

REPORT OF THE TECHNICAL COMMITTEE ON MONITORING

The Technical Committee on Monitoring (MONITOR) met from 14:00–18:00 h on October 28, 2009, under the chairmanship of Dr. Hiroya Sugisaki. Seven committee members were present and a total of 14 scientists from 6 PICES member countries were in attendance (*MONITOR Endnote 1*). The meeting agenda (*MONITOR Endnote 2*) was very full and business was conducted at a brisk pace.

AGENDA ITEM 2

Report on the meeting of FUTURE

Dr. John Stein, Chairman of Science Board briefed the Committee on the status of the new PICES scientific program, FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems), including a report on the FUTURE Advisory Panel meeting held the previous day, on October 27. Three MONITOR members, Drs. Young-Jae Ro (AICE, Anthropogenic Influences on Coastal Ecosystems) Vyacheslav Lobanov (COVE, Climate, Oceanographic Variability and Ecosystems), and Phillip Mundy (SOFE, Status, Outlooks, Forecasts, and Engagement) serve as members of the FUTURE Advisory Panels. They and Hiroya Sugisaki (interim Chairman of COVE) attended the FUTURE meeting.

Committee members agreed that monitoring activities are very important for the early stage of the FUTURE program and MONITOR can summarize existing observing systems, identify gaps in observations, and also identify monitoring programs at risk of being lost and the importance of these monitoring systems.

AGENDA ITEM 3

North Pacific Ecosystem Status Report

Dr. Sugisaki reported on the editing of NPESR II (North Pacific Ecosystem Status Report II). The editors of the report, Drs. Skip McKinnell and Michael Dagg, asked MONITOR to review the drafts of the chapters, and to attend a workshop for reviewing regional chapters and developing a draft synthesis of results in Honolulu, U.S.A. December 1–3, 2009. MONITOR recommended Drs. Young Jae Ro and Jeffrey Napp to participate in the workshop as representatives of the Committee. Dr. Sugisaki expressed appreciation to Committee members for their cooperation in editing NPESR II.

AGENDA ITEM 4

Reports corresponding to MONITOR

Dr. Jack Barth attended the *OceanObs '09 Conference* held September 21–25, 2009 in Venice, Italy as the representative of PICES and introduced a statement of PICES' background and activities. Dr. Barth could not attend the PICES-2009 meeting so his report was provided by the Chairman.

Dr. Sugisaki informed the Committee about the relationship with the ICES-GOOS Steering Group (IGSG). He attended the IGSG meeting held at Woods Hole, U.S.A. in March to introduce the activities of MONITOR. Based on the similarities in interests, MONITOR invited the IGSG to co-sponsor a Theme Session on “*Development and use of ocean observing and forecasting systems in coastal and marine management*” at PICES-2010. The session would likely focus on ocean observations in forecasting. The IGSG accepted the invitation.

IGSG invited members of MONITOR to an ICES-GOOS Working Group meeting in Woods Hole in April 2010. ICES-GOOS will be meeting jointly with the Working Group on the Northwest Atlantic Regional Sea (WGNARS). This is a new Working Group and one of their Terms of Reference is “*coordinated ocean*”

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observation systems to support integrated assessment of climate change ecosystem effects". The international interactions and the topic of the Working Group are relevant to PICES/MONITOR.

Dr. Sonia D. Batten reported on the scientific accomplishments and present status of the North Pacific Continuous Plankton Recorder (CPR) project. In spite of the difficult funding situation, the importance of CPR becomes greater. Sessions on CPR were held at the GLOBEC OSM in Victoria, Canada (June 2009) and at OceanObs '09 conference in Venice (September 2009). To encourage an interest in CPR in the western Pacific, a workshop on "*Continuous Plankton Recorder survey and long-term observations of plankton ecosystems in the North Pacific*" was hosted by Dr. Sugisaki in Yokohama (September 30–October 1). A joint research project between SAHFOS and Japanese scientists to analyze western Pacific CPR samples has begun.

Dr. Lobanov reported that NEAR-GOOS is operational. He also reported that a CREAMS/PICES workshop on "*Status and trends in East Asian marginal sea ecosystems*", relating to contributions to the North Pacific Ecosystem Status Report, was held in Busan, Korea, April 21–22, 2009.

Dr. John Calder, representing Sustaining Arctic Observing Networks (SAON), presented the background and activities of SAON to the Committee members and discussed common interests between MONITOR and SAON.

Dr. Sugisaki stressed to Committee members that MONITOR and PICES must communicate with other international organizations and programs to encourage joint international activities on ocean observations.

AGENDA ITEM 5

Report on POMA

Dr. Sugisaki briefly described the need for MONITOR to recommend a candidate(s) for the PICES Ocean Monitoring Service Award (POMA) to Science Board.

AGENDA ITEM 6

National reports

The following Committee members made short presentations on national monitoring activities relevant to PICES:

- Canada: Dr. David Mackas
- Japan: Dr. Sugisaki
- Korea: Drs. Ro and Kwang Soon Park
- Russia: Dr. Lobanov
- United States: Dr. Mundy

AGENDA ITEM 7

Best Presentation awards

MONITOR was assigned responsibility to assess oral and poster presentations for the MONITOR-sponsored Topic Session on "*State of the art of real-time monitoring and its implication for the FUTURE oceanographic study*" (S7). The Chairman thanked the volunteers in advance for their service.

The Best Presentation award was given by MONITOR to Dr. Kelly J. Benoit-Bird (Oregon State University, U.S.A.) for her paper on "*Trophic cascades in Hawaii's nearshore ecosystem: Using observing technology to understand ecological interactions*". Dr. Shin-ichi Ito (Tohoku National Fisheries Research Institute, Japan) received the MONITOR Best Poster award on "*A profiling mooring buoy to observe mixed layer formations*".

in the western North Pacific and its combination with a deeper type underwater glider” (co-authored by Yugo Shimizu, Shigeho Kakehi, Fumitake Shido, Taku Wagawa, Kazuyuki Uehara, Toshiya Nakano and Masafumi Komachi).

AGENDA ITEM 8

Planning for PICES-2010 and inter-sessional meetings

MONITOR strongly supported the following two proposals for PICES-2010 (see *MONITOR Endnote 3*):

- Dr. Sugisaki proposed a 1-day joint PICES/ICES Topic Session entitled “*Development and use of ocean observing and forecasting systems in coastal and marine management*”.
- Dr. Lobanov proposed a 1-day POC/BIO/MONITOR/FUTURE session entitled “*Comparing the two major gyres of the subarctic North Pacific- Seasonal and interannual variability and its predictability*”.

Committee members agreed that MONITOR should recommend sending one attendee to the next GOOS Scientific Steering Committee meeting, and two attendees at CREAMS/PICES meeting.

AGENDA ITEM 9

Other business

MONITOR agreed with a request from TCODE on “a joint proposal to semi-permanently renew the contract for the PICES remote server”.

At the request of Science Board, MONITOR to nominated PhD student, Hanna Na (Korea), to be a member of the Scientific Steering Committee for the second Early Career Scientists’ Conference to be held in Majorca, Spain in 2012, and co-sponsored by PICES and ICES.

MONITOR Endnote 1**Participation list**Members

Vyacheslav Lobanov (Russia)
David L. Mackas (Canada)
Phillip R. Mundy (U.S.A., Vice-Chairman)
Kwang Soon Park (Korea)
Young Jae Ro (Korea)
Hiroya Sugisaki (Japan, Chairman)
Young Sang Suh (Korea)

Observers

Sonia D. Batten (Canada, CPR-AP)
John Calder (SAON)
Sanae Chiba (Japan)
Kuh Kim (Korea)
Tony Koslow (U.S.A)
Dong Young Lee (Korea)
John Stein (PICES)

MONITOR Endnote 2**MONITOR meeting agenda**

1. Welcome, Introductions and sign-in (all)
2. Report on the meeting of FUTURE on 27th, Wednesday (member of FUTURE-AP)
3. NP Ecosystem Status Report current status
 1. Discussion about MONITOR’s roles with NPESR-II
 2. Review the drafts of chapters of NPESR-II
 3. List up the suggestion and comments to the editors and authors

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4. Reports on corresponding MONITOR technical committee
 1. MONITOR session overview (Young Jae Ro)
 2. Report on the membership of FUTURE-AP from MONITOR (Hiro Sugisaki)
 3. Report on Ocean Obs '09 meeting
 4. Report on ICES-GOOS Steering Group meeting (Sugisaki)
 5. Report on the CPR workshop in Japan (Sugisaki)
 6. Status of NEAR-GOOS activities (Slava Lobanov)
 7. Status of Pacific CPR program and advisory panel (Phil Mundy)
 8. Status of CREAMS w. POC & report on the NPESR workshop on status and trends on the East Asian Marginal Seas (Lobanov)
 9. Report on international activities relevant to MONITOR committee
 - i) NEAR-GOOS (Lobanov, Dong Young Lee)
 - ii) AOOS (Phil Mundy)
 - iii) NaNOOS
 - iv) SAON (John Calder)
 - v) SAHFOS (Sonia Batten)
5. Report on POMA (Sugisaki)
6. National reports of relevant monitoring and observational activities (brief introduction of each member states' preparation activity for the PICES-FUTURE Program)
 - Canada (Dave Mackas)
 - China (Quan Wen, Xianyong Zhao)
 - Japan (Sei ichi Saitoh, Sugisaki)
 - Korea (Kwang-Soon Park, Ro, Young-Sang Suh)
 - Russia (Elena Gritsay, Lobanov)
 - U.S.A. (Mundy)
7. Judges for PICES-2009 Best Paper awards
8. Proposals for PICES-2010 MONITOR workshops, special sessions, inter-sessional meetings
9. Other business (if any)

MONITOR Endnote 3

Proposals for Topic Sessions at PICES-2010

1-day PICES/ICES Topic Session on “*Development and use of ocean observing and forecasting systems in coastal and marine management*”

The session will advance the objectives of the PICES Technical Committee on Monitoring, the PICES FUTURE program (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems) and the ICES-GOOS Steering Group. These groups have ToRs related to the coordination of Global Ocean Observing Systems, the development and evaluation of forecasting systems, and their application to ocean management. The theme session will focus on examples where ocean observations and forecasts have been used in PICES and ICES products. Methodological advances and issues will also be presented to promote the development of observing and forecasting capabilities. Finally, the theme session will serve as a forum to bring the ocean observing, ecological forecasting and resource management communities together to better link observing and forecasting efforts with the need to provide scientific advice for marine and coastal resource management.

Recommended Conveners: Hiroya Sugisaki (Japan), Phillip Mundy (U.S.A), Young Jae Ro (Korea), David Mackas (Canada) Vyacheslav Lobanov (Russia), and Jonathan Hare (IGSG, U.S.A).

1-day POC/BIO/MONITOR/FUTURE Topic Session on “*Comparing the two major gyres of the subarctic North Pacific - Seasonal and interannual variability and its predictability*”

The description of this session: In the North Pacific, there are two major gyres; the western subarctic gyre and the Alaskan gyre. Although severe winter conditions have limited observational activity, recent progress in observational networks, including satellites, drifters and Argo floats, have improved our understandings of the two gyres. Both gyres are mainly driven by the subarctic wind field and are expected to be synchronized with each other. However, the real responses are not so simple. For example, the western subarctic gyre shows large seasonal variability in the western boundary current (Oyashio), while the Alaskan stream does not show large seasonal variability. In addition to these physical characteristics, chemical and biological characteristics are different. For example, iron supply is larger in the western subarctic gyre since the distance from the terrestrial sources is closer than in the Alaskan gyre. This, in turn, affects seasonal cycling and magnitudes of phytoplankton and zooplankton production. Therefore ecosystems are also different in the two gyres. To achieve better understanding of the mechanisms of the subarctic response to atmospheric forcing, comparisons of the responses of the two gyres are essential. This session will focus on the comparison of the physical, chemical and biological characteristics of the two gyres, on all time scales. Presentations on predictability of the two gyres, or which address additional improvements of the subarctic observation network are also welcome.

Recommended Conveners: James Christian (Canada), Emanuele Di Lorenzo (U.S.A.), Shin-ichi Ito (Japan), David Mackas (Canada), Vyacheslav Lobanov (Russia) and Atsushi Tsuda (Japan)