

REPORT OF FISHERY SCIENCE COMMITTEE



The meeting of the Fishery Science Committee (FIS) was held from 13:30-17:30 hours on October 17, 2004. The Chairman, Dr. Yukimasa Ishida, called the meeting to order and welcomed the participants. The meeting was attended by 12 FIS members and 21 observers representing all PICES member countries except China (*FIS Endnote 1*). Dr. Michael Schirripa kindly served as rapporteur.

The Chairman reviewed the proposed agenda (*FIS Endnote 2*) and noted that Agenda Item 17 (PICES website: contributions from FIS) and Agenda Item 19 (Discussion of potential topics towards next major PICES science program) should be discussed by e-mail due to time limitation. The agenda was approved as presented.

Implementation of PICES XII decisions (Agenda Item 3)

At PICES XIII, FIS co-sponsored a 1-day FIS/BIO Topic Session on “Hot spots and their use by migratory species and top predators in the North Pacific” and a ½-day FIS Paper Session. Summaries of the sessions are included elsewhere in this Annual Report.

Progress report of WG 16 on *Climate change and fisheries management* (Agenda Item 4a)

Dr. Richard Beamish submitted an electronic copy of the draft WG 16 report to the FIS Chairman. The report is approximately 85% complete. The contribution by the United States is not yet complete, and forthcoming. A final draft will be completed in the summer of 2005, and the report will be ready for publication in the PICES Scientific Report Series later in 2005. Some issues need to be addressed prior to the finalization of this report. These include the necessity to properly match FAO catches, standardization of the use of species names among countries, and standardized report formatting.

Progress report of WG 18 on *Mariculture in the 21st century* (Agenda Item 4b)

The FIS/MEQ Working Group 18 on *Mariculture in the 21st century – The intersection between ecology, socio-economics and production*, met on October 16, 2004, and had a successful meeting. The WG 18 Co-Chairman, Dr. Carolyn S. Friedman, described the results of the meeting and a workplan. Also, she outlined a possible related session to be convened at PICES XIV. The WG 18 report is included elsewhere in this Annual Report.

Progress report of SG on *Ecosystem-based management science and its application to the North Pacific* (Agenda Item 4c)

The MEQ/FIS Study Group on *Ecosystem-based management science and its application to the North Pacific* (SGEBM), met on October 14, 2004, and the report of this meeting is included elsewhere in this Annual Report. The SGEBM Co-Chairman, Dr. Glen Jamieson, made a presentation on the progress of the Study Group. Dr. George Boehlert noted that the discussion at the Study Group meeting was very broad and could cover a large number of subject areas. Dr. Beamish asked the question “who is actually doing ecosystem-based management today?” Nonetheless, ecosystem-based management remains a goal in many countries. The presentation concluded with a suggestion for a joint MEQ/FIS Topic Session, either half or full day, on “Ecosystem indicators and models” (*SGEBM Endnote 4*).

Proposal for a new Working Group (Agenda Item 5)

Based on the report from the Study Group on *Ecosystem-based management science and its application to the North Pacific*, FIS discussed a possible new Working Group on *Ecosystem-based management science* (WGEBM). It was pointed out that although ecosystem-based

management is a difficult topic, ICES has had some success in its efforts, as shown in a presentation by Dr. Chris Frid at PICES XII. The ICES General Secretary, Dr. David Griffith, welcomed PICES scientists to work with the ICES effort in this area. In general, FIS members from all countries represented at the meeting supported this proposal (*SGEBM Endnote 3*) but noted that the terms of reference are a bit broad, given the time available. Some FIS members wondered whether the ecosystem effects of fishing should be made a focus. It was suggested to clarify the proposal and recommended that habitat degradation and protection be included in the terms of reference. In conclusion, FIS agreed to support the establishment of the Working Group on *Ecosystem-based management science and its application to the North Pacific*, under the direction of FIS and MEQ.

Inter-sessional meetings (Agenda Item 6)

No inter-sessional meetings are proposed.

Topic Session and workshop proposals for PICES XIV (Agenda Item 7)

The theme for PICES XIV is “Mechanisms of climate and human impacts on ecosystems in marginal seas and shelf regions”. Four session topic proposals were considered by FIS:

- a 1-day FIS/CCCC Topic Session on “Evidence of distributional shifts in demersal fish in relation to short- and long-term changes in oceanographic conditions” (*FIS Endnote 3*); this topic was supported, however, it was suggested that demersal invertebrates as well as human impacts that may lead to changes in distribution should be included;
- a ½-day MEQ/FIS Topic Session on “Current and emerging issues of marine and estuarine aquaculture in the Pacific Region: carrying capacity, ecosystem function and socioeconomics” (*WG 18 Endnote 5*); there was general support for this topic from all members;
- a 1-day MEQ/FIS Topic Session on “Ecosystem indicators and models” (*SGEBM Endnote 4*); FIS suggests that this

session would be premature for PICES XIV but should be considered for the following PICES Annual Meeting;

- a ½-day “Modeling climate and fishing impacts on fish recruitment” (*MODEL Endnote 4*); FIS members felt that this topic might be more appropriate as a workshop.

FIS was reminded that a Topic Session entitled “Cold and deep sea corals” will be proposed for the 2006 Annual Meeting due to a conflict with another symposium on corals in 2005.

FIS considered the issue of maintaining a FIS Paper Session. Some members thought that this was a good way to keep opportunities open for students to give presentations. There was general support for holding the FIS Paper Session in 2005 for a half-day.

Requests for travel support (Agenda Item 8)

FIS expects that funds (~CDN \$5,000) will be available for invited speakers of FIS-supported Topic Sessions at PICES XIV.

The WG 16 Co-Chairmen pointed out that, to date, there were no inter-sessional meetings for this working group. To facilitate the rapid completion of the WG 16 report, funds are requested for Dr. Akihiko Yatsu (WG 16 Co-Chairman) to travel to Canada to work with Dr. Beamish. This request is made in addition to the funding that is normally used to support invited speakers to the Annual Meeting. FIS members supported this request.

Proposed publications (Agenda Item 9)

It is expected that the final report of WG 16 will be completed and published in the PICES Scientific Report Series in 2005.

The work of SGEEM could also produce a publication. FIS discussed the format for such a publication. Assuming that the report is not too long, the Science Board Chairman suggested that it could be published as part of the 2004 PICES Annual Report. It was also suggested that it could be published in electronic form on the PICES website.

FIS was advised that a publication in an international journal may result from this year's BIO/FIS Topic Session on "Hot spots and their use by migratory species and top predators in the North Pacific".

Proposals with financial implications (Agenda Item 10)

There were no additional proposals for other items with financial implications.

High priority projects (Agenda Item 11)

No projects are recommended.

Relations with other international programs and organizations (Agenda Item 12)

Dr. Loh-Lee Low (NPAFC) provided information on the joint NPAFC-PICES Symposium on "The status of Pacific salmon and their role in North Pacific marine ecosystems" to be held in conjunction with the 2005 NPAFC Annual Meeting.

Dr. Kuh Kim informed FIS on a proposed CREAMS/PICES program to better understand circulation, climate change and the ecosystems of East Asian marginal seas.

Dr. Douglas E. Hay provided information on the jointly sponsored ICES/PICES session on "A multidisciplinary approach to stock identification of small pelagic fishes" to be convened at the 2005 ICES Annual Science Conference.

Recommendations and draft text on other items to be included in the FIS report to Science Board (Agenda Item 13)

Recommendations and requests are included under each item as required. There are no additional recommendations.

Theme for PICES XV (Agenda Item 14)

FIS suggested the following three potential themes for PICES XV (2006) to be held in Japan:

- Sustainable ocean use;
- Understanding ecosystem processes; and
- Comparison of the ecosystem of the Western and Eastern Gyres.

Discussion of how FIS will contribute to a PICES Action Plan (Agenda Item 15)

Several questions motivated the FIS discussion. Dr. Elizabeth Logerwell asked, "Now when we know that environmental variability affects fish stocks, what do we do?" Dr. Hay asked, "What advice can PICES provide to member nations?" FIS already established (jointly with MEQ) WG 18 on *Mariculture in the 21st century – The intersection between ecology, socio-economics and production*, and recommended (again jointly with MEQ) to form a Working Group on *Ecosystem-based management science and its applications to the North Pacific*, and work by these groups will represent much of the FIS activities over the next few years. Future directions, critical questions, and needs for new research should be included in the terms of references of these Working Groups.

Discussion of developing a Vice-Chairman position for FIS (Agenda Item 16)

Dr. Boehlert asked whether a Vice-Chairman position is necessary. Would this position support and help the Chairman with the meeting work details? Dr. Hay suggested that a Vice-Chairman could be a useful position, with the Chairman from either the west or the east, and the Vice-Chairman from the other side of the Pacific. Dr. Beamish warned about creating a bureaucracy. In general, FIS did not support the idea, and instead suggested that the Chairman should feel free to call upon any of the committee members for help with the workload. FIS representatives from various countries let it be known that they could be called on to help.

PICES website: Contributions from FIS (Agenda Item 17)

The FIS Chairman will work with the PICES Secretariat to provide information to fit the proposed template, and will seek assistance from other FIS members as needed by e-mail.

Discussion of PICES Capacity Building opportunities (Agenda Item 18)

The FIS Chairman expressed concern about the large amount of funding involved and does not necessarily support the idea of a separate Young Scientists Conference with ICES. It was noted that the PICES community already has a program to support young scientists to attend PICES Annual Meetings. FIS members generally agreed with this assessment and believed that PICES is making progress in this direction. Dr. Logerwell offered other suggestions to continue this progress, such as holding workshops on proposal writing and similar topics to help the junior scientist get started on their careers. Russia agreed that, while PICES has such a program, it could go further in helping young scientists. Overall, FIS feels that it is better to continue to support young scientists' involvement in PICES, and FIS does not support the proposal for a separate conference.

FIS Endnote 1

Discussion of potential topics towards next major PICES science program(s) (Agenda Item 19)

FIS members will exchange ideas by e-mail.

Other business (Agenda Item 20)

FIS Best Presentation Award and Poster Award Committee

Following practices of previous years, the convenors of the FIS-sponsored sessions were asked to make the selection. The 2004 FIS Best Presentation Award went to Scott M. Gende (National Park Service, Glacier Bay Field Station) for his paper entitled "Persistence of prey 'hot spots' in southeast Alaska" (co-authored by Mike Sigler).

FIS thanks Dr. Jin Yeong Kim, who served as a member on the Best Poster Award Committee.

Participation List

Members

Richard J. Beamish (Canada)
George W. Boehlert (U.S.A.)
Elena P. Dulepova (Russia)
Douglas E. Hay (Canada)
Alexander I. Glubokov (Russia)
Jin-Yeong Kim (Korea)
Elizabeth A. Logerwell (U.S.A.)
Yukimasa Ishida (Japan, Chairman)
Gordon H. Kruse (U.S.A.)
Takashi Minami (Japan)
Toshikuni Nakatani (Japan)
Laura Richards (Canada)

Observers

Alexander Buslov (Russia)
Vincent Gallucci (U.S.A.)
Churchill Grimes (U.S.A.)
David Griffith (ICES)
Masahide Kaeriyama (Japan)
Oleg Katugin (Russia)
Jacquelynn R. King (Canada)
Sergey Korostelev (Russia)
Nikolina Kovacheva (Russia)
Jae-Bong Lee (Korea)
Loh Lee Low (U.S.A.)
Skip McKinnell (PICES)
Gordon A. McFarlane (Canada)
Alec MacCall (U.S.A.)
R. Ian Perry (Science Board Chairman)
Yasunori Sakurai (Japan)
Michael Schirripa (U.S.A., Rapporteur)
Mikhail Stepanenko (Russia)
Tokio Wada (Japan)
Akihiko Yatsu (Japan)
In-Ja Yeon (Korea)
Oleg Zolotov (Russia)

FIS Endnote 2

FIS Committee Meeting Agenda

1. Welcome and introduction of new members, and nomination of a rapporteur
2. Adoption of agenda
3. Implementation of PICES XII decisions
4. Report of the existing Working Group's activities in the past year, including membership changes
 - a. WG 16 on *Climate change, shift in fish production, and fisheries management*
 - b. WG 18 on *Mariculture in the 21st century*
 - c. SG on *Ecosystem-based management science and its application to the North Pacific*
5. Proposals for new Working Groups
6. Inter-sessional meetings proposed for 2005 and beyond
7. Topic Session and workshop proposals for PICES XIV
8. Travel support requests
9. Publications proposed for 2005 and beyond
10. Other items with financial implications
11. High priority projects
12. Relations with other international programs and organizations
13. Proposed recommendations and draft text on other items to be included in the FIS report
14. Theme for PICES XV
15. Discussion of how FIS will contribute to a PICES Action Plan
16. Discussion of developing a Vice-Chairman position for FIS
17. PICES website: contributions from FIS
18. Discussion of PICES Capacity Building opportunities
19. Discussion of potential topics towards next major PICES scientific program(s)
20. Other business
21. Adoption of FIS report and recommendations to the Science Board

FIS Endnote 3

Proposal for a 1-day FIS/CCCC Topic Session at PICES XIV on "Evidence of distributional shifts in demersal fish in relation to short- and long-term changes in oceanographic conditions"

Demersal fish, either on the continental shelves, slopes or sea mounts, support major fisheries in both the eastern and western Pacific. These include such fish as the rockfishes (genus *Sebastes*), thornyheads (genus *Sebastolobus*) and many flounders (family Pleuronectidae). These species are known to exhibit periodic shifts in their distribution either latitudinally (moving north-south) or longitudinally (moving east-west). While these shifts can at times be attributed to such things as life history characteristics, often they are due to changes in the fish's environment. Changes in the fish's environment can be the result of short-term phenomena, such as seasonal depletions in oxygen levels, or long-term phenomena, such as decadal climate shifts. Shifts in the spatial distribution of these species due to changes in the fish's environment, can cause these populations to move into and out of the areas traditionally covered by the fisheries they support, as well as the surveys that seek to assess their abundance. Consequently, resource

surveys designed to develop annual indices of abundance for these species can produce erroneous trends, and as a result, the stock assessments that depend on these surveys will be inaccurate. If the causes of these distributional changes were known, indices of abundance could be modeled so as to account for these changes in ways other than changes in overall stock abundance. This session invites papers that describe the changes in demersal fishes distributions with specific emphasis on those changes due to changes in climate, either short- or long-term. The goal of the session will be to provide sound evidence for ecosystem-based distributional shifts that can be used to account for some of the year-to-year variability in survey trends of demersal fish that may currently be attributed to changes in overall abundance.

Recommended convenors: Gordon A. McFarlane (Canada), Michael J. Schirripa (U.S.A.) and Mikhail Stepanenko (Russia).