

Report of the FUTURE Scientific Steering Committee

June 2021



The FUTURE SSC conducted a virtual meeting for three hours on each of three consecutive days, from April 27th/28th to April 29th/30th. FUTURE Co-Chairs, Drs. Steven Bograd (USA) and Sukyung Kang (Korea) led the meetings, which were hosted online by the PICES Secretariat.

AGENDA ITEM 1

Introductions and nomination of a rapporteur

Self-introductions were made (*FUTURE SSC Endnote 1*); Lori Waters (Secretariat) agreed to take notes. Steven Bograd relayed the protocols for conducting business using the Zoom conferencing service.

AGENDA ITEM 2

Adoption of agenda

The agenda was adopted without modification (*FUTURE SSC Endnote 2*).

AGENDA ITEM 3

Changes in membership and revision of liaison table

There have been no changes to FUTURE SSC membership since our last meeting (October 2020). The SSC revised the liaison table (*FUTURE SSC Endnote 3*) to reflect the addition of new Working Groups and completion of others.

AGENDA ITEM 4

SSC general business and updates

Dr. Bograd provided a summary briefing to SSC members on the activities of the FUTURE SSC since the last inter-sessional meeting in April 2020, which included work with the ICES and PICES Secretariats on planning engagement with the UN Decade of Ocean Science (UNDOS; **see IPOD article in this issue**); completion of the FUTURE *Phase III* Science and Implementation Plans; review of the NPESR 3 synthesis chapter; and hosting of the SSC business meeting at PICES-2021. This was followed by discussion of several key FUTURE SSC activities:

- *FUTURE Product Matrix*: The Product Matrix will link products developed by PICES expert groups to specific objectives and questions of the FUTURE Science Program, allowing for an easily accessed catalogue of FUTURE-relevant products, as well as a synthesis of products and a gap analysis of unmet objectives. Over the past few months, Saeseul Kim from PICES Secretariat worked with SSC members to prepare a draft FUTURE Product Matrix. The next steps will be to make final edits to the Product Matrix and work with the Secretariat to have it posted on the PICES website. A sub-group of SSC members was formed to prepare a journal manuscript that will use the Product Matrix to highlight key achievements of the FUTURE Science Program, identify knowledge gaps and the reasons they remain, and determine next steps for addressing FUTURE's goals. The Product Matrix will be included in the FUTURE *Phase II* Final Report, which SSC members are planning to complete prior to PICES-2021.
- *Updates to FUTURE SEES Schematic*: SSC members agreed to periodically update the FUTURE SEES schematic by adding new and removing completed expert groups. The set of schematics would be available on the PICES website and will form a visual legacy of the FUTURE program.
- *Plan for the Next FUTURE Open Science Symposium*: Dr. Bograd reviewed the motivation and initial plans to hold a FUTURE Open Science Meeting. The objective is to highlight and synthesize accomplishments of the FUTURE Phase II (2014-2020) Science Program and related activities, including with other international organizations. A key theme of the Open Science Meeting would be the application of the SEES approach, and initiation of the UN Decade of Ocean Science for Sustainable Development (UNDOS). In our prior business meeting, we targeted late winter to early spring 2022 as the date for the OSM, with Hawaii the likely location. However, due to travel constraints and delays related to the Covid-19 pandemic, and with many other meetings being scheduled for early 2022, this timing was deemed not feasible. We are now targeting Feb-Mar 2023 in Hawaii, and a sub-group has formed to continue working with the Secretariat on meeting planning and logistics. The SSC also discussed ideas for alternate meeting structure, including having 'ideation' workshops to develop ocean solution roadmaps and events aimed at early career ocean professional participation.

AGENDA ITEM 5

Updates from FUTURE Children Expert Groups

Dr. Bograd reviewed recent activities of four Working Groups and two Study Groups that are parented or co-parented by the SSC: WG 35 (Third North Pacific Ecosystem Status Report); WG 36 (Common Ecosystem Reference Points); WG 40 (Climate and Ecosystem Predictability); and WG 41 (Marine Ecosystem Services; SG ECOP (Early Career Ocean Professionals); and SG UNDOS (UN Decade of Ocean Science). Highlights include: **WG 35** has completed a draft Synthesis Report, which has been reviewed by parent committees and is expected to be published as a Scientific Report. Individual NPESR regional chapters will be published online following review by the Editorial Board and Science Board. **WG 36** is preparing two peer-reviewed manuscripts on (a) methodologies to quantify thresholds in ecological time series and (b) a case study for the west coast of Vancouver Island. They plan to complete their final report in fall 2021. **WG 40** is currently completing a special issue of *Frontiers in Marine Science* on 'North Pacific Climate and Ecosystem Predictability on Seasonal to Decadal Timescales'. **WG 41** is continuing with two Projects: a marine ecosystem services methodology review amongst PICES nations and a web-based survey on economic valuation of marine ecosystem services. Each of these Working Groups is set to end at PICES-2021. **SG ECOP** and **SG UNDOS** were approved at PICES-2020 and have begun their work this year. SG UNDOS has held an initial planning meeting, while SG ECOP continues to meet bi-weekly.

AGENDA ITEM 6

Review and discussion of FUTURE and ICES-PICES joint activities in UNDOS

Dr. Bograd briefly summarized the work of an ad hoc group of ICES and PICES members who have been discussing strategies for joint activities that these organizations can undertake as part of UNDOS. The group met in person at PICES-2019 and had a series of calls between January and April 2020. Several products have emerged from these meetings: (a) a letter to the PICES Governing Council and ICES Science Committee describing a strategy for joint UNDOS activities; (b) a draft Strategic Plan of joint ICES-PICES UNDOS activities, still under development; (c) joint comments on the draft UNDOS Implementation Plan; (d) a proposal for a Study Group (SG-UNDOS) to coordinate joint ICES and PICES UNDOS activities; and, finally, (e) a joint ICES-PICES UNDOS program proposal, Sustainability of MARine ecosystems Through knowledge NETworks (SMARTNET).

AGENDA ITEM 7

Discussion of Potential New Expert Groups

The FUTURE SSC had a constructive discussion about potential new Expert Groups needed to advance the goals of FUTURE, particularly since WGs-35, 36, 40 and 41 are due to end this

year. Dr. Bograd reviewed the coordination meeting between WGs-36, 40 and 41 and FUTURE SSC held at PICES-2019. One idea that gained traction at the meeting, and at subsequent WG, FUTURE SSC and Committee meetings, was an expert group focused on ‘Climate Extremes and Coastal Impacts in the Pacific’. The FUTURE SSC considered a draft proposal for a new WG on this topic, but concluded that there was a need for additional scoping and input from the broader PICES community. A virtual workshop has been planned for June to further scope this idea and prepare a WG proposal for consideration at PICES-2021.

AGENDA ITEM 8

Develop FUTURE SSC 2021 Action Plan

During the meeting, a list of action items for the next year were developed (*FUTURE SSC Endnote 4*).

AGENDA ITEM 9

Develop list of FUTURE recommendations and requests for Science Board

During the meeting, a list of recommendations and requests to Science Board were developed (*FUTURE SSC Endnote 5*).

Meeting Adjourned at 21:05 PDT, April 30th.

Endnote 1: FUTURE SSC Inter-Sessional Meeting Participation List

Members

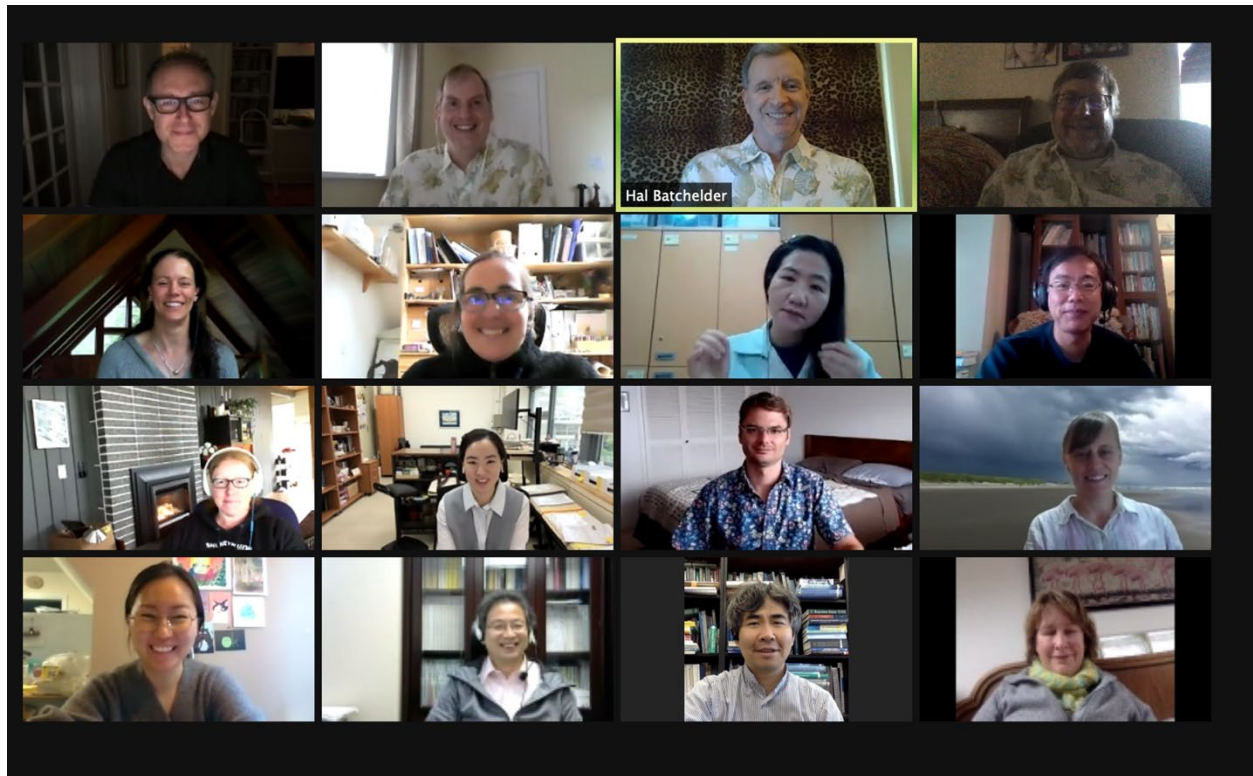
Steven Bograd (USA, Co-Chair)
Sukyung Kang (Korea, Co-Chair)
Emanuele Di Lorenzo (USA)
Toyomitsu Horii (Japan)
Oleg Katugin (Russia)
Jacquelynne (Jackie) King (Canada)
Vyacheslav Lobanov (Russia)
Mitsutaku Makino (Japan)
Guangshui Na (China)-*unable to attend*
Hanna Na (Korea)
Fangli Qiao (China)
Ryan Rykaczewski (USA)
Thomas Therriault (Canada)

Guests/Observers

William Karp (ICES)
Jörn Schmidt (ICES)

PICES

Harold (Hal) Batchelder (PICES Secretariat)
Sonia Batten (PICES Executive Secretary)
Alex Bychkov (PICES Secretariat)
Enrique Curchitser (GC Chair, USA)
Karen Hunter (S-HD)
Saeseul Kim (PICES Secretariat)
Sung Yong Kim (MONITOR)
Raphael Roman (SG-ECOP)
Erin Satterthwaite (SG-ECOP)
Vera Trainer (Science Board Chair)
Lori Waters (PICES Secretariat)



Endnote 2: FUTURE SSC Inter-Sessional Meeting Agenda, April 2021

Day 1, April 27/28th

- Introductions and nomination of a rapporteur
- Adoption of agenda
- Changes in membership
- SSC updates and general business
 - Review of 2020-21 Action Items (*Appendix 2*)
 - Update on FUTURE Product Matrix (*Appendix 4*)
 - Update/revision of Liaison Table (*Appendix 5*)
 - Update/revision of FUTURE Schematic (*Appendix 6*)
 - Plan for FUTURE *Phase II* Final Report (*Appendix 7*)
 - Update on 2022 OSM Planning (*Appendix 8*)
- Updates from children: WG-35, WG-36, WG-40, WG-41, SG-ECOP, SG-UNDOS (*Appendix 3*)

Day 2, April 28/29th

- Review & Completion of Day 1 items
- Discussion on potential collaboration with APN
- Discussion on FUTURE and PICES engagement in UN Ocean Decade
 - Update on SG-UNDOS (aka IPOD-SC)
 - Update on ICES-PICES UNDOS program proposal SMARTNET; IOC feedback
 - Review of other PICES-relevant UNDOS program proposals
 - Map PICES Expert Groups onto UN Ocean Decade societal goals
 - Ideas for communication, capacity building, stakeholder engagement
- Potential new Expert Groups to meet FUTURE & UN Ocean Decade societal goals
 - Working Group on Climate Extremes (forcing, predictability, attribution, ecosystem/societal impacts)
 - Other ideas ...

Day 3, April 29/30th

- Review & Completion of Day 2 items
- Plans for FUTURE business at 2021 Annual Meeting
- Storyboard new FUTURE videos
- Develop FUTURE SSC 2021 Action Plan
- Develop list of FUTURE recommendations & requests for Science Board
- Adjourn

Endnote 3: Updated FUTURE SSC Liaison Table

(Revised 29 April 2021)

	Committee	WG	Section	AP/SG
Jacquelynn King	FIS	WG-45*, WG-communication	S-CCME*	
Guangshui Na	MEQ	WG-42*	S-HAB	
Fangli Qiao	TCODE*, POC	WG-40	S-CC	CREAMS
Mitsutaku Makino	HD*	WG-41*, WG-44,		SG-SciCom*
Tetsuo Fujii	MEQ	WG-45	S-HAB*	
Sukyung Kang	FIS*	WG-48*	S-CCME	
Hanna Na		WG-46		NPCOOS*, SG-ECOP
Oleg Katugin	FIS, HD		S-MBM*	
Vyacheslav Lobanov	MONITOR*			CREAMS*/NPCOOS
Emanuele Di Lorenzo	POC*	WG-40, WG-46*		SG-UNDOS*
Steven Bograd	POC	WG-44*	S-CC*, S-MBM	
Ryan Rykaczewski	BIO*, TCODE	WG-40*, WG-43		
Tom Therriault	MEQ*			NIS*. SG-ECOP*
Jennifer Boldt	MONITOR	WG-43*, WG-47*		
	*Primary liaison members			

Endnote 4: FUTURE SSC 2021 Action Plan

Completed Actions

- Virtual FUTURE SSC meeting to discuss UNDOS Activities [All; MAY 2020]
- Submit FUTURE SSC Inter-Sessional Meeting report to Secretariat [Chairs; JUN 2020]
- Review NPESR3 synthesis chapter [All; JUL 2020]
- Develop Joint ICES/PICES Study Group on UN Ocean Decade [Steven; AUG 2020]
- 2021 virtual FUTURE SSC business meeting at PICES-2020 [All; OCT 2020]
- Give FUTURE SSC Annual Report to Science Board [Chairs; OCT 2020]
- Submit FUTURE SSC Annual Report to Secretariat; Article for *PICES Press* [Chairs; NOV 2020]
- Prepare joint ICES/PICES UNDOS program proposal – SMARTNET [Steven, Secretariat; JAN 2021]
- Give FUTURE SSC Inter-Sessional report to ISB [Chairs; May 2021]

Proposed Actions

- Provide FUTURE SSC Inter-Sessional report to Secretariat; Article for PICES Press [Chairs; **JUN 2021**]
- Host PICES virtual workshop on development of ‘climate extremes’ Working Group proposal [All; **JUN 2021**]
- Finalize FUTURE Product Matrix [Chairs, Jennifer, Tom, Saeseul; **AUG 2021**]
- Update FUTURE SSC Liaison Table and SEES Schematic [Chairs, Manu; **AUG 2021**]
- Update FUTURE items on PICES website (liaison table, product matrix, schematic) [Chairs, Secretariat; **AUG 2021**]
- Finalize & disseminate FUTURE *Phase II* Final Report with Product Matrix [All; **JUL-OCT 2021**]
- PICES/(ICES) UN Decade of Ocean Science Activities [All, IPOD; **JUL-OCT 2021**]
- Develop climate extremes’ Working Group proposal [All; **JUL-OCT 2021**]
- Progress on 2023 Open Science Meeting [Chairs, Secretariat; **JUL-OCT 2021**]
- Prepare FUTURE manuscript based on Product Matrix [Chairs, All; **JUL-OCT 2021**]
- Review WG-36, WG-40 final reports [All; **AUG-OCT 2021**]
- Planning & Participation in 2021 virtual PICES Annual Meeting [All; **OCT 2021**]
- Produce new FUTURE videos [All; **OCT 2021**]

Endnote 5: FUTURE SSC Recommendations and Requests to Science Board

Recommendations

- Support online distribution of revised FUTURE Liaison Table, Product Matrix & SEES schematic
- Endorse plans for (a) 2023 OSM and (b) FUTURE *Phase II* Final Report
- Support meeting requests:
 - 3-day FUTURE SSC virtual business meeting at Oct 2021 Annual Meeting
 - Postponement of FUTURE-supported Topic Sessions and Workshops to Oct 2021 Annual Meeting
- Recommendations for WG and SG proposals:
 - Support SG-APN/PICES
 - Support development of WG(s)-Climate Extremes & Coastal Impacts