

Report of 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 18, 2014 in Yeosu, Korea. Four Panel members and two observers from Japan, Korea and Russia 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 14:00 h and, after greeting participants, reviewed the agenda (*AP-CREAMS Endnote 2*). Because of the absence of the members from China, due to travel problems, and members from Japan and USA, Dr. Kim covered only part of the agenda. Other items would be discussed at the next AP meeting planned for October 29 in Qingdao, China where better attendance was anticipated. See *AP-CREAMS Endnote 3* for a report of the meeting, and also the AP-CREAMS inter-sessional meeting on April 15, 2014 in Qingdao (*AP-CREAMS Endnote 4*). Dr. Kim thanked all the participants and asked Dr. Vyacheslav Lobanov to serve as the Rapporteur of the meeting.

AGENDA ITEM 2

Country reports on activities and plans related to the CREAMS/PICES Program

China, Japan

Reports were postponed to the next meeting planned for October 29 in Qingdao, China.

Korea

Dr. Jae-Hak Lee reported briefly on the Korean Institute of Ocean Science and Technology (KIOST) activity in the EAST-II area. There are no observational projects currently in the East China Sea. One project in the Yellow Sea is focused on the Bottom Cold Water Study. There is collaboration between KIOST and First Institute of Oceanography, SOA, China.

Russia

Dr. Yury Zuenko reported that TINRO-Center observations of regularly monthly cruises have been continued in the coastal waters of Peter the Great Bay for the May–October period. Based on this long-term monitoring, a warming trend in the surface layer and cooling trend in the bottom layer of the bay was found. Monitoring of the northwestern part of the open sea has demonstrated warming of the surface layer, increase of stratification, decrease of nutrients and zooplankton.

AGENDA ITEM 3

Capacity building activities

Dr. Kim reported on the PICES 2014 Summer School on “*End-to-End Models for marine resources management and research*” which was hosted by Gangneung-Wonju National University in Gangneung City, Korea from August 26–29, 2014. Twenty-nine students from PICES member countries as well as from Australia, Bangladesh, Canada, China, India, Japan, Korea, Nigeria, Oman, Peru, Singapore, Tanzania, and Ukraine attended. The lectures and practical training provided by six instructors covered wide area from oceanography, fisheries, and policy, to social impacts. The main model themes were circulation models, NPZ Models, Ecopath and Ecosim, Atlantis End-to-End Model, Individual-Based Models.

AP-CREAMS-2014

AP members proposed no training activities for 2015 although there was a possibility to hold a workshop and summer school on remote sensing and circulation and ecosystem modeling for 2016–2017.

AGENDA ITEM 4

Status report and discussion on international cooperation

Dr. Lobanov reported briefly on the Joint Korea–Russia cruise implemented in the EAST-I area in April 2014 on the R/V *Akademik M.A.Lavrentyev*. There were 19 Russian (POI and IO RAN) and 11 Korean (SNU, PNU and other universities) on board. The cruise included hydrographic and biogeochemical observations along standard sections monitored jointly since 2001 and deployment of three mooring systems on the northern slope of Yamato Rise to study the variability of the cyclonic gyre over the northern deep basin of the sea. The next joint cruise is planned for April 2015 to recover and redeploy the moorings and repeat hydrographic and biogeochemical sampling.

Dr. Lobanov also reported on a Joint Korea–Russia workshop hosted by POI at Cape Shults Marine Station, Russia, on July 22–25, 2014. The major goal of the workshop was to discuss results of the joint cruise held in 2012, and related topics. Fifteen Russians and 7 Koreans participated, and 18 presentations were made. The next joint workshop is planned for July 2015 in Donghae, Korea, and will be organized by SNU.

It was suggested to continue the discussion on international collaboration at next AP-CREAMS meeting planned for October 29 in Qingdao, China.

AGENDA ITEM 5

EAST-II Program

During PICES-2013 (Nanaimo, Canada), AP-CREAMS proposed to prepare “*Oceanography of the Yellow Sea and East China Sea*” for publication in a PICES Scientific Report series. It would be a textbook/overview covering physical, chemical and biological oceanography of the area (*AP-CREAMS Endnote 5*). Dr. Jae-Hak Lee reported on the progress of this item. He mentioned that much effort is still required to work with the collected information which is supposed to be finished by the end of 2015. AP suggested submitting a proposal for PICES to postpone a deadline for completion of the report by the end of 2015. More discussion on the contents of the EAST-II report is planned for the next AP meeting in Qingdao on October 29.

AGENDA ITEM 6

Proposal for continuation of AP activities

Dr. Kim informed participants that AP-CREAMS was established in 2005 for 5 years to initiate and oversee a program to study the hydrography, circulation, and biology and their variability in East Asian Marginal Seas in the PICES area, effect of climate and long-term changes in the abiotic and biotic environments of this region, to facilitate the establishment of permanent observation and data exchange networks in this region; and to convene workshops/sessions to evaluate and compare results from the program. Its term was extended through 2011 to 2015 at PICES-2011 in Khabarovsk to start a second 5-year phase. The AP Co-Chairman reviewed a summary of AP activities in 2014 and further plans for 2015 and beyond (*AP-CREAMS Endnote 6*). The AP agreed that the AP should continue for the period 2015–2019, as its activity is continuing. One of the rationales for this would be to support the EAST-II publication expected to be published by the end of 2015, by coordinating international activity on a regional level. The AP members agreed with the justification for the extension of the AP’s term (*AP-CREAMS Endnote 7*).

AGENDA ITEM 7

Report on status of supplementary chapter on “EAST-I area for Marine Ecosystems of the North Pacific Ocean 2003–2008”

Dr. Kim reviewed the minutes from the AP meeting at PICES-2013, presenting a detailed account of events to date and leading discussion on the possible future steps to be done. It was agreed that the prepared manuscript be published without further delay.

The following recommendations agreed upon at PICES-2013 were:

- PICES should initiate the publication of the supplementary chapter without further delay as SB already endorsed.
- In case of further delay, some of the authors seem to have started the 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 2nd NPERS by any means. PICES should continue efforts for completing the 2nd NPERS for the preparation of NPESR 3.

He mentioned that a further progress is underway. Revision of manuscript comparable with other sections of the published Status Report for publication by PICES should be finished by the end of 2014. Submission of this revised manuscript to Chairman of SB will close the AP-CREAMS activity on this issue. Publication of other main part of the prepared manuscript will be pursued outside of PICES on voluntary basis. Survey on individual contributor’s consent for publication is under way.

AGENDA ITEM 8

Next AP-CREAMS inter-sessional meeting in spring 2015

Discussion on where to hold the next inter-sessional meeting was postponed to next meeting planned for October 29 in Qingdao, China.

AGENDA ITEM 9

Miscellaneous items

AP members supported the idea of continuing the current AP business meeting to Qingdao on October 29 in hopes of increasing attendance, especially by members from China, who were not able to attend this meeting. Without further items, the meeting was adjourned at 15:30 h.

AP-CREAMS Endnote 1

AP-CREAMS participation list

Members

Kyung-Ryul Kim (Korea, Co-Chairman)
Jae-Hak Lee (Korea)
Vyacheslav Lobanov (Russia, Co-Chairman)
Yury Zuenko (Russia)

Observers

Hiroya Sugisaki (Japan)
Takashi Ikeda (Japan)

AP-CREAMS Endnote 2

AP-CREAMS meeting agenda

1. Opening remarks
2. Brief country reports on activities and plans related to the CREAMS/PICES Program
3. Report and discussion on capacity building activities in 2014 and later
4. Status report and discussion on international cooperation
5. Progress on EAST-II Program
6. Proposal for continuation of AP activities
7. Report on status of supplementary chapter on “EAST-I area for Marine Ecosystems of the North Pacific Ocean 2003-2008”
8. Next AP-CREAMS inter-sessional meeting in spring 2015
9. Miscellaneous items
10. Closing

AP-CREAMS Endnote 3

Report on the AP-CREAMS meeting in Qingdao, China on October 29, 2014

(continued from PICES-2014, Yeosu, Korea)

Summary: AP-CREAMS 2nd Meeting 2014

Date: October 29, 2014

Place: Ocean University of China, Qingdao, China

Participants: Yu Fei, Joji Ishizaka, Kyun-Ryul Kim, Vyacheslav Lobanov, Jae-Hak Lee, Sumei Liu, Takeshi Matsuno, Jing Zhang

1. Opening remarks (K.R. Kim)

2. Progress on EAST-II Program (Ishizaka, Lee)

During last year’s PICES Annual Meeting in Nanaimo, AP-CREAMS proposed to publish “*Oceanography of the Yellow and East China Sea*” in a PICES Scientific Report series. The deadline for the first draft will be April 2015 and the final draft to October 2015.

3. Brief national report on activities and plans related to CREAMS/PICES

3.1 China (Liu, Fei)

One open cruise in the EAST-II region, supported by the Natural Science Foundation of China, was conducted in March–April 2014 and focused on nutrient dynamics and the benthic nitrogen cycle. Three cruises took place in May, September and October 2014 in Sanggou Bay, focusing on phosphorus bioavailability.

Supported by the Chinese Academy of Sciences Pioneer Project, and open cruise supported by Natural Science Foundation of China, a spring cruise and autumn cruise of the Yellow Sea by R/V *Kexue* No.3 and East China Sea by R/V *Kexue* No.1 was carried out in 2014. The Yellow Sea cruise was conducted to compare the variation from the Yellow Sea Warm Current mode in winter to the Yellow Sea Cold Water Mass mode in summer, and also the ecosystem variation accompanied with physical variation, and to compare these with historical data. Sampling in the East China Sea was done in order to understand the seasonal variation of the Taiwan Warm Current and its relation to the hypoxia area at the Changjiang river mouth. During the two cruises, 10 bottom-mounted fishery resistant mooring systems were deployed to monitor the seasonal variation of the Taiwan Warm Current, Yellow Sea Warm Current and coastal current in the Yellow Sea and East China Sea. The bottom temperature, salinity and dissolved oxygen were also monitored simultaneously.

3.2 Japan (Zhang, Ishizaka, Gamo)

A cruise of the T/S *Nagasaki-maru* (PI, Matsuno) took place in July 2014 and cruises of the R/V *Sinsei-maru* (PI, Morimoto) took place in June and July 2014 in the Tsushima Strait. One Korean student (Kyushu University), 3 Chinese students (Nagoya University), and 2 Chinese participants (Ocean University of China) took part in the *Nagasaki-maru* cruise.

4. Report and discussion on capacity building activities in 2014 and later

- A report on 2014 summer school of ecological modeling was given by Dr. K.R. Kim at PICES-2014.
- A new proposal for a summer school (workshop and training) on “*Submarine groundwater discharge*” for 2016 was given by Drs. Zhang and Kim.

5. Status report and discussion on international cooperation

- Russian-Korea cruise in EAST-I area (Lobanov): planning in mid-April 2015,
- R/V *Hakuho-maru* (Zhang): Korean waters of ECS in October 14–November 2, 2015, Nagasaki to Naha, Japan.

6. Proposal for continuation of the AP activity

Continuation was approved by Science Board and Governing Council.

7. Report on status of supplementary chapter on “EAST-I Marine Ecosystems for the North Pacific Ocean 2003–2008” (K.R. Kim)

A revision of the manuscript, comparable with other sections of the published North Pacific Ecosystem Status Report is underway by Dr. Kim. Submission of this revised manuscript to Science Board will close the AP-CREAMS activity on this issue.

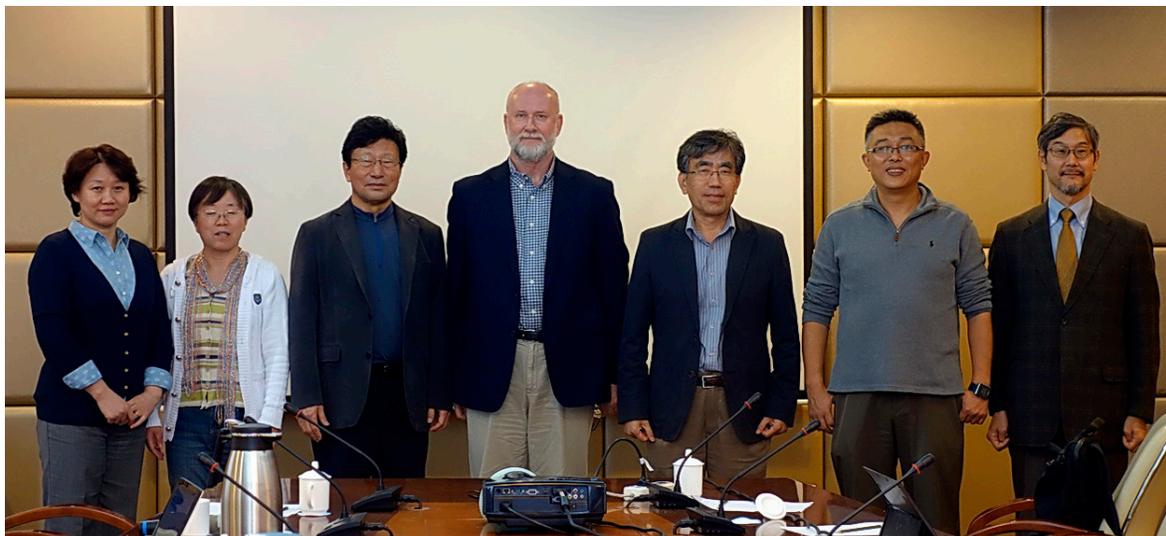
8. Next AP-CREAMS meeting in spring 2015

Chinese members will choose a venue from one of the three options before the end of next week.

- 1) Okinawa (PAMS, April 21–23),
- 2) Hanzhou (SIO, May),
- 3) Busan (PICES Inter-sessional meeting, mid-May).

9. Miscellaneous items

None



Participants of the AP-CREAMS meeting (continued from PICES-2014, Yeosu, Korea) in Qingdao, China on October 29, 2014, from left to right: Jing Zhang, Sumei Liu, Kyung-Ryul Kim, Vyacheslav Lobanov, Jae-Hak Lee, Yu Fei, Joji Ishizaka (missing Takeshi Matsuno).

AP-CREAMS Endnote 4

Report on the inter-sessional CREAMS-AP meeting, April 15, 2014, Qingdao, China

Participants: Yu Fei, Sumei Liu, Jae-Hak Lee, Kyung-Ryul Kim, Jing Zhang, Joji Ishizaka

1. Opening remarks (K.R. Kim)

2. Brief national report on activities and plans related to CREAMS/PICES Program

2.1 China (Y. Fei, S. Liu)

- There were three cruises in May, August, October 2013 in the Changjiang estuary and East China Sea Shelf, focusing on biogeochemical cycles under multi-stressors and response of hypoxic ecosystems to multi-stressors.
- There was one cruise in July 2013 in the Yellow and East China Seas, focusing on evolution of ecological environment.
- There were four cruises in April, July, October 2013, and January 2014 in Sanggou Bay, and one in the aquaculture bay in the western Yellow Sea, focusing on interactions between biogeochemistry and the food web.
- There is one on-going cruise in the South China Sea, and one open cruise, supported by Natural Science Foundation of China, focusing on nutrient dynamics and the benthic nitrogen cycle.

2.2 Japan (J. Zhang, J. Ishizaka)

- There was a joint cruise of the R/V *Dongfanghong* and T/S *Nagasaki-maru* in the EAST-II area in July 2013.
- Some Japanese members participated in the ARAON cruise in the EAST-I area in October 2013.
- There will be a cruise of the T/S *Nagasaki-maru* (PI, Matsuno) in July 2014 and cruises of the R/V *Sinsei-maru* (PI, Morimoto) in June and July 2014 in the Tsushima Strait.
- Programs of the Ministry of Environment (PI for EAST-I area: Yoshida) and of MEXT (for EAST-II area: Matsuno) have started.
- There may be a possibility to conduct a joint cruise of the *Hakuho-maru–Donfenghong–Taiwan–Korea* at the end of summer 2015.

2.3 Korea (K.-R. Kim, J.H. Lee)

- East China Sea: No basin scale survey cruise was carried out in the East China Sea in 2013 and the maintenance of the time series site (surface moored buoy) in the southeast of Jeju-do was finished in December 2013. A HF radar system (Project PI: KT Jung, KIOST) in the Jeju Strait has been maintained to monitor the surface current. A new observational research project in relation to the typhoon–ocean interaction (PI: SK Kang, KIOST) was launched in 2014. The observational target area is the eastern East China Sea.
- Korea–China Cooperation: A Korea–China Workshop on “*Marine research cooperation in the Yellow and East China seas*” to discuss the future joint research in the region was held in Jeju, Korea from June 24–27, 2014.

3. Discussion on capacity building activities in 2014 and later

A workshop/training course entitled “*End-to-End Models for marine resources management and research*” was held for August 26–29, 2014, at Gangneung-Wonju National University, Gangneung City, Korea.

4. Status report and discussion on international cooperation

- 4.1 Korea–Russia cooperative research (K.-R. Kim) – 2014 fall (2nd cruise in 2014),
- 4.2 Possible other cruises in late 2014 and later? – T/S *Nagasaki-maru*, R/V *Sinsei-maru*,
- 4.3 Planned cruises for 2015 – *Hakuho-maru–Donfanghon-II*, May, October 2014; summer, winter 2015,
- 4.4 Korea–China workshop, late June 2014, Jeju (K.I. Chang, J.H. Lee),
- 4.5 Japan Geochemistry Society symposium China–Japan, Toyama (J. Zhang),
- 4.6 Joint publications. Several special issues planned for publication in BG, JMS (Green tide), ECMS, JGR (PAMS), DSR-II.

5. Progress on EAST-II Program

Dr. J.H. Lee presented a progress report on the publication of “*Oceanography of Yellow Sea and East China Sea*” associated with the EAST-II project. A proposal for the publication in a textbook style was submitted to Science Board at PICES-2013 where it was accepted as a PICES Scientific Report. It was mentioned that no geological part currently exists.

6. Current Status on Status Report on supplementary chapter EAST-I area for Marine Ecosystems of the North Pacific Ocean 2003-2008 (J. Ishizaka K.-R. Kim)

The following recommendations were agreed:

- PICES should initiate the publication of the supplementary chapter without further delay as SB already endorsed.
- PICES should continue efforts for completing the 2nd NPERS for the preparation of NPESR 3.
- Executive Summary to be compatible with other sections of the published Status Report for publication by PICES.

7. Next AP-CREAMS meeting in Fall 2014

October 16, 2014, 9:00–12:30 in Yeosu.

8. Miscellaneous items

Extension of AP-CREAMS activity (Oct. 2005–2014).



Participants of the AP-CREAMS inter-sessional meeting in Qingdao on April 15, 2014, from left to right: Kyung-Ryul Kim, Yu Fei, Joji Ishizaka, Jae-Hak Lee, Jing Zhang, Sumei Liu.

AP-CREAMS Endnote 5

AP-CREAMS proposal for a publication of an EAST-II project (Oct. 29, 2014)

Tentative Title: **Oceanography of Yellow Sea and East China Sea**

Type of Publication: PICES report

Time Schedule

Initiation: 1 November 2014

1st Draft (by lead author and coauthors) deadline: 30 April 2015 (next AP meeting?)

1st Review (by chapter editors) deadline: 31 May 2015

2nd Draft deadline: 30 June 2015

Final Review (by editors): 31 July 2015

Final Draft: 31 August 2015

Submission to CREAMS-AP: 30 September 2015

Submission PICES annual meeting (POC/MONITOR/SB): 18/19 October 2015

Editors: J. Ishizaka, T. Matsuno, J. Zhang, J.H. Lee, S. Kim, D. Xu, F. Yu, S.M. Liu, V. Lobanov

Pages : 300 pp.

Contents of Publication: Review of current understanding usable for textbook of this area

Support from PICES: Comments and Suggestions for Editorial of English and Contents

Guideline for draft

Contents

Time schedule

Volume: Total 300 pages, 100 pages/chapter, 15 pages/section

Table of Contents (Possible authors, * not confirmed)

Chapter 1. Physical Oceanography (J.H. Lee, T. Matsuno, F. Yu)

(1) Circulation (including both observational and numerical studies)

Lead author: Heung-Jae Lee (KIOST)/Korea

Coauthors: Xinyu Guo (Ehime U.)/Japan, *FangLi Qiao (FIO) /China

(2) Tides (including tidal current, surface wave, internal tide/waves)

Lead author: Dongfeng Xu (SIO) / China

Coauthors: Sang Ho Lee (Kunsan NU)/Korea, Akihiko Morimoto (Nagoya U.)/Japan

(3) Water Masses

Lead author: Fei Yu (IOCAS) /China

Coauthors: *Tomoharu Senjyu (Kyushu U.)/Japan, IgChan Pang (Jeju NU)/Korea

(4) Ocean Mixing (particularly vertical mixing)

Lead author: Takeshi Matsuno (Kyushu U.) / Japan

Coauthors: JaeHak Lee (KIOST)/Korea, *Wei Hao(Tianjin U.) *Wei Chuanjie (IOCAS)/China

(5) Air-sea Interaction

Lead author: Atsuhiko Isobe (Kyushu U.) / Japan

Coauthors: Jingsong Guo (FIO)/China, KyungIl Chang (Seoul NU)/Korea

(6) Long-term Variation (seasonal, to decadal and to trend)

Lead author: CheolHo Kim (KIOST)/Korea

Coauthors: *Dongliang Yuan(IOCAS)/China, *Naoki Hirose(Kyushu U.)/Japan

Chapter 2. Chemical Oceanography (J. Zhang, S.M. Liu, D.J. Kang)

(1) Radiative Gases

Lead author: *Guiling Zhang (OUC)/China

Coauthors: DongJin Kang (KIOST)/Korea, *Hisayuki Yoshikawa (Hokkaido U.), *Fumiko Nakagawa (Nagoya U.)/Japan, *Guipeng Yang/Honghai Zhang (OUC)

(2) Nutrients

Lead author: Sumei Liu (OUC)/China

Coauthors: *Dongseon Kim (KIOST)/Korea, Yu Umezawa (Nagasaki U.)/Japan

(3) Hypoxia

Lead author: Zhuoyi Zhu (ECNU)/China

Coauthors: *TaeGeun Noh (KIOST)/Korea, *Hiroshi Koshikawa (NIES)/Japan

(4) Biogeochemical Tracers

Lead author: Jing Zhang (Toyama U.) / Japan

Coauthors: Guebuem Kim (SNU)/Korea, Jingling Ren (OUC)/China, Jian Zheng (NIRS)/Japan, Xuchen Wang (OUC)/China

(5) Lignin and Amino Acid

Lead author: *Ying Wu (ECNU)/China

Coauthors: *??? (/Korea, *Yohei Yamashita (Hokkaido U.)/Japan

(6) Productivity reconstruction

Lead author: Meixun Zhao(OUC)/China

Coauthors: *DongIl Lim (KIOST)/Korea, Masanobu Yamamoto (Hokkaido U.)/Japan

(7) POPs and heavy metal pollution

Lead author: Xianguo Li (OUC), Yanbin Li(OUC)

Coauthors: SeungKyu Kim (Incheon NU)/Korea, Shin Takahashi (Ehime U.)/Japan

(8) Atmospheric Deposition

Lead author: Saichun Tan (IAP)/China

Coauthors: *Shigenobu Takeda (Nagasaki U.)/Japan, *Chunok Jo (SNU)/Korea

Chapter 3. Biological Oceanography (J. Ishizaka, S. Kim, Rencheng Yu)

(1) Bacteria

Lead author: Tian Xiao (IOCAS)/China

Coauthors: *Byoung Cheol Cho (SNU)/Korea, Hiroshi Koshikawa (NIES)(tentative) /Japan

(2) Phytoplankton

Lead author: Joji Ishizaka(Nagoya U.)/Japan

Coauthors: Sinjae Yoo (KIOST)/Korea, Rencheng Yu (IOCAS)/China

(3) Seaweed and Seagrass

Lead author: *Zhongmin Sun (IOCAS)/China

Coauthors: *Ik Gyo Jung (PNU)/Korea, Teruhisa Komatsu (U. Tokyo)/Japan

(4) Zooplankton (Including Giant Jellyfish)

Lead author: *Sun Song (IOCAS)/China

Coauthors: *HaeLip Seo (Cheon Nam NU)/Korea, Joji Ishizaka (Nagoya U)(tentative)/Japan

(5) Benthic Community

Lead author: Kuidong Xu(IOCAS)/China

Coauthors: *JaeSang Hong (Inha U)/Korea, Hiroya Yamano (NIES)/Japan

(6) Fish and Invertebrate Fisheries

Lead author: *Xianshi Jin (YSFRI)/China, or Xiujuan Shan

Coauthors: *Suam Kim (Pukyong NU) *Sukeun Jung (Jeju U.)/Korea, Masaaki Fukuwaka (Seikaiku FRI) /Japan

(7) Marine Birds and Mammals

Lead author: *??? (?) / China

Coauthors: *YongRak Ahn (NFRDI)/Korea, *Yutaka Watanuki (Hokkaido U.)/Japan

AP-CREAMS Endnote 6

Summary Report on AP-CREAMS Activities in 2014

Co-Chairmen:

J. Ishizaka (Nagoya U., Japan), K-R. Kim (RIO SNU, Korea),

V. Lobanov (POI FEB RAS, Russia)

1. AP-CREAMS/PICES AP tasks

The AP-CREAMS was established in October 2005 with the tasks:

- to initiate and oversee a program to study the hydrography, circulation, and biology and their variability in East Asian Marginal Seas in the PICES area, effect of climate and long-term changes in the abiotic and biotic environments of this region;
- to facilitate the establishment of permanent observation and data exchange networks in this region;
- to convene workshops/sessions to evaluate and compare results from the program.

2. AP Activities of 2014

- Inter-sessional AP meeting on April 15, 2014 in Qingdao, China,
- Annual AP meeting on Oct. 18 2014 in Yeosu, Korea,
- Planned continuation of AP meeting on Oct. 29, 2014 in Qingdao, China (at PEACE-7 workshop),
- EAST-I area: Joint Korea–Russia cruise in April 2014 (R/V *Akademik M.A.Lavrentyev*),
- EAST-I area: Joint Korea–Russia workshop at POI Cape Shults Marine Station, Russia, in July 2014,
- EAST-II area: Japan–China cruise in July 2014 (R/V *Nagasaki-maru*),
- EAST-II area: preparation of “*Oceanography of the Yellow Sea and East China Sea*” for the PICES Scientific Report series,
- EAST-II area: Korea–China Workshop on “*Marine research cooperation in the Yellow and East China seas*” to discuss the future joint research in the region, June 24–27, 2014, Jeju, Korea,

- PICES 2014 Summer School on “*End-to-End Models for marine resources management and research*”, August 26–29, 2014, Gangneung-Wonju National University, Gangneung City, Korea, 30 students, 6 instructors.

3. AP Activities planned for 2015 and beyond

- EAST-I – Russia-Korea joint cruise in April 2015,
 - EAST-II – China, Japan, Korea joint cruises in July–August 2015,
 - EAST-II – completion a report on Oceanography of the Yellow and East China Sea, end of 2015,
 - Next AP inter-sessional meeting in spring 2015,
 - Workshops and Summer Schools on remote sensing, circulation and ecosystem modeling in 2015–17,
- More information will be added after the AP meeting in Qingdao on October 29.

4. Requests for PICES

4.1. Proposal to extend the deadline for preparation of EAST-II Report “Oceanography of the Yellow Sea and East China Sea” to the end of 2015. At PICES-2013 it was suggested to complete the report during 2014. However, much effort is still required to work with the collected information which is supposed to be finished by the end of 2015.

4.2. Proposal for the continuation of AP-CREAMS activity through 2019. AP-CREAMS was established in October 2005 and extended through 2011 to 2015. As the activity of the CREAMS/PICES program is continuing, it is suggested to propose continuation of the AP for a period from 2015–2019.

AP-CREAMS Endnote 7

Proposal for CREAMS AP activity extension through 2019

Co-Chairmen:

J. Ishizaka (Nagoya U., Japan)
 K.-R. Kim (RIO SNU, Korea)
 V. Lobanov (POI FEB RAS, Russia)

1. CREAMS AP tasks and their implementation

The CREAMS AP (Advisory Panel on Circulation Research in the East Asian Marginal Seas) was established in October 2005 with the tasks:

- to initiate and coordinate the studies on hydrography, circulation, and biology, as well as on variability of oceanographic and biological properties in PICES area of the East Asian Marginal Seas;
- to estimate climate-scale and long-term changes in abiotic and biotic environments of this region;
- to facilitate the establishment of permanent observation and data exchange networks in this region;
- to convene workshops/sessions to evaluate and compare the results of national and international research programs.

The AP-CREAMS activity was extended in 2010, and now the second term is finishing. Recently, in addition to the above mentioned tasks, AP-CREAMS started two new directions, as a contribution to FUTURE: i) scientific capacity building in the form of semi-regular summer schools on modern advances in oceanography and marine biology and ii) preparing scientific publications overviewing the state of regional ecosystems and their variations.

In 2014, AP-CREAMS continued coordination of national and international research in the frameworks of the research projects, EAST-I and EAST-II: two joint cruises were conducted, and two scientific workshops were held where the programs and results of these surveys were discussed. AP-CREAMS organized the summer school on “*End-to-end models for marine resources management and research*” in Gangneung, Korea, as one of a series of summer schools, and continued preparation of scientific publications on state of regional ecosystem, namely on the report “*Oceanography of the Yellow and East China Seas*”. All these activities are successfully developing and should be continued.

2. Reasons for extending AP-CREAMS AP activities

2.1 Coordinate the current research projects

- In the framework of the EAST-I project, a Russia–Korea joint cruise aboard a Russian research vessel is planned in April 2015 and beyond on an annual basis;
- In the framework of EAST-II project, the joint cruises aboard a Japanese research vessel are planned in July–August 2015;
- AP-CREAMS meeting to coordinate these surveys and discuss their results is planned for the spring of 2015.

2.2 Complete the volume “*Oceanography of the Yellow Sea and East China Sea*”, as a PICES Scientific Report. The deadline for the final draft is planned for September 2015, and it is expected to be submitted to PICES by October 2015.

3. Other motives for continuing AP-CREAMS activities

3.1 Coordination of national and international researches and observational and data-exchange networks

Research activities among PICES member countries in the region of the East Asian marginal seas have a permanent character and need ongoing coordination, as the interests of different countries tightly overlap. Some ideas on further development of international surveys and observation networks have already been discussed by AP-CREAMS though the details, such as joint standard sections, extension to the Okhotsk Sea, *etc.*, are not yet developed.

3.2 Scientific capacity building

This FUTURE-related activity is deeply shared by the entire AP and will be continued in different forms, but most importantly as summer schools held at Seoul National University, taking advantage of SNU’s expertise in satellite oceanography, observational systems, hydrodynamic and ecosystem modeling, *etc.* A summer school on submarine groundwater discharge for 2016 will be discussed at the AP-CREAMS meeting on October 29, 2014.

4. Request for PICES

As the activities of AP-CREAMS are continuing successfully, with some definite plans for 2015 and intentions for beyond, AP-CREAMS requests an extension for another term until 2019.