

REPORT OF THE IMPLEMENTATION PANEL ON THE CCCC PROGRAM

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The Executive Committee of the Climate Change and Carrying Capacity Program Implementation Panel (CCCC-IP/EC) met from 17:30-20:00 hours on October 17, 2004. The meeting was chaired by Drs. Harold P. Batchelder and Suam Kim. The Chairmen welcomed the attendees, and after brief introductions of those present (*CCCC-IP Endnote 1*), it was noted that MONITOR had been elevated from a CCCC Task Team to a Technical Committee, as recommended by the CCCC-IP/EC at PICES XII, and now should report directly to Science Board. Also, it was noted that this was the last meeting for the BASS and REX Task Teams, and the inaugural meeting for the new *Climate Forcing and Marine Ecosystems* (CFAME) Task Team. The agenda was reviewed and adopted with slight modifications (*CCCC-IP Endnote 2*).

Review of procedures for Best Presentation Awards and Closing Ceremony

Dr. Batchelder reported on the results of the discussion of this item at the first Science Board session. The procedure of nomination/selection for the CCCC Best Presentation Award by a young scientist will be identical to that used at PICES XII. PICES Secretariat implemented procedures for PICES XIII registration that provided more complete information on which talks were eligible for this award. Drs. Batchelder and William T. Peterson agreed to serve as judges to determine the Best CCCC presentation from the eligible papers in the CCCC Topic Session on “The impacts of large-scale climate change on North Pacific marine ecosystems”, and the CCCC/MODEL Topic Session on “Modeling approaches that integrate multiple spatial and trophic levels between shelf and open oceans”, and from the CCCC/REX Workshop on “The seasonal cycle of plankton production in continental shelf waters around the Pacific Rim”. Dr. Sukyung Kang was

nominated and agreed to serve as a judge representing CCCC on the Best Poster Award committee for PICES XIII.

Mr. Hyun-Cheol Kim (Korea Ocean Research and Development Institute) won the CCCC Best Presentation Award for his paper entitled “Relation between phytoplankton blooming and wind stress in the central Japan/East Sea” (co-authored by S. Yoo and I.S. Oh) presented in the CCCC/REX Workshop.

Business from PICES XII (Agenda Item 3)

There were no items on-going from last year’s meeting that required discussion.

Documentation of scientific sessions (Agenda Item 4)

CCCC-IP/EC discussed responsibilities for documenting CCCC-sponsored Topic Sessions and workshops at PICES XIII. It was agreed that convenors of the CCCC/REX Workshop (Dr. W. Peterson), the CCCC Workshop on “Linking open ocean and coastal ecosystems II” (Dr. Kerim Y. Aydin), and the CCCC/MODEL Topic Session (Drs. Francisco E. Werner and Shin-ichi Ito) would provide session summaries by the end of Wednesday, October 20, to Dr. Batchelder. Drs. Batchelder and Kim will prepare a summary of the CCCC Topic Session on “The impacts of large-scale climate change on North Pacific marine ecosystems” after it concludes on Thursday, October 21. All summaries are included elsewhere in this Annual Report.

Progress reports of Task Team activities (Agenda Item 5)

CCCC-IP/EC received brief reports of CCCC Task Team activities from BASS, REX and MODEL Co-Chairmen, and a more lengthy

report and discussion of CFAME activities from the proposed Co-Chairmen of this Task Team, Drs. Kerim Y. Aydin and Akihiko Yatsu. On October 20, all Task Teams provided final reports that included a summary on progress since PICES XII and recommendations and planned activities for MODEL and CFAME for 2005, and even some for 2006. These reports appear elsewhere in this Annual Report. It was also noted that the Advisory Panel on *Iron Fertilization Experiment in the Subarctic Pacific* (IFEP-AP), had been formerly under BASS, which has now completed its work and has been dissolved, and so the Panel would need a new home. CCCC-IP/EC suggests to Science Board that the Biological Oceanography Committee should be the new home for IFEP-AP.

Changes in CCCC-IP/EC and Task Team membership (Agenda Items 6 and 7)

CCCC-IP/EC endorsed:

- MODEL's request to extend Dr. Werner's term as Co-Chairman for one additional year, with Dr. Thomas C. Wainwright (U.S.A.) to serve as Co-Chairman-elect after PICES XIV. It was noted that this might result in both Dr. Werner and Dr. Shin-ichi Ito's terms ending in 2005 (at PICES XIV), and the Executive Committee might want to consider extending Dr. Ito's term to end in 2006 (at PICES XV). Dr. Ito agreed to consider this extension in his term;
- MODEL's proposal on the following changes in Task Team membership:
 - Drs. Toshio Katsukawa and Hiroaki Saito (Japan) to be replaced by Dr. Goh Onizuka;
 - Dr. Hao Wei (People's Republic of China) to join the Task Team as a member;
 - Drs. Peter S. Ross (Canada), Jae-Hak Lee (Republic of Korea) and Linda Jones (U.S.A.) to formally rotate off the Task Team as they have not participated in recent meetings;
 - Additional members from Canada, People's Republic of China, Republic of Korea and Russia are needed.
- CFAME's request to have Drs. Kerim Aydin (U.S.A) and Akihiko Yatsu (Japan) as initial

Co-Chairmen. It was suggested by CCCC-IP/EC that Dr. Aydin's term be for three years and Dr. Yatsu's term be for two years to avoid simultaneous rotation of both Co-Chairmen in future years;

- CFAME's recommendation that the initial Task Team members be: Drs. Jacquelynne R. King and Gordon A. McFarlane (Canada), Sanae Chiba, Masahide Kaeriyama, Akihiko Yatsu and Yoshiro Watanabe (Japan), Hyung-Ku Kang and Sukyung Kang (Republic of Korea) and Vera Agostini, Kerim Y. Aydin, Brenda L. Norcross and James E. Overland from the United States. No specific suggestions for the People's Republic of China and Russia were made because those countries did not participate (except Dr. Vladimir I. Radchenko) in the CFAME meeting. At the Science Board meeting later in the week, Dr. Radchenko suggested Dr. Elena P. Dulepova as a Russian member to CFAME.

Suggested changes in membership will be forwarded to Science Board and Council for further actions.

The CCCC Co-Chairmen thanked Drs. Peterson and Watanabe for their service as REX Co-Chairmen, and Drs. Yatsu and McFarlane for their service as BASS Co-Chairmen.

Proposals for new subsidiary bodies (Agenda Item 8)

The Executive Committee did not receive any proposals for new subsidiary bodies.

Topic Session and Workshop proposals for PICES XIV (Agenda Item 9)

The following Topic Sessions and Workshops are proposed to be convened:

- a ½-day CCCC/MODEL Topic Session on "Modeling climate and fishing impacts on fish recruitment", possibly joint with FIS (*MODEL Endnote 4*);
- a 1-day CCCC/CFAME Topic Session on "Comparative response of differing life history strategists to climate shifts" (*CFAME Endnote 6*); selected papers from

the session are expected to be published in an international scientific journal;

- a 1-day CCCC/FIS Topic Session on “Evidence of distributional shifts in demersal fish in relation to short and long term changes in oceanographic conditions” (*FIS Endnote 3*);
- a CCCC Poster Session on “GLOBEC, and GLOBEC-like studies in the North Pacific: Observing pattern and inferring process” (*CCCC Endnote 3*);
- a 1-day CCCC/CFAME Workshop on “East-west comparison of community structure, productivity and biodiversity under climate change scenarios” (*CFAME Endnote 7*);
- a ½-day joint IFEP-MODEL Workshop on “Modeling and iron biogeochemistry: How far apart are we?” (*IFEP-AP Endnote 4*).

Theme proposals for future Annual Meetings (Agenda Item 10)

CCCC-IP/EC suggests several potential themes for the Science Board Symposium at PICES XV (October 2006, Japan). The first choice is, “Key recruitment processes and life history strategies: Bridging the temporal and spatial gap between models and data”. A draft description of the theme has been prepared.

Update on CCCC Synthesis Symposium in April 2006 (Agenda Item 11)

Dr. Batchelder reviewed the current status on the planning of the PICES/GLOBEC Symposium on “Climate variability and ecosystem impacts on the North Pacific: A basin-scale synthesis”. He noted that the CCCC Topic Session on “The impacts of large-scale climate change on North Pacific marine ecosystems” at PICES XIII was a preliminary step toward having a successful synthesis symposium. Co-convenors for the symposium are Drs. Harold Batchelder and Suam Kim. A Steering Committee for the symposium has been formed, and they had an informal *ad hoc* meeting early during PICES XIII to discuss a timeline and agenda for the meeting. The Steering Committee consists of Drs. Makoto Kashiwai (Japan), Gordon A. McFarlane (Canada), Vladimir I. Radchenko

(Russia), Yasunori Sakurai (Japan), Franklin B. Schwing (U.S.A), Sinjae Yoo (Korea), and Francisco E. Werner (GLOBEC International). All, except Dr. Kashiwai were able to attend the *ad hoc* meeting. Dr. Batchelder received useful feedback from the committee on the structure of the meeting, and will revise the schedule as suggested to provide more time for organized discussion during the meeting. The symposium will occur April 19-21, 2006, in Honolulu, U.S.A. The meeting has three sub-themes: (1) Regime shifts, (2) Ecosystem productivity and structural responses to physical forcing, and (3) Pan-Pacific comparisons. A preliminary announcement of the symposium has been published previously in PICES Press (Vol. 12, No. 2, July 2004), and a separate printed announcement will be distributed in February 2005.

CCCC activities and travel support requests (Agenda Item 12)

The following meetings are proposed to be convened inter-sessionally (between October 2004 and October 2005):

- a 2-day CCCC/CFAME workshop in late winter or early spring 2005, to develop a work plan for future CFAME activities and to focus on time and space scales of fish, euphausiids, and squids to regime shift (*CFAME Endnote 5*); projected workshop size is 15 participants; preliminary results from this workshop will be presented at the CCCC Synthesis Symposium in April 2006;
- a CCCC/MODEL workshop in September or more likely October 2005, in Japan, that will focus on extending NEMURO.FISH to fish stocks in other geographic regions (Europe, Africa, Asia, South America); the pending APN workshop proposal titled “Toward quantitative understanding of natural fluctuations of marine coastal fisheries of sardines and anchovies and their impact on fishing-dependent human communities” was submitted by Dr. Michio Kishi, and if the funding is awarded, it will support the travel of Chinese, Indian and Bangladeshi young scientists to the workshop; funding has also been requested from IAI, IOC and FRA.

CCCC-IP/EC requests support for the following travel:

- 2 scientists to attend the CCCC/CFAME inter-sessional workshop to develop a CFAME workplan, to be held in late winter or early spring of 2005;
- 2 scientists to attend the CCCC/MODEL inter-sessional workshop on extending NEMURO.FISH to fish stocks in other geographic regions, to be held in Japan, in September/October 2005;
- 1 invited speaker for the CCCC/CFAME Topic Session on “Comparative response of differing life history strategists to climate shifts” at PICES XIV;
- 1 invited speaker for the CCCC/MODEL Topic Session on “Modeling climate and fishing impacts on fish recruitment” at PICES XIV;
- 2 scientists to attend the joint IFEP-MODEL Workshop on “Modeling and iron biogeochemistry: How far apart are we?” at PICES XIV;
- 1 invited speaker for the International SEEDS-II Symposium to be held at Ocean Research Institute, University of Tokyo (Japan), in October 2005;
- both CCCC Co-Chairmen to participate in the interim Science Board meeting to be held in Seattle (U.S.A.), in April 2005;
- 1 CCCC scientist to attend the ICES/PICES session on “Fisheries, ecology and life history of small pelagic fish” at the ICES Annual Science Conference, in Aberdeen (Scotland), in September 2005;
- 1 CCCC scientist to participate in the ICES/PICES session on “Comparing and constructing the scientific strategies and output of regional ecosystem projects” at the ICES Annual Science Conference, in Aberdeen (Scotland), in September 2005;
- 1 CCCC scientist to participate in the joint NPAFC-PICES symposium on “State of Pacific salmon and their role in North Pacific marine ecosystems” to be held in Jeju (Republic of Korea), in October 2005.

Funds are also requested (estimated at US\$20,000) to translate users’ manuals and documentation of NEMURO and NEMURO.FISH from English to Chinese,

Korean, Russian and Japanese. This activity is viewed as a capacity building contribution.

PICES Capacity Building (Agenda Item 13)

Due to time limitations this topic was little discussed. In principle, CCCC-IP/EC supports the proposal for a joint PICES-ICES Young Scientists Conference on marine sciences. No further discussion on this topic occurred, except to note that the MODEL Task Team has developed several proposals which have enabled some limited capacity building with Russian and Chinese scientists on NEMURO and NEMURO.FISH, and that more capacity building will occur in the proposed inter-sessional MODEL workshop in Japan, in October 2005.

Discussion of PICES Strategic Plan (Agenda Item 14)

Little time was spent on this issue in the CCCC-IP/EC meeting. Dr. Batchelder asked that the two CCCC Task Teams, MODEL and CFAME, consider how their future work and activity plans address the specific goals provided in the PICES Strategic Plan. MODEL was able to do this specifically (see the MODEL report elsewhere in this Annual Report). CFAME, which was just organized this year, and relating the CFAME activities to the PICES Strategic Plan will occur more fully during the requested 2005 inter-sessional workshop.

Discussion of future PICES Programs (Agenda Item 15)

No specific discussion on this topic occurred, other than to note that PICES would like to establish a second major science program that integrates activities and interests of all of the PICES member nations. This new program could be based on remaining unresolved scientific questions from CCCC (*e.g.*, climate-oriented), or might be completely unrelated (HABs, ecosystem-based management, *etc.*). Science Board has asked that the committees and scientific programs of PICES provide input on what future PICES science programs might include.

Relations with other organizations and programs/projects (Agenda Item 16)

CCCC-IP/EC identified linkages with ICES, GLOBEC, NPRB and the EVOS Gulf Ecosystem Monitoring (GEM) initiative as high priorities for the coming year. Also, there are several regional coastal observing programs in the Northeast Pacific (PaCOS, PNW-IOOS, AOOS), as well as numerous programs in the Northwest Pacific (CREAMS, NEAR-GOOS, others), that CCCC-IP should maintain close relations with. The continued development of closer links with GOOS and the Sloan Foundation's Census of Marine Life initiative are also viewed as promising areas to support. Finally, CCCC-IP must interact closely with NPAFC to address salmon issues of interest to the CCCC Program in the North Pacific. Because of the interests in maintaining close ties with ICES and NPAFC, in particular, it is recommended above, that CCCC scientists attend the ICES Annual Science Conference (September 2005) to participate in the joint ICES/PICES sessions, and also attend the joint NPAFC-PICES symposium on "State of Pacific salmon and their role in North Pacific marine ecosystems" in October 2005.

Dr. Ken Drinkwater, Chairman of the ICES Cod and Climate Change Program, attended the CCCC-IP/EC meeting this year. He invited the CCCC Program to participate in a broadly based theme organized around climate and marine

ecosystems at the ICES Annual Science Conference in 2006. Moreover, he suggested that the ICES and PICES meetings in 2006 have identical themes that would apply to both the CCCC and CCC Programs. The goal is to have several invited CCCC scientists attend the ICES Annual Science Conference in September 2006, and several CCC scientists attend the PICES Annual Meeting in 2006. Drs. Drinkwater and Batchelder will continue discussions on this issue. Overall, CCCC-IP/EC endorsed this suggestion.

Recommendations to Science Board (Agenda Item 18)

- CCCC-IP/EC **suggests a theme** of "Key recruitment processes and life history strategies: Bridging the temporal and spatial gap between models and data" for PICES XV.
- CCCC-IP/EC **strongly endorses** BIO Committee's recommendation that PICES support travel of one additional participant to each meeting of the new SCOR Working Group on "Global comparisons of zooplankton populations"; projected to be three meetings (one in each of 2005, 2006, 2007).
- CCCC-IP/EC **recommends the approval** of changes in CCCC-IP/EC membership requested under Agenda Items 6 & 7 above.
- CCCC-IP/EC **recommends the approval** of the travel requests detailed above.

CCCC Endnote 1

Participation List

Members

Kerim Aydin (proposed CFAME Co-Chairman)
Harold P. Batchelder (CCCC-IP Co-Chairman)
William R. Crawford (Canada)
Shin-ichi Ito (MODEL Co-Chairman)
Suam Kim (CCCC-IP Co-Chairman)
William T. Peterson (REX Co-Chairman)
Sei-ichi Saitoh (MONITOR Vice-Chairman)
Yoshiro Watanabe (REX Co-Chairman)
Francisco E. Werner (MODEL Co-Chairman)
Akihiko Yatsu (BASS Co-Chairman)
Sinjae Yoo (Korea)

Observers

Ken Drinkwater (ICES CCC Chairman)
Stewart (Skip) M. McKinnell (Deputy Executive Secretary)
R. Ian Perry (Science Board Chairman)

CCCC Endnote 2

CCCC-IP/EC Meeting Agenda

1. Welcome and opening remarks
2. Adoption of agenda
3. Business from last year's meeting
4. Review of responsibilities for documenting CCCC scientific sessions W2, W3, S9 and S10; best poster/oral awards
5. Brief progress reports of Task Teams (MODEL, REX, BASS, CFAME) activities from past year and plans for next two years; more complete reports submitted in writing
6. Review of current CCCC-IP membership
7. Replacements for Task Team Chairmen
8. Proposals for new CCCC subsidiary bodies
9. Topic Session and Workshop proposals for PICES XIV
10. Themes for future PICES Annual Meetings
11. Discussion of CCCC integration and the NEXT report and recommendations
12. Review of planned CCCC activities and travel support requests
13. Discussion of North Pacific Ecosystem Status Report
14. Discussion of report from Study Group on *PICES Capacity Building*
15. Discussion of report from Study Group on *PICES Strategic Issues*
16. Relations with other international programs
17. PICES website revisions
18. Request for scientific advice from the United States
19. CCCC report and recommendations to Science Board
20. Other business

CCCC Endnote 3

Proposal for a CCCC Poster Session on "GLOBEC and GLOBEC-like studies in the North Pacific: Observing pattern and inferring process"

Numerous GLOBEC and GLOBEC-like studies linking atmospheric forcing, ocean climate and physical variability, and ecosystem structure and pattern have occurred in the past decade. This POSTER session provides a forum for a review of the observational evidence linking climate to ecosystem pattern, and inferring the mechanisms or processes that link climate forcing to ocean physics and ecosystem pattern and dynamics. Presentations related to dynamics and processes

on multiple temporal (event to seasonal to interannual and longer) and multiple spatial (local to mesoscale to regional to basin-wide) scales are encouraged. Inferring mechanism (process) from spatial and/or temporal patterns is emphasized in this session, but contributions on related topics are encouraged as well.

Convenors: Harold P. Batchelder (U.S.A.) and Suam Kim (Korea)