

Arctic

The meeting will be invited to review and comment on the discussion document with the aim to develop a strategy and roadmap to ensure ICES is well positioned to contribute in this area.

ICES Action Area: Arctic

The Arctic Council currently negotiates an international agreement on science cooperation for the Arctic. In its Strategic Plan 2014-2018, ICES has a focus to further develop its science, advisory and data work on the Arctic and is seeking the input from the Arctic Council on how to address information gaps and needs in a deliberate, well planned manner to avoid duplication and add value to on-going processes.

In the Strategic Plan, ICES has set a clear intention to get further involved in the Arctic area. Links are already in place with Arctic Council Working Groups on the Arctic Monitoring and Assessment Programme (AMAP) and the Protection of the Arctic Marine Environment (PAME), the International Arctic Science Committee (IASC), the Sustained Arctic Ocean Observation Network (SAON), as well as the North Pacific Marine Science Organization (PICES). ICES has held Arctic-oriented workshops in the past. ICES application for observer status is awaiting the 2015 ministerial meeting of the Arctic Council. This document aims to define action points for ICES scientific cooperation in the Arctic area.

Integrated Ecosystem Assessments

ICES has a network of Integrated Ecosystem Assessment (IEA) Groups (Figure 1 in Annex 1). These groups have shown the capacity of catalyzing other groups by spreading methodology and guidance from one ecoregion to another. This “pay it forward” system has worked well by rapidly expanding the numbers of ICES groups active in IEAs. By getting strategically involved in the Arctic, ICES can advance the knowledge and structure of ongoing IEAs.

Of specific relevance to the Arctic area are two ICES-run groups on Integrated Ecosystem Assessment (IEA): the Working Group on the Integrated Assessments of the Norwegian Sea (WGINOR) and the Working Group on the Integrated Assessments of the Barents Sea (WGIBAR). Both of these groups have great potential to demonstrate the strength of ICES as a provider of knowledge about the state of ecosystems, overview of available data, monitoring strategies, and adaptive management. (See Table 1, Annex 2 for a listing of these and other groups of potential aid in the Arctic)

Ecosystem Overviews

In support of IEAs, ICES has constructed “Ecosystem Overviews” which describe the trends in pressures and states of regional ecosystems. Ecosystem overviews of relevance to the Arctic area are currently in preparation—this includes the ACOM/SCICOM Workshop to draft advice on Ecosystem Overviews for northern ecoregions Iceland Sea, Norwegian Sea, and Barents Sea (WKNORECO).

Polar Ocean activities

Norway has taken the lead with regard to an ICES activity group for the Polar Ocean, the aim being to arrange a workshop preferably during 2014 which will review ongoing activities, identify the gaps, and propose a roadmap on how ICES can get involved in the area.

ICES data services in relation to the Arctic

ICES provides the core evidence base for marine assessments in the ICES area; for example, the Contaminants and Biological Effects dataset is closely related to the AMAP monitoring and assessment programme. This includes potential further cooperation on a hazardous substances assessment tool, generating on demand a dataset product from the ICES databases, as is demonstrated by the OSPAR assessment tool.¹

For more than a decade ICES has produced a report from the ICES Area of the North Atlantic and Nordic seas describing the state and trends in ocean climate. More recently, this comprehensive report has been available as an operational data tool from the ICES website. <http://www.ices.dk/news-and-events/newsarchive/news/Pages/Climate-report-enters-the-digital-age.aspx>.

ICES working relations with the Arctic Council and International Arctic Science Council

ICES has established work relationships with the following working groups and activities under the umbrellas of Arctic Council and IASC:

- Arctic Monitoring and Assessment Programme (AMAP)
(<http://www.amap.no>)
- Conservation of Arctic Flora and Fauna (CAFF) (<http://www.caff.is>)
- Protection of the Arctic Marine Environment (PAME)
(<http://www.pame.is>)
- International Arctic Science Council (IASC) and its ICARP III process (International Conference in Arctic Research Priorities, under the joint umbrella of AC and IASC) to culminate in the actual conference in 2015 (<http://icarp.arcticportal.org/>).
- Meetings of Scientific Experts on Fish Stocks in the Arctic Ocean (<http://icarp.arcticportal.org/>). The meetings discuss fish stock and fisheries issues which are reported to the governments of Canada, Greenland, Norway, Russia and the US.
- The joint AC and IASC Sustained Arctic Observation Network (SAON).

¹ <http://dome.ices.dk/osparmime/main.html>

Two theme session proposals to the ICARP III planning committee have been submitted in cooperation with the Canadian and German delegates of the ICES Science Committee (SCICOM) as well as the Chair of ICES Arctic Fisheries Working Group (AFWG):

- Innovative Approaches to Communication for a Changing Arctic (conveners Jörn Schmidt, Stephanie Pfirmann, NN indigenous)
- Fisheries in the Arctic Ocean - just a dream or a reality in the near future? (conveners Kevin Hedges, Carolina Behe, Bjarte Bogstad)

ICES continues to have Arctic-related theme sessions at the ASC (2014 Session F).

Identifying ICES joint AMAP/PAME/CAFF activities

The Arctic Council currently negotiates an international agreement on science cooperation for the Arctic. ICES will be represented by its member countries in the relevant meetings.

In early September an information exchange took place at the ICES HQ with AMAP secretariat staff. ICES explained the framework of Expert Groups performing IEAs as well as the ICES mission to advance Ecosystem Understanding into the ICES advice system.

During the discussion the following opportunities for cooperation were identified:

- IEA and integration of contaminants,
- inventory of Arctic surveys,
- a possible workshop on IEA tools in spring 2015,
- development of an Arctic IEA Expert Group,
- the upcoming meeting in Whitehorse and the role of ICES in setting priorities for research.

The AMAP 28th Working Group Meeting was held in Whitehorse, Yukon, Canada 16 - 18 September, including a joint meeting with PAME WG. ICES SCICOM chair was invited to give a presentation before the meeting on how ICES can support the Arctic IEA development. Due to prior commitments in ASC, the Chair of PAME II, Hein Rune Skjoldal, was provided with a presentation to give for the meeting.

Edda Johannesen (Co-Chair of ICES Working Group on the Integrated Assessments of the Barents Sea) and Bjarte Bogstad (Chair of ICES Arctic Fisheries Working Group) will co-convene the session "Ecosystem and Fisheries Understanding Cumulative Effects and Managing Change" at the Arctic Biodiversity Congress arranged by CAFF on 2–4 December in Trondheim Norway.

Figure 1. ICES network of Integrated Ecosystem Assessment (IEA) Groups

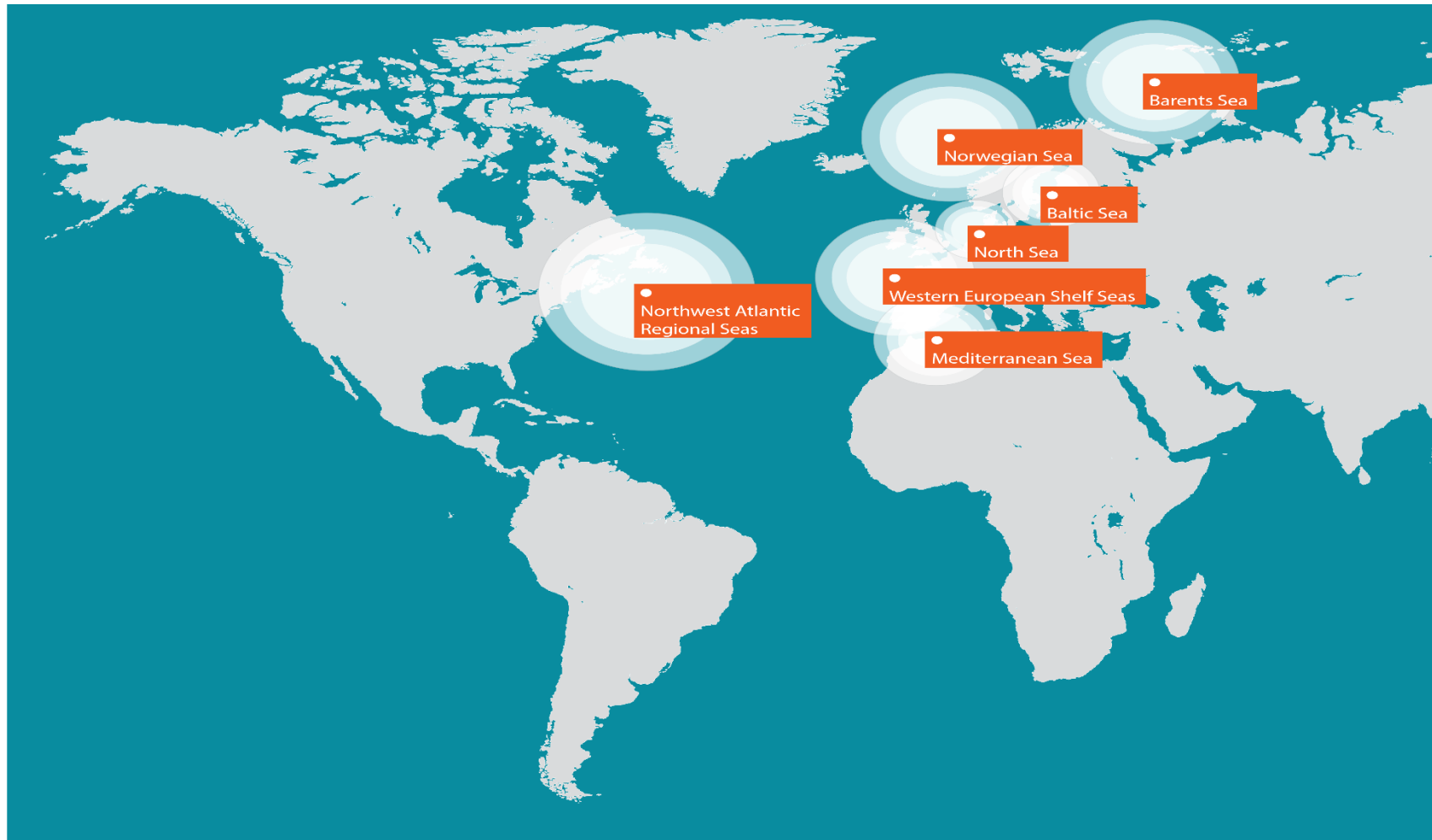


Table 1. List of Expert Groups in ICES of potential aid to the Arctic work

State	Group name	Acronym	Chair
Arctic fisheries	Arctic Fisheries Working Group	AFWG	Bjarte Bogstad, NO
Benthic habitat	Benthos Ecology Working Group	BEWG	Steven Degraer, BE
Pelagic Habitat	Working Group on Small Pelagic Fishes, their Ecosystems and Climate Impact	WGSPEC	Jürgen Alheit, DE; Priscilla Licandro, UK
Pelagic Productivity	Working Group on Phytoplankton and Microbial Ecology	WGPME	Xosé Anxelu G. Morán, ES; Alexandra Kraberg, DE
Foodweb structure	Working Group on Multispecies Assessment Methods	WGSAM	Daniel Howell, NO & Steve Mackinson, UK
Zooplankton	Working Group on Zooplankton Ecology	WGZE	Piotr Margonski, PO
Benthos	Benthos Ecology Working Group	BEWG	Steven Degraer, BE
Pelagic Invertebrates	Working Group on Cephalopod Biology and Life History	WGCEPH	Jean-Paul Robin, FR
Birds	Joint ICES OSPAR working group on seabirds	JWGBIRD	Ian Mitchell, UK

Mammals	Working Group on Marine Mammal Ecology	WGMME	Eunice Pinn, UK
Invasive species	Working Group on Introduction and transfers of Marine Organisms	WGITMO	Henn Ojaveer, EE
Oceanic hydrography/climate	Working Group on Oceanic Hydrography	WGOH	Stephen Dye, UK & Kjell Arne Mork, N

Integrated ecosystem assessment	Working Group on the Integrated Assessments of the Norwegian Sea	WGINOR	Geir Huse, N & Gudmundur J. Oskarsson, IS
Integrated ecosystem assessment	Working Group on the Integrated Assessments of the Barents Sea	WGIBAR	Edda Johannesen, NO & Yuri A. Kovalev, RF