

**WGICA – Working Group proposal from WKICA – ICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean**

2015/MA2/SSGIEA02

**ICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA)**, chaired by John Bengtson, (ICES), USA, Sei-Ichi Saitoh (PICES), Japan, and Hein Rune Skjoldal (PAME), Norway, will meet to work on ToRs and generate deliverables as listed in the Table below.

	Meeting dates	Venue	Reporting details	Comments (change in Chair, etc.)
Year 2016	24–26 May	ICES Headquarters	Interim report by 4 July 2016 to SSGIEA, SCICOM & ACOM	
Year 2017	19–21 April	Seattle, USA	Interim report by 19 May 2017 to SSGIEA, SCICOM & ACOM	
Year 2018	24–26 April	St. Johns, Newfoundland, Canada	Final report by 23 May 2018 to IEASG, SCICOM & ACOM	

**ToR descriptors**

ToR	Description	Background	Science Plan topics addressed	Duration	Expected Deliverables
a	Consider approach and methodology (-ies) for doing an IEA for the CAO (based on the outcome of WKICA).	Basis for carrying out IEA for the CAO; draw upon experiences in other IEA groups (WGNARS, WGINOSE, WGEAWESS, WGINOR, WGIBAR and WGIAB)	SP Goal 1	Year 1	Summary on approach and methodology in interim report
b	Assemble data and information and carry out appropriate statistical and other types of analyses including mathematical modelling	Initial steps in an IEA	SP Goal 1	Years 1 and 2	Summary on data sources in interim report Draft (incomplete) IEA of the CAO
c	Prepare an IEA outline for the current status of the CAO ecosystem (CAO LME and adjacent slope waters including Atlantic and Pacific inflows and relevant shelf-basin exchanges) and effects, potential effects and vulnerability in relation to climate variability and change and human activities such as Arctic shipping and potential future fisheries	IEA is an essential component of the EBM approach to human activities. Will provide a basis for advice in an ecosystem context on future Arctic marine shipping and fisheries taking into account ongoing and future climate change	SP Goal 1 and 2	Years 2 and 3	Draft (incomplete) outline of an IEA in interim report 2 <sup>nd</sup> year First complete outline for an IEA for the CAO at the end of the 3 <sup>rd</sup> year

d	Consider requirements and design of monitoring of the CAO to meet the need for repeated IEA in the near future as well as other types of assessments (which can be modular components of IEAs)	The first approach towards an IEA of the CAO builds on existing data and information, mostly from research and modelling activities. There is a need to consider improved and additional monitoring to better meet the need for refinements and update of the IEA	SP Goals 1 and 2	Years 1, 2 and 3	Summaries in interim reports 1 <sup>st</sup> and 2 <sup>nd</sup> years Summaries in final report after 3 <sup>rd</sup> year
e	Identify priority research issues which, when addressed, can improve the knowledge base for the future iterations of the IEA	Carrying out an IEA will reveal gaps in knowledge that forms the basis for identifying priority research issues	SP Goals 1, 2 and 3	Year 3	Summary in final report

### Summary of the Work Plan

Year 1	Consider approach and methodology for IEA, start assembling of data and information, and consider monitoring requirements
Year 2	Continue assembling of data and information and carry out analyses. Prepare an initial and incomplete draft of IEA
Year 3	Finalize IEA report and consider monitoring requirements and priority research issues

### Supporting information

Priority	<p>The new ICES science plan has a strong focus on integrated ecosystem understanding and subsequent assessments, including ecosystem overviews and monitoring programmes. Furthermore, ICES is making a move toward the Arctic as a strategic activity area.</p> <p>The Arctic area as defined for the work under the Arctic Council includes the Subarctic and boreal waters of the Barents and Norwegian seas and the waters around Iceland. ICES is already heavily involved with fishery advice and other activities (e.g. status reports on climate and plankton) in these parts of the Arctic area in the North Atlantic. ICES work in the past has included the Arctic Ocean. The activity of preparing an IEA for the central Arctic Ocean (CAO) gives ICES a central role in this remote and changing ecosystem and is a step needed to provide scientific advice on issues such as the prospect for future fisheries in the Arctic Ocean and sensitivity and vulnerability in relation to arctic transpolar shipping.</p> <p>The CAO is part of the Arctic Mediterranean Sea and is openly connected to the deep basins of the Nordic Seas through the deep Fram Strait. Atlantic water flows into the CAO through the Fram Strait and the Barents Sea, while Pacific Water flows up through the shallow Bering Strait and the Chukchi Sea. These inflows have decisive roles for the circulation and ice conditions in the CAO, and the conditions in the CAO again influence the climate and climate variability of the northern North Atlantic and North Pacific. Better understanding of the role of the CAO in the hemispherical and global climate systems will contribute to better understanding of climate and ecosystem variability of the core ICES area in the North Atlantic as well as in the Bering Sea and Gulf of Alaska in the North Pacific.</p>
Resource requirements	The research programmes which provide the main input to this group are already underway, and resources are already committed. The additional resource required to undertake additional activities in the framework of this group is negligible.
Participants	The Group is normally attended by some 20–25 members and guests.
Secretariat facilities	None.

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Financial	No financial implications.
Linkages to ACOM and groups under ACOM	There are no obvious direct linkages but work on IEA as a core element of EA has clear relevance to future advice on the CAO ecosystem.
Linkages to other committee or groups	There is a very close working relationship with all other groups of the SCICOM SSG on integrated ecosystem assessment and monitoring (SSGIOM).
Linkages to other organizations	The work of this group is anticipated to be a joint effort with AMAP, CAFF and PAME.

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