

## 2021 Report of the Advisory Panel for a *Circulation Research in East Asian Marginal Seas/PICES Program*

### AGENDA ITEM 1

#### Opening remarks

The virtual business meeting of the Advisory Panel for a *Circulation Research in East Asian Marginal Seas/PICES Program* was opened by Dr. Vyacheslav Lobanov, Co-Chair of AP-CREAMS, on October 1, 2021 at 8:00 am (Chinese time; which is 9:00 am in Japan and Korea; 10:00 am in Vladivostok, Russia; and 2:00 pm the prior day in Honolulu, USA) and was facilitated by Julia Yazvenko (PICES Secretariat). There were 13 participants, including AP-CREAMS members and guests (*AP-CREAMS Endnote 1*). Participants adopted the meeting agenda without change (*AP-CREAMS Endnote 2*). Dr. Ryan Rykaczewski was nominated as a rapporteur.



Participants of the AP-CREAMS meeting on September 30/October 1, 2021. Upper left to right: Vyacheslav Lobanov (Russia), Ryan Rykaczewski (USA), Yosuke Igeta (Japan), Joji Ishizaka (Japan), Jae-Hak Lee (Korea), Takafumi Yoshida (observer, NOWPAP), Genki Terauchi (observer, NOWPAP), SungHyun Nam (Korea), Dongfeng Xu (China), Fei Yu (China), Julia Yazvenko (PICES Secretariat); not visible: Jing Zhang (Japan) and Alexander Bychkov (PICES).

AGENDA ITEM 2

**Completion of previous business**

Dr. Lobanov reminded members on the action points accepted at the AP inter-sessional meeting of July 27, 2021 (*AP-CREAMS Endnote 3*). Some issues were discussed here while the others were discussed under the Agenda item 7.

*2.1. Status of the report on EAST-II publication*

Dr. Joji Ishizaka reported that PICES Scientific Report No. 62 is completed and in a nearly final version. Ms. Rosalie Rutka of the Secretariat was checking the copyright of some of the figures, but a close-to-final version was distributed among the members to review.<sup>1</sup> Dr. Ishizaka thanked the authors and the editors and gave special thanks to Dr. Yu for organizing the contributions from China. Dr. Lobanov noted that the completion of the sections of this report occurred over many years. Some chapters were completed several years ago, while others were completed more recently, so the information is somewhat unequal in the time period that is covered. Dr. Ishizaka responded that while this is true, much of the information is a review of work that happened over the last several decades, and so it is still a very useful reference.

*2.2. Status of the CREAMS-related chapters of the PICES North Pacific Ecosystem Status Report-3*

Dr. Lobanov reported that NPESR-3 Regional Chapter 19 has been completed, but some re-formatting is needed. He reviewed the components of Ch. 19 for the members. The synthesis chapter will be printed, but the full report will be available online only. WG 35 has been the leader of this effort, and the process has not been easy. The report covers the period of 2009–2016, and it is now 2021. A new Ecosystem Status Report will be started by PICES, but there will need to be discussions about how frequently this effort will be.

*2.3. CREAMS database and webpage proposal*

Prof. SungHyun Nam reported for Prof. Guebuem Kim on their strategy for the webpage: they will create a “test” webpage that they hope to have completed by the end of this year (2021). Dr. Ishizaka noted that he has not been able to dedicate enough time to the database idea since the inter-sessional meeting. There are new data from recent cruises (led by Profs. Matsuno and Ishizaka), and the next step is to share these data more broadly. Dr. Ishizaka shared a list of cruises from 1993–2014 as an example. Dr. Lobanov suggested that we reach out to TCODE for advice, given that developing a dataset from scratch may be challenging. Prof. Nam noted that a list of metadata may be more practical than sharing the data themselves. He would like to add metadata for recent cruises. He noted that metadata is the more important, and then individual databases could be linked from those metadata. Dr. Lobanov noted that for joint Korea–Russian cruises, data are submitted to a Russian national database and then eventually shared with the global data bases/data centers (like WOD; Levitus). It may be redundant to manage the sharing of the data if they will be curated through a larger global or national effort. Dr. Ishizaka noted that while most of the data will eventually be submitted to JODC, it may be more efficient to share the data more directly. There may be some data that are not entered into the national database. Dr. Lobanov agreed but suggested that we ought to be careful not to duplicate effort. This would be a large undertaking and may require a discussion with TCODE. Dr. Jae-Hak Lee supported the idea of compiling a list of metadata as an initial step, and he can contribute some metadata. Dr. Yosuke Igeta notes that Japanese metadata can be shared, but the raw data themselves may be restricted because of the data policy concerning the sharing of biological data. Prof. Fei Yu commented that there may be duplication of efforts, as many users in China download data from national or international databases. But the metadata may be contributed. Dr. Dongfeng Xu also noted that there would be prohibitions against sharing data. There may even be problems sharing metadata for some cruises, but perhaps for some other cruises, metadata could be shared.

**Action item:** contact TCODE.

---

<sup>1</sup> Published online first week in October, <https://meetings.pices.int/publications/scientific-reports/Report62/Rpt62.pdf>

## AGENDA ITEM 3

**Past and future cruises and coordination**

The prospect of joint cruises was discussed, but concern for single cruises that cross EEZ boundaries remains a challenge. A potential solution is “coordinated” cruises that are operated by each country, but coordinated in the types of data collected, the location of the survey lines, and the timing of the surveys so as to jointly address a hypothesis that may not be sufficiently addressed by cruises within one EEZ alone. The data would be more useful, and there would be more motivation for exchange of data and collaboration. Dr. Lobanov asked the group for suggestions about proceeding with such coordination.

Dr. Ishizaka noted that universities have more flexibility in cruises than the cruises run by the Japanese government. Scheduling is still a challenge, but this could be done if planned well in advance. The participants are also negotiable, and a few foreigners may join. Of course, things have become more complicated with the pandemic, and quarantines are commonly required.

Common scientific interest and goals need to be identified to motivate the coordination. But a first step is to develop a system of information exchange about future cruise plans. Perhaps the webpage that might include the metadata on past cruises should also include information on future cruises.

## AGENDA ITEM 4

**Capacity building activities***4.1 Summer School on Ocean Turbulence in China postponed to 2021*

Prof. Yu reported that this year’s Summer School has been postponed. It has now been postponed twice due to the pandemic, and it is currently planned for summer 2022. International travel is still difficult. Ideally, this would be face-to-face meeting because there is seagoing work planned. The specific date and the content may change, as the lecturers (currently from China, Japan, and Canada) will need to be contacted again. However, if this needs to be delayed again, he will be considering moving the summer school online.

Dr. Lobanov noted that PICES has already offered support in the past. It is necessary to update POC and Science Board that this has again been delayed.

*4.2 Training course on satellites information with NOWPAP*

Dr. Genki Terauchi reported that this training course will be in a form of two webinars. The first is for three half-days (3 hours each day) on mapping sea grass by remote sensing. Each day will be split between a lecture (90 minutes) and hands-on work (90 minutes). This is proposed for November 2021. The second webinar is focused on water quality and ocean color. The format is similar: three half-days, split between lectures and hands-on activities. The proposed dates are December 14–16, 2021. There was discussion of the format and how it might reach the greatest number of students. It was suggested that the lectures be open to many students, but the hands-on activities be more restricted in size. It was noted that the time for advertising these training sessions is immediate.

Dr. Rykaczewski noted that NOAA continues to run training courses, and these have all transitioned to be online. There may be the potential for collaboration between the NOAA CoastWatch training courses and NOWPAP. See <https://coastwatch.gitbook.io/satellite-course/> for the NOAA course.

*4.3 Training course on eDNA*

Dr. Takafumi Yoshida had planned an in-person training course on eDNA in Japan, but that has now been canceled. The plan is to organize a new training course in spring 2023. There is interest in using eDNA

to monitor harmful algal blooms and non-indigenous species, and AP-NIS and S-HABs have been contacted to judge their interest. This focus has shifted a bit, and so this is considered a “new” training course rather than a simple postponement. Students may bring their own samples, and a survey may be included in the course.

#### *4.4 Other proposals*

AP members expressed general thoughts on training courses, summer schools, and workshops during a pandemic period that overall, the last two years have demonstrated that online training courses are possible, but there are clearly plusses and minuses.

### AGENDA ITEM 5

#### **Cooperation with other active programs/organizations in the region**

##### *5.1. WESTPAC (AMS, UNDOS, NEAR-GOOS, CSK-2)*

Prof. Jing Zhang informed AP members about a new project on Asian Marginal Seas (AMS) supported by IOC Sub-Commission for the Western Pacific (WESTPAC) and a planned kickoff meeting for UNDOS in the Western Pacific and its adjacent areas that will take place in November. She and Prof. Nam are both involved in this effort that is led by IOC-WESTPAC. They are also putting together a proposal for an Ocean Decade Incubator Program that would support a conference. They have a draft of an agenda that they will propose for the meeting. One of the topics to be included in the discussion is a long-term monitoring of the AMS, and there is a clear relevance with AP-CREAMS. One remaining issue is the need of social science expertise to be included in this proposal.

There are 22 countries involved in WESTPAC activities which connect north and south of the western Pacific while PICES connects east and west. When it comes to the UNDOS, it appears clear that the two groups should collaborate. AP-CREAMS is very supportive of the potential collaboration with WESTPAC on the AMS project and the Decade incubator.

Dr. Lobanov noted the NEAR-GOOS project (also under WESTPAC) and collaboration on a pilot project on Climate Monitoring Section which includes regular annual observations in the sea between Japan and Russia.

Dr. Lobanov also mentioned another new project by WESTPAC, the Second Cooperative Study of Kuroshio and its Adjacent Regions (CSK-2). He noted that an Intergovernmental Steering Group of CSK-2 was formed recently to discuss an implementation plan of the project. At the moment the project consists of around 10 research projects covering the northwestern Pacific from the origin of the Kuroshio in the south up to the Kuroshio Extension area in the north, including branch currents of the Kuroshio system and coastal areas influenced by the Kuroshio. It includes physical aspects and climate, and the marine ecosystem. The activity also includes capacity building and close collaboration with regional stakeholders.

Dr. Lee noted that there has been some difficulty in mobilizing activities under the umbrella of CSK-2 because of limited cruise activities in each country. In Korea, it is not clear how they will participate. Prof. Yu has not heard any new information on new collaborations between China and the broader CSK-II project.

### AGENDA ITEM 6

#### **Other matters**

##### *6.1. Special issue on East Asian Marginal Seas*

Dr. Rykaczewski reported that the deadline for this special issue in *Frontiers in Marine Science* has been extended from August 30 to November 30, 2021. There are currently 13 manuscripts in review.

## AGENDA ITEM 7

**Overall discussion on future plans for AP-CREAMS***7.1. Broadening scope*

AP-CREAMS members continued the discussion that began during the last inter-sessional meeting (*AP-CREAMS Endnote 4*) on broadening the scope of work. This could include involving socio-economic (SEES) aspects in AP-CREAMS, and interactions with the Human Dimensions committee. A previous suggestion was for Prof. Nam to reach out to Prof. Jongseong Ryu (a colleague of Dr. Hee-Dong Jeong) to discuss whom to contact who might want to join the CREAMS group. Prof. Nam has emailed Prof. Ryu, but they have not yet had a discussion. He hopes that Prof. Ryu will join the next AP-CREAMS meeting as an observer.

Another suggestion proposed by Dr. Lobanov is to arrange a session (maybe 1 hour during the inter-sessional period) specifically to interact with the HD experts to share ideas about how there may be overlap between CREAMS interests and HD experts. There is also an opportunity to collaborate with WESTPAC on the need for human dimensions involvement in science, as they are also putting together a proposal for a UNDOS “incubator program.”

Another suggestion regarding broadening of the scope includes improved communication with other PICES committees. Further discussion on new working group proposals (*e.g.*, WG-Extremes) and TCODE may help with that communication.

During summer 2018, there were very high SSTs around Korea, northeastern China, and Vladivostok. This summer (2021) was also very warm around Vladivostok. Information about these recent Asian marine heatwaves may be relevant to the new working group on Climate Extremes and Coastal Impacts that is being proposed.

Closer collaboration with other organizations is also an ongoing goal, and this could involve collaboration that is facilitated by UNDOS. AP-CREAMS members recognized that PICES continues to work towards better defining the interaction between its expert groups and UNDOS (via SMARTNET and a current Study Group on UNDOS).

*7.2. Future publication idea on 30 years of CREAMS*

Dr. Lee noted that there has not been a lot of discussion of this possibility. Perhaps this can be discussed in more detail during the next meeting.

## AGENDA ITEM 8

**Next AP-CREAMS meeting**

Dr. Lobanov proposed an inter-sessional meeting in April or May 2022 in Vladivostok. An in-person meeting would be great, and if so, then April would be better. However, the group recognizes the continuing uncertainty about COVID-19 on the likelihood of in-person meetings.

## AGENDA ITEM 9

**Summary and closing**

Dr. Lobanov reviewed the progress made during the meeting and closed the meeting at around 13:00 (Vladivostok, UTC+10) on October 1, 2021

***AP-CREAMS Endnote 1***

**AP-CREAMS participation list**

Members

Joji Ishizaka (Japan, Co-Chair)  
Jae-Hak Lee (Korea, Co-Chair)  
Vyacheslav Lobanov (Russia, Co-Chair)  
Fei Yu (China, Co-Chair)  
Dongfeng Xu (China)  
Jing Zhang (Japan)  
Yosuke Igeta (Japan)  
SungHyun Nam (Korea)  
Ryan Rykaczewski (USA)

Members unable to attend

China: Sumei Liu  
Korea: Hee-Dong Jeong, Guebuem Kim  
Russia: Pavel Ya. Tishchenko, Yury Zuenko

Observers

Alexander Bychkov (Past PICES Executive Secretary)  
Genki Terauchi (NOWPAP)  
Takafumi Yoshida (NOWPAP)  
Julia Yazvenko (PICES Webmaster)

***AP-CREAMS Endnote 2***

**AP-CREAMS meeting agenda**

*Video-conference September 30/October 1, 2021*

1. Opening remarks, introduction of the participants, adoption of the agenda, nomination of the rapporteur (AP co-chairmen)
2. Completion of previous business
  - 2.1. Status of the report on EAST-II publication (J. Ishizaka)
  - 2.2. Status of the CREAMS-related chapters of the PICES North Pacific Ecosystem Status Report-3 (V. Lobanov)
  - 2.3. CREAMS database and webpage proposal (J. Ishizaka)
3. Past and future cruises and coordination
4. Capacity building activities
  - 4.1. Summer School on Ocean Turbulence in China postponed to 2021 (F. Yu)
  - 4.2. TC on satellites information with NOWPAP (G. Terauchi)
  - 4.3. Training course on e-DNA (T. Yoshida)
  - 4.4. Other proposals
5. Cooperation with other active programs/organizations in the region
  - 5.1. WESTPAC (AMS, UNDOS, NEAR-GOOS, CSK-2)
6. Other matters
  - 6.1. Special issue on East Asian Marginal Seas (R. Rykaczewski)
  - 6.2. Other?
7. Overall discussion on future plans for AP-CREAMS
  - 7.1. Broadening scope
  - 7.2. Future publication idea on 30 years of CREAMS
8. Next AP-CREAMS meeting
9. Summary and closing

***AP-CREAMS Endnote 3*****Action points from the inter-sessional meeting of July 27, 2021**

1. To develop a human dimensions expertise of the AP-CREAMS. Prof. SungHyun Nam will reach out to Prof. Jongseong Ryu and Dr. Hee-Dong Jeon to discuss whom to contact regarding an expert in human dimensions who might want to join the AP.
2. To start developing of the AP-CREAMS webpage. Prof. Nam will discuss this with Prof. Guebuem Kim.
3. Dr. Joji Ishizaka will provide a vision of a planned CREAMS database and circulate it among the members for comments and suggestions for further discussion at the next meeting.
4. Discuss international collaboration through a coordination of national programs in a fall AP-CREAMS meeting. To have enough time for coordination, perhaps we should discuss our plans for 2022–2023 (all members).
5. Prepare a final decision (if possible) on the form of implementation of an Ocean Turbulence Summer School and Satellite Training Course to report to SB by the 2021 Annual Meeting (Yu Fei, Genki Terauchi).
6. Participation in the IMBeR West Pacific Symposium (November 22–25) <https://imber.info/event/wps2021/> is encouraged; abstracts are due in September (all members).
7. Prepare suggestions on further AP-CREAMS activity (reports, training courses, *etc.*) (all members)
8. Discuss AP-CREAMS contribution to UNDOS by developing our own programs or through collaboration with other organizations/programs.
9. Overall discussion on new plans for AP-CREAMS (discussion on new TOR, broadening the scope, roadmap, CREAMS 3.0 plans, *etc.*) will be during Fall business meeting.



*AP-CREAMS Endnote 4*

**Report of the Advisory Panel for  
Circulation Research in East Asian Marginal Seas (AP-CREAMS)  
Inter-sessional Meeting**

*July 27, 2021  
(video-conference)*

**1. Opening remarks**

The online inter-sessional meeting was opened by Dr. Vyacheslav Lobanov, Co-Chair of AP-CREAMS, on July 27 at 8:00 am (Chinese time; which is 9:00 am in Japan and Korea; 10:00 am in Vladivostok, Russia; and 2:00 pm the prior day in Honolulu, USA). There were Ten participants attended the meeting: 8 AP-CREAMS members and 2 observers from NOWPAP (*AP-CREAMS Endnote 1*). Participants adopted the meeting agenda without change (*AP-CREAMS Endnote 2*). Dr. Ryan Rykaczewski was nominated as rapporteur.



Participants of the AP-CREAMS inter-sessional online meeting on July 27, 2021. Upper left to right: Takafumi Yoshida (NOWPAP), Vyacheslav Lobanov (Russia), Ryan Rykaczewski (USA), Yosuke Igeta (Japan), Jae-Hak Lee (Korea), Joji Ishizaka (Japan), Dongfeng Xu (China), Genki Terauchi (NOWPAP), SungHyun Nam (Korea), not visible Fei Yu (China).

**2. Completion of previous business**

Dr. Lobanov provided a brief update on ongoing AP-CREAMS activities and plans. Broadening participation and communication were the main foci of the overview and included development of an AP-CREAMS website and the inclusion of human dimensions expertise on the AP. Dr. SungHyun Nam noted that he will reach out to Prof. Jongseong Ryu and Dr. Hee-Dong Jeong to discuss whom to contact regarding an expert in human dimensions who might want to join the AP. Prof. Nam also noted that he would explore the possibility of developing a webpage with Prof. Guebuem Kim, and Dr. Joji Ishizaka will provide input on the page and how it might interface with a planned CREAMS database.



### *2.1. Status of the report on EAST-II publication*

Dr. Ishizaka reported on the status of the EAST-II publication by PICES. Rosalie Rutka is editing the report as PICES Scientific Report 62, and the hope is to have the report by the next Annual Meeting. Dr. Ishizaka is preparing a satellite image for her to add to the front cover of the report.. The document will be available only in pdf. He estimated the length at about 300 pages, and so this would be a rather substantial document were it to appear in print.

### *2.2. Status of the CREAMS related chapters of the PICES North Pacific Ecosystem Status Report-3*

Dr. Lobanov noted that there are some sections of NPESR-3 Chapter 19 that still need completion (on birds, mammals, and pollutants), but he expects that these sections will be finished in August of this year and then can be forwarded to the Secretariat. The current draft is 69 pages, a little longer than suggested, but there is still some editing required, and the length may be trimmed in that process. Sections on Biogenic Habitat and Human Dimensions were canceled due to some lack of information and concern about public release of some information.

### *2.3. CREAMS database proposal*

Dr. Ishizaka opened the discussion about the CREAMS database saying that some of the data from cruises related to CREAMS can be shared as a database, and the inventory can be placed on the PICES website for AP-CREAMS as the starting point. Examples of databases currently served on the PICES web pages include the Continuous Plankton Recorder and some data concerning debris-related impacts from the 2011 Japanese tsunami. Dr. Lobanov suggested that TCODE could help with the development of a database. Perhaps a first step would be to share a data inventory or metadata so as to avoid issues of confidentiality that may be associated with sharing of the data themselves. TCODE members are more experienced with these challenges and strategies to develop useful databases. Prof. Nam noted that the webpage that was discussed earlier could be used as part of the AP-CREAMS database effort.

Dr. Ishizaka asked about the time series database (ETSOs) that was used for NPESR-3 and whether TCODE manages that database. Dr. Lobanov reported that the time series database was not easily accessible, and the data are not in a standardized format, but perhaps the ETSOs could be used as a component of the envisioned AP-CREAMS database.

## **3. Past and future cruises and coordination**

### *3.1. China*

Prof. Fei Yu and Dr. Dongfeng Xu reported on recent cruises conducted by China. Prof. Yu reported that during the last two years, 15 moorings have been visited for maintenance in the NW Pacific and South China Sea. There has been comparably little investigation in the East China Sea and the Yellow Sea. This year, there will be three cruises in the NW Pacific to maintain moorings and to visit the Marianas Trench.

Dr. Xu reported that in the last two years, cruises have been focused on the western Pacific as part of the Tropical Pacific Observing System (TPOS) program, as Japanese maintenance of TPOS in concluding. Four buoys have been deployed; two of those are on the equator (147°E and 156°E). Half a year of data has been collected and compared with Japanese data. Dr. Xu also reported on some research examining the circulation around seamounts that are being explored for potential deep-sea mining work. Mooring work shows anticyclonic circulation around the seamount, and the data show that the anticyclonic current energy is focused on the NE part of the seamount. A paper has recently been submitted. This characteristic may be associated with a mesoscale eddy that helps to communicate the energy from the surface to depth.

### 3.2. Japan

Dr. Ishizaka noted that usually, there is a cruise this time of year (July 7–15) in ECS to survey internal waves on the T/V *Nagasaki-maru*. Later it was confirmed that the cruise was again canceled this year because of the pandemic. Vaccinations have been prioritized for older individuals, and just are ongoing for students and scientists in Japan.

Dr. Yosuke Igeta provided an update on the effort to aggregate data from the 15 prefectures along the Japanese west coast where hydrographic data are collected monthly. FRA collects the data, quality checks those data, and then contributes the data to GTSP (Global Temperature and Salinity Profile Programme). They are available in near real time, and gridded data are used to generate a figure shared once a month. He highlighted data from one of these lines (SI-Line, the Sado Island line). Currents, turbulence, and zooplankton information are collected from CTD, water sampling, plankton nets, mooring, and seaglider. Two seagliders are used to run this line; a battery runs for two months, and then it is picked up and exchanged with the alternate glider.

### 3.3. Korea

Prof. Nam reported that there was one cruise conducted in July off the Korean east coast on vessel HY-2000, finished just a few weeks ago and focusing on the hydrography. Not many participants could join. There were about 40 CTD stations that were occupied where the East Korea Warm Current separated from the coast as the shelf deepens abruptly. He also noted the plan for fall: KIOST's R/V *Jeodo* will be used to service instruments attached to EC-1 in October, a mooring that has been maintained since 1996. The data collected from the mooring over the past 24 years are available through OceanSITES (<http://www.oceansites.org>) and SEANO (E) (<https://www.seano.org/data/00677/78916>). A second cruise will be on board the KIOST R/V *Onnuri* that will collect physical and chemical data from the southern part of the Korean Peninsula in October, with 10–20 participants.

Dr. Jae-Hak Lee noted that many KIOST cruises were canceled or postponed last year. There remains uncertainties in cruises in the near future. He also noted that areas of research emphasis will be microplastics and marine heatwaves. Microplastics work is currently more concentrated in bays and harbors, and the heatwave work is focused on using satellite and reanalysis data.

### 3.4. Russia

Dr. Lobanov reported on a cruise in December 2020 to monitor hydrography and climate conditions that ran due south along two lines from Primorye in the EEZ measuring CTD, chemistry, radioisotopes, and zooplankton. During the cruise, there was also a focused survey on mesoscale eddies and deployment of two moorings on the shelf near the coast. The weather during this cruise was particularly bad. There were 37 CTD stations that were occupied. Since 1996, the temperature of bottom water of the Japan deep basin has increased steadily, though the rate of increase has declined over the recent decade. The eddy work has indicated that eddies on the shelf are characterized by either low salinity or high salinity cores, based on their origin. There are three cruises in the area that are planned for August, August–September, and September–October 2021. One of these cruises will examine a hypothesis about harmful algal blooms (HABs) and climate change off the coast of Kamchatka (*i.e.*, the “poison water” that was reported last year).

Dr. Ishizaka asked about whether the source of the event had yet been identified as a HAB. Dr. Lobanov reported that there was evidence that it was HABs, but the data are preliminary, and it is still debated. Because of the relationship with high water temperatures and the wide spatial extent of the event, the source is believed to be related to the environment (and not to some chemical leak which was an alternative hypothesis offered initially).

Dr. Yury Zuenko could not attend the meeting, but he sent a comment to note that there have been a few cruises planned through TINRO, but for the EAST-I area there will be only a small survey targeting salmon in October 2021.

### *3.5. US NRL project and US ONR plans (SH Nam, JH Lee)*

Prof. Nam updated members on the joint US–Korea cruise, as a third cruise planned for remaining of this year, now scheduled for early November to December. Microstructure profilers and CTDs will be joined with a deployment of several moorings to examine mixing processes in the southwestern part of the EAST-I area. The location is of interest because internal tides generated by the steep bathymetric change here can influence turbulent mixing processes. The moorings will be recovered next year to collect time series data for at least six months. Participants will be about 10 to 20 (from Korea) and 7 from the US (mostly from NRL and ONR).

### *3.4. Suggestions on development of international collaboration*

Collaboration was not discussed, but the topic will be brought up during our meeting in fall.

## **4. Capacity building activities**

### *4.1. Summer School on Ocean Turbulence in China*

Prof. Yu reported that this Summer School was supported by PICES in 2019, but was delayed to 2020, and then further delayed in 2021 because of the ongoing pandemic. International travel remains difficult, and the Chinese government is restricting international activities. There are two options: delay again, or have it as an online, virtual summer school. Because a field survey was planned as an important component, face-to-face interaction is preferred. Prof. Yu suggests that we try once more for 2022 to hold an in-person summer school, expecting that the situation with COVID will be better. If it is not possible, then the potential for an online, remote course will be considered.

### *4.2. Training Course on satellites information with NOWPAP*

Dr. Genki Terauchi reported on the previous plan to conduct an in-person, 7-day satellite course, as had been done in Vladivostok (2011) and in Qingdao (2013). This year, the decision has not yet been made, but it is likely to be an online course (this December). Instead of one 7-day course, the plan is to break this into two courses. Dr. Terauchi reviewed the planned syllabus and the NOWPAP Marine Environmental Watch website. He also reviewed the online satellite data evaluation tool. Here, you can upload your own field data for comparison with satellite data. See <https://ocean.nowpap3.go.jp/>. He offered a detailed introduction to the seagrass mapper tool.

Dr. Lobanov asked about the number of potential participants in the online course. Dr. Terauchi suggested that 20 to 30 would be optimal to try to maintain the attention that trainers can devote to participants. However, perhaps it is possible to have a larger number of participants if it is virtual.

Dr. Ishizaka asked about PICES financial support for the course. Currently, the funding from PICES was for support for travel expenses. Of course, funding is no longer needed for this purpose given the virtual nature of the course. Dr. Terauchi noted that they have funds for further development of the web tools, and he will consult with the NOWPAP Regional Coordinating Unit to see if PICES support could be used for another purpose.

Dr. Lobanov asked what PICES' role would be in the course if PICES is not able to supply funds for travel. Dr. Terauchi hoped that PICES would encourage PICES scientists to participate as lecturers and for early career scientists to participate as students.

#### 4.3. Other proposals

Dr. Takafumi Yoshida reported that because of the pandemic, the face-to-face training course on eDNA is not possible. Most of the course is learning laboratory skills that are not easily taught remotely. The plan is to re-organize this for 2022 and 2023. NOWPAP will again ask PICES to support the meeting.

### 5. Cooperation with other active programs/organizations in the region

#### 5.1. IMBeR Continental Margins WG

No one from IMBeR was present, but the website <https://imber.info/event/wps2021/> was noted, and the IMBeR West Pacific Symposium (November 22–25) was discussed. There is one session (Session 8: “Ecosystem, biogeochemistry, and Interventions in the Western Pacific and its marginal seas: Beyond the disciplinary borders”) for which a presentation on CREAMS could be presented. Abstracts are due in September.

#### 5.2. WESTPAC (AMS, CSK-2, UNDOS)

Dr. Jae-Hak Lee reported that CSK was the Cooperative Study of the Kuroshio and Adjacent Regions that ran from the 1960s and 1970s. CSK-2 has been under development since 2015. Several feasibility and planning workshops have taken place. A science Action Plan was submitted to WESTPAC, and CSK-2 was established as a new program in April 2021 – an International Steering Committee is being formed. Dr. Lee reviewed the planned science activities of CSK-2 with AP-CREAMS. He also circulated a flyer announcing the UN Ocean Decade activities in the Western Pacific and its Adjacent Areas.

Dr. Lobanov asked what contributions AP-CREAMS could make to CSK-2. Dr. Lee noted that time series data from the CREAMS areas (EAST-I and EAST-II) would be valuable.

WESTPAC may be using AMS (Asian Marginal Seas) and CSK-2 as a UNDOS proposal. Dr. Lee encouraged members to think about how to efficiently collaborate.

### 6. Other matters

#### 6.1. Special issue on East Asian Marginal Seas

Dr. Ryan Rykaczewski reminded the group that the special issue in *Frontiers in Marine Science* is accepting manuscripts with a deadline at the end of August (most likely postponed). The name of the special issue was recently edited for political sensitivity reasons.

#### 6.2. PICES UNDOS activity

Dr. Rykaczewski provided a brief update on IPOD and SMARTNET. Future working groups proposed in PICES will likely make an effort to align their terms of reference with the objectives of UNDOS. One example of such a new working group is a proposed focus on coastal extreme events and societal impacts, which hopes to include expertise on climate, hydrography, ecology, and human dimensions. Heatwaves, hypoxia, and HABs off the coast of Russia and Korea were discussed. This seems like a valuable topic to focus on because it is a practical, timely, and impactful to all coastal countries. Dr. Lee noted that he will recommend some names of people working on marine heatwaves in Korea.

### 7. Overall discussion on new plans for AP-CREAMS

Discussion on new Terms of Reference; broadening AP-CREAMS scope; roadmap, CREAMS 3.0 plans, etc. will continue during the Annual Meeting in fall.

## 8. Next AP-CREAMS meeting

The PICES Secretariat has scheduled the next AP-CREAMS meeting for September 30, 2021, 17:00-20:00 Pacific Time / October 1 morning Asia time. No one voiced objections for this time.

## 9. Summary and closing

Dr. Lobanov reviewed the progress made during the meeting and closed the one-day meeting at around 14:00 (Vladivostok, UTC+10) on July 27, 2021.

### *AP-CREAMS Endnote 1*

#### **AP-CREAMS participation list**

##### Members

Joji Ishizaka (Japan, Co-Chair)  
 Jae-Hak Lee (Korea, Co-Chair)  
 Vyacheslav Lobanov (Russia, Co-Chair)  
 Fei Yu (China, Co-Chair)  
 Yosuke Igeta (Japan)  
 SungHyun Nam (Korea)  
 Ryan Rykaczewski (USA)  
 Dongfeng Xu (China)

##### Members unable to attend

China: Su Mei Liu  
 Japan: Jing Zhang  
 Korea: Heedong Jeong, Guebuem Kim  
 Russia: Pavel Ya. Tishchenko, Yury Zuenko

##### Observers

Genki Terauchi (NOWPAP)  
 Takafumi Yoshida (NOWPAP)

### *AP-CREAMS Endnote 2*

#### **Agenda for the AP-CREAMS Inter-sessional Meeting**

##### *Video-conference on July 27, 2021*

1. Opening remarks, introduction of the participants, adoption of the agenda, rapporteur (AP co-chairmen)
2. Completion of previous business
  - 2.1. Status of the report on EAST-II Publication (J. Ishizaka)
  - 2.2. Status of the CREAMS related chapters of the PICES North Pacific Ecosystem Status Report-3 (V. Lobanov)
  - 2.3. CREAMS database proposal (J. Ishizaka)
3. Past and future cruises and coordination
  - 3.1. China
  - 3.2. Japan
  - 3.3. Korea
  - 3.4. Russia
  - 3.5. US NRL project and US ONR plans (SH Nam, JH Lee)
  - 3.6. Suggestions on development of international collaboration
4. Capacity building activities
  - 4.1. Summer school on Ocean Turbulence in China postponed from 2021 (F Yu)
  - 4.2. TC on satellites information with NOWPAP (J Ishizaka, G Terauchi, T Yoshida)
  - 4.3. Other proposals

## AP-CREAMS – 2021

5. Cooperation with other active programs/organizations in the region
  - 5.1. IMBeR Continental Margins WG (SM Liu, F Zuo)?
  - 5.2. WESTPAC (AMS, CSK II, UNDOS) (SH Nam)
6. Other matters
  - 6.1 Special issue on East Asian Marginal Seas (R Rykaczewski)
  - 6.2 Other?
7. Overall discussion on new plans for AP-CREAMS (discussion on new TOR; broadening the scope; roadmap, CREAMS 3.0 plans, etc.)
8. Next AP-CREAMS meeting
9. Summary and closing