

Report of the Advisory Panel for a Circulation Research in East Asian Marginal Seas/PICES Program

The meeting the Advisory Panel for a *Circulation Research in East Asian Marginal Seas* (AP-CREAMS) was opened by Dr. Joji Ishizaka, Co-Chair, at 9:00 am, October 26, 2018 in Yokohama, Japan. Participants gave self-introductions (*AP-CREAMS Endnote 1*) and adopted the meeting agenda was adopted by the AP members (*AP-CREAMS Endnote 2*). The AP welcomed Dr. Ryan Rykaczewski, a new member representing USA. Dr. Jae-Hak Lee acted as rapporteur.



Participants of the 2018 PICES AP-CREAMS meeting. Left to right: Jing Zhang (Japan), Fei Yu (China), Sung-Hyun Nam (Korea), Jae Hak Lee (Korea), Vyacheslav Lobanov (Russia), Joji Ishizaka (Japan), Osamu Katoh (Japan), Yuri Zuenko (Russia), and Hee-Dong Jeong (Korea).

AGENDA ITEM 2

National reports

China

Dr. Fei Yu reported on the survey cruises conducted in the Yellow Sea and East China Sea (ECS) in 2017 by IOCAS (Institute of Oceanology, Chinese Academy of Science). Three cruises monitoring *Enteromorpha prolifera* and a southern ECS cruise were carried out between April and September of 2017. He explained recent research results on: the study for eddies between the Kuroshio and Taiwan Warm Current in the southern ECS focusing on seasonal variation and related dynamics (JEBAR (Joint Effect of Baroclinicity and Bottom Relief), *etc.*), the study for the Southern Yellow Sea Cold Water Mass (SYSCWM) based on current meter data (formation, cold core on the western side associated with the southward coastal current, variation trend in temperature, and weakening of SYSCWM circulation), and a suggestion of a new branch of Taiwan Warm Current associated with intrusion paths. Summaries of other cruises carried out by Ocean University of China and First Institute of Oceanology were briefly reported.

Japan

Dr. Jing Zhang reported that the NS-10 cruise to study mixing processes and material exchange between the Kuroshio water and shelf water was conducted in the southeastern ECS in July 2018 using a new vessel,

the T/S *Nagasaki-maru*. Major participating institutions were Kyushu University, University of Toyama, Nagoya University and Ehime University. Researchers from KIOST and Ocean University of China also joined to the cruise. Dr. Ishizaka explained various cruises conducted by the *Nagasaki-maru*, *Kagoshima-maru* and *Hakuo-maru* focused more on ocean mixing studies. The use of the Himawari satellite images for the distribution of Chl-*a* was discussed.

Korea

Dr. Jae-Hak Lee presented a brief report on Korea's activities: the EAST project and time series measurement sites including the HF radar system in the Jeju Strait. Additional Korean activities were reported by Dr. Sung-Hyun Nam: the EAST cruise in the EAST II and EAST I area, the joint Korea–Russia cruise, and recently published results from the cruises. The implications for possible changes in bottom water formation in the EAST I area was discussed by the members and it was agreed that continuous observation is needed. This is an important activity to support AP-CREAMS's request for an extension.

Russia

Dr. Vyacheslav Lobanov presented a report on survey cruises carried out by the V.I. Il'ichev Pacific Oceanological Institute (POI). Major observations included cascading at Peter the Great Bay (PGB), study for mesoscale eddies and Primorye upwelling, the PGB observing system, the NEAR-GOOS Climate monitoring system, and the Russia–Korea joint cruise. He explained time series data (winter moorings 2016–2017) results from observations of cascading at PGB. In addition, the data collected from three moorings from December 1, 2017 to April 29, 2018 revealed 10, 4 and 2 cascading events at 651 m, 1136 m, and 1967 m, respectively. For the study of mesoscale eddies and Primorye upwelling, satellite images and section profiles for December 2017 were presented. He also discussed activities related to the PGB observing system, to the Pacific Floating University, and to the NEAR-GOOS Climate monitoring system, and introduced the Russia–Korea EAST-I joint cruise scheduled for November 2018. Members discussed physical processes related to convectional events. It was suggested that eddies may have an important role on the events rather than short-term winds. Yury Zuenko reported fishery science activities. A Primorye shelf trawl survey along the Russian coast by the R/V *Buhoro* was conducted in April–May 2018. Results showed cold water at the bottom of PGB produced by an ice-freezing effect. He also explained survey results from the RV *Dmitry Peskov* in the deep-water part of the Russia EEZ in August 2018.

AGENDA ITEM 3

Report on AP-CREAMS publications

Status report on EAST-I: Supplementary Chapter of PICES NPESR 2003–2008

AP-CREAMS is still waiting for a clear answer on when the Supplementary Chapter will be published. Members agreed that AP-CREAMS needs to ask/recommend PICES to complete this process.

Status report on EAST-II

Dr. Ishizaka reported the progress on the EAST II publication for the PICES Scientific Report series. It was submitted to POC and MONITOR at PICES-2018 for review. Two subsections, 'Sea grass/Seaweeds' and 'Marine mammals', were deleted in the Biology section because authors willing to contribute could not be found.

Dr. Zuenko provided comments (and later via e-mail) on the technical issues: 1) most of sub-sections had their own complete structure, with a general description of the area, so it was repeated many times, 2) each sub-section had its own list of references, mostly very extensive, and it was very probable that some sources were repeated many times, 3) some geographical names were not consistent across sub-sections, 4) the order of sub-sections did not seem logical sometimes, in particular in the chemical chapter, 5) some

figures and tables were too small, 6) the text of some sub-sections was too detailed and ‘loose’, and 7) there were too many abbreviations. In some cases, they could be written out in full, others could be collected in a list of abbreviations, and definitely, only common abbreviations should be used in all sub-sections.

Dr. Ishizaka commented on the naming issue and recommended that an editorial committee be set up to review chapters. Details on the procedure and timing will be discussed and decided via email.

The next step will be to revise the report after receiving comments and submit to the Secretariat no later than the next inter-sessional AP-CREAMS meeting in spring of 2019.

AGENDA ITEM 4

Development of PICES North Pacific Ecosystem Status Report-3

Dr. Lobanov presented the status on proposed outline of regional assessment. The Study Group on *North Pacific Ecosystem Status Report (2015–2016)* recommended the establishment of a Working Group on *Third North Pacific Ecosystem Status Report* to gather North Pacific ecosystem time series observations (ETSO). This would be done through status report-3 website. The ETSO would then be synthesized to produce a third NPESR. The AP reviewed the progress of each part for the region 19. Some parts the coordinators are responsible for have changed, and it was pointed out that it is not easy to find appropriate person for specific areas. Dr. Yu reported the progress on region 21 (the East China Sea). It contains Hydrography (Nutrients and Hypoxia), Chemistry, Phytoplankton, Zooplankton, MacroBenthos and Fish and Invertebrates. Members pointed out that a part on the atmosphere should be included, and that the effect of the Kuroshio on shelf water in 21, *i.e.*, exchange between the shelf and Kuroshio region, is important.

AGENDA ITEM 5

Capacity building activities

Progress of training course in 2019, China

Dr. Fei Yu updated members on the progress of the PICES Summer School proposed to be held in August 2019 in Qingdao. The title is ‘Ocean Turbulence: From Observing to Research’. The proposal was submitted to the Secretariat. Members suggested that more lecturers and sponsors be added. [Later, it was confirmed that Takeshi Matsuno agreed to support the Summer School via the OMIX project.]

AGENDA ITEM 6

International cruises

CREAMS-III Basin Scale Survey (1999 + 20)

Dr. Lobanov explained the CREAMS-III Basin Scale Survey for 2019–2020. He gave a brief history of CREAMS, the relation between PICES and CREAMS, and the creation of AP-CREAMS. He also discussed the Co-operative Study of the Kuroshio (CSK, 1965–1979); a CSK-2 program is under discussion through a feasibility study in WESTPAC. AP-CREAMS agreed that its involvement with the program needed further discussion for several issues including collaboration with a WESTPAC WG, relation with CSK-2, the use of routine observations of operational agencies, the period of survey, partners *etc.* The observational connectivity between EAST-I and EAST-II regions was also noted.

Ferry boat monitoring

Dr. Hee-Dong Jeong provided an update on the Korea–Russia ferry boat monitoring system. The system installed on the cruise vessel *Eastern Dream* connecting the route between Donghae and Vladivostok.

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Examples of data recorded as a test case were shown. The expansion of ferry boat monitoring lines in Korean waters and a future plan for the monitoring lines connecting Korea and Japan were introduced.

Others

Dr. Sung-Hyun Nam introduced the plan for a Korea–US Naval Research Lab joint cruise for ocean mixing study in 2020.

AGENDA ITEM 7

Collaboration with other international programs and organizations

NEAR-GOOS and PACON

Dr. Lobanov discussed the goals of The North-East Asian Regional–Global Ocean Observing System (NEAR-GOOS), which is a regional ocean observing system of GOOS alliances, its data products, national databases, working groups, and the second phase of its Strategic Plan. He cited past and ongoing Pilot Projects, a proposal for a 4th Pilot Project (ferry-based monitoring) suggested recently, and the potential for new Project (studies of seals using satellite tags). NEAR-GOOS activities for 2018 and beyond were also introduced. In addition, Dr. Lobanov noted the 26th PACON (Pacific Congress on Marine Science and Technology) Conference will be held in July 16–19, 2019, in Vladivostok, Russia.

WESTPAC and GEOTRACES

Dr. Jing Zhang introduced GEOTRACES (International Study of the Marine Biogeochemical Cycles of Trace Elements and Their Isotopes), a SCOR-supported activity. She talked about its data management structure, status of observations and data visualization, and showed P01, J/E, P-N, T, and K lines as observations in the western Pacific and the marginal seas. Two future cruises in the western North Pacific (PI Minhan Dai, Carbon fixation and export in the oligotrophic ocean regulated by nutrient regimes) are scheduled in December 2019–January 2020 and in July–August 2021. A GEOTRACES-China cruise planning workshop was held May 5–6, 2018 in Xiamen, China, and a joint GEOTRACES/PAGES Workshop on “*Trace element and isotope proxies in paleoceanography*” will be held December 3–5, 2018 in Aix-Marseille, France. In WESTPAC activities, a Working Group (WG 06) on ‘A Framework for Cooperative Studies in the Western Pacific Marginal Seas: Energy and Materials Exchange between Land and Open Ocean’ was established in May 2017. The WG held its first workshop in Fukuoka, Japan, in October 2017. A second workshop will be held in Qingdao, China, on December 17–18, 2018.

AGENDA ITEM 8

Proposals for other future AP activities

Vyacheslav Lobanov suggested two one-day workshops during AP-CREAMS meetings in 2019. Dr. Sung-Hyun Nam agreed to prepare a proposal for PICES-2019 (*AP-CREAMS Endnote 3*).

AGENDA ITEM 9

Next meeting

The next inter-sessional AP-CREAMS meeting will be held in late April 2019 in Gangneung, Korea (see *AP-CREAMS Endnote 4* for the AP-CREAMS inter-sessional meeting in May 2018 in Hangzhou, China).

AGENDA ITEM 10

Message from FUTURE

Dr. Lobanov, FUTURE liaison to AP-CREAMS, reminded members about FUTURE's goals, research themes, activities, and preparation of a synthesis paper as it nears the end of its lifespan.

AGENDA ITEM 11

Miscellaneous items

Dr. Jae-Hak Lee (Korea) replaced Dr. Kung-Ryul Kim as Co-Chair. Dr. Ryan Rykaczewski was appointed new member, representing USA. Membership and chairmanship of KR Kim were replaced to Sung-Hyun Nam and Jae-Hak Lee, respectively.

AGENDA ITEM 12

Closing

The meeting was closed at 17:40 October 26, 2018.

AP-CREAMS Endnote 1**AP-CREAMS participation list**Members

Joji Ishizaka (Japan, Co-Chair)
 Hee-Dong Jeong (Korea)
 Osamu Katoh (Japan)
 Jae-Hak Lee (Korea)
 Vyacheslav Lobanov (Russia, Co-Chair)
 Ryan Rykaczewski (USA)
 Fei Yu (China, Co-Chair)
 Jing Zhang (Japan)
 Yury Zuenko (Russia)

Members unable to attend

China: Sumei Liu, Dongfeng Xu
 Korea: Guebuem Kim
 Russia: Pavel Ya. Tishchenko

Observers

Sung-Hyun Nam (Korea)
 Hiroya Sugisaki (Japan)

AP-CREAMS Endnote 2**AP-CREAMS agenda**

1. Opening remarks
2. National reports
3. Report and discussion on AP-CREAMS publication
4. Development of PICES North Pacific Ecosystem Status Report-3
5. Report and discussion on capacity building activities
6. International cruises
7. Collaboration with other international programs and organizations
8. Proposals for other future AP activities (Sessions of Workshops for next PICES meeting)
9. Next meeting
10. Message from FUTURE
11. Miscellaneous items
12. Closing

AP-CREAMS Endnote 3

Proposal for Workshop on

***“Circulation, biogeochemistry, ecosystem, and fisheries of the western North Pacific marginal seas:
Past and future of CREAMS (Circulation Research of East Asian Marginal Seas)”
at PICES-2019***

Conveners: Sung Hyun Nam (Korea), Fei Yu (China), Joji Ishizaka (Japan), Yuri I. Zuenko (Russia)

Suggested Invited Speakers: Vyacheslav B. Lobanov (Russia), Jing Zhang (Japan), Sumei Liu (China), Jae-Hak Lee (Korea)

The western North Pacific, one of the areas of the global ocean most affected by climate change and anthropogenic activities, consists of series of marginal seas. Two time series programs have contributed to significant advances in understanding of these seas/regions, names EAST (East Asian Seas Time-series)-I and -II regions since the CREAMS (Circulation Research of East Asian Marginal Seas) program was initiated beyond the national borders several decades ago (early 1990s). This workshop will provide a forum for summarizing progress made during the decades of CREAMS and during the 15 years of Advisory Panel (AP) CREAMS activities (since 2005), and for envisioning the future of CREAMS over the coming decades. This is a good time to share the knowledge/findings and experiences/lessons learned in hydrodynamics, biogeochemistry, ecosystem, and fisheries variability at multiple scales. We seek contributions from studies including, but not limited to, weakening of ventilation and decrease of dissolved oxygen in deep waters, eutrophication and development of hypoxia and acidification, changes of biological community structures, mixing and use of tracers as new methods, observational capabilities, etc. We will also discuss remaining issues, capacity building, new challenges, and future CREAMS plans during this workshop.

AP-CREAMS Endnote 4**Report on the inter-sessional meeting of the Advisory Panel for
a Circulation Research in East Asian Marginal Seas (AP-CREAMS)****May 4–5, 2018,
Hangzhou, China**

Participants (Members): Joji Ishizaka, Guebuem Kim, Jae-Hak Lee, Sumei Liu, Vyacheslav Lobanov, Dongfeng Xu, Fei Yu, Jing Zhang,
(Observer): Sung-Hyun Nam



AP-CREAMS meeting participants. Front, from left: Fei Yu, Vyacheslav Lobanov, Joji Ishizaka; back, from left: Sumei Liu, Jing Zhang, Dongfeng Xu, Jae-Hak Lee, Guebuem Kim, Sung-Hyun Nam.

1. Opening remarks

The meeting was opened by Dr. Fei Yu, Co-Chair of AP-CREAMS, at 9:30 am, May 4, 2018 at the New Century Hotel in Hangzhou, China. Participants gave self-introduction and adopted the meeting agenda. Dr. Jae-Hak Lee was nominated as a rapporteur of the meeting, and he agreed.

2. National reports on activities and plans related to the AP-CREAMS Program**2.1. China**

Dr. Yu discussed recent investigation done by the Institute of Oceanology Chinese Academy of Sciences (IOCAS). Eleven cruises were conducted from 2016 to present. *Interomorpha* cruises were carried out in the western Yellow Sea and East China Sea, the interface region between the Bohai Sea and Yellow Sea. A basin- scale cruise was also conducted. Current meter moorings have been deployed at 10 stations since 2014 and at 5 stations in 2017. A remarkable observation was the existence of cold eddies in the southern East China Sea. Bottom intrusion of Taiwan Warm Current water in the southern East China Sea and seasonal variation of water properties in the western Yellow Sea associated with the Yellow Sea Warm Current and cold coastal current were also reported. Dr. Sumei Liu presented the progress of the study entitled ‘Nutrient cycle in the China Sea’ conducted by Ocean University of China (OUC), focusing on the analysis of data obtained from cruises in 2017–2018. She also announced that the 8th IMBeR China-Japan-Korea symposium will be September 17–19, 2018, in Shanghai, China and the 2nd IMBeR Open Science Conference will take place June 17–21, 2019, in Brest, France. Dr. Dongfeng Xu reported on the recent work done by his group at the Second Institute of Oceanography, which included trajectories of satellite-tracked surface drifters showing slope eddies, the results of *in-situ* and mooring observations, and a

modeling study in the South China Sea. He also discussed deployment of surface drifters in the Arctic Ocean, a study on the currents in the channel region near Hong Kong, and a study in relation to typhoons and deep currents in the western North Pacific.

2.2. Japan

Dr. Joji Ishizaka reported on a study for eddies and spring chlorophyll bloom in the EAST-I region that suggested ocean mixing changes inside the eddy, which differs from the classical concept. Data collected in a series of EAST-II cruises in the eastern East China Sea in 2009, 2010, 2011, 2013 showed variation of phytoplankton distributions well but the question on nutrient sources, which may be related to the coastal upwelling, remains to be clarified. The status of the OMIX (Ocean Mixing Processes) project (2015–2019), especially for the cruise in the Kuroshio region near Taiwan, and results (i.e., distribution of low salinity water and internal waves, new estimation of turbulence in the Tokara Strait, and GCOM-C images) of the T/V *Nagasaki-maru* cruise in July 17–28, 2017, were explained. Dr. Jing Zhang gave a talk about the results of the KH-17-5 cruise, Leg 2 and Leg 3. Leg 3, the zonal line survey along 28°N (130°–147°E), was conducted as part of the Japan GEOTRACES activity.

2.3. Korea

Dr. Jae-Hak Lee presented a brief report of Korea activity focusing on research in the EAST-II region, and discussed new issues related to oil tanker accidents and microplastics in the ocean. Dr. Guebuem Kim spoke about the Korea EAST project (2016–2023), including the background of the study and some recent environmental changes in the study area such as ventilation in the EAST-I region. Recent research has been focused more on chemical oceanography: FDOM and CDOM in the East China Sea, DIN fluxes from the shelf to the open ocean, nutrients distribution in the EAST-I and EAST-II regions. For the EAST-I region, he explained CDOM and FDOM observations, including FDOM inputs from bottom sediments, preliminary result of Ra tracing vertical fluxes. Dr. Sung-Hyun Nam presented the recent oceanographic changes in the EAST-I region showing that the bottom water formation in the EAST-I region has slowed down recently based on the data collected from 19 CREAMS and EAST-I cruises. He also presented the results of cruises in the EAST-II region in February 2017 and April 2018, and the results of a non-linear internal wave study.

2.4. Russia

Dr. Vyacheslav Lobanov reported on five cruises carried out by the V.I. Il'ichev Pacific Oceanological Institute (POI) as Russian. The first cruise was conducted in June 7– July 3, 2017 and included the recovery of a current meter mooring. He explained cascading in the Peter the Great Bay (PGB) based on the time series data. Another cruise was conducted in August 2– September 13, 2017, in the Tatar Strait the western Okhotsk Sea where oxygen minimum zone was observed. A third cruise was carried out in September 25–October 30, 2017, mainly in the Tatar Strait, and partly included the NEAR-GOOS monitoring line. A fourth cruise was conducted in November 19–20, 2017 in the northern EAST-I region to study eddies in the region of the northwestern branch of the Tsushima Current. Also in November, three moorings were deployed in the PGB. A short cruise was done in April 27–30, 2018 to recover the moorings. The PGB Observing System, a joint study of polycyclic aromatic hydrocarbons conducted with Kanazawa University, Japan, and the Pacific Floating University involving three cruises, were also noted.

3. Status report on international cooperation

3.1. Korea–Russia joint cruises

Dr. Lobanov presented an overview on POI–SNU joint cruises which have been going on since 2001. A transect is planned for the November 2018 cruise. For the 2019 cruise, members discussed issues such as sampling sites, sharing bottle samples, data comparison and a technical problem (removal of sampling bottles to install LADCP). Winter convection on the slope in the northern EAST-I region was also discussed.

3.2. China–Japan–Korea joint cruises

Dr. Yu noted the difficulty in conducting multi-national joint cruises and suggested regional observations in each Exclusive Economic Zone (EEZ). He mentioned that a ‘Time series area’ in the East China Sea, suggested from a past WESTPAC WG workshop, would be good idea to study. Members exchanged opinions about the sharing of bottle samples and data comparison, especially for biological and chemical data. Dr. Yu touched on a plan for a IOCAS cruise for early career scientists in 2020. He pointed out that the cruise times must be announced well in advance so members can make the joint cruise arrangements. Members discussed the increasing difficulty for the marine scientific research in foreign EEZ areas.

3.3. CREAMS-III Basin Scale Survey (1999 + 20)

Dr. Lobanov introduced CREAMS-III: Basin Scale Survey. He gave a brief history of CREAMS, its relation with PICES, and how of AP-CREAMS became established. A Co-operative Study of the Kuroshio (CSK, 1965–1979) and the CSK-2 program is under discussion through a feasibility study in WESTPAC. Several issues, including collaboration with a WESTPAC WG, relation with CSK-2, the use of routine observations of operational agencies, the period of survey, partners, *etc.* still need to be worked out.

4. Report and discussion on AP-CREAMS publications

4.1. Status report on EAST-I: Supplementary Chapter of NPESR 2003–2008

Dr. Lobanov re-stated the status of NPESR-2 that was given by Dr. KR Kim at the AP CREAMS meeting during PICES-2017. He has sent an e-mail to KR Kim and the PICES Secretariat to ask if there is any new thing but has received no response from either so far.

4.2. Status report on EAST-II publication after Xiamen

Dr. Ishizaka reported the status of the EAST-II publication which was proposed at PICES-2013 (Nanaimo, Canada). He explained the history of the work and suggested a new schedule. He reviewed the progress on Chapter 3, Biological oceanography. Four sub-sections are completed, one sub-section will be completed in 10 days, and Two sub-sections are not finished (and may be deleted).

Dr. Lee described the progress on Chapter 1, Physical Oceanography. Sub-section 2, Tides and waves is still being written and is expected to be completed by the end of May. Due to a communication problem between the lead author and the chapter editor for Sub-section 3, Water masses, completion is behind schedule but it is expected that it will be finished in two weeks, including the review process.

Dr. Zhang noted that for Chapter 3, Chemical oceanography, Sub-section 6 will be completed by the end of June. The other 5 sub-sections have been completed but the review process is in progress for some sessions.

Technical editing will be done by the Secretariat. Members agreed that authorship must be finalized. The publication schedule has been revised (Appendix)

5. Collaboration with other international programs and organizations

5.1. WESTPAC and GEOTRACES

Dr. Zhang provided background and current activities of GEOTRACES and WESTPAC. For GEOTRACES, she described the data management structure, status of observations, and data visualization, showed the P01, J/E, P-N, T, K and SCS lines in the northwestern Pacific Ocean. A GP-06 cruise was conducted in the East China Sea to measure the water mixing ratio using the Nd isotope. A GEOTRACES-China cruise planning workshop is being held on May 5–6, 2018, in Xiamen. A WESTPAC Working Group on ‘A Framework for Cooperative Studies in the Western Pacific Marginal Seas: Energy and Materials Exchange between Land and Open Ocean’, was established with experts from 9 countries. Its first workshop was held in October 2017 in Fukuoka, Japan. A time series area in the ECS, which is a continuation of PEACE, was selected for discussion in the workshop.

5.2. NEAR-GOOS

Dr. Lobanov introduced NEAR-GOOS, which is one of 13 Global Ocean Observing System (GOOS) regional alliances (GRA). He explained GOOS history, management structure, work plan, and GRA Forum. For NEAR-GOOS, he described the initial goals, data products, national databases, concerning issues, and the NEAR-GOOS' second phase. There are three ongoing Pilot Projects, with a fourth (ferry based monitoring) being suggested, and a potential for one on studies of seals using satellite tags. It was suggested that AP-CREAMS take action to improve its relationship with NEAR-GOOS.

5.3. Others

Dr. Sumei Liu suggested IMBeR as a regional collaborator with AP-CREAMS. She also described the key points of the Chinese marginal seas case study.

6. Development of PICES North Pacific Ecosystem Status Report-3

Dr. Lobanov talked about the goals and activities of the Working Group on *Third North Pacific Ecosystem Status Report* (WG-NPESR3/WG 35). A Study Group on NPESR formed in 2015 and recommended the establishment of a Working Group on *Third North Pacific Ecosystem Status Report* which would gather and synthesize North Pacific ecosystem time series observations (ETSO) as a base for new status report (NPESR3). Five regions within AP-CREAMS activity area which are based on LME, outline of regional assessment, procedure for preparation and timeline of NPESR-3 were explained. The report is expected to be published in 2019. Nominated lead authors for the 5 regions are Yury Zuenko for 17 (Okhotsk Sea), Sanae Chiba for 18 (Kuril/Oyashio area), Vyacheslav Lobanov for 19 (EAST-I), Sinjae Yoo for 20 (Yellow Sea), and Fei Yu for 21 (East China Sea). Dr. Lobanov asked AP members to contribute data and to the writing of 19 (EAST-I). The nominated coordinators are Vyacheslav Lobanov (Atmosphere), Sung-Hyun Nam (Physical Ocean), Guebuem Kim (Chemical Ocean), Joji Ishizaka (Phytoplankton), Yury Zuenko (Zooplankton), Sukeun Jung and Yury Zuenko (Fishes and Invertebrates).

Fei Yu explained for the status of 21 (East China Sea). The nominated coordinators are Sumei Liu (Chemical Ocean) and Joji Ishizaka (Phytoplankton).

7. Report and discussion on capacity building activities

7.1. Report on cancellation of training course in 2018

Dr. Kim reported the cancellation of a proposed Summer School on *Satellite oceanography* due to lack of time for preparation, and explained the changed funding system to support students in Korea.

7.2. Proposals for training course, summer schools, etc. in 2019 and later

Dr. Yu explained his proposal for a Summer School on *Ocean turbulence* in 2019. He has contacted funding agencies and institutes in China for the possibilities to open a summer school, but there is uncertainty on obtaining funds. Members brought up earlier cases of CREAMS summer schools and suggested possible procedures to get funding. The AP unanimously offered its support to Fei Yu for the preparation of a summer school.

8. Proposals for other future AP activities

Dr. Lobanov noted that AP-CREAMS needs to renew its term, which will be finished in 2019. To be approved for extension, the AP needs to propose some reasonable future activities such as summer school. He suggested having a workshop to discuss future activities during PICES-2019. Dr. Kim will organize the workshop.

9. Next AP-CREAMS meeting

The next AP-CREAMS meeting will be held on October 26, 2018 during PICES-2018 in Yokohama, Japan. The next inter-sessional meeting will be held April, 2019 in Busan, Korea.

10. Miscellaneous items

None

11. Closing

The meeting was closed at 12:00 May 5, 2018.

Appendix: New Time Schedule (EAST-II publication)

AP-CREAMS Meeting on May 4–5, 2018:

- Chapter Editors to distribute the present version to all contributors by May 15, 2018.
- Chapter Editors to ask lead authors and contributors for comments and if there are any missing parts. The deadline for the authors/contributors is May 31, 2018.
- Chapter Editors to ask contributors to be prepared to make possible revisions after the comments.
- Chapter Editors to communicate with possible contributors who have not responded whether they will contribute or not by June 10, 2018.

- Final draft by lead authors: June 30, 2018
- Chief Editors to write preface: July 15, 2018
- Chief Editors to finalize the manuscript and submit to PICES: August 31, 2018
- AP-CREAMS to report to POC/MONITOR/SB at PICES-2018 (Yokohama, Japan, October 25–November 4, 2018)

History

- AP-CREAMS proposed to prepare “Oceanography of the Yellow Sea and East China Sea” for publication in a PICES Scientific Report series at PICES-2013 (Nanaimo, Canada).
Editors: F Yu, J Ishizaka, S Jung, JH Lee, SM Liu, V. Lobanov, T Matsuno, D Xu, R. Yu, J Zhang
- Contents of Publication: Review of the current understanding of oceanography of the Yellow Sea and East China Sea, usable for a textbook of this area
- POC/MONITOR/Science Board supported: provided comments and suggestions for contents and English editing
- Volume: Total ~300 pages, 100 pages/chapter, 15 pages/section, 10 figures/section (not strict)
- Format: A4 12 point font, 1.5 spacing, 32 lines
- PICES-2013: completion of publication – tentatively by end of 2014
- PICES-2014: deadline for completion reset to end of 2015
- PICES-2015: publication postponed
- PICES-2016: publication postponed
- PICES-2017: publication postponed
- PICES-2018: Need to “Finish”