

## **The Advisory Panel for a *CREAMS/PICES Program* in *East Asian Marginal Seas***

The meeting of the Advisory Panel for a *Circulation Research in East Asian Marginal Seas* (AP-CREAMS) was held on October, 13, 2013 in Nanaimo, Canada. Eight Panel members and four observers, from China, Japan, Korea, Russia and USA attended the meeting (*AP-CREAMS Endnote 1*).

### AGENDA ITEM 1

#### **Opening remarks**

Dr. Kyung-Ryul Kim, Co-Chairman of AP-CREAMS, opened the meeting at 14:30 h and, after greeting participants, reviewed the agenda (*AP-CREAMS Endnote 2*). Dr. Kim stated that at least one member from all participating countries was in attendance and that the meeting could be an official AP-CREAMS meeting, and all participants agreed. He thanked all the participants and asked Dr. David Checkley to serve as the Rapporteur of the meeting.

### AGENDA ITEM 2

#### **National reports on activities and plans related to CREAMS/PICES Program**

##### *China*

Dr. Dongfeng Xu discussed the residual current observed by a Mooring Station and its importance to the Yangtze River Estuary and Adjacent Seas was explained. Studies including ship-based and mooring observations and models were used to investigate the currents. A new project has been applied to study mesoscale processes of the shelf-break in the Northern South China Sea.

##### *Japan*

No Report was presented at the meeting.

##### *Korea*

Dr. Kim reported activities associated with the Korea EAST-I project:

- To celebrate the 20<sup>th</sup> anniversary of first CREAMS expedition in 1993 an international workshop was held August 22–23, 2013 at Seoul National University.
- The R/V *Lavrentyev* Expedition will take place October 25 to November 9, 2013. Scientists will include 13 from Korea and ~ 23 from Russia. Stations will be within 37–43°N and 130–136°E.

Dr. Jae-Hak Lee reported activities associated with KIOST:

- Repeat cruises with line surveys (including T, S, DO, and chlorophyll) have taken place since October 2012 at 2-week intervals. A surface mooring has been operational since May 2012 east of Jeju-do Island (including wind, T, S, currents, DO, and chlorophyll). Surface-deep shears have been observed, with a deep southward countercurrent flow (a new finding) below the Tsushima Warm Current.
- A new program proposal has been submitted to the Ministry of Oceans and Fisheries to study physical/ecological functions in the East China Sea using time series measurements from a fixed surface buoy, repeated observations at 2-week intervals, seasonal synoptic observations, and process studies, *e.g.*, of stratification.

##### *Russia*

Dr. Yury Zuenko reported that monthly cruises have been conducted regularly in the coastal waters of Peter the Great Bay in May–October since 2007. Long-term monitoring in Amur Bay has shown a warming trend in the surface layer. Other layers show no warming or cooling trends. The Amur Bay surface is becoming warmer and saltier, but the bottom is not. Hypoxia in late summer is occurring less, perhaps due to lower productivity or upwelling. Most zooplankton is of local origin but changing, with oceanic taxa increasing in abundance. Three decades of general results exist for the coastal zone.



Participants at the AP-CREAMS/PICES workshop, held at Seoul National University, August 2013, celebrating the 20th anniversary of the CREAMS first expedition.

#### AGENDA ITEM 3

##### **Capacity building activities in 2014 and later**

The 2014 PICES International Summer School on “*End-to-End models for marine resources management and research*” is planned for August 26–29, 2014, at Seoul National University. Participating students will be both high undergraduate and graduate levels. Main course components will be an introduction to End-to-End modeling (day 1), Food-Web Models (day 2), time-dependent dynamic simulations (day 3), and space-dependent dynamic simulations (day 4). The hope is that PICES will support proposed all instructors; if not, Korea will need to find funds to supplement those recommended by PICES. This summer school was already been approved by the PICES Governing Council in 2012 but the exact number of teachers had not been decided at the time of our meeting.

No other courses planned or considered were presented at the meeting.

#### AGENDA ITEM 4

##### **Status report on international cooperation**

Dr. Kim gave a status report of Korea–Russia cooperative research (See also Agenda Item 2 above regarding the 2014 cruise of the R/V *Lavrentyev* with Korea and Russia). The expedition will consist of 20 days in the fall immediately following PICES-2013. There will be no participation from Japan or China. The hope is to conduct this cruise every year; two years of continuing funding now exist. Thus, participation of China and Japan may be possible in future years. Next year’s cruise is already being planned, with possibly 17–18 non-Russian foreign scientists participating. Dr. Kim requested Panel members to contact him if anyone was interested in participating or having work done on future cruises. He noted that approvals from Russia are necessary for each activity, thus advance planning is necessary.

It is too early to provide any information on the possible uses, including collaboration in the Japan/East Sea, for Japan’s newly built R/V *Shinsei Maru*. It was commissioned in less than 10 months of the Fukushima event for post-tsunami work but will also be used for general oceanography.

## AGENDA ITEM 5

**Progress on EAST-II Program**

Publication of a volume on the Yellow Sea and East China Sea was discussed. Dr. Lee presented a progress report associated with this project. Details are appended as *AP-CREAMS Endnote 3*. A proposal for a textbook style publication will be submitted to Science Board for approval and/or support, *i.e.*, a PICES Scientific Report or a commercial publication. No geological component currently exists. Ocean acidification was added as a topic under chemistry.

## AGENDA ITEM 6

**Current Status of NPESR supplementary chapter Japan/East Sea for Marine Ecosystems of the North Pacific Ocean 2003–2008**

Dr. Kim presented a detailed account of events to date and led the discussion on possible future steps to take. It was agreed that the prepared manuscript be published without further delay.

The following recommendations were agreed upon:

- PICES should initiate the publication of the supplementary chapter without further delay as Science Board already endorsed.
- In case of further delay, AP-CREAMS will initiate efforts to publish the prepared manuscript outside PICES, possibly as a book. However, this publication will not be a replacement of the missing chapter of the 2<sup>nd</sup> North Pacific Ecosystem Status Report by any means. PICES should continue efforts for completing the second version of NPERS before the preparation of NPESR 3.

Some steps to achieve above recommendation were further discussed, which include publication of the entire report as a book without the PICES affiliation (*e.g.*, no PICES logo), and possible revision of its present Executive Summary to be compatible with other sections of the second version of NPESR for publication by PICES.

## AGENDA ITEM 7

**Next AP-CREAMS meeting in spring 2014**

Qingdao or Hangzhou was suggested as a possible venue for the next AP-CREAMS meeting but the Panel also suggested that the date and place for the meeting may need to be more carefully considered in view of the FUTURE Open Science Meeting, which will be held in Hawaii, USA, April 14–18, 2014.

## AGENDA ITEM 8

**Miscellaneous items**

AP-CREAMS recommended a Topic Session on the “*Use of long time series of plankton to inform decisions in management and policy concerning climate, ecosystems and fisheries*” at PICES-2014, in Yeosu, Korea (*AP-CREAMS Endnote 4*).

Without further items, the meeting was adjourned at 5:00 pm.

**AP-CREAMS Endnote 1**

**AP-CREAMS participation list**

Members

Kyung-Il Chang (Korea)  
David Checkley (USA)  
Naoki Iguchi (Japan)  
Hee-Dong Jeong (Korea)  
Kyung-Ryul Kim (Korea, Co-Chairman)  
Jae-Hak Lee (Korea)  
Dongfeng Xu (China)  
Yury Zuenko (Russia)

Observers

Tae Hee Na (Korea)  
Jae-Hun Park (Korea)  
Naesun Park (Korea)  
Hiroyuki Shimada (Japan)



Some AP-CREAM members at PICES-2013 in Nanaimo, Canada (left to right): Kyung-Il Chang, Kyung-Ryul Kim, Yury Zuenko, and Dongfeng Xu.

**AP-CREAMS Endnote 2**

**AP-CREAMS meeting agenda**

1. Opening remarks
2. Brief national report on activities and plans related to CREAMS/PICES Program
- 2.1 China
- 2.2 Japan
- 2.3 Korea
  - 2.3.1 Activities associated with Korea EAST-I project
  - 2.3.2 Activities associated with KIOST
- 2.4 Russia
3. Discussion on capacity building activities in 2014 and later
4. Status report and discussion on international cooperation
  - 4.1 R/V *Lavrentyev* cruise in 2014
  - 4.2 Possible other cruises in 2014 and later
5. Progress on EAST-II Program
6. Current Status on Status Report on supplementary chapter Japan/East Sea for Marine Ecosystems of the North Pacific Ocean 2003–2008
7. Next AP-CREAMS meeting in spring 2014
8. Miscellaneous items
9. Closing

**AP-CREAMS Endnote 3****Proposal for a publication of the EAST-II project**

Tentative Title: Oceanography of Yellow and East China Sea

Type of Publication: PICES report

Time for Publication: End of 2014 (tentative)

Editorial: J. Ishizaka, T. Matsuno, J. Zhang, J.H. Lee, S. Kim, D. Xu, Y. Fei, S.M. Liu, V. Lobanov

Pages: 300 pp.

Contents of Publication: Review and textbook-style book of this area

Support from PICES: Comments and suggestions for Editing of English and Contents and publication fee

**Table of Contents (Possible authors, not confirmed)**

Chapter 1. Climate and Physical Oceanography (author(s) TBD)

1.1. Circulation (including current and influence of wind) (Heung-Jae Lie)

1.2. Tides (China)

1.3. Water masses (China)

1.4. Ocean mixing (T. Matsuno)

1.5. Air-sea interaction in the East China Sea (frontal structure or influence of typhoon) (Isobe)

1.6. Long term variations (Jae-Hak Lee?)

Chapter 2. Chemistry (J. Zhang, S.M. Liu)

2.1. Nutrients

2.2. Anoxic Water

2.3. Suspended Sediment

2.4. Ocean acidification

Chapter 3. Biology (J. Ishizaka, S. Kim)

3.1. Bacteria (?)

3.2. Phytoplankton (J. Ishizaka)

3.3. Seaweed and Seagrass (?)

3.4. Zooplankton (Including Giant Jellyfish) (Iguchi)

3.5. Benthic Community (?)

3.6. Fish and Invertebrate Fisheries (Chinese)

3.7. Marine Birds and Mammals (?)

**AP-CREAMS Endnote 4****Proposal for a 1/2-day MONITOR/BIO/TCODE Topic Session on**

***“Use of long time series of plankton to inform decisions in management and policy concerning climate, ecosystems and fisheries” at PICES-2014***

Convenors: David Checkley (USA) and Sanae Chiba (Japan)

Plankton plays key roles in the pelagic ocean. Planktonic plants, invertebrates and the early developmental stages of vertebrates are important for trophic and population dynamics of exploited protected species; the flux of energy and material, including carbon; and as indicators of ecosystem status. Phytoplankton has been both sampled *in situ* and observed remotely, from satellites. Zooplankton has been collected by nets. Increasingly, optics, acoustics, and ‘omics’ are used. Sampling programs worldwide now span decades, often with ancillary data. From these, time series of plankton abundance have been created, with varying levels of taxonomic and geographic resolution. Often, such programs have been in support of fisheries management. Increasingly, however, they are also relevant to management and policy decisions affecting ecosystems and climate. In turn, such programs require justification for their continuation. Examples include the California Cooperative Oceanic Fisheries

## **AP-CREAMS-2013**

Investigations (CalCOFI), the Global Alliance of Continuous Plankton Recorder Surveys (GACS), and many other plankton sampling programs worldwide. The objective of this session is to learn how time series of plankton have been, are being, and might be used to inform decisions in management and policy concerning climate, ecosystems, and fisheries. Presentations are invited on both time-tested uses of plankton time series and on novel, untested uses.