



PICES 2019 Annual Meeting: Connecting Science & Communities in a Changing North Pacific

Overview WG39 and WGICA activities

Co-chair: Sei-Ichi Saitoh (Japan)

October 20, 9:00-12:30

What is the PICES WG39 ?



NORTH PACIFIC MARINE SCIENCE ORGANIZATION



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- Programs and Projects ▾
- Publications ▾
- Meetings ▾
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Working Group 39: Joint PICES/ICES/PAME Working Group on an Integrated Ecosystem Assessment for the Central Arctic Ocean

Acronym: WG 39

Parent Committee: [SB](#)

Term: Nov. 2016 – Oct. 2021
(extended in 2018 – Decision 2018/S/4 (vii))

ICES Co-Chair: John Bengtson (ICES; USA)

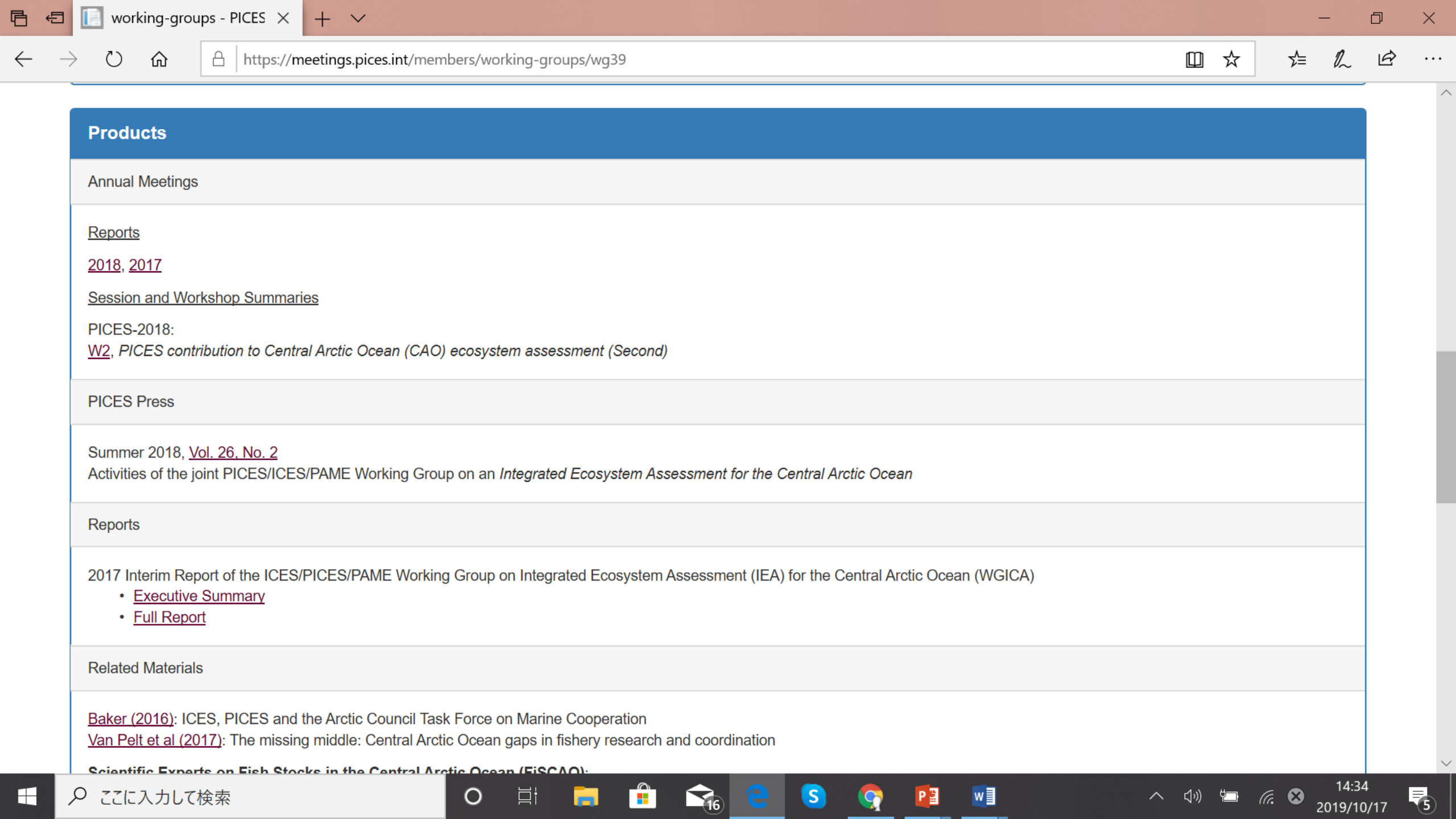
PAME Co-Chair: Hein Rune Skjodal (PAME; Norway)

Co-Chair: Prof. Sei-Ichi Saitoh [<ssaitoh@salmon.fish.hokudai.ac.jp>](mailto:ssaitoh@salmon.fish.hokudai.ac.jp)

[Mailing List](#)

Background:

At PICES-2016, the ICES President requested that PICES join an existing ICES/PAME (Protection of the Arctic Marine Environment) Working Group on an Integrated Ecosystem Assessment for the Central Arctic Ocean. This request was approved by Governing Council (Decision 2016/S/5). Preparing an Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (CAO) is



Products

Annual Meetings

Reports

2018, 2017

Session and Workshop Summaries

PICES-2018:

W2, PICES contribution to Central Arctic Ocean (CAO) ecosystem assessment (Second)

PICES Press

Summer 2018, Vol. 26, No. 2

Activities of the joint PICES/ICES/PAME Working Group on an *Integrated Ecosystem Assessment for the Central Arctic Ocean*

Reports

2017 Interim Report of the ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean (WGICA)

- Executive Summary
- Full Report

Related Materials

Baker (2016): ICES, PICES and the Arctic Council Task Force on Marine Cooperation

Van Pelt et al (2017): The missing middle: Central Arctic Ocean gaps in fishery research and coordination

Scientific Experts on Fish Stocks in the Central Arctic Ocean (FiSCAO):

New Working Group 39: Joint PICES/ICES/PAME Working Group on an Integrated Ecosystem Assessment for the Central Arctic Ocean
2/3/2017 2:00:16 PM PST

Members

📍 **Dr. Fujio Ohnishi (WG-39)**
Arctic Research Center
📍 Hokkaido University
Kita-21 Nishi-11 Kita-ku
Sapporo, Hokkaido
Japan 001-0021
☎️ [+81-11-706-9074](tel:+81-11-706-9074)
📠 [+81-11-706-9582](tel:+81-11-706-9582)
✉️ fujio.ohnishi@arc.hokudai.ac.jp

📍 **Prof. Sei-Ichi Saitoh (MONITOR, WG-39)**
WG-39 PICES Co-Chair
Arctic Research Center
📍 Hokkaido University
N21W11 Kita-Ku
Sapporo, Hokkaido
Japan 001-0021
☎️ [\(81-11\) 706-9073](tel:+81-11-706-9073)
📠 [\(81-138\) 43-5015](tel:+81-138-43-5015)
✉️ ssaitoh@salmon.fish.hokudai.ac.jp

📍 **Dr. Zhongyong Gao (CC-S, WG-39)**
Key Laboratory of Global Change and Marine-Atmospheric Chemistry
📍 Third Institute of Oceanography, MNR
178 Daxue Rd., Siming District
Xiamen, Fujian
People's Republic of China 361005
☎️ (86-592) 219 5121
📠 (86-592) 219 5982
✉️ zgao@263.net

📍 **Dr. Guangshui Na (FUTURE-SSC, MEQ, SB, WG-35, WG-39)**
MEQ Chair
Marine Chemistry
📍 National Marine Environmental Monitoring Center (NMEMC), MEE
42 Linghe St., Shahekou District
Dalian, Liaoning
People's Republic of China 116023
☎️ (86-411) 8478-2702
📠 (86-411) 8478-3277
✉️ gsna2010@163.com

📍 **Dr. Fang Zhang (WG-39)**
Biological Department
📍 Polar Research Institute of China
451 Jinqiao Rd., Pudong District
Shanghai, People's Republic of China
200136
☎️ (86-21) 5871 7635
✉️ zhangfang@pric.org.cn

📍 **Dr. Hyoung Chul Shin (WG-39)**
Division of Polar Ocean Sciences
📍 Korea Polar Research Institute (KOPRI)
26 Songdomirae-ro, Yeonsu-gu
Incheon, Republic of Korea 21990
☎️ (82-32) 760-5520
📠 (82-32) 760-5399
✉️ hcshin@kopri.re.kr

What is the WGICA ?

**ICES/PICES/PAME Working Group
on Integrated Ecosystem Assessment
for the Central Arctic Ocean
(WGICA)**

ICES/PICES/PAME WGICA

- Joint Working Group on Integrated Ecosystem Assessment of the Central Arctic Ocean
- ICES – **International Council for Exploration of the Sea**
 - Science and Advice
- PICES – **North Pacific Marine Science Organization (P-ICES)**
- PAME – Protection of the Arctic Marine Environment (AC working group)
- Established 2015 – 3-years period: 2016-2018
- Extended 2018 – 3-years period: 2019-2021

WGICA



Integrated Ecosystem Assessment Groups in ICES



WGICA

ICES/PICES/PAME Working Group on Integrated Ecosystem Assessment (IEA) for the Central Arctic Ocean

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Affiliation: IEASG

Chairs: John Bengtson, Hein Rune Skjoldal, Sei-ichi Saitoh (PICES)

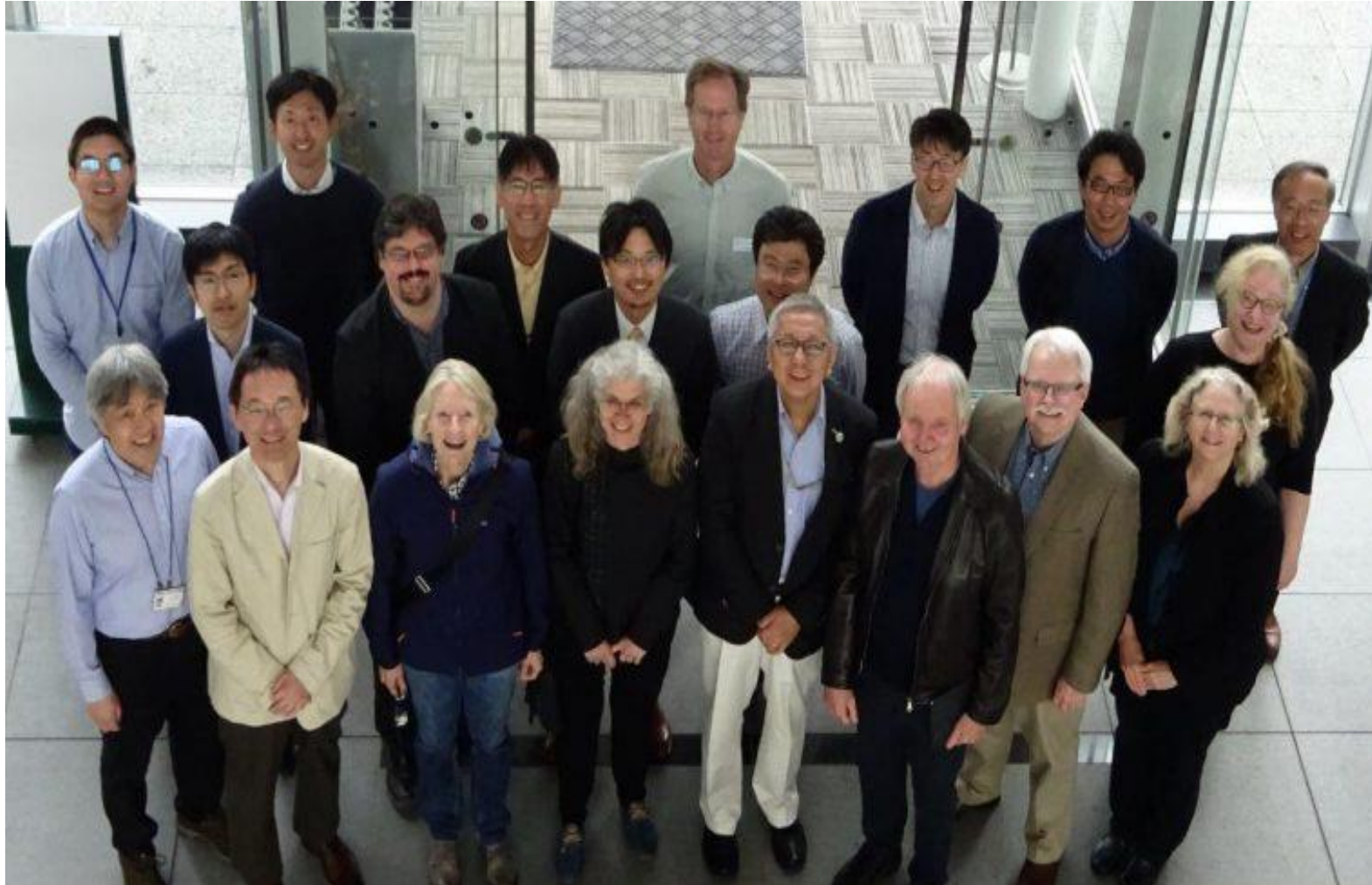
Three co-chairs of WGICA



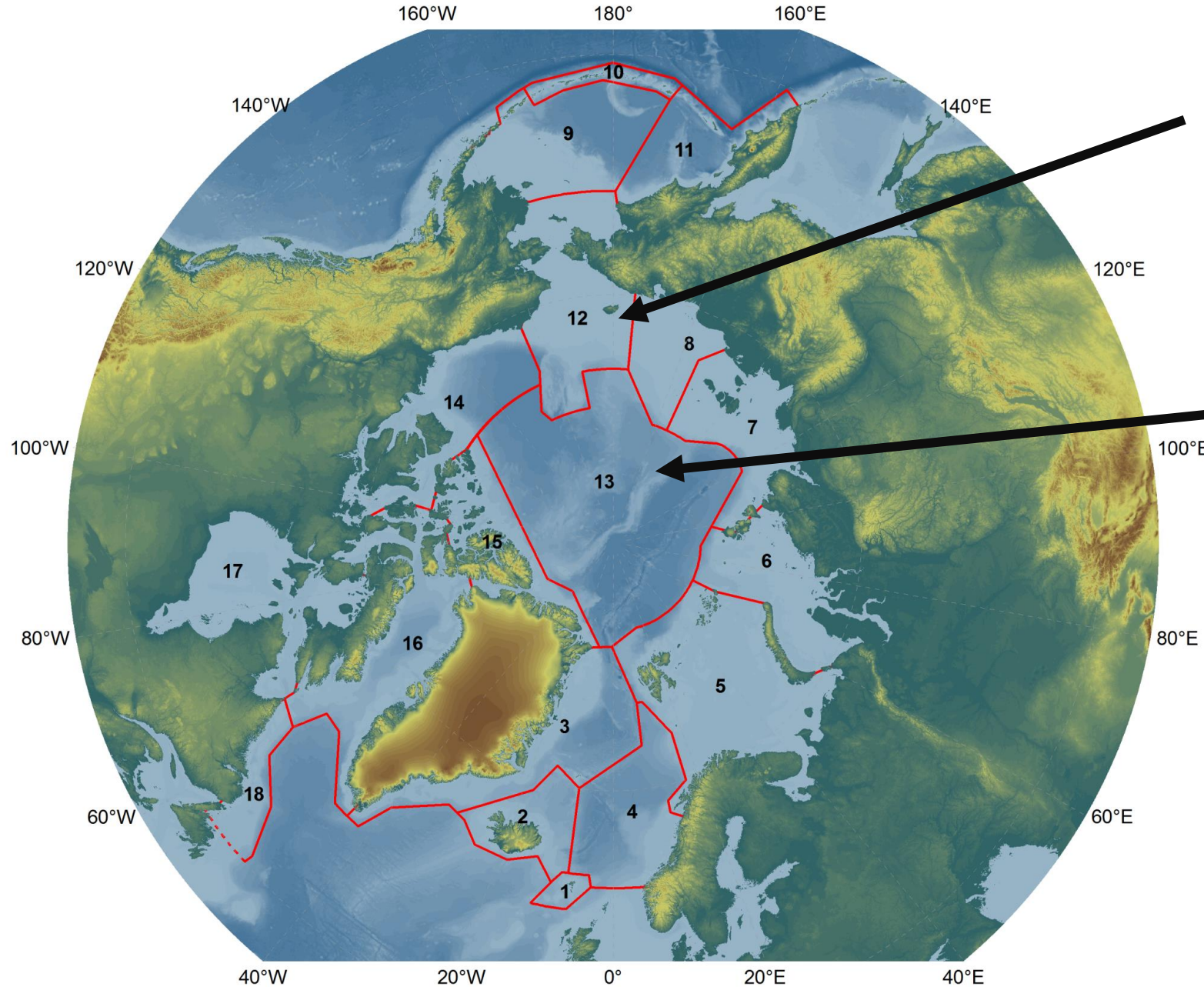
WGICA meeting in the past

- **First meeting: May 24-26, 2016, Copenhagen, Denmark**
- **Second meeting: April 19-21, 2017, Seattle, USA**
- **Third meeting: April 24-26, 2018, St. Jones, Canada**
- **Forth meeting: May 8-10, 2019, Sapporo, Japan**

4th WGICA Meeting, Sapporo, Hokkaido, Japan 8-10 May 2019



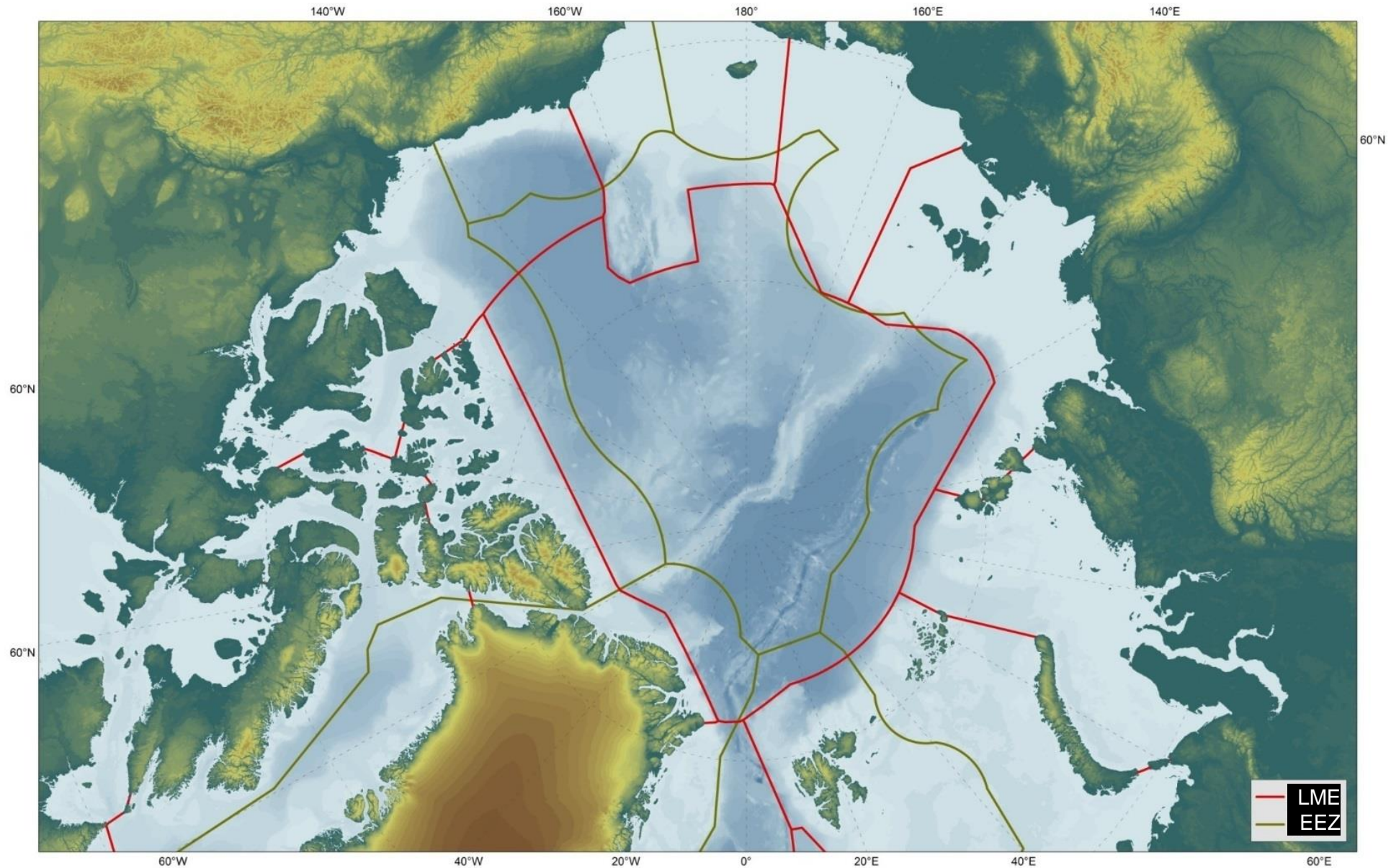
Large Marine Ecosystems (LMEs)



- **12: North Bering - South Chukchi Seas**

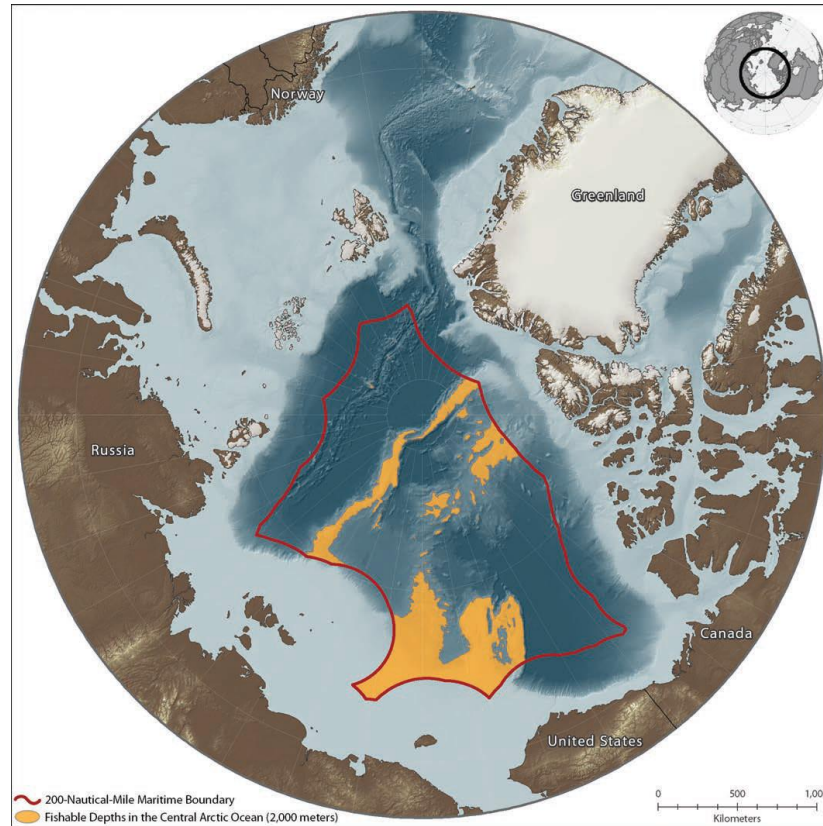
- **13: Central Arctic Ocean**

Large Marine Ecosystems (red) and Territorial Boundaries (green) of the Central Arctic Ocean

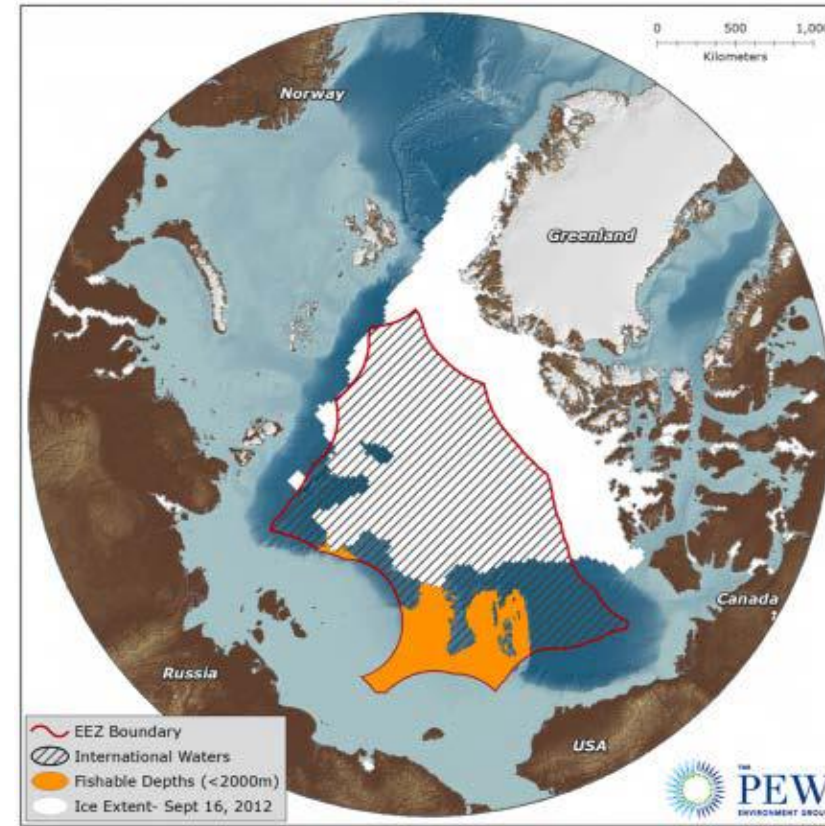


Central Arctic Ocean: Territorial and International Areas

Fishable depths were derived from IBCAO v3 bathymetry (www.ngdc.noaa.gov/mgg/bathymetry/arctic/).

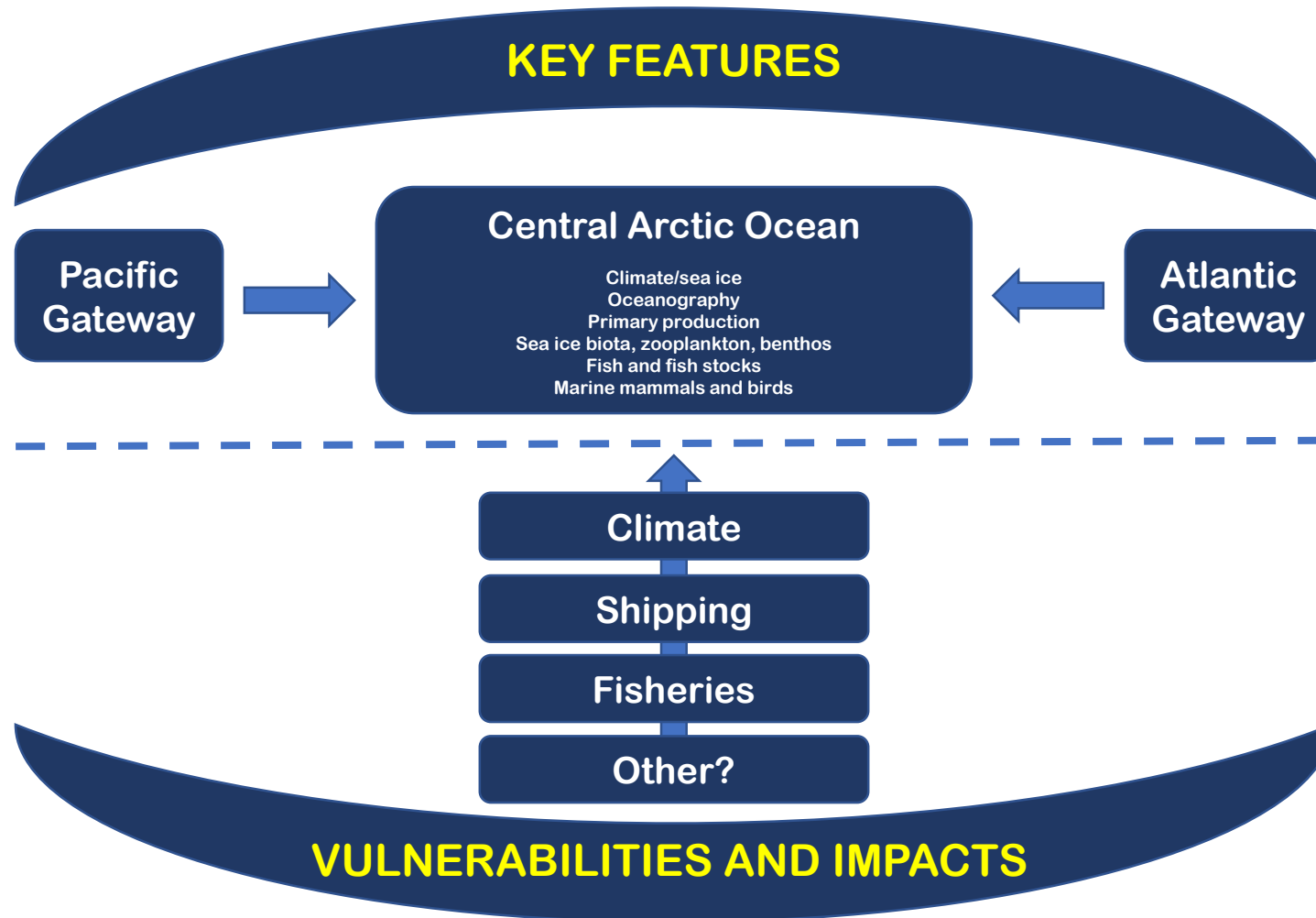


Twenty-two percent (614,000 square kilometers) of the Central Arctic Ocean is made up of ridges and continental shelves at fishable depths of 2,000 meters or less (PEW Foundation)



International waters of CAO north of 200 nm Exclusive Economic Zones (EEZs)

Integrated Ecosystem Assessment



Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (Nov. 2017)

The image is a screenshot of a web browser displaying a news article on the Science magazine website. The browser's address bar shows the URL: <http://www.sciencemag.org/news/2017/12/nations-agree-ban-fishing-arctic-ocean-least-16-years>. The page features a dark navigation bar with the Science logo and links for Home, News, Journals, Topics, and Careers. A search bar and a user profile for Sei-Ichi Saitoh are also visible. The main content area includes a large image of sea ice with a caption: "Declining summer sea ice could open the Arctic Ocean to commercial fishing." Below the image is the article title: "Nations agree to ban fishing in Arctic Ocean for at least 16 years" by Hannah Hoag, dated Dec. 1, 2017, at 1:30 PM. To the left of the image are social media share buttons for Facebook (4K), Twitter (12K), and LinkedIn (103). To the right, there is a promotional message about "metered access" and a "Got a tip?" button. At the bottom right, there is an advertisement for "TOP TEN Big Data TRENDS" with a "SEE THE TRENDS" button.

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Declining summer sea ice could open the Arctic Ocean to commercial fishing. NASA/Kathryn Hansen/Flickr (CC BY 2.0)

Nations agree to ban fishing in Arctic Ocean for at least 16 years

By Hannah Hoag | Dec. 1, 2017, 1:30 PM

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TOP TEN Big Data TRENDS SEE THE TRENDS

IEA report for the CAO (2018 Report)

- **Integrated Ecosystem Assessment of the Central Arctic Ocean: Ecosystem Description and Vulnerability Characterization**
- Ecosystem description with emphasis on **spatial aspects** and trophic (**food-web**) connections
- Oceanography, plankton, ice biota, benthos, fish, birds and marine mammals
- Vulnerability
 - general aspects (concepts, terminology, methodology)
 - Initial considerations of vulnerability to human activities – climate, pollution, fisheries,
 - **Shipping**

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NEWS

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Science & Environment

First tanker crosses northern sea route without ice breaker

By Matt McGrath
Environment correspondent

24 August 2017 | Science & Environment

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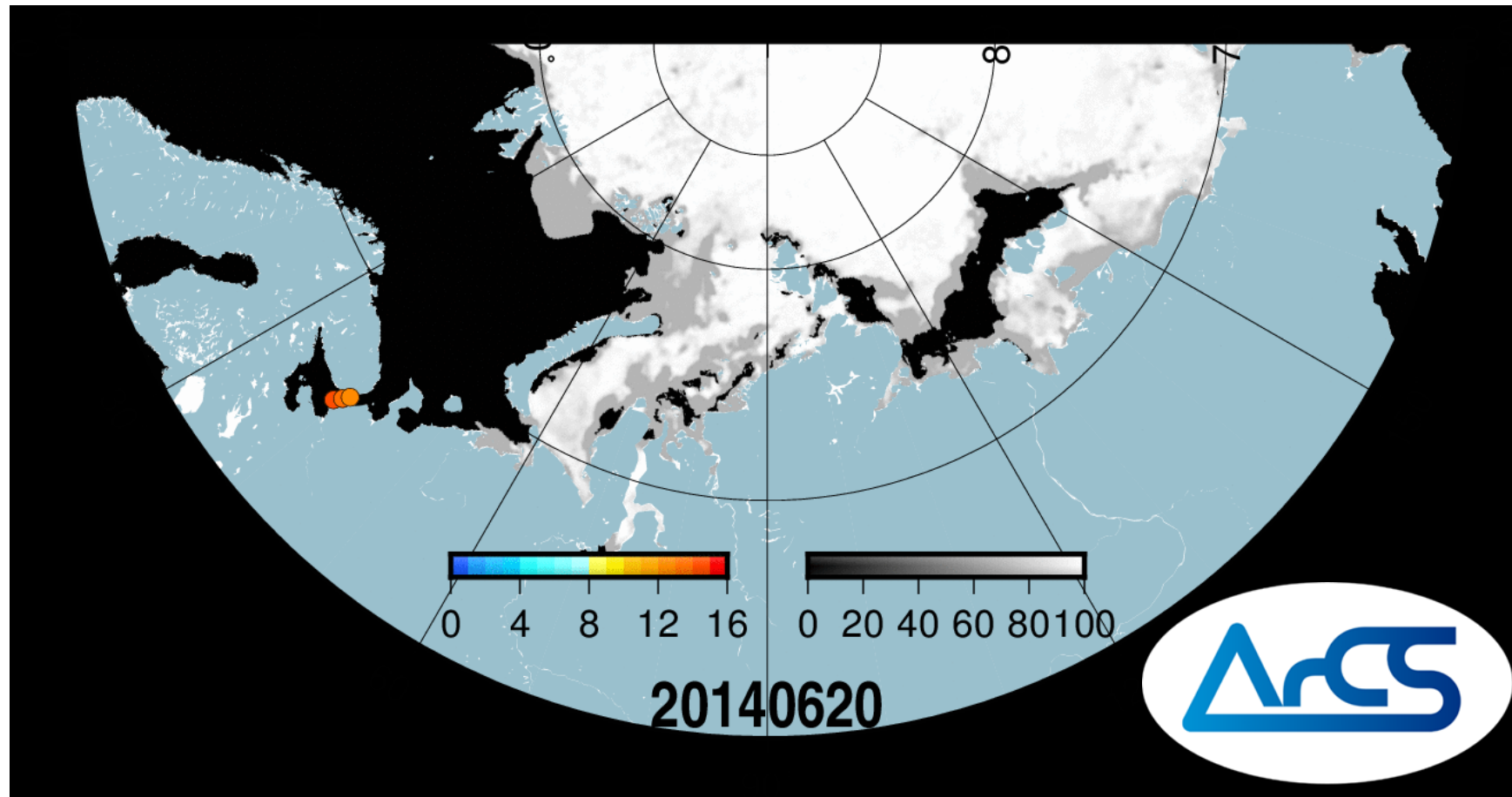


A combined ice breaker and LNG tanker has crossed the northern sea route

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Cargo Ship trajectories (Satellite AIS, Shipfinder)



- June-November 2014, over 5000DWT
- Background is sea ice concentration image (from AMSR2, ADS).
- Color of ○ represents ship speed (kn)
- Otsuka et.al (2016) Navigability facts of the Northern Sea Route from recent activities, The Seventh Symposium on Polar Science, Japan.

Time Table of WGICA Activities

	2016	2017	2018	2019	2020	2021	2022
Term 1	←————→						
Term 2				←————→			
Report				★			★
Events				←————→ MOSAiC			
Events					←————→ SAS		
WGICA Meetings	★	★	★	★	★	★	