

**Working Group (WG 44) on
Integrated Ecosystem Assessment (IEA) of the Northern Bering Sea – Chukchi Sea (NBS-CS)
Inter-sessional Meeting Report
April 14, 2021**

Co-Chairs/PICES: Libby Logerwell (USA), Yury Zuenko (Russia)

Rapporteurs: Megan Ferguson and Kim Rand

Platform: Zoom

WG 44 on IEA of NBS-CS met on April 14, 2021, virtually. All members were present except one member from Russia and two from the US. Nonetheless there was representation from all PICES member countries. In addition, Dr. Jörn Schmidt, the ICES Science Committee (SCICOM) Chair, attended, including a number of guests:

- Marisol Garcia Reyes (Farallon Institute, US)
- Jamal Moss (NOAA)
- Lyle Britt (NOAA)
- Fletcher Sewall (NOAA)
- Ebett Siddon (NOAA)
- Henry Huntington
- Matthew Asplin (ASL Environmental Science, US)
- Jackie Grebmeier (University of Maryland, US)
- Carin Ashjian (Woods Hole Oceanographic Institution, US)
- Julie Kellner (ICES)
- Jessica Cross (NOAA)

A new ICES chair-nominated member, Lis Jørgensen, was introduced to the WG. Dr. Jørgensen is Co-Chair of the ICES/PICES/PAME WG on *Integrated Assessment of the Central Arctic Ocean* (WG 39/WGICA).

The agenda of this meeting of WG 44 was:

1. Welcome, adoption of agenda, appointment of rapporteurs (Chairs)
2. Introductions, new members and guests (Chairs)
3. Metadata, status and upcoming milestones (Ferguson, Rand and Zuenko)
4. Approach and methodology, status and upcoming milestones (Holsman, Daniel, Stram)
5. Indigenous knowledge sharing, status and upcoming milestones (Wise)
6. Revised timeline due to COVID restrictions (Chairs)
7. ICES IEA projects, workshops, etc. (Schmidt)
8. NOAA IEA proposal (Holsman)
9. NPRB synthesis proposal (Logerwell)
10. Arctic Council PAME Ecosystem Approach Expert Group (Logerwell)
11. New surveys, IEA projects or other information

Summaries of the discussion on each of the agenda items follows.

3. Metadata, status and upcoming milestones

Update WG 44 on status of metadata compilation:

- A spreadsheet has been populated based on responses from WG 44 members to the Google Form that was distributed in autumn 2020.
- We discovered that multiple metadata archives exist online. In some instances, a single database is referenced in multiple archives.
- Some databases have no metadata or are not archived in a publicly accessible archive.
- A lot of the Arctic data in the US is hosted by DataONE (a custom portal for scientific data) and the contact there is Matthew Jones at onesjones@nceas.ucsb.edu. He is the lead PI for the NSF Arctic Data Center which is part of DataONE (<https://arcticdata.io/>; <https://www.dataone.org/plus/>).
- The following Russian research institutions potentially are able to investigate the northern Bering and Chukchi Seas:
 - Federal Hydrometeorological Agency (meteorology, oceanography, chemistry, pollution)
 - Far-Eastern Research Hydrometeorological Institute (Vladivostok)
 - Arctic and Antarctic Research Institute (St-Petersburg)
 - Academy of Science (oceanography, chemistry, marine biology)
 - Pacific Oceanological Institute (Vladivostok)
 - Institute of Marine Biology (Vladivostok)
 - Institute of Biological Problems of the North (Magadan)
 - Federal Fisheries Agency (oceanography, chemistry, pollution, marine biology)
 - Russian Research Institute of Fisheries and Oceanography (Pacific branch (TINRO) in Vladivostok, Magadan branch in Magadan)
 - Hydrographic Service of the Russian Navy (meteorology, oceanography)
- About 90% of Russian marine data is collected by the Fisheries Agency (mostly by TINRO).
- Russian metadata about the main part of data are already collected for WG 44.

How would WG 44 members like to use and interact with an inventory of scientific metadata, institutions, and programs (*e.g.*, spreadsheet, app, *etc.*)?

- Metadata needs can be further defined as objectives are narrowed.
- It would be useful to access in a dynamic way, like a web-based shiny app. Need both access to data and a way to understand what data are available.
- It's good to retain expert interpretation of data, not just the data alone.
- TCODE in PICES deals with metadata and metadata cataloging. Might have advice or infrastructure (<https://meetings.pices.int/members/committees/TCODE/>; [https://meetings.pices.int/publications/pices-press/volume28/PPJul2020.pdf#page=20](https://meetings.pices.int/publications/pices-press/volume28/PPJul2020.pdf#page=20;); <https://sites.google.com/site/picestc/>).

Two types of metadata exist:

- Metadata that point to all the other data and are fully online accessible with URLs.
- Metadata that list available data that are NOT available online but rather through contacts.

Milestones for the rest of Year 1, 2021:

- Provide a list and URLs for known, existing metadata archives where WG 44 members can go to conduct searches themselves (Autumn 2021).
- Create a simple compilation of known databases that have no metadata or are not archived in a publicly accessible archive. Include PI contact info and other key features (Autumn 2021).

4. Approach and methodology, status and upcoming milestones

The first step in the NOAA IEA Approach is the “Define EBM Goals and Targets”. The term “scoping” is often used to describe this first step which includes defining:

- The system of interest, including relevant ecological, social, economic characteristics, and their relationships with partners and stakeholders;
- Management or planning goals and objectives.

A conceptual model is a good communication and engagement tool used in scoping that can:

- Provide a unifying framework across people and disciplines (*i.e.*, natural and social scientists; managers and policy frameworks; industries and local communities);
- Promote dialog among interested parties;
- Increase and visualize understanding of complex system dynamics and relationships;
- There are several examples from the NOAA IEA Program (*e.g.*, Gulf of Mexico and Gulf of Alaska). Another example is the IPBES conceptual model approach <https://www.ipbes.net/conceptual-framework>.

A draft scoping document for the NBS-CS IEA has been outlined and is available to WG members on a shared Google drive. In addition, a SharePoint site can be set up at ICES for all WG members. A draft outline with draft goals will be distributed later this spring.

ACTION ITEM: Review the outline and the draft scoping document.

The next steps are:

1. Summer 2021: Finalize goals and objectives
2. Sept 2021: Complete IEA Scoping Doc: Sept 2021 (to align with IERP)
 - Overview and lay of the land
 - Answer: Who is the IEA for? What is the value added?
 - Goals
 - Objectives for each goal
 - Process and products to achieve each goal
 - Scope
3. Activities for year 2 and 3
 - Conceptual model workshop (fund with AK IEA?)
 - Partnership building and knowledge sharing
 - Symposia, workshops, joint proposals

5. Indigenous knowledge sharing, status and upcoming milestones

Objective: Include Indigenous perspectives, Indigenous knowledge, and Indigenous voices in the process and products—not incorporated into the “science” sections but standing on their own. Doing so at the beginning is important.

- Highlight how Indigenous Peoples are part of the ecosystem and what that means for guiding human actions.
 - Map Lay of the Land. Who is doing work out there? Where and on what?
 - Define boundaries and scope;

- Map: Institutions, organizations, associations, networks, research efforts, tools, co-management projects, collaborations, working groups, subject matter;
- Identify gaps and linkages.
- Define “Ecosystem” holistically”—include multiple knowledge systems and perspectives.
 - Indigenous Conceptual Ecosystem Models (ICEM). Develop ICEM of the NBS and Chukchi Sea ecosystem using an interdisciplinary methodology, framework, and team (TK holders, scientists, managers).
 - Define ecosystem equitably including all ways of knowing;
 - Promote enduring interdisciplinary partnerships;
 - Bridge knowledge systems to inform EBM;
 - ID key issues/concerns for communities.

This work for this item in our Work Plan will take place in three Phases:

Year 1 – Facilitate a knowledge network. Identify individuals who can bridge between the WG and the communities to help bridge language and concepts.

Year 2 – Data Collection and ICEM Development Workshop

Year 3 – Synthesis into broader IEA. Contribute to the ability of Indigenous Tribes and communities to make use of the latest knowledge about the region.

6. Revised timeline due to COVID restrictions

The WG agreed there was no need to revise the timeline of the Work Plan due to COVID because good progress has been made on all items.

7. ICES IEA projects, workshops, etc.

The call for topic session proposals for the 2022 ICES Annual Science Conference is now open. There is interest in ICES and PICES in putting together a session on “Integrating Ecosystem Assessments”. Dr. Logerwell may be one of the conveners.

ACTION ITEM: WG members to contact Dr. Logerwell if they are interested in helping to organize an IEA session.

Ecosystem Overviews: The ICES ecosystem overviews (EOs) are advice products that provide a description of the ecosystems, identify the main human pressures, and explain how these affect key ecosystem components (in line with EBM and IEA approaches).

ICES EOs describe the distribution of human activities and resultant pressures (in space and time) on the environment and ecosystem. They are made by IEA groups with contributions from other groups and are reviewed by the advice drafting group (ADGECO). The final advice is agreed by Advisory Committee (ACOM), which includes scientists appointed by each ICES member country government.

Upcoming workshops include:

- Workshop on Stakeholder Engagement Strategy (WKSHOES, 22-24 June 2021)
<https://www.ices.dk/community/groups/Pages/WKSHOES.aspx>
- Climate-related advice (September/October 2021)

- Joint ICES/EUROMARINE Workshop on Common Conceptual Mapping Methodologies (1-5 November 2021) <https://www.ices.dk/community/groups/Pages/WKCCMM.aspx>
- Ecosystem Services (later 2021)

Ideas for other workshops:

- Workshop on Guiding Principles for Community Supported Observations (CSO)
 - Data collection and reporting protocols are co-created by communities and researchers, producing linked social and environmental data in interoperable formats that can embed biophysical data in social contexts.
 - WG members noted that it would be beneficial to see examples of successful community-based scientific observation projects, and how training, data sharing, communication were addressed.
- Workshop on knowledge sharing and knowledge co-production approaches
 - Traditional (TEK), local (LEK) or Indigenous ecological knowledge (IEK) from coastal communities is invaluable to understand the development of local social–ecological systems by providing practical experience in living within ecosystems and responding to ecosystem change.
 - WG members were particularly interested in this idea for a workshop. It would be a good opportunity to address different perspectives on scale.
 - The Alaska Ocean Observing System (AOOS) and the North Pacific Research Board (NPRB) have held sessions bringing together Indigenous communities and scientists and might be able to help with a workshop.
 - It was commented that one should be careful not to lump Indigenous Knowledge and Local Knowledge because they are really different things.

ACTION ITEM: WG members to contact Dr. Jörn Schmidt if they are interested in helping to organize a workshop.

8. NOAA IEA proposal

The WG could seek support for workshops or other activities through a NOAA IEA proposal, as part of the Alaska Integrated Ecosystem Assessment. Funds cannot be used for field surveys, but otherwise the products that they can be used for are very broad. The timeline for proposal review is:

- Spring 2021: 3 year plans drafted
- Summer 2021: Cross regional review by SC
- Fall 2021: 3 year plans finalized

ACTION ITEM: WG members to contact Dr. Holsman if they have ideas on how WG 44 could use funds from NOAA IEA, preferably before May 15, 2021.

9. North Pacific Research Board Synthesis proposal

The NPRB Arctic Integrated Ecosystem Research Program will put out a Synthesis Request for Proposals in September 2021. Dr. Logerwell is planning a proposal “Benthic-pelagic coupling or decoupling in the Northern Bering Sea – Chukchi Sea (NBS-CS)?”. A scoping group has been formed to outline the proposal. The key questions for the work are: Have there been changes in export of pelagic production to the benthos due to ocean warming and loss of sea ice? What might the future hold?

There are some useful synergies between this proposal and WG 44 activities:

- Management Endpoints and local Community concerns
- Indigenous Knowledge sharing
- Metadata

ACTION ITEM: WG members to contact Dr. Logerwell if they are interested in being a PI or collaborator on the proposal.

10. Arctic Council PAME Ecosystem Approach Expert Group (EA-EG)

There are a number of EA-EG projects potentially of interest to WG 44:

- WG Integrated Ecosystem Assessment of the Central Arctic Ocean (WGICA)
- Workshop on Value and Valuation
- Report on Ecological Objectives
- Ecosystem Approach Framework Revision

This website has more information: <https://pame.is/index.php/projects/ecosystem-approach>.

ACTION ITEM: WG members to contact Dr. Logerwell if they would like to learn more about these projects.

11. New surveys, IEA projects or other information

The meeting closed with brief updates from each member country about new surveys and projects. The details can be found by viewing the slide deck pdf.