

**PICES Twenty Second Annual Meeting**  
*Nanaimo, Canada*

**October 13 (18:00-19:30) and October 16 (14:00-18:00), 2013**

**PHYSICAL OCEANOGRAPHY AND CLIMATE COMMITTEE (POC)**  
*Provisional Agenda*

1. Welcome, introductions, opening remarks
2. Membership changes: Dr. Hannah is a new POC member representing Canada. Dr. Fangli Qiao is a new Committee member representing China to replace Mr. Zhenya Song.
3. Changes to, adoption of, agenda and appointment of rapporteur
4. Completion of 2012 PICES 21 decisions
  - a. 2013 PICES 22 POC Paper/Topic Sessions and Workshop

<i>Title</i>	<i>Convenors</i>	<i>Invited speakers</i>	<i>Duration (day)</i>	<i>Date</i>	<i>Committees (Sponsors)</i>
<i>POC Paper Session</i>	Kyung-II Chang (Korea), Michael Foreman (Canada)		0.5	Oct. 18 (Fri.)	POC
<i>S2: Are marine ecosystems of the North Pacific becoming more variable?</i>	Steven Bograd (USA) Elizabeth Logerwell (USA) William Sydeman (USA) Yutaka Watanuki (Japan)	Emanuele Di Lorenzo (USA) Michael Litzow (Australia)	0.5	Oct. 18 (Fri.)	BIO/FIS/POC
<i>S4: The changing carbon cycle of North Pacific continental shelves and marginal seas</i>	Minhan Dai (China) Sophia Johannessen (Canada) Dong-Jin Kang (Korea)	Miguel Goni (USA) Kon-kee Liu (Chinese-Taipei)	1	Oct. 16-17 (Wed.,Thurs.)	POC
<i>S6: Recent trends and future projections of North Pacific climate and ecosystem</i>	Jack Barth (USA) James Christian (Canada) Enrique Curchitser (USA) Chan Joo Jang (Korea) Angelica Pena (Canada)	Jason Holt (UK) William Merryfield (Canada)	1.5	Oct. 15-16 (Tues.,Wed.)	BIO/POC/ TCODE/ MONITOR/ FUTURE
<i>W2: Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future</i>	Jack Barth (USA) Emanuele Di Lorenzo (USA) Marc Hufnagl (Germany) Jacquelynn King (Canada) Arthur Miller (USA) Shoshiro Minobe (Japan) Ryan Rykaczewski (USA) Kazuaki Tadokoro (Japan)	Jurgen Alheit (Germany) Bryan Black (USA) Carolina Parada (Chile) Hans-O. Portner (Germany)	1	Oct. 11 (Fri.)	POC/BIO/ MONITOR/ FUTURE (ICES)

- b. 2012 Inter-sessional symposia/sessions/workshops/meetings
  - PICES Workshop “Radionuclides Science and Environmental Quality of Radiation in the North Pacific” (Xiamen, China, March 14-15)
  - Inter-sessional Science Board Meeting, May 20-21, 2013, St. Petersburg, Russia
  - PICES/ICES FUTURE Workshop “Global assessment of the implications of climate change on the spatial distribution of fish and fisheries” (St. Petersburg, Russia, May 22-24): Anne Hollowed (S-CCME, PICES co-chair), Suam Kim (S-CCME, PICES co-chair)
  - PICES Summer School 2013 “Ocean observing systems and ecosystem monitoring” (Newport, USA, Aug. 19-23)
  - 6<sup>th</sup> International SOLAS Summer School (Xiamen, China, Aug. 23-September 2, 2013)
  - RCM-II Workshop (Busan, Korea, Sep. 10-12): WG-29
  - 4 ICES/PICES Joint Theme Sessions at the 2013 ICES ASC (Reykjavik, Iceland, Sep. 23-27)
    - ✓ Session B: Responses of living marine resources to climate change and variability: Learning from the past and projecting the future (Anne Hollowed, S-CCME co-chair)
    - ✓ Session M: Identifying mechanisms linking physical climate and ecosystem change: Observed indices, hypothesized processes, and "data dreams" for the future (Emanuele Di Lorenzo, WG27 co-chair)

- NOWPAP-PICES Joint Training Course “Remote sensing data analysis” (Qingdao, China, Oct. 21-25)
- c. Travel and representation at the meetings of other organizations/programs
  - PICES convenors for CLIVAR-PICES joint session “Biophysical Interaction” in “WCRP/CLIVAR Second International Symposium on Boundary Current Dynamics” (Lijiang, China, July 8-9): Shoshiro Minobe (POC, WG-27 co-chair), Hiroaki Saito (AP-COVE chair) (**Appendix I**)
  - PICES representative (POC) to attend CLIVAR SSG meeting (Kiel, Germany, May 6-9, 2013), CLIVAR Pacific panel meeting (Lijiang, China, July ??, 2013): Shoshiro Minobe (POC, WG-27 co-chair) (**Appendix II**)
- d. Publications (2012 GC decision)
  - Special issue of Progress in Oceanography on modeling dedicated to Dr. Bernard Megrey (Guest Editors: Enrique Curchitser, Shin-ichi Ito, Kenneth Rose, Michio Kishi, Myron Peck) to be published in 2015. Submission deadline: Nov. 15, 2013.
  - Special issue of ICES Journal of Marine Science based on selected papers from 2012 2<sup>nd</sup> International Symposium on “Effects of climate change on the world’s oceans” to be published in 2013.
  - Report of the 2012 GLOBEC/PICES/ICES Workshop “Forecasting ecosystem indicators with process-based models” (Editors: E. Di Lorenzo, A. Miller, S. Minobe)
- 5. Progressive reports and future plans of POC active groups
  - a. Section on Carbon and Climate (J. Christian ?)
  - b. Joint PICES/ICES Section on Climate Change Effects on Marine Ecosystems (A. Hollowed/S. Kim ?)
  - c. Advisory Panel on CREAMS/PICES Program in East Asian Marginal Seas (Y. Zuenko ?)
  - d. WG 27 on North Pacific Climate Variability and Change (E. Lorenzo/S. Minobe ?)
  - e. WG 29 on Regional Climate Modeling (E. Curchitser/ C.J. Jang ?)
    - 2<sup>nd</sup> RCM Workshop in September 2013, Busan, Korea
- 6. Relation with other international organizations/programs
  - a. APN (Asia Pacific Network for Global Change Research, Linda Stevenson)
  - b. ARGO (Howard Freeland ?)
  - c. BEST-BSIERP (Bering Sea Ecosystem Study, Jeff Napp)
  - d. CLIVAR/WCRP (Shoshiro Minobe ?)
  - e. ESSAS (Franz Mueter, Sei-ichi Saitoh)
  - f. ICES (Adi Kellermann)
  - g. IOCCP (International Ocean Carbon Coordinated Project, Masao Ishii)
  - h. NEAR-GOOS ( Hee-Dong Jeong ?)
  - i. SOLAS (Lisa Miller ?)
- 7. FUTURE and Advisory Panels
  - a. 1st FUTURE Open Science Meeting, April 15-18, 2014, Kohala Coast, Big Island, Hawaii, USA
    - Structure and Scientific Programs (WG27, WG29, S-CCME)
      - ✓ Morning plenary sessions followed by concurrent theme sessions to assess progress towards FUTURE objectives. The plenary session will introduce major themes for the concurrent sessions. All speakers are invited people for these sessions. (in the morning of Day 1-3)
      - ✓ Contributed presentations followed by reports from discussions in concurrent sessions to appraise advancement on FUTURE key themes. (in the afternoon of Day 1-3)
      - ✓ A morning plenary session with overarching presentations focusing on the integration of more general topics (Day 4)
      - ✓ A plenary discussion to provide an overall evaluation of FUTURE progress, and to identify needed changes or adjustments to fulfill program objectives. Also one invited talk from each PICES member country be given on the current and future role of its national programs. (in the afternoon of Day 4)
    - Abstract submission deadline: Dec. 15, 2013
- 8. Election of new POC Chairman.

9. Planning 2014 PICES 23 “Steps toward better understanding of the North Pacific: Reflecting on the past and steering for the future” in Yeosu, Korea,  
 For more than two decades, PICES has made every effort to better understand the status of North Pacific ecosystems and how they change. At the center of these efforts are the two Integrative Scientific Programs: CCCC (Climate Change and Carrying Capacity) and FUTURE (Forecasting and Understanding Trends, Uncertainty and Responses of North Pacific Marine Ecosystems). While these programs certainly have advanced our understanding of the patterns and mechanisms of ecosystem changes in the North Pacific, many unknowns remain. Since FUTURE will focus primarily on prediction of North Pacific ecosystem change, there are other fundamental scientific questions to be understood beyond the scope of FUTURE. The PICES 2014 annual meeting will broadly discuss and assess the status of our scientific understanding of marine ecosystems in the North Pacific. Particular emphasis will be placed upon the scientific questions that are not adequately addressed or answered by FUTURE. Scientific communities are encouraged to critically assess the current understanding and to identify fundamental scientific questions remaining to be answered.
- POC-related topic sessions (Conveners from POC committee and/or subsidiary bodies, WG27, WG29, S-CC, S-CCME, AP-CREAMS) : 6 among total 15 proposals
  - POC-related workshops: 3 among total 7 proposals
  - Business meetings (WG27, WG28, S-CC, S-CCME, CREAMS-AP)
  - Capacity building
    - 2014 PICES Summer school on Ecological Modeling (CREAMS-AP) (**Appendix 3**)
  - Others

ID	Title	Convenors	Duration	Committees (Sponsors)	Publication
	POC Paper Session		1 day	POC	
TS-2	Variability in advection and its biological consequences for Subarctic and Arctic ecosystems	<u>Franz Mueter</u> (USA), <u>Ken Drinkwater</u> (Norway), <u>Sei-Ichi Saitoh</u> (Japan), <u>Enrique Curchitser</u> (USA)	1 day	S-CCME (ESSAS)	Yes
TS-6	Dynamics of pelagic fish in the North Pacific under climate change	<u>Gerard DiNardo</u> (USA), <u>Suam Kim</u> (Korea), <u>Sei-Ichi Saitoh</u> (Japan), <u>Cisco Werner</u> (USA)	1 day	S-CCME (ISC)	Yes
TS-12	Recent assessments of climate change impacts on marine ecosystems	<u>Anne B. Hollowed</u> (USA), <u>Jake Rice</u> (Canada), <u>Sukgeun Jung</u> (Korea), <u>Hans Pörtner</u> (Germany)	0.5 day	S-CCME (ICES)	
TS-13	Climate change impacts on spatial distributions of marine fish and shellfish	<u>Jon Hare</u> (USA), <u>Anne B. Hollowed</u> (USA), <u>Sukyung Kang</u> (Korea)	1 day	S-CCME (ICES)	
TS-14	Use of long time series of plankton to inform decisions in management and policy concerning climate, ecosystems and fisheries	<u>Dave Checkley</u> (USA), <u>Sanae Chiba</u> (Japan)	0.5 day	AP-CREAMS	
TS-15	Regional climate modeling in the North Pacific	<u>ChanJoo Jang</u> (Korea), <u>Enrique Curchitser</u> (USA), <u>Mike Foreman</u> (Canada), <u>Kyung-Il Chang</u> (Korea), <u>Shin-ichi Ito</u> (Japan), <u>Angelica Peña</u> (Canada), <u>Hyodae Seo</u> (USA)	1 day	POC, WG27, WG29	Yes
WS-1	SOLAS into the future: Designing the next phase of the Surface Ocean-Lower Atmosphere Study within the context of the future earth program	<u>Lisa Miller</u> (Canada), <u>Minhan Dai</u> (China), <u>Yukihiro Nojiri</u> (Japan)	0.5 day	S-CC (SOLAS)	
WS-2	SOLAS into the future: Designing the next phase of the Surface Ocean-Lower Atmosphere Study within the context of the future earth program	<u>Ken Denman</u> (Canada), <u>Jack Barth</u> (USA), <u>Jae Hak Lee</u> (Korea), <u>Bob Weller</u> (USA), <u>Hidekatsu Yamazaki</u> (Japan)	1.5 day	(Ocean Networks Canada, US CLIVAR)	Yes

- Publication for 20132 and beyond (other than those already approved)
  - AP-CREAMS: Oceanography of the EAST-II region
- Items with financial implications (rank)
  - Topic sessions for PICES 2014
  - Proposed inter-sessional meetings for 2013 and beyond
    - WG 27

- WG 29
  - S-CCME
  - S-CC
  - CREAMS-AP
  - 3<sup>rd</sup> PICES/ICES/IOC Symposium on “Effects of Climate Change on the World’s Oceans” (Mar. 23-27, 2015, Santos City, Brazil)
    - ✓ SSC members: Shoshiro Minobe, Angelica Pena, Fangli Qiao, and 6 other members from ICES and IOC)
    - ✓ Proposing a topic session on RCM-III (Shoshiro Minobe)
    - ✓ Other topics (Shoshiro Minobe)
      - Impacts of Climate Variability and Change on Nutrient Distributions
      - Validation and Utilization of Earth System Models
12. 2013 POC Best Presentation and Poster Award
    - a. Eligibility
      - Oral – 1st author & presenter should be early career scientist.
      - Poster – no age limit
    - b. Sessions
      - POC paper session (judge: ), S2 (judge: ), S4 (judge: ), S6 (judge: )
    - c. Evaluation sheet (available from secretariat, Rosalie)
  13. Documenting business meetings, topic sessions and workshops
    - a. Business meeting summary (WG27, WG29, CREAMS-AP, S-CC, S-CCME) – Chairs are asked to submit the summary reports to secretariat within 1 month after the annual meeting.
    - b. Topic session summary - Conveners, to secretariat, before the end of the annual meeting: POC (), S2 (), S4(), S6 ()
  14. Other business
    - a. PICES 25th Anniversary activities
  15. Adoption of POC report and recommendations to Science Board

**Appendix 1. Report of CLIVAR-PICES joint session in “WCRP/CLIVAR second international symposium on boundary current dynamics” (Li Jiang, China July 7-9, 2013).**

In this symposium, a joint session between CLIVAR and PICES was held as a one of three sessions. The session is devoted to “biophysical interaction”, with the corresponding convenor, Shoshiro Minobe (Hokkaido University, Japan, WG 27 co-chair) and Hiroaki Saito (Fisheries Research Agency, Japan). The session has five invited and four contributed talks, which cover global paleo ecosystem modeling and ecosystem in the southern Indian Ocean, but majority of the presentations were devoted to the western North Pacific and its marginal seas. A topic commonly discussed in the latter papers is nutrient, and its physical controls including vertical mixing, upwellings, and advections, in association with the Kuroshio (Fig. 1). These studies clarify the large uncertainty of nutrient budget. As a session summary it is suggested that a holy grail may be three-dimensional budget of nutrient for mean climatology, climate variability on interannual and decadal timescales, and climate change. We appreciate travel supports from local organizing committee (especially Prof. Xiaopei Lin, Ocean University of China, China) for the conveners and two invited speakers and from PICES for one invited speaker, and science committee chair, Prof. Lixin Wu (Ocean University of China, China). Profs. Wu and Lin are WG27 members.

Summary of session 3, marine biophysical interaction

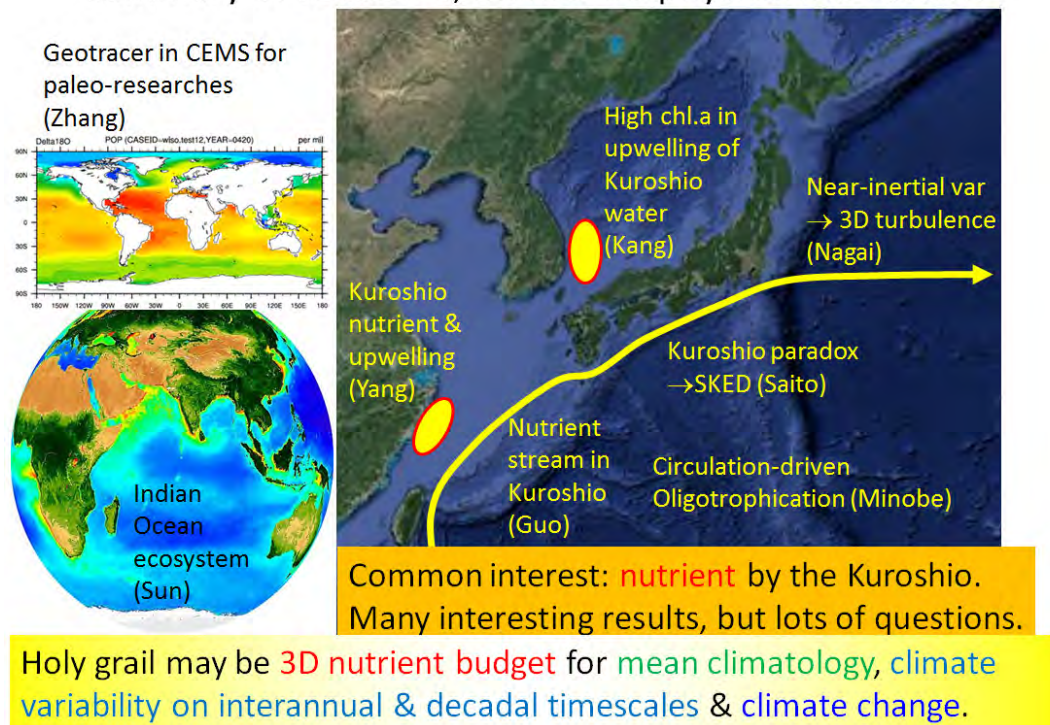


Fig. 1. Summary slide of biophysical interaction session of the symposium.

## **Appendix 2. Report on Collaboration for PICES and CLIVAR via CLIVAR's research opportunity of "Biophysical interaction and dynamics of upwelling systems"**

Shoshiro Minobe (Hokkaido University, Japan, WG27 co-chair) attended CLIVAR SSG meeting held in Kiel, Germany from 6 to 9 May, 2013 as a guest, representing PICES and Japan. This SSG meeting is an important one, because CLIVAR evolves to its second phase from 2014. Thus this SSG meeting is a place where CLIVAR determines its new structure and activities. In new CLIVAR, sciences will be conducted by "core panels" and "focused & integrated research opportunity" (Fig. 2). Some research opportunities can be related to PICES, but the most important one should be "biophysical interactions and dynamics of upwelling systems". In the SSG meeting, the leader of the tiger team for this research opportunity, Prof. Ken Drinkwater (University of Bergen, Norway), present a motivation and expected activities. In the last PICES meeting 2012, POC discussed about this research opportunity, and agreed that the phrase of the title "upwelling systems" is modified. This is because that this phrase sounds as if this research opportunity focuses on just upwellings in the eastern boundary regions, and excludes important upwellings, for example dynamical uplift in the western boundary currents. Following this POC's suggestion, Minobe proposed in the SSG meeting that the title should be modified, for example the phrase "upwelling systems" may be changed into "upwellings", but no decision was made about it. Through discussions with Drinkwater and co-chairs of CLIVAR, Minobe joined the tiger team.

As a relating activity, Minobe attended to the CLIVAR's Pacific panel meeting held in Li Jiang in July. In this meeting, Minobe took care of a short session for this research opportunity, and written a suggestion document based on its discussion for title, major themes, specific activities, etc.

Also, he is invited in August as a member of the scoping team of the new panel of "climate dynamics", and asked in September to take a lead for writing a scoping document for this panel. CLIVAR co-chairs suggested that this panel studies several topics of dynamics of atmosphere such as storm tracks, annular modes, etc., whereas Minobe added topics of air-sea interaction and ocean dynamics in the draft of the scoping document, which is expected to be finalized in September, 2013.

### **Appendix 3: Capacity building proposal by CREAMS-AP**

#### A draft proposal for 2014 PICES Summer School on Ecological Modeling

Purpose: Ecological models have applications in a wide variety of disciplines, such as natural resource management, wildlife conservation and agriculture. These models are formed by combining known complicated ecological relations with field observation data, and are being used in order to make an understanding about the process in systems and predictions about the dynamics of the real ecosystem. The purpose of this Summer School is to review and present methods of modeling in ecological relations, and to show how these models (methods) can be applied to understand and predict change in ecosystem.

Date: 18-21 (Monday ~ Thursday) August, 2014

Venue: Seoul National University (Republic of Korea)

Lecture & Workshop: Bd. 25-1/1st floor International Conference Room

Hands-on Exercise: Bd. 25-1/2nd floor Room 210 (SEES Computer Room)

Students: maximum 30

Instructors: 5

Request for financial support from PICES: travel costs for five non-Korean students and two foreign lecturers.

SSC members: Chung-II Lee (principal organizer, instructor, Korea), Timothy Essington (instructor, USA), Chris Harvey (instructor, USA), Emanuele Di Lorenzo (instructor, USA), Kenneth Rose (instructor, USA), Yang-Ki Cho (Korea), Tae-Hee Na (Korea)