

Report of Working Group 40 on *Joint PICES/ICES Working Group on Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea*

The Joint PICES/ICES Working Group on the *Integrated Ecosystem Assessment for the Northern Bering Sea - Chukchi Sea* (WG 44) met for the first time on September 1 and 2, 2020, virtually. All members were present except two from China and one from Korea who were out at sea; and one from Japan who had a conflict with another meeting (*WG 44 Endnote 1*). Nonetheless there was representation from all PICES member countries and ICES. The meeting was co-chaired by Drs. Elizabeth (Libby) Logerwell (USA) and Yury Zuenko (Russia). The meeting agenda was reviewed by members and adopted without revision (*WG 44 Endnote 2*).

AGENDA ITEMS 2, 4

Background, review of Terms of Reference

The goals of this meeting of WG 44 were:

- Review WG44 Terms of Reference
- Introduce the members to each other and discuss potential contributions of each to the IEA
- Discuss the approach and methodology for the IEA. Specifically:
 - The relationship of this WG to other programs/projects
 - Ideas from the NOAA IEA Program (Holsman) and ICES WGIBAR and WGICA
 - The scope of the IEA (What? Who? How?)
- Discuss ways to develop Indigenous knowledge sharing
- Review preliminary inventories of metadata and institutions/programs
- Draft the 2021 Work Plan

AGENDA ITEM 5

Work Plan 2020–2021

WG members developed and finalized the 2020–2021 Work Plan and identified WG members to lead work under each Term of Reference. Deliverables, deadlines, meetings and reports are detailed in *WG 44 Endnote 3*.

Scoping the IEA

The NOAA IEA approach provided a starting point for our discussions on scoping the IEA (Fig. 1). We discussed the first phase of the cycle: defining the system and goals. We developed a draft scoping document which will be finalized over the course of the next year (see the 2021 Work Plan, *WG Endnote 3*).

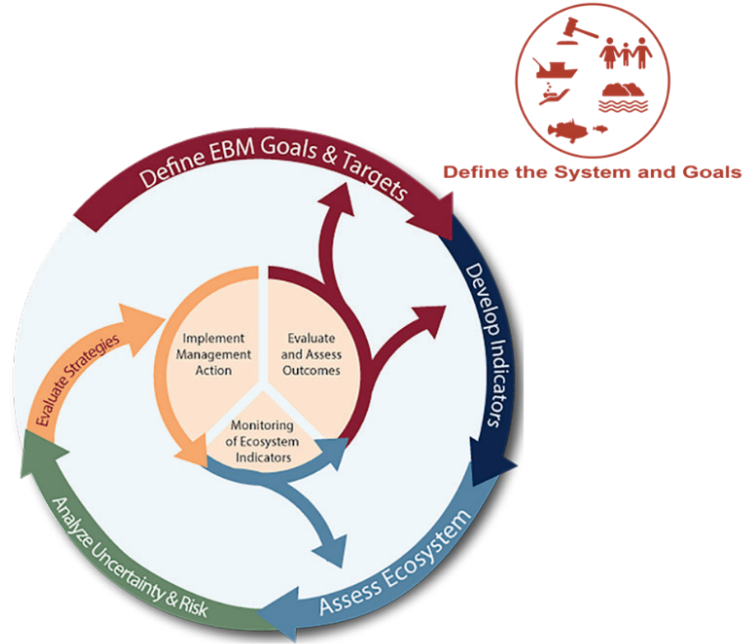
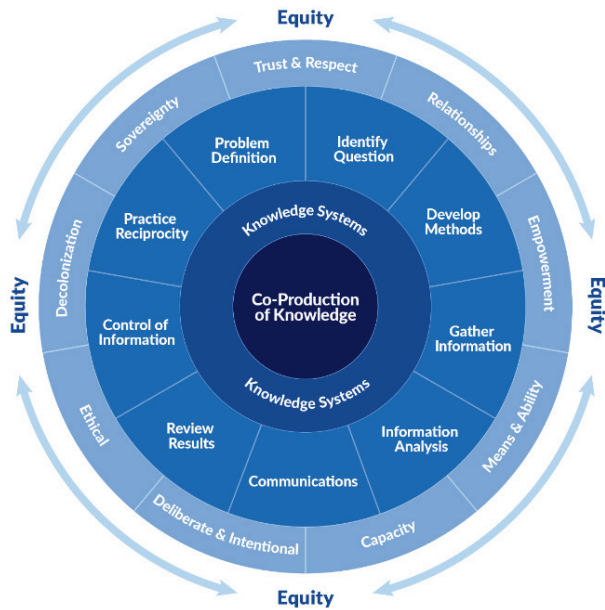


Figure 1. The NOAA IEA approach (www.integratedecosystemassessment.noaa.gov).

Indigenous knowledge sharing

The co-production of knowledge model developed by the Pew Charitable Trusts, Kawerak Inc., and the Inuit Circumpolar Council Alaska (Fig. 2), provided a framework for our initial discussions of Indigenous Knowledge sharing which will be expanded and finalized as part of our 2021 Work Plan.



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Figure 2. The Co-Production of Knowledge wheel (© The Pew Charitable Trusts, Kawerak Inc. and Inuit Circumpolar Council Alaska).

Inventory of metadata

Before the WG meeting, members were asked to submit metadata on scientific surveys in the NBS-CS using a Google form. Surveys have been conducted by all PICES member countries (Fig. 3). We anticipate that the final inventory (developed during the 2021 Work Plan) will contain many more surveys.

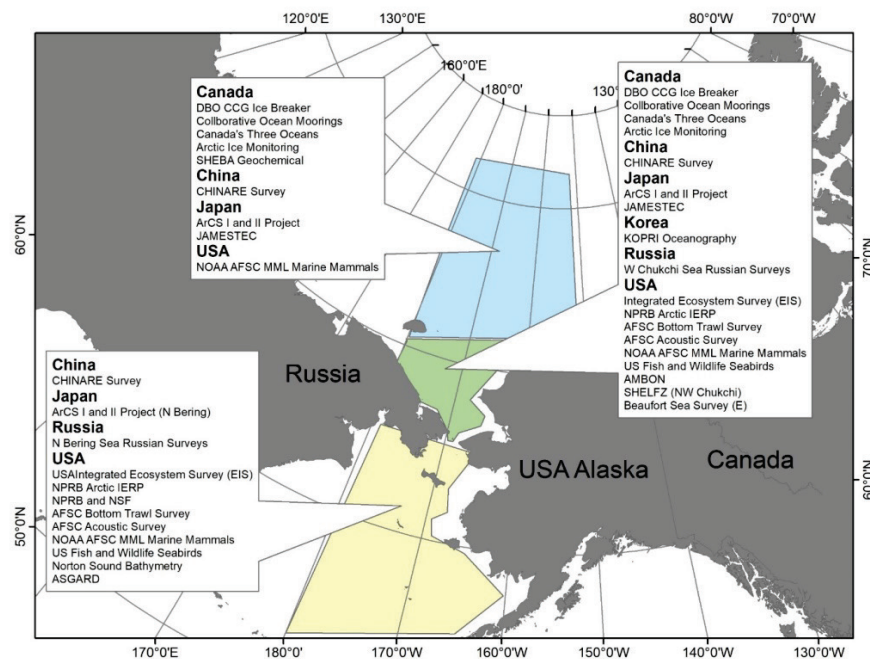


Figure 3. Preliminary inventory of metadata on scientific surveys in the Northern Bering Sea (yellow), Southern Chukchi Sea (green) and Northern Chukchi Sea and Central Arctic Ocean (blue).

AGENDA ITEM 6

Requests

- Addition of one Japanese member, Kohei Matsuno from Hokkaido University who has expertise in marine environments, and the biology and distribution of zooplankton in the Bering Sea and Chukchi Sea.
- Addition of two Canadian members, Nadja Steiner from DFO Science and Martin Nantel, DFO Pacific Region's Indigenous Science Liaison.
- A 1-day business meeting at PICES-2021.
- Proposal for a ½-day workshop on “*The northern Bering Sea-Chukchi Sea Integrated Ecosystem Assessment: Recent findings, progress, and the way forward*” convened by WG Co-Chairs, Logerwell and Zuenko (*WG 44 Endnote 4*). The goal of the workshop would be to share information among WG 44 members and with other researchers studying the NBS-CS ecosystem. Topics to be discussed are: 1) describe the work on the IEA to date, and 2) recent findings about the NBS-CS ecosystem, especially those that shed new light on the ecosystem's status, changes, and processes. It was recommended by Science Board to combine this workshop with a workshop proposed by WG 39 Joint PICES/ICES/PAME Working Group on an *Integrated Ecosystem Assessment for the Central Arctic Ocean*. WG 44 Co-Chairs have preliminarily agreed to this.
- To extend the term of the WG one year (until 2023). The reason is that the Co-Chairs and members were approved late in year 2020, such that little work could be accomplished during Year 1. The chair's (Logerwell) nomination was approved April 23, 2020. The final, Russian, membership nominations were approved on August 24, 2020, one week before the WG business meeting. The ToRs require 3 full years to complete. This extension has also been requested and granted by ICES.

WG 44 Endnote 1

WG 44 participation list

Members

Elizabeth A. Logerwell (USA, PICES Co-Chair)
Yury I. Zuenko (Russia, PICES Co-Chair)
Matthew Baker (USA)
Lee Cooper (USA)
Raychelle Daniel (USA)
Lisa B. Eisner (USA)
Elena Eriksen (Norway/ICES)
Megan Ferguson (USA)
Takafumi Hirata (Japan)
Kirstin Holsman (USA)
Henry Huntington (USA)
Katrin Iken (USA)
Mellisa Johnson (USA)
Kirill Kivva (Russia)
Kathy Kuletz (USA)
Andrea Niemi (Canada)
Shigeto Nishino (Japan)
Qi Shu (China)
Aleksei Somov (Russia)
Diana Lynn Stram (USA)
Sarah Wise (USA)

Members unable to attend

China: Zhongyong Gao, Changan Xu
Japan: Yutaka Watanuki
Korea: Hyoung Sul La

Observers

Kohei Matsuno (Japan)

WG 44 Endnote 2

WG 44 meeting agenda

September 1, 2020, 18:00-21:00 Pacific Daylight Time (GMT-7)

- Welcome and logistics
- Background of WG 44
- Member Introductions: research interests and possible contributions to the WG (5 minutes each)
- Review WG 44 Terms of Reference (ToR)

September 2, 2020, 18:00-21:00 Pacific Daylight Time (GMT-7)

- Develop Work Plan for Year 2020-21
 - Inventories of metadata and institutions/programs
 - Determine approach and methodology
 - Develop Indigenous knowledge sharing
- Present the preliminary inventories
- Develop a preliminary outline of approach and methodology
- Requests

WG 44 Endnote 3**Integrated Ecosystem Assessment of the Northern Bering Sea – Chukchi Sea (NBS-CS) (WG 44)
2020–2021 Work Plan**

1. Determine approach and methodology for conducting an IEA in the Northern Bering – Chukchi Sea LME.
 - a. Deliverable: Draft “Methods” for IEA publication
 - i. Continue editing the scoping document from Day 1 of September business meeting
 - ii. Identify goals, objectives, partners
 - iii. Develop co-production of knowledge
 - b. Deadline: Fall 2021 PICES Annual Meeting
 - c. WG Member leads: Holsman, Daniel, Stram
 - d. Meetings:
 - i. Monthly virtual status report meetings
 - ii. Intersessional virtual/in-person workshop (Date and location TBD) to invite partners to give feedback on draft scoping document
 - e. Identify a centralized location for draft documents and resources.
2. Compile an inventory of scientific metadata and of institutions and programs
 - a. Deliverable: Metadata, knowledge, institutions and programs relevant to the Northern Bering Sea-Chukchi Sea LME.
 - i. PICES or ICES Report summarizing metadata with data gaps identified.
 - ii. Google form-based inventory
 - b. Deadline: Fall 2021 PICES Annual Meeting
 - c. WG member leads: Logerwell, Zuenko
 - d. Meetings: Monthly virtual status report meetings
3. Development of Indigenous knowledge sharing with knowledge holders, to facilitate co-production of knowledge while protecting intellectual property as per the UN Declaration on the Rights of Indigenous Peoples (Articles 11.2, 31).
 - a. Deliverable: Draft “Methods” for IEA publication
 - b. Deadlines: Fall 2021 PICES Annual Meeting
 - c. WG Member lead: Wise
 - d. Meetings:
 - i. Local virtual conversations in Indigenous communities. Possibly in collaboration with PAME EA-EG October and January virtual conversations in Alaska.
 - ii. Intersessional virtual/in-person workshop. Possibly in collaboration with PAME EA-EG Value Workshop (Date and location TBD)
4. Reports
 - a. Oral reports to PICES parent committees: FIS and HD. September 2020
 - b. PICES Annual Progress Report. Due: October 2020

WG 44 Endnote 4

**Proposal for a Workshop on
“The Northern Bering Sea-Chukchi Sea Integrated Ecosystem Assessment:
Recent findings, progress, and the way forward”
[later merged with WG 39 workshop]**

Convenors: Elizabeth (Libby) Logerwell (USA), Yury Zuenko (Russia)

Duration: ½ day

PICES Working Group 44 (WG 44) is undertaking an integrated ecosystem assessment (IEA) of the northern Bering Sea and Chukchi Sea (NBS-CS), a three-year effort that began in 2020. In the first year, WG 44 determined its approaches and methods for conducting the IEA, compiled an inventory of scientific metadata and relevant institutions and programs, and developed a plan for co-production of knowledge with Indigenous partners. At the same time, the region’s ecosystem continues to change rapidly and more data and knowledge are being compiled from many active projects and programs. The purpose of this workshop is to share information among WG44 members and with other researchers studying the NBS-CS ecosystem. Doing so will ensure that the IEA incorporates the most up-to-date information and facilitates networking among researchers who may be, or be interested in becoming, contributors to the IEA.

We welcome submissions that (1) describe the work on the IEA to date, and (2) present recent findings about the NBS-CS ecosystem, especially those that shed new light on the ecosystem’s status, changes, and processes.