

Report of the FUTURE Scientific Steering Committee

The FUTURE SSC met on Sunday, October 28 and on Tuesday, October 30, 2018 at PICES-2018 in Yokohama, Japan. FUTURE Co-Chair, Drs. Steven Bograd (USA) led the meetings.

October 28, 2018

AGENDA ITEM 1

Introductions and nomination of a rapporteur

Self-introductions were made (*FUTURE SSC Endnote 1*), Drs. Ryan Rykaczewski (USA), and Sukyung Kang (Korea/FUTURE SSC Co-Chair) agreed to serve as rapporteurs.

AGENDA ITEM 2

Adoption of agenda

The agenda was modified (*FUTURE SSC Endnote 2*) and the following items were added to Other SSC business:

- Review S-CC special publication,
- Receive an oral report from WG 36 and discuss their possible extension and interaction with ICES,
- Review of PICES special project on “Sea turtle ecology in relation to environmental stressors in the northwest Pacific regions”.

AGENDA ITEM 3

Volunteers for award committees for 2018

Volunteers were sought to serve on the awards committee to select the FUTURE awards for Best Oral Presentation and for Best Poster Presentation by an early career scientist during PICES-2018. Drs. Ian Perry (Canada) and Sukyung Kang agreed to judge oral presentations. Drs. Jackie King (Canada) and Steven Bograd (USA) agreed to judge posters. This year’s selections were from topic sessions S3 and S7 (six oral presentations and six posters in competition).

The Best Oral Presentation was given to Vanessa R. Fladmark “*Citizen engagement through shoreline cleanup litter data: British Columbia case study*” (S3). The Best Poster Presentation was given to Hiroto Abe “*Sediment-associated phytoplankton release from the seafloor in response to win-induced currents in the Bering Strait*” (S7).

AGENDA ITEM 4

Review 2018 FUTURE SSC Action Plan

Dr. Bograd provided a briefing to the SSC members on the activities of the FUTURE SSC since PICES-2017.

- Submission of Report: FUTURE SSC Annual Meeting report and Topic Session S10 report from PICES-2017 were submitted to the Secretariat, and are on the FUTURE SSC’s [webpage](#).
- FUTURE presence on the PICES website: Proposed modifications to the PICES website to better represent FUTURE have been developed and were communicated to the Secretariat. The changes

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have been partially implemented, but there are several that have yet to be made. The Secretariat have had several meetings to discuss changes to the website, but given the suite of meeting that PICES has organized in the last 12 months, the workload has been relatively high.

- FUTURE SSC Inter-Sessional Meeting: A FUTURE inter-sessional meeting was held April 1–12, 2018 in Honolulu (see PICES Press, [Vol. 26, No. 2](#)). In addition to discussions on website revisions and prospects for the future of PICES integrative science, significant effort was put into the synthesis paper.
- Other FUTURE activities: FUTURE was represented at a number of meetings:
 - International PICES Symposium on “*Understanding changes in transitional areas of the Pacific*”, April 24-26, 2018, La Paz, Mexico. Dr. Bograd presented a FUTURE synthesis talk at a 1-day PICES–Mexico meeting prior to the symposium.
 - 4th International Symposium on “*The effects of climate change on the world’s oceans*”, June 4–8, 2018, Washington, DC, USA. FUTURE presented a poster and WG 36 (*Common Ecosystem Reference Points across PICES Member Countries*) held a 2-day workshop (W 11) on “*Quantifying thresholds in driver-response relationships to identify reference points*”.

AGENDA ITEM 5

FUTURE synthesis paper

An update on the status of the FUTURE synthesis paper was given. A draft is nearing completion, and submission to *Frontiers in Marine Science* is anticipated before the end of 2018. The outline of the synthesis paper was reviewed. The section that remains to be written is “Lessons Learned and New Challenges.” It was proposed that one lesson learned is the need for a meeting that specifically aims at synthesis which, in our case, was a valuable step in developing the narrative. Changes to the paper’s title were discussed: need to emphasize the process or need to balance the science with the process. The figures of the paper were reviewed, and some changes (mostly simplifications) are required. It was recommended to combine and simplify Figures 1 and 2 into one introductory figure. It was also recommended to add a ‘monitoring’ box to the case study schematics.

AGENDA ITEM 6

FUTURE products matrix

The FUTURE product matrix provides information on how the activities of expert groups are linked to the FUTURE research themes. Dr. Hal Batchelder has updated the matrix, but more revisions are required. The FUTURE SSC will contact expert group chairs (past and present) to solicit advice and specific information to add to the matrix. The intent is to have the product matrix on the PICES website with direct links to each of the products. The SSC Co-Chairs will send the draft product matrix to the expert group chairs for review before the end of 2018, with a specified deadline for responses.

There was additional discussion about whether the FUTURE road map is necessary. Dr. Bograd referred to a previous discussion where we concluded that the combination of the FUTURE schematic and product matrix was sufficient, and that a column indicating date of completion could be included in the product matrix if needed. However, the FUTURE roadmap on the website is out of date and needs to be removed if it is not going to be updated.

AGENDA ITEM 7

FUTURE outreach video

A FUTURE outreach video was planned and will include a suite of 1- to 2-minute videos from SSC members that highlight different aspects of the FUTURE program. The FUTURE SSC planned to meet on Wednesday (October 31) at the conclusion of the plenary session (S6) to prepare the videos. However, video shooting was postponed to the next inter-sessional meeting due to the unavailability of some SSC members.

AGENDA ITEM 8

Next integrative Science Program

The FUTURE SSC had a discussion on the next PICES integrative science program (or the continuation of FUTURE), and formulated a new term of reference to address this issue, as requested by Science Board. Dr. Bograd offered an initial suggestion of: “FUTURE SSC will facilitate discussion within and beyond the PICES community on the planning of the next Integrative Science Program (scope, structure, process)”, which led to a lengthy and fruitful discussion. Dr. Jackie King (Canada) noted that “facilitating discussion” is not sufficient, that developing a potential replacement for or restructuring of FUTURE is a large undertaking, and that some guidance from Science Board is needed on the level, scope, and structure of the suggestions desired. One suggestion (offered by Dr. Hal Batchelder) was that we simply respond to Science Board that FUTURE is not yet prepared to address the issue of a replacement program until we are able to assess the impact of the current actions. The FUTURE SSC is about to submit a peer-reviewed paper that may have a significant impact on the community, and the reception of this paper is something that will help guide the direction of a new integrative science plan. Another suggestion (Dr. King) was that we ask for an extension with a clear and concise list of reasons why FUTURE would need an extension. A third suggestion (Dr. Bograd) was that FUTURE might develop and present a range of options for what the next integrative science program might be.

At the conclusion of the discussion, the FUTURE SSC settled on offering a new term of reference (FUTURE ToR 8: “Provide recommendations to Science Board on options for implementing PICES integrative science.”). It is anticipated that the SSC will have significant discussion of this issue at its 2019 inter-sessional meeting.

AGENDA ITEM 9

Plan presentation, format of Session 6

Format of the FUTURE plenary session (S6, *The FUTURE of PICES: Next steps in understanding, forecasting and communicating climate impacts on North Pacific marine ecosystems*) on Wednesday (Oct. 31) was discussed, as this was a new structure from previous topic sessions and mini-symposia. A tentative schedule, including presentations of the current standing children of FUTURE was presented, and a few more presentations were added in the schedule of S6.

The following ideas were discussed to facilitate the discussion during the session:

- How can communication amongst PICES expert groups be improved?;
- What is going to be different over the next 10 years?;
- Reinforce the role of the FUTURE SSC liaison;
- Look for the right balance between nearshore and offshore systems.

A report of S6 was completed and submitted to the Secretariat (see PICES-2018 [Session and Workshop Summaries](#) in the 2018 Annual Report).

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AGENDA ITEM 10

Plan 2019 (and later) meetings

The FUTURE SSC will request 8 hours of business meeting at the next Annual Meeting, with no dedicated plenary session. There was the suggestion that we request one hour of plenary time in the Opening Session (S1), either to discuss the FUTURE science plan or to have presentations from some of the parent expert groups. The SSC accepted the suggestion that we request two 30-minute time slots. Having an inter-session meeting of FUTURE SSC was also discussed and a proposal was submitted for Science Board and Governing Council approval (see *FUTURE SSC Endnote 3*). Logistics and budget for an upcoming FUTURE Open Science Meeting were discussed. It was suggested to aim for Spring 2021 in Hawaii, and the budget from the 2014 Open Science Meeting could be appropriated for this purpose.

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AGENDA ITEM 11

Prepare 2019 action plan

During the FUTURE SSC's second meeting on October 30, a list of items was drawn up for Science Board approval (see *FUTURE SSC Endnote 4*), and action items for the next year were developed (*FUTURE SSC Endnote 5*).

AGENDA ITEM 12

Other SSC business

Report of Working Group on Common Ecosystem Reference Points across PICES Member Countries (WG 36)

Dr. Xiujuan Shan (Co-Chair of WG 36) reported on the recent activities of the WG and plans for the future. Dr. Shan presented an idea that WG 36 be extended for two years beyond the planned 2019 end date, with a reconfigured structure in which WG 36 would be a joint WG with an ICES group with similar aims. Dr. Jennifer Boldt (Canada), also a WG 36 member, noted that another option would be to conclude WG 36 with a final report, and then make a request for a new WG that might have similar aims and membership. These options were discussed by the SSC at length, and a range of viewpoints were offered. The discussion included concern that there are many groups that, at the end of their term, request extensions and are late on production of their final reports. Extensions of WG terms should not be taken for granted. The advantages of bringing WGs to their planned conclusion include production of a product that can be used by ongoing or new working groups. It was noted that, as a matter of course, the SSC should encourage opportunities for leveraging WG products by other groups. The example offered here was that WG 40 (*Climate and Ecosystem Predictability*) could build upon the results of WG 36. The SSC should encourage opportunities for leveraging WG products by other groups. Dr. Boldt agreed that whether or not WG 36 continues, a final report for the current term should be produced. Science Board Chair, Dr. Hiroaki Saito noted that extension of the term of WG also has consequences for how many new WGs can be approved. This discussion stimulated the comment from Dr. Batchelder and Dr. Thomas Therriault (Canada) that the SSC might suggest WGs 36 and 40 have a joint workshop to help facilitate interaction (regardless of whether WG 36's term is extended or not). As a body, the SSC recognized that WG 36 is making important progress and is active, but also suggested that WG 36 continue with its terms of reference on its current schedule and plan on submitting a final report next year.

S-CC special publication

Section on *Carbon and Climate* is ready to publish a PICES Special Publication on ocean acidification and deoxygenation in the North Pacific. There is a spot in the opening pages of the document for a foreword by FUTURE. Co-Chairs of FUTURE SSC will prepare text related to FUTURE for this Special Publication.

PICES special project

This item was not discussed due to lack of time.

Update of FUTURE liaison table

The FUTURE liaison table was updated and revised. Dr. Mitsutaku Makino (Japan) was recommended as a liaison to Working Group on *Marine Ecosystem Services* (WG 41). However, it was noted that he already had two primary liaison roles (HD and WG 36). Dr. Kang indicated that she can take over as the primary liaison with WG 36.

FUTURE SSC Endnote 1

FUTURE participation list

Members

Steven Bograd (USA, Co-Chair)
 Emanuele Di Lorenzo (USA)
 Toyomitsu Horii (Japan)
 Sukyung Kang (Korea, Co-Chair)
 Oleg Katugin (Russia)
 Jacquelynne King (Canada)
 Vyacheslav Lobanov (Russia)
 Mitsutaku Makino (Japan)
 Guangshui Na (China)
 Ian Perry (Canada)
 Fangli Qiao (China)
 Ryan Rykaczewski (USA)
 Thomas Therriault (Canada)
 Sinjae Yoo (Korea)

Observers

Harold (Hal) Batchelder (PICES Secretariat)
 Jennifer Boldt (Chair, MONITOR)
 Chieko Kondo (Japan)
 Hideaki Maki (Japan)
 Yumi Okochi (Japan NUS Co., Ltd.)
 Hiroaki Saito (Science Board Chair)
 Xiujuan Shan (Co-Chair, WG 36)
 Shion Takemura (Japan)
 Taichi Yonezawa (Japan NUS Co., Ltd.)



FUTURE SSC meeting participants, back row, from left: Guangshui Na, Sinjae Yoo, Ian Perry, Hal Batchelder, Sukyung Kang, Sarah Dudas; middle row, from left: Taichi Yonezawa, Shion Takemura, Emanuele Di Lorenzo, Ryan Rykaczewski, Steven Bograd; front row from, left: Yumi Okochi, Fangli Qiao, Toyomitsu Horii, Vyacheslav Lobanov, Oleg Katugin, Thomas Therriault, Jacquelynne (Jackie) King. FUTURE SSC member missing from photo: Mitsutaku Makino.

FUTURE SSC Endnote 2

FUTURE meeting agenda

October 28, 2018, 14:00–17:00 and October 30, 2018, 18:00–21:00

1. Introductions and nomination of a rapporteur
2. Adoption of agenda
3. Volunteers for award committees for 2018
4. Review 2018 FUTURE SSC Action Plan
5. Discuss status, complete writing of FUTURE synthesis paper
6. Discuss completion, dissemination of FUTURE products matrix
7. Prepare FUTURE outreach video
8. Discuss next PICES Integrative Science Program - Beyond FUTURE
9. Plan presentation, format of Session 6
10. Plan 2019 (and later) meetings
 - Inter-Sessional goals and logistics
 - PICES-2019 (Victoria) activities (business meeting, sessions, workshops)
 - FUTURE Open Science Conference (2020–21)
11. Prepare 2019 Action Plan
12. Other SSC business
 - Report of WG 36
 - S-CC special publication
 - PICES special project

Adjourn

FUTURE SSC Endnote 3

Proposal for a 2019 FUTURE inter-sessional meeting

FUTURE SSC has met inter-sessionally for the past three years, with a 2- to 3-day meeting permitting significant progress to be made in developing products and addressing our terms of reference. We request an inter-sessional business meeting in 2019 in order to make progress on several activities:

1. Completion of the FUTURE Product Matrix and dissemination plan,
2. Development of further synthesis products,
3. Identification of gaps in FUTURE objectives,
4. Completion of additional communication and outreach activities,
5. Planning for the next phase of PICES integrative science program (ToR 8),
6. Planning for activities at PICES-2019.

We propose a 3-day business meeting at a time and location to be determined. Ideally, the meeting would occur in conjunction with, and just prior to, the ISB-2019. However, we would also consider meeting separately prior to ISB-2019 at a central location, *e.g.*, Hawaii, or in conjunction with a potential WG 36 inter-sessional workshop.

FUTURE SSC Endnote 4

PICES-2019 FUTURE SSC requests to Science Board

- Support for a 2019 Inter-sessional FUTURE SSC 3-day meeting (FUTURE budget);
- Support for 2019 inter-sessional WG 36 and WG 40 workshops (partial FUTURE budget; PICES support requested);
- Support for 2019 Annual Science Meeting FUTURE SSC activities (partial FUTURE budget for FUTURE workshop; PICES support requested)
- Support for a 2019 Joint PICES/CLIVAR Pacific Panel Workshop prior to the Annual Meeting in Victoria;
- Support for new PICES/ICES Working Group on Common Ecosystem Reference Points (WG 36 request).

FUTURE SSC Endnote 5

FUTURE SSC 2019 Action Plan

- Submit reports on FUTURE SSC business and Session 6 to Secretariat [Chairs; Nov 15]
- Contribute FUTURE text to S-CC Special Publication on OA & deoxygenation [Chairs; Nov 30]
- Submit FUTURE Synthesis Paper to Frontiers in Marine Science [Chairs; Dec 15]
- Finalize FUTURE Product Matrix [Chairs, Batchelder; Jan 1]
- Send FUTURE Product Matrix to Expert Group chairs and past product developers to refine Matrix, obtain brief descriptions of how FUTURE objectives are being addressed [Chairs; Jan 15]
- 2018 Inter-Sessional Business Meeting [All; Apr–May]
 - Develop synthesis products (matrix), outreach activities (video)
 - Identify FUTURE research and communication gaps
 - Plan for 2019 Annual Meeting activities
 - Plan for 2021–22 Open Science Symposium (discuss at SB)
 - Plan for future of PICES integrative science (discuss at SB)
- 2019 Annual Science Meeting [All; Oct]
 - S1 invited talks
 - Workshop on science communication
 - Business meeting(s)