

REPORT OF REX TASK TEAM



The REX Task Team met from 13:30-17:30 hours on October 19, 2002, to review the past year's accomplishments and to plan activities for 2003. The Co-Chairman, Dr. William T. Peterson, called the meeting to order and welcomed the participants (*REX Endnote 1*). 13 scientists from Canada, Japan, Russia and U.S.A. attended the meeting. There were no representatives from the People's Republic of China and Republic of Korea. The meeting agenda is appended as *REX Endnote 2*.

Inter-sessional activities in 2001 - 2002

The proceedings of the REX Workshop on *Temporal variations in size-at-age for fish species in coastal areas around the Pacific Rim* (convened in October 2001, at PICES X in Victoria, Canada) was published in PICES Scientific Report No. 20.

A 4-day joint MODEL/REX Workshop to *Develop a marine ecosystem model of the North Pacific Ocean including pelagic fishes* was held January 24-27, 2002, Nemuro/Yokohama, Japan (co-sponsored by Nakajima Foundation and Nemuro-city).

Dr. Peterson gave a brief presentation on a research project that was to examine the feasibility of reproducing the seasonal cycle of nutrients and plankton in the coastal zone off Oregon, using a simulation model. Cheryl Brown, an associate at a laboratory in Newport, used the Edwards code of the circulation in the Oregon upwelling zone and added to that an NPZ model. Plankton data collected at bi-weekly intervals during the year 1999 were used to test the simulations. Excellent agreement was found between the model and the data when coastal winds were used to force the model. Lesser agreement was obtained when the model was forced with winds from a buoy located 25 miles from shore.

Subarctic seas studies

Dr. George L. Hunt presented the results of a workshop on *Ecosystem studies of subarctic seas*, held September 4-6, 2002, in Laguna Beach, CA, U.S.A. He is working on a new research initiative that is meant to compare the response of subarctic and polar seas to inter-annual variations in sea ice resulting from forcing by the Arctic Oscillation. The project is of great interest to REX scientists since this research initiative seeks to compare ecosystem dynamics in the eastern and western Bering Sea as well as in the Sea of Okhotsk. Also included in the initiative would be study of the Barents and Labrador Seas, making the project of interest to both PICES and ICES scientists. The research would have gadoid fishes as its focus.

GLOBEC Focus 2 Working Group

Dr. Dian Gifford, a member of the International GLOBEC Focus 2 Working Group on *Process studies*, requested time to make a presentation to explore potential topics of common interest between this Working Group and REX. The goal of the Working Group is primarily to facilitate communication among GLOBEC countries, and they are in process of developing their Terms of Reference. The Focus 2 Working Group will organize a meeting in 2004 to review the achievements of the regional programs, to identify gaps between plans and completed work, and to review and evaluate the importance of the key processes affected by climate variability. This meeting is definitely of interest to REX.

CCCC Program integration

The Task Team discussed Dr. Makoto Kashawai's proposal for implementation of a better integrated CCCC Program. Dr. Peterson reviewed the 8 Key Questions posed by the CCCC Program and the REX tasks (see list of

Key Questions at <http://www.pices.int/Annual/pices11/agendas/REXWhitepaper.pdf>).

REX activities contribute to Questions 2, 3, 4, 6, 7 and 8. REX recommended that Questions 2 (“comparisons of ecosystems in the eastern and western sides of the Pacific”), 3 (“ecosystem structure”) and 7 (“differential responses of dominant species to climate forcing”) be combined and that these tasks should form the basis of REX work in the next few years. REX felt that Question 4 (“flow dynamics”) had been addressed as well as it could at this point and that this was more a problem for BASS. REX also recommended leaving question 6 for other groups (salmon research).

Proposal for a CCCC Symposium

As a means of making progress on the integration of Questions 2, 3 and 7, REX proposed that an inter-sessional Symposium (or Topic Session at a future Annual Meeting) on *The climate shifts of 1977, 1989 and 1998: differential physical forcing and ecosystem response in the PICES region* be held in 2004 or 2005¹. The REX Co-Chairmen were recommended as covenors.

Three climate shifts have been observed in the North Pacific Ocean during the past 25 years: in 1977, 1989 and 1998. The physical forcing and biological response appear to be different in the eastern and western sides of the Pacific. In this symposium, we ask “*What do the differences tell us about physical forcing and biological response, and what are the mechanisms that lead to these differences? Is species diversity different in the east and the western Pacific? Do changes in dominance of species affect ecosystem structure? What is the relative importance of basin-scale forcing vs. local scale forcing on changes in ecosystem structure? Do differences in diversity at the beginning of a climate shift influence changes in community structure?* (e.g., it was noted that the 1998 shift may have started with a different mix of species than 1989, 1977 or 1947).”

¹ Science Board recommended to convene a REX Workshop on this topic at PICES XIII in 2004.

Proposed activities at PICES XII

REX Workshop²

Given that the focus of PICES XII is on *Human dimensions of ecosystem variability*, REX recommends to hold a workshop on *Influence of fishing and/or invasive species on ecosystem structure in coastal regions*. The purpose of the workshop is chiefly to explore the following ideas: *Do we know enough about the influence of fishing or invasive species on ecosystem structure to be able to identify an effect? Can we distinguish the signal from the noise?*

REX-sponsored Topic Session³

A scientific result of the La Paz Symposium on *North Pacific transitional areas* was that distinct latitudinal differences in the magnitude and variability of distribution, productivity and recruitment of plankton and fish stocks were identified. In the Topic Session on *Latitudinal differences in response of productivity and recruitment of marine organisms to climate variability, from subarctic to subtropical waters, in the eastern and western sides of the Pacific*, we would further explore latitudinal clines in life history strategies at various temporal scales of variability. We would focus on the north-south clines in environmental variability and life history strategies in the eastern Pacific from Mexico to Alaska, and in the western Pacific from China to Russia. We would encourage presentations on scales of physical variability, and clines in productivity and recruitment of plankton, fish, birds, mammals, the benthos and intertidal invertebrates.

Selection of REX Co-Chairman

There was discussion of selection a new Co-Chairman to replace Dr. Peterson. The Task Team suggested that Dr. Richard D. Brodeur be contacted. Dr. Peterson discussed this with Dr. Brodeur and he declined the invitation because he is already committed to working on BIO (member) and the WG 14 (Co-Chairman). REX members will continue discussion on an alternate potential Co-Chairman.

² Accepted as a ½-day Topic Session at PICES XII.

³ Accepted as a 1-day Topic Session at PICES XII.

REX Endnote 1

Participation List

Members

Kenji Asano (Japan)
William T. Peterson (U.S.A., Co-Chairman)
Vladimir I. Radchenko (Russia, Co-Chairman)
Yoshiro Watanabe (Japan, Co-Chairman)
Yutaka Watanuki (Japan)

Observers

Alexey A. Baitalyuk (Russia)
Vladimir A. Belyaev (Russia)
Svetlana V. Davydova (Russia)
Dian Gifford (U.S.A.)
Douglas E. Hay (Canada)
George L. Hunt (U.S.A.)
Takashi Minami (Japan)

REX Endnote 2

REX Meeting Agenda

1. Welcome and opening remarks
2. Inter-sessional activities in 2001 – 2002
 - a. MODEL/REX Workshop to *Develop a marine ecosystem model of the North Pacific Ocean including pelagic fishes*
 - b. Proceedings of the REX Workshop on *Temporal variations in size-at-age for fish species in coastal areas around the Pacific Rim*
 - c. Project to examine the feasibility of reproducing the seasonal cycle of nutrients and plankton in the coastal zone off Oregon, using a simulation model
3. Subarctic seas studies – results of a NSF workshop
4. Activities of GLOBEC Focus 2 Working Group
5. CCCC Program integration
6. Proposal for a CCCC Symposium
7. Proposed activities at PICES XII
 - a. Workshop *Influence of fishing and/or invasive species on ecosystem structure in coastal regions*
 - b. Topic Session on *Latitudinal differences in response of productivity and recruitment of marine organisms to climate variability, from subarctic to subtropical waters, in the eastern and western sides of the Pacific*
8. Selection of REX Co-Chairman

