



# PICES-2020 Year in Review



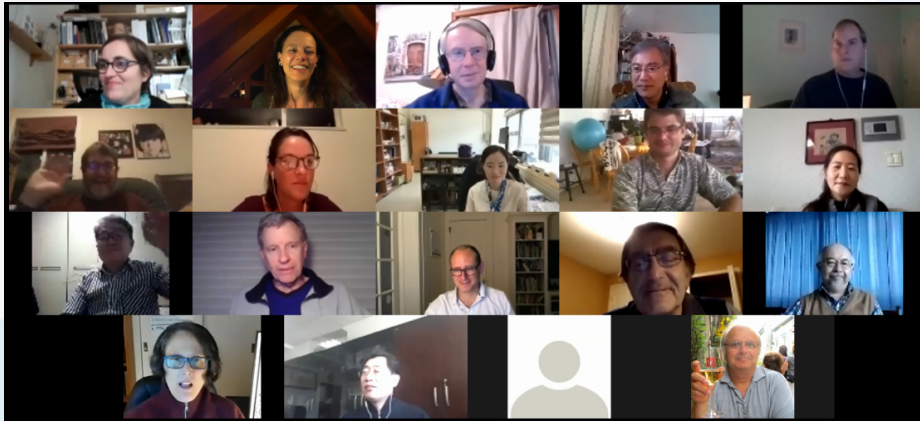
**Vera L. Trainer, PICES Science Board Chair**





# PICES Scientific Excellence

Moving PICES Science forward – ‘virtually’ this year



**FUTURE-SSC Inter-sessional meeting**



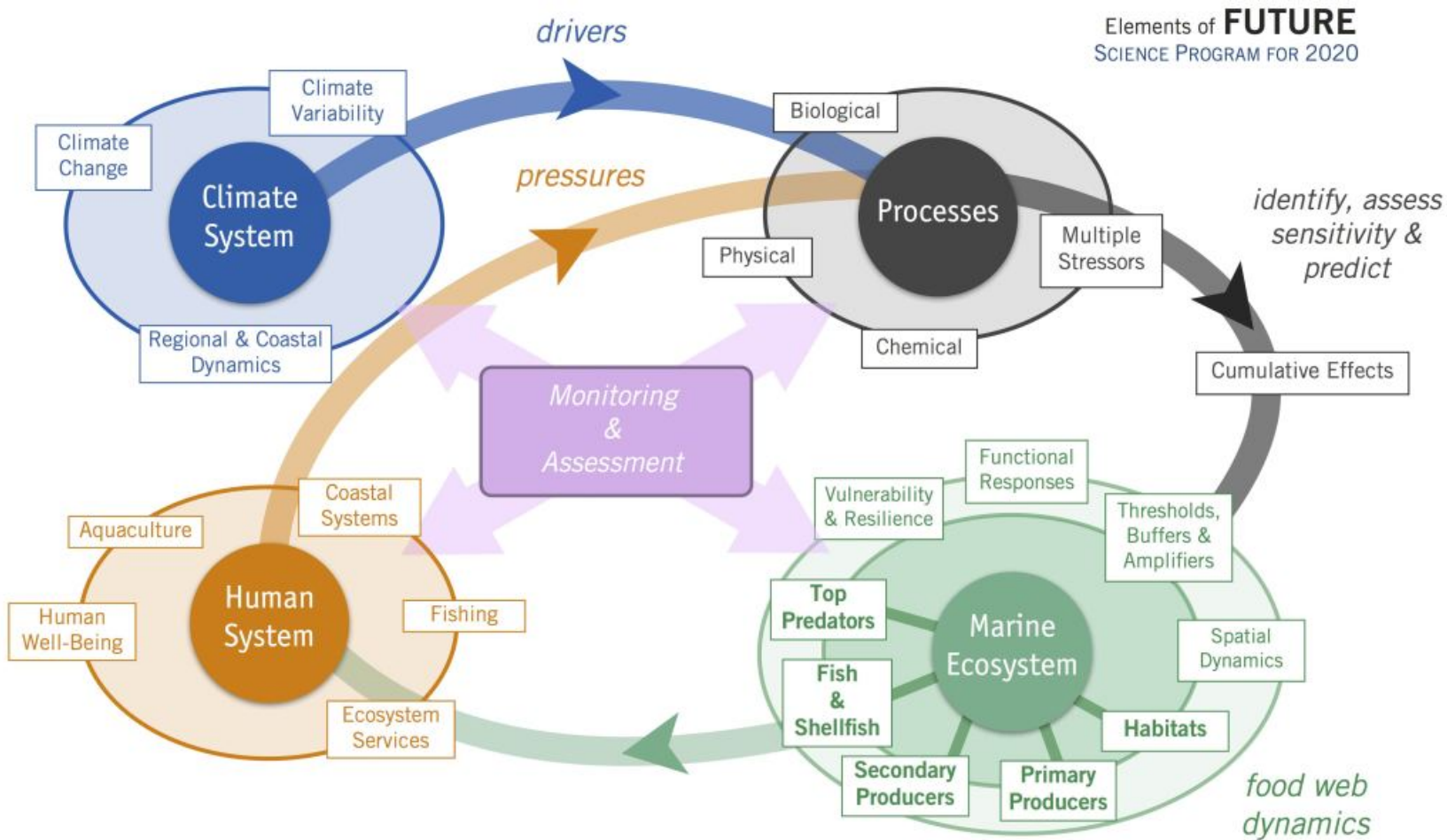
**Science Board ISB-2020**





# FUTURE Science Program

Forecasting and **U**nderstanding **T**rends, **U**ncertainty and **R**esponses of the North Pacific **E**cosystem



The FUTURE SSC continued its work using the **SEES approach** and recently published a research paper describing several “crisis” **SEES** case studies in the North Pacific.

frontiers in Marine Science | Marine Conservation and Sustainability

SECTION | ABOUT | ARTICLES | RESEARCH TOPICS | FOR AUTHORS | EDITORIAL BOARD | ARTICLE ALERTS

Articles | THIS ARTICLE IS PART OF THE RESEARCH TOPIC: Successes at the Interface of Ocean, Climate and Humans | View all 16 Articles >

PERSPECTIVE ARTICLE  
Front. Mar. Sci., 18 June 2019 | <https://doi.org/10.3389/fmars.2019.00333>

Check for updates | Download Article | Export citation Article

3,263 TOTAL VIEWS

View Article Impact

Steven J. Bograd<sup>1\*</sup>, Sukyung Kang<sup>2</sup>, Emanuele Di Lorenzo<sup>3</sup>, Toyomitsu Horii<sup>4</sup>, Oleg N. Katugin<sup>5</sup>, Jackie R. King<sup>6</sup>, Vyacheslav B. Lobanov<sup>7</sup>, Mitsutaku Makino<sup>8</sup>, Guangshui Na<sup>9</sup>, R. Ian Perry<sup>10</sup>, Fangli Qiao<sup>11</sup>, Ryan R. Rykaczewski<sup>12</sup>, Hiroaki Saito<sup>13</sup>, Thomas W. Theriault<sup>14</sup>, Sinjae Yoo<sup>15</sup> and Hal Batchelder<sup>13</sup>



## Phase II (2014-2020)



**FUTURE is  
working towards  
Phase III**

- **Implementation of Social-Ecological-Environmental Systems (SEES) Approach**
- **Engagement with UN Decade of Ocean Science for Sustainable Development**
- **Enhanced Communication & Early Career Researcher involvement**

# PICES: Uniquely positioned for UNDOS



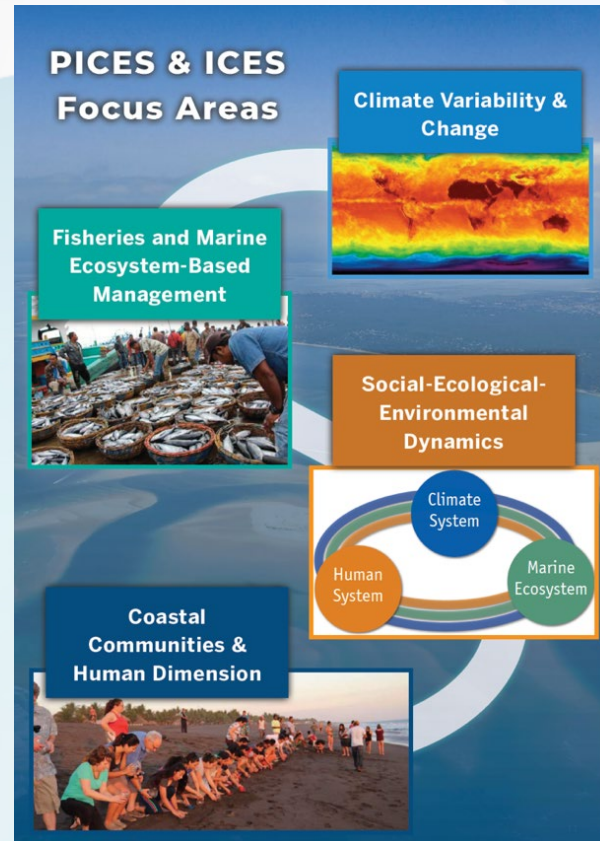
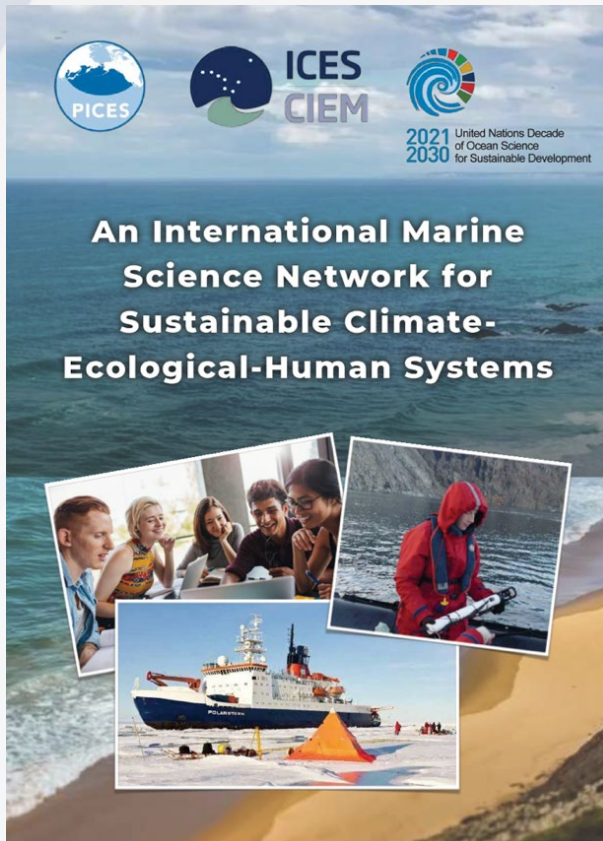
## The Science We Need for the Ocean We Want

- PICES unique International inter-disciplinary Science community is well positioned to contribute to UNDOS



# UN Decade of Ocean Science

2021-2030



## ▪ PICES (& partners) UNDOS focus:

- **Climate Change and Variability**
- **Fisheries and Marine Ecosystem-based Management**
- **Social-Ecological-Environmental Dynamics**
- **Coastal Communities and Human Dimension**



# PICES Contributions to UNDOS

- Draft Implementation Plan



2021 United Nations Decade  
2030 of Ocean Science  
for Sustainable Development

**“The Science we need.”**

**“The ocean we want”**

**“The ocean we have”**

“Global ocean science capacity and ocean literacy (Objective 1)”

Generate knowledge through ocean science relevant to society (Objectives 2 & 3)

Widely deploy ocean knowledge applications, tools, and services (Objective 4)

Policy and decision-making based on best scientific knowledge (Objectives 1&4)

**An ocean that is:**

- clean
- healthy and resilient
- predicted
- safe
- sustainably harvested and productive
- transparent and accessible

**DECADE SCIENTIFIC OBJECTIVES  
(UNDOS Section 2)**

**DECADE SOCIETAL OUTCOMES  
(UNDOS Section 1.2)**

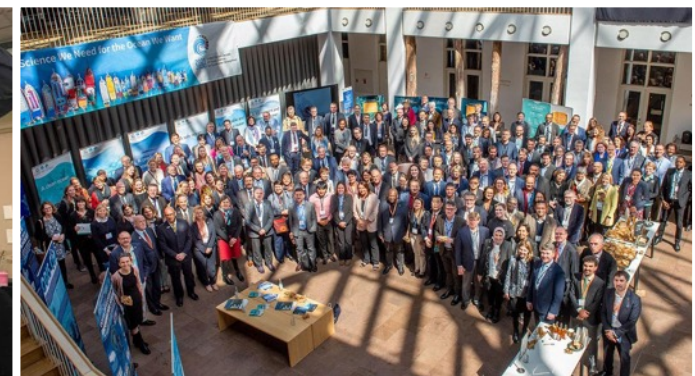


# Early Career Ocean Professionals (ECOP) Contributing to PICES

Aoi Sugimoto (Japan), Pengbin Wang (China), & Erin Satterthwaite (USA)

- Ensure the **continuity & legacy PICES**
- **Equip the new generation of ocean leaders with skills** to conduct science & engage in intergovernmental processes
- Retain valuable **institutional knowledge**
- Provide **new perspectives**
- **Enhance partnerships** to other regional & global institutions
- **ECOP engagement as a PICES focal contribution to UN Ocean Decade**

Visit: [tiny.cc/PICESECOP](https://tiny.cc/PICESECOP)







# The Contribution of Early Career Ocean Professionals (ECOP) to PICES

Aoi Sugimoto (Japan), Pengbin Wang (China), & Erin Satterthwaite (USA)



- Build a **PICES ECOP & Mentor community**



- Survey & consultations to **understand priorities, gaps, and opportunities for ECOP engagement within PICES**



- Hosted a virtual **PICES ECOP workshop (W9)** to solicit **community input**

- Proposed an **ECOP Study Group** to develop a **PICES ECOP Engagement Plan**



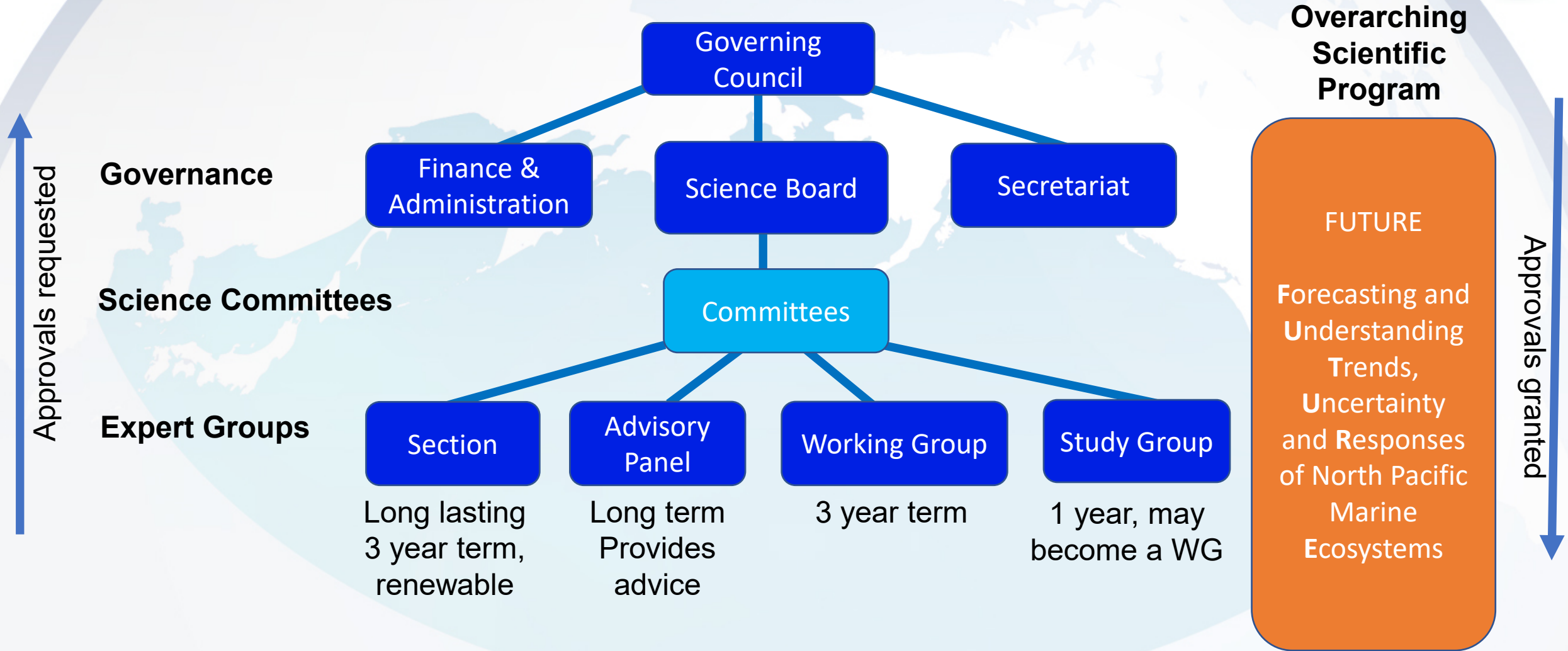
- Continue to foster connections with the **Ocean Decade ECOP global initiatives**





# PICES structure

## North Pacific Marine Science Organization





# New expert groups in PICES

[WG 43](#): Joint PICES/ICES Working Group on *Small Pelagic Fish*

[WG 44](#): Joint PICES/ICES Working Group on *Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea*

[WG 45](#): Joint PICES/ICES Working Group on *Impacts of Warming on Growth Rates and Fisheries Yields (GRAFY)*

[WG 46](#): Joint PICES/ICES Working Group on *Ocean Negative Carbon Emissions (ONCE)*



# Scientific Excellence: Special Projects



## Projects

### FishGIS

#### Building capacity for coastal monitoring by local small-scale fishers

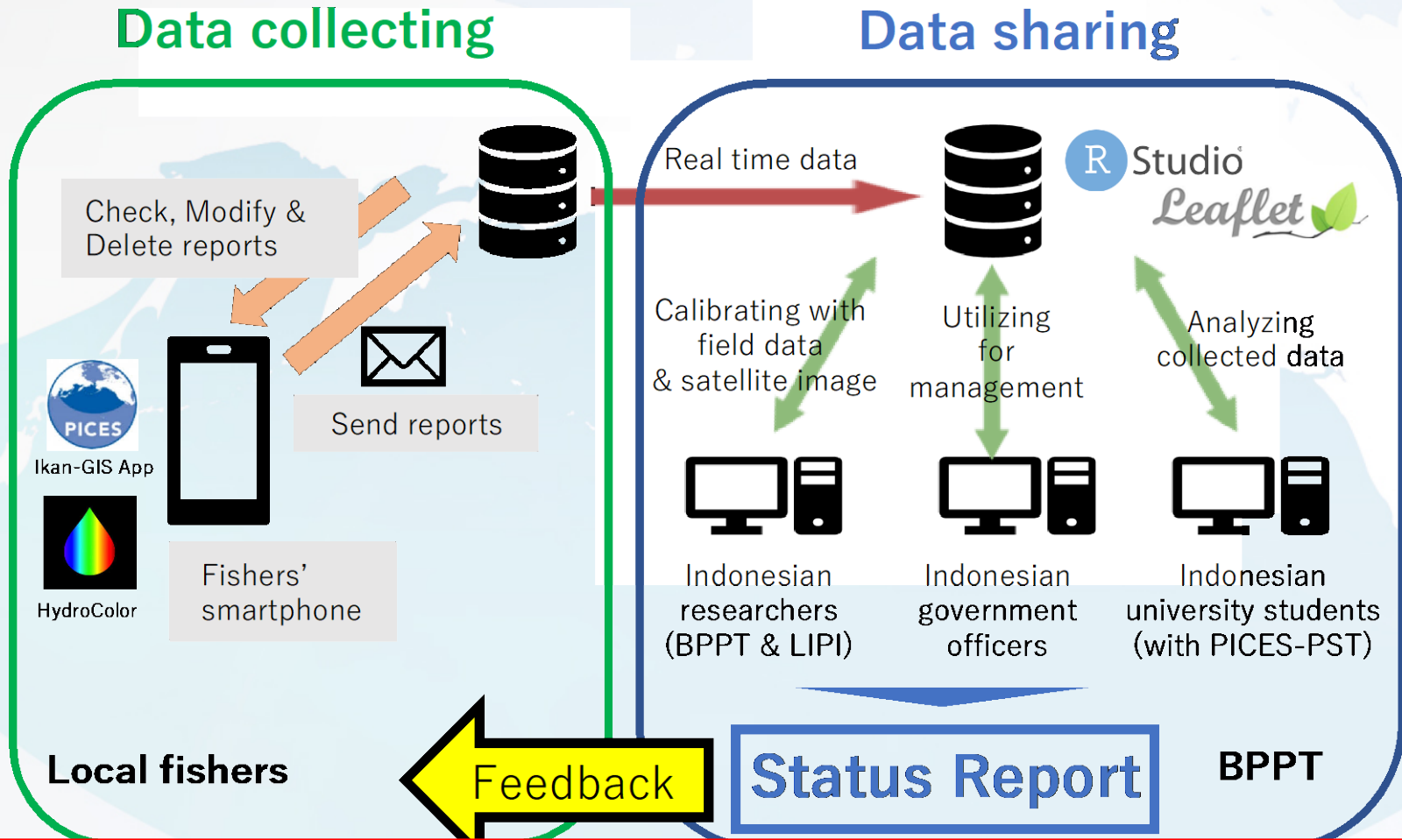
A 3-year project: 2017-2020

funded by the Ministry of the Agriculture, Forestry and Fisheries (MAFF) of Japan

#### Capacity building in Indonesia



# Community-based coastal environmental monitoring system using a smartphone technology: The FishGIS project



A 3-year project:  
2017-2020

**Capacity building in Indonesian fishing communities**



# New Ciguatera project (MAFF)



## THE DETECTION AND HUMAN DIMENSION OF CIGUATERA FISH (CFP) POISONING IN INDONESIA

Project Goal: Build on the smartphone-based technology developed in the previous MAFF project to help Indonesian coastal communities to:

- Assess** — the state of the local corals by monitoring aspects water quality (chl a, turbidity), and document the outbreaks of eel-grass or the expansion of dead coral
- Detect** — the presence of the toxin-containing dinoflagellate (*Gambierdiscus*) in the reef environment
- Avoid** — the transfer of likely contaminated fish from the damaged environment to the tables of families



# PICES Scientific Excellence: Projects



## SEAturtle project:

*Sea Turtle Ecology in Relation to Environmental Stressors in the North Pacific Regions* ~ A 4-year project: 2018-2022

an Inha University collaboration with PICES funded by Inha University, Korea



# PICES Scientific Excellence: Selected Publications

[www.pices.int/publications/](http://www.pices.int/publications/)



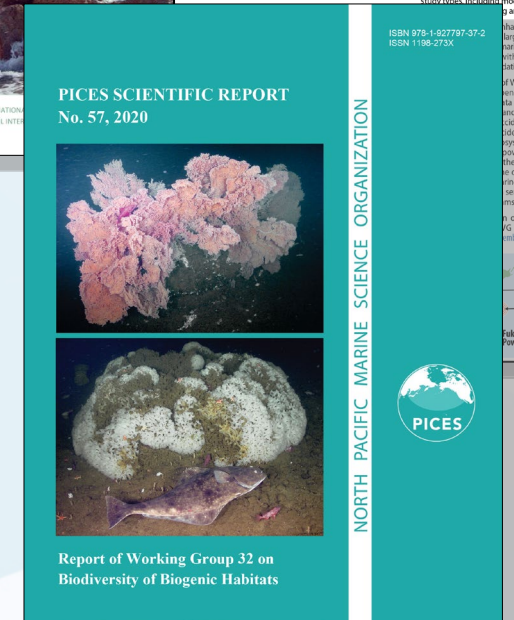
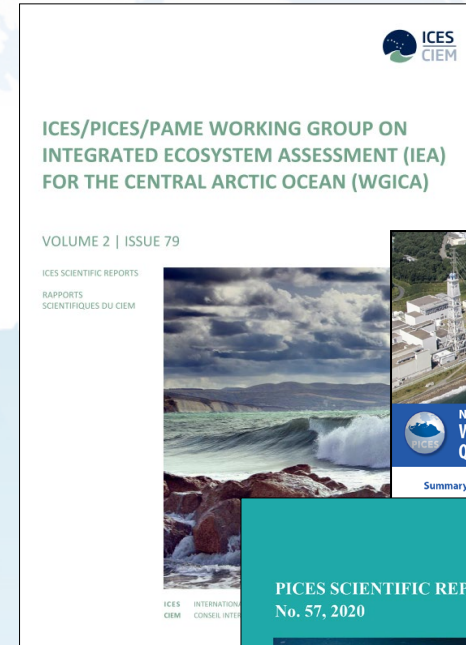
- 2020 ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA). ICES Scientific Reports. 2:79. 144 pp.

<http://doi.org/10.17895/ices.pub.7454>

- Brochure: Working Group 30: *Assessment of Marine Environmental Quality of Radiation around the North Pacific*. PICES Sci. Rep. [No. 57](#)

- *Janelle M.R. Curtis and Masashi Kiyota (Eds.) 2020 Report of Working Group 32 on Biodiversity of Biogenic Habitats.*

<https://meetings.pices.int/publications/scientific-reports/Report57/Rpt57.pdf>



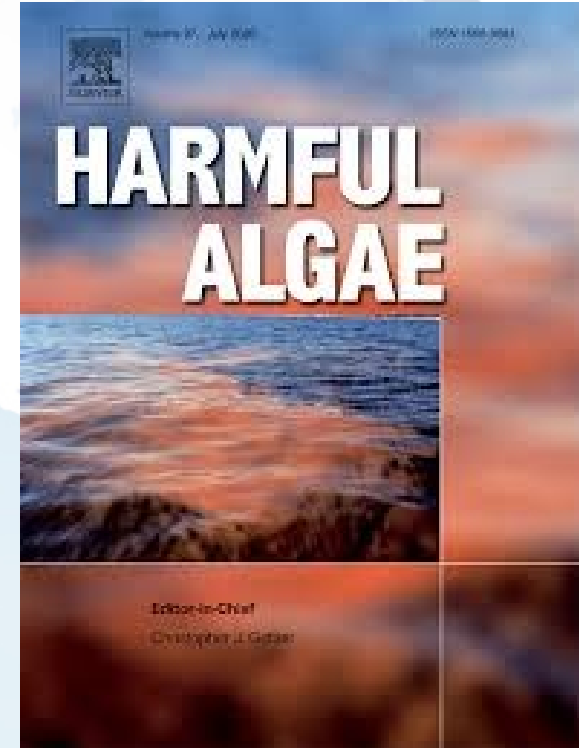


# PICES Scientific Excellence: Selected Publications

[www.pices.int/publications/](http://www.pices.int/publications/)



- *“Future HAB science: Directions and challenges in a changing climate”* (Authors: M.L. Wells, B. Karlson, A. Wulff, R. Kudela, C. Trick, V. Asnaghi, E. Berdalet, W. Cochlan, K. Davison, M. De Rijcke, S. Dutkiewicz, K.J. Flynn, C. Legrand, H. Paerl, J. Silke, S. Suikkanen, P. Thompson, and V. L. Trainer) from the [Scientific Symposium on “Harmful Algal Blooms and Climate Change”](#) held May 19-22, 2015 in Göteborg, Sweden. Authors include members from the PICES Section on Harmful Algal Blooms and GlobalHAB Scientific Steering Committee. <https://doi.org/10.1016/j.hal.2019.101632>
- *“Pelagic harmful algal blooms and climate change: Lessons from nature’s experiments with extremes”* (Authors: V.L. Trainer, S.K. Moore, G. Hallegraeff, R.M. Kudela, A. Clement, J.I. Madrones, and W.P. Cochlan) Authors include members from the PICES Section on Harmful Algal Blooms. <https://doi.org/10.1016/j.hal.2019.03.009>



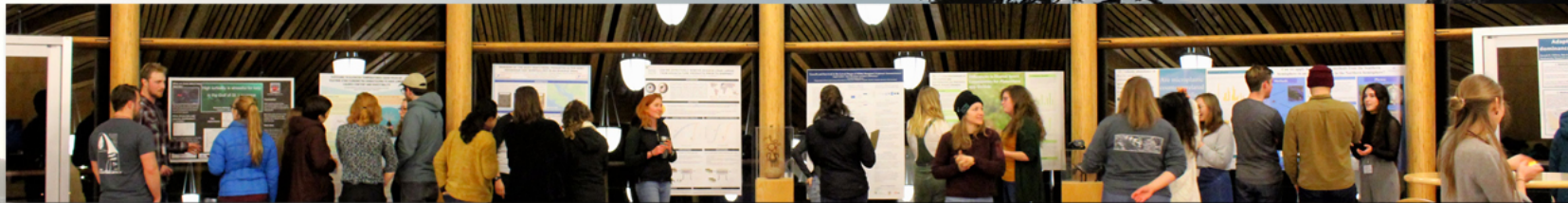


# PICES Scientific Excellence

## PICES Capacity Building Sponsorship



2020 Annual  
Pacific Ecology and Evolution Conference  
February 21-23rd, 2020  
Bamfield Marine Sciences Centre



Read about PEEC in PICES Press, Vol.28, No.2, Summer 2020  
<https://meetings.pices.int/publications/pices-press/volume28/PPJul2020.pdf#page=18>

Photo: Lori Waters



North Pacific Marine Science Organization

# PICES Capacity Building

## PICES Intern Program



Saeseul Kim (Korea; 2019-2020)

**20 interns have assisted/trained at the PICES Secretariat since 2000**



# PICES Collaborations & Partnerships

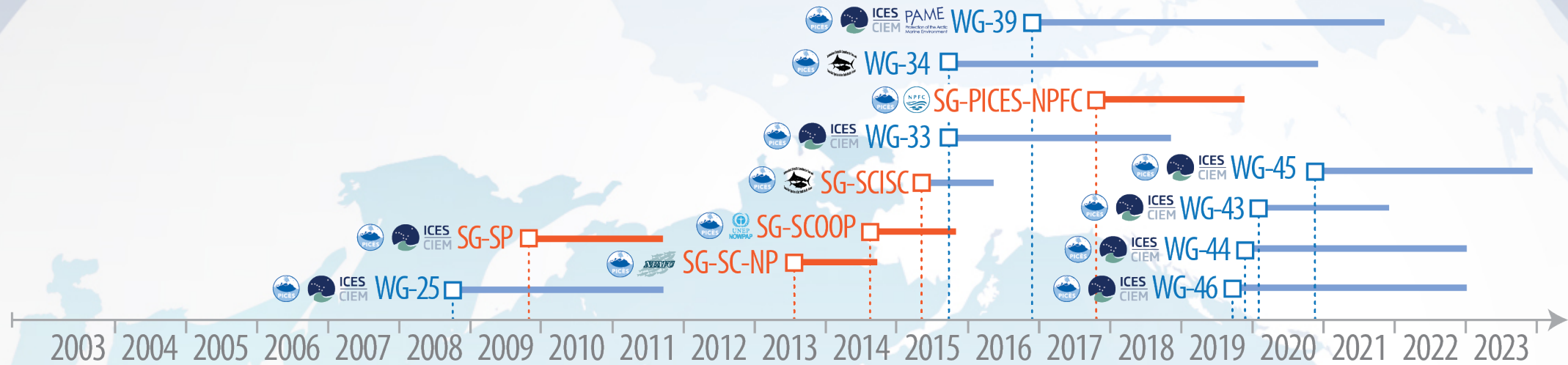


- **Membership in each other's expert groups**
- **Collaboration in organizing joint symposia and conferences,**
- **Collaboration in capacity-building events.**



# PICES Collaborations & Partnerships

## Joint Expert Group Collaborations



**“WG” = Working Group**  
 Term: 3 years, unless extended

**“SG” = Study Group**  
 Term: 1 year, unless extended

**WG 25: Oct-08–Oct-11**  
 Joint PICES/ICES Working Group on Forecasting Climate Change Impacts on Fish and Shellfish

**SG-SP: Oct-09–Oct-11**  
 Joint P/ICES Study Group on Developing a Framework for Scientific Cooperation in Northern Hemisphere Marine Science

**SG-SC-NP: Jun-13–Oct-14**  
 Joint NPFC-PICES Study Group on Scientific Cooperation in the North Pacific Ocean

**SG-SCOOP: Jul-14– Oct-15**  
 Joint PICES-NOWPAP Study Group on Scientific Cooperation in the North Pacific Ocean

**SG-SCISC: Apr-15–Apr-16**  
 Study Group for Scientific Cooperation of ISC and PICES

**WG 33: Oct-15–Oct-18**  
 Joint PICES/ICES Working Group on Climate Change and Biologically-driven Ocean Carbon Sequestration

**WG 34: Oct-15–Oct-20**  
 Joint PICES/ISC Working Group on Ocean Conditions and the Distribution and Productivity of Highly Migratory Fish

**WG 39: Nov-16–Oct-21**  
 Joint PICES/ICES/PAME Working Group on an Integrated Ecosystem Assessment for the Central Arctic Ocean

**WG 46: Oct-19–Oct-22**  
 Joint PICES/ICES Working Group on Ocean Negative Carbon Emissions (ONCE)

**WG 44: Nov-19–Nov-22**  
 Joint PICES/ICES Working Group on Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea

**WG 43: Dec-19–Nov-21**  
 Joint PICES/ICES Working Group on Small Pelagic Fish

**SG-PICES-NPFC: Oct-17–Oct-19**  
 Joint PICES-NPFC Study Group for Scientific Cooperation in the North Pacific Ocean Ecosystem Assessment for the Central Arctic Ocean

**WG 45: Oct-20–Oct-23**  
 Joint PICES/ICES Working Group on Impacts of Warming on Growth Rates and Fisheries Yields (GRAFY)





# PICES Collaborations & Partnerships

International / regional organizations represented at PICES-2020



# PICES Carbon Savings – setting an example



The screenshot shows the PICES website homepage. A green callout box highlights the 'PICES Carbon Savings' link in the top navigation bar. Below the callout, the 'PICES Carbon Savings' link is shown in a larger, detailed view. The main content area includes a 'FUTURE Science Program' banner, an 'Events' section with 'Upcoming' events like 'PICES-2020 Virtual Meeting' and 'Plastics in the Arctic and Sub-Arctic Region', and a 'NEW AWARDS' section for the 'FUTURE Early Career Scientist Award'.

- New on PICES main page
- Links to CO<sub>2</sub> savings updates

**PICES Carbon Savings**

**PICES virtual ISB-2020 saves 70mT of carbon emissions**

The Science Board Chair, Vera Trainer, is pleased to report that by holding the Inter-sessional Science Board meeting (ISB-2020) virtually in 2020, PICES saved 70 tonnes of CO<sub>2</sub> emissions (equivalent to taking 15 cars off the road for one year). We realize that in person meetings are a valuable and often a necessary tool for scientific exchange, however, recent events have shown us the value of virtual meetings. We envision a way forward in which a combination of virtual and in-person meetings will be used by PICES. At the Annual Meeting in October 2020, the SB will discuss how to best use this combination of virtual and in-person conferencing and is seeking input from all members.

- ISB Savings: equivalent to removing 15 cars from the road for one year!





# Making Progress: PICES 2020 Carbon Savings

## • PICES Emission Savings Year to Date 2020: 768.85 Metric Tonnes (MT) of CO<sub>2</sub>:

- ISB-2020 70.32 MT
- AP-CREAMS 9.45 MT
- PICES-2020 689.07 MT

### • Equivalent to:

- 166 Passenger vehicles driven for one year
- 3,070,349 Km driven by average passenger vehicle
- 327,491 Litres of gasoline consumed
- 384, 270 Kg of coal burned
- 1,780 barrels of oil consumed
- Carbon sequestered by: 12,713 tree seedlings grown for 10 years
- 1,004 acres of U.S. forests in one year





# Promoting PICES Science

## Science Communications Outreach – vision for the future



**North Pacific Marine Science Organization**  
International collaboration for improved ocean health.

[FUTURE: PICES Science Program](#) [CO<sub>2</sub> Emission Reductions Tracker](#)

Search Everything

[ABOUT](#) [PROJECTS](#) [EVENTS](#) [JOIN US!](#)

*International collaboration and study,  
providing reliable data and advice,  
for improved ocean health.*

**MEETINGS & EVENTS**

**PICES 2020**

- > PICES 2020 Virtual
- > Capacity Building
- > MSEAS

**PICES NEWS**

- > PICES Career Postings
- > Call for Nominations
- > Expert Groups

**PICES ADVICE**

- > PICES Latest Advice
- > PICES Outreach
- > PICES Videos

**PUBLICATIONS**

- > PICES Special Pubs
- > PICES Press

**MEMBERS**

- > PICES Intranet (Members Only)

**Quick Links**

- > **ADVICE** for Decision Makers
- > **TUTORIALS** for Citizen Scientists
- > **RESOURCES** for Scientists
- > PICES Strategic Plan
- > Early Career Ocean Professionals

[Ask a PICES Scientist](#)

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# We look forward to seeing you at upcoming PICES Science Events!



## **PICES-2021**

Qingdao, China  
Dates: TBA



## **MSEAS**

Yokohama, Japan  
Dates: TBA



## **SPF-2022**

Lisbon, Portugal  
Feb 21-25, 2022



## **PICES-ICES-ECS**

More details soon  
Dates: TBA



# Scientific sessions this week

*looking forward*



## **Monday, October 26 (Pacific Time)**

**19:30-21:00** Science Board Symposium: How does 30 years of research on changing North Pacific ecosystems inform the UN Decade of Ocean Science for Sustainable Development Goals

## **Tuesday, October 27**

**18:00-21:00** Science Board Symposium: How does 30 years of research on changing North Pacific ecosystems inform the UN Decade of Ocean Science for Sustainable Development Goals

## **Wednesday, October 28 18:00-21:00 (2 sessions)**

Topic Session: Using eDNA to assess and manage non-indigenous species in the North Pacific

Topic Session: Implementing a collaborative, integrated ecosystem high seas survey program to determine climate/ocean mechanisms affecting the productivity and distribution of salmon and associated pelagic fishes across the North Pacific Ocean

## **Thursday, October 29 18:00-21:00**

Topic Session: Atmospheric nutrient deposition and microbial community responses, and predictions for the future in the North Pacific Ocean

