposed experimental plan and re-submit the proposal to the North Pacific Research Board in fall 2003, and suggest potential alternative sources of funding.
- The PICES Secretariat was requested to explore the possibility of common interests that the Pacific Sciences Association and PICES may share with regard to PICES XIII activities.

Agenda Item 4. Implementation of PICES Review Committee Report

At PICES XI, Council endorsed the PICES (10 year) Review Committee Report and its recommendations. Discussion at the interim Science Board meeting focused on the implementation of this report.

Dr. George Boehlert noted the need to define principal areas of responsibility of Committees, and to show how these are linked to their Strategic Plans. Many problems are identified and it may be useful for PICES to investigate for ideas in other organizations.

Dr. Boehlert asked to what degree in the PICES Secretariat had attempted to make use of secondment in staffing. The Executive Secretary reported that this had been pursued with little success.

Mr. Qian-Fei Liu suggested that it would be valuable for PICES to review the progress in implementing the Review Committee report and

to make adjustments on an annual basis. This is similar to the concept of having a Strategic Plan for PICES and knowing which proposed activities fit that plan.

Specific items from the Review Committee report were discussed:

Study Group on PICES Capacity Building

Dr. Batchelder presented a draft report of this group on behalf of the Chairman, Dr. Warren Wooster. The main recommendations included:

1. Develop fiscal resources for capacity building, including travel costs;
2. Develop a web-based compendium of training/education opportunities;
3. Enhance opportunities for both young and experienced scientists to participate in PICES activities;
4. Strengthen the commitment of PICES member nations to support PICES and to improve coordination of national involvement in PICES;
5. Develop methodology workshops to improve inter-comparability of methods and train analysts in accepted methods;
6. Establish a permanent Data Management Team to ensure compatibility of national and international data management efforts;
7. Establish a permanent interdisciplinary modeling group to synthesize and integrate available large data sets, determine gaps, and propose new studies;
8. Create a common working environment, including data, techniques, methods, software tools, mathematical models, computing power for sharing among all scientists involved.

Dr. Perry thanked the Study Group for their initial report. In the discussions that followed, SB asked the Study Group to consider the following:

- Identify what could be done with (1) “unlimited” funding; (2) with “limited” funding; and (3) with “no additional funding”, e.g. having students participate in local PICES workshops. Which workshop/training topics would be recommended to occur first, which later? –

