# The International Waters of the Central Arctic Ocean

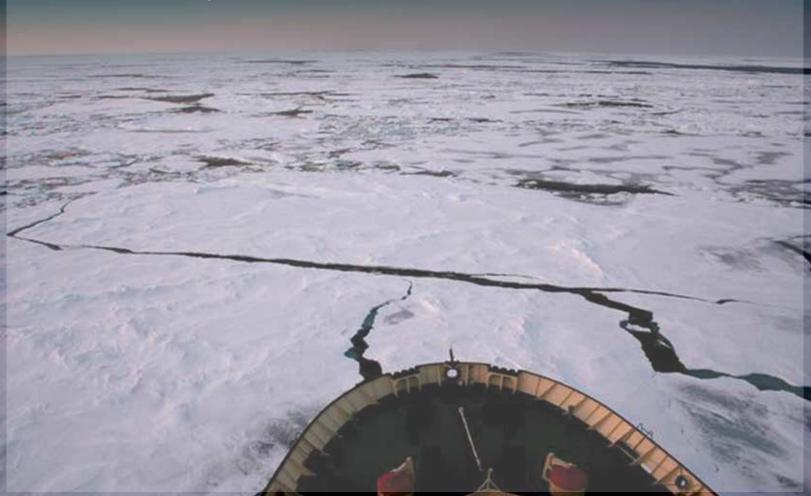
Protecting fisheries in an emerging ocean

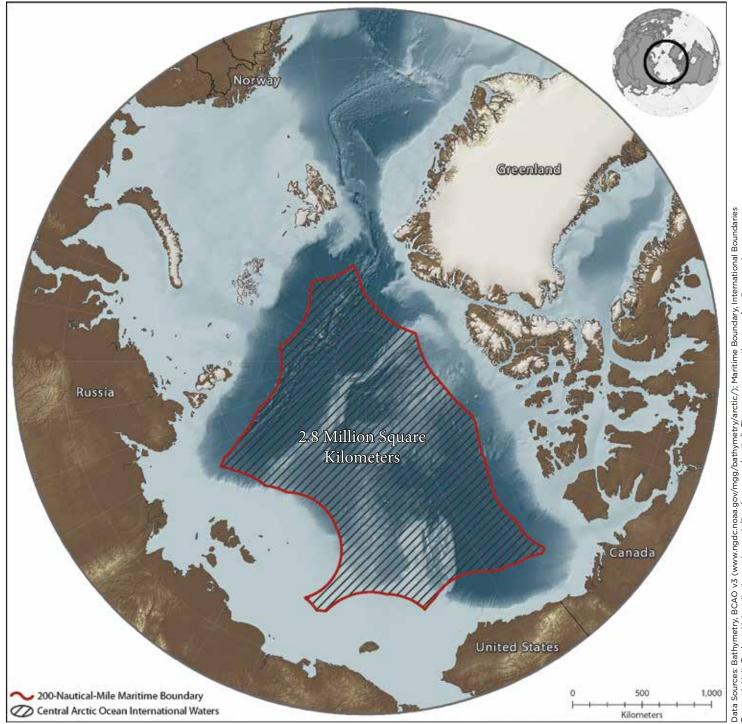
Arctic ice extent & international maritime boundary, September 2012

### THE INTERNATIONAL WATERS OF THE CENTRAL ARCTIC OCEAN

The Arctic Ocean is one of the planet's pristine marine regions. But permanent ice is diminishing due to climate change, opening the international waters of the Central Arctic Ocean to commercial fishing for the first time in human history.

These waters, encompassing an area as big as the Mediterranean Sea, are not governed by a fisheries agreement. Such an accord is needed to close this region to commercial fishing until scientific knowledge and management measures can ensure a sustainable fishery.

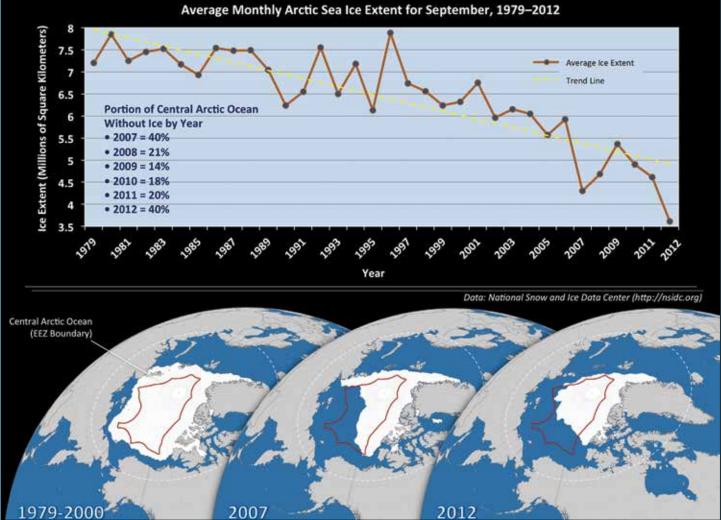




AO v3 (www.ngdc.n sity (www.dur.ac.uk/

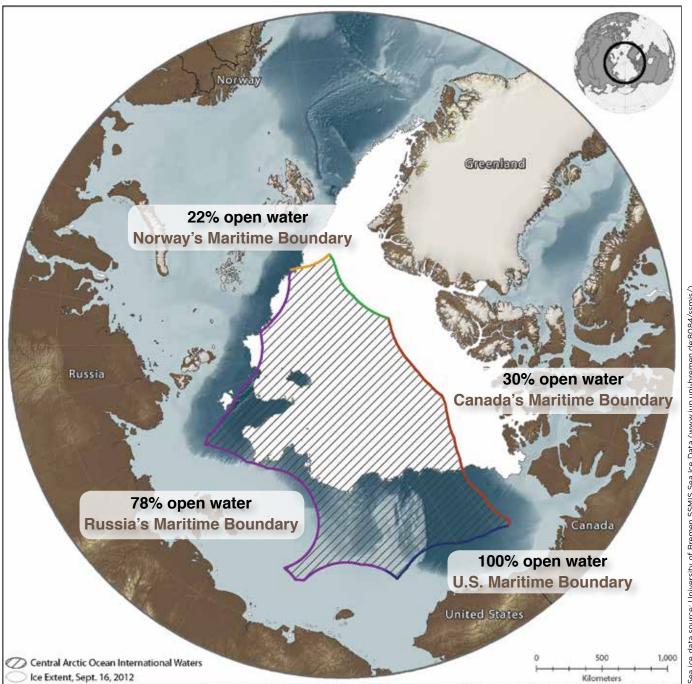
### MELTING ICE

The permanent ice that has covered the Arctic Ocean for more than 100,000 years is vanishing. In summer 2012, 40 percent of the Central Arctic Ocean—the region outside each nation's 200-nautical-mile exclusive economic zone (EEZ)—was open water.

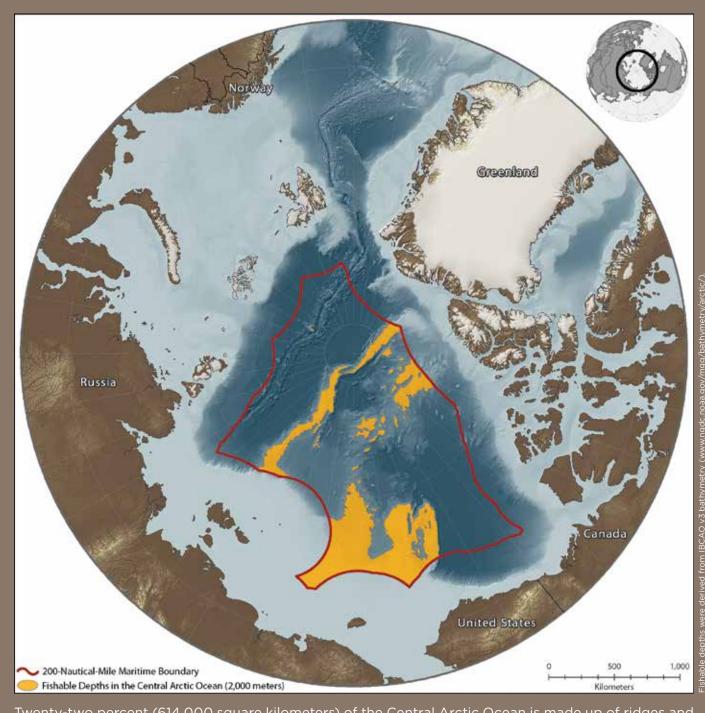




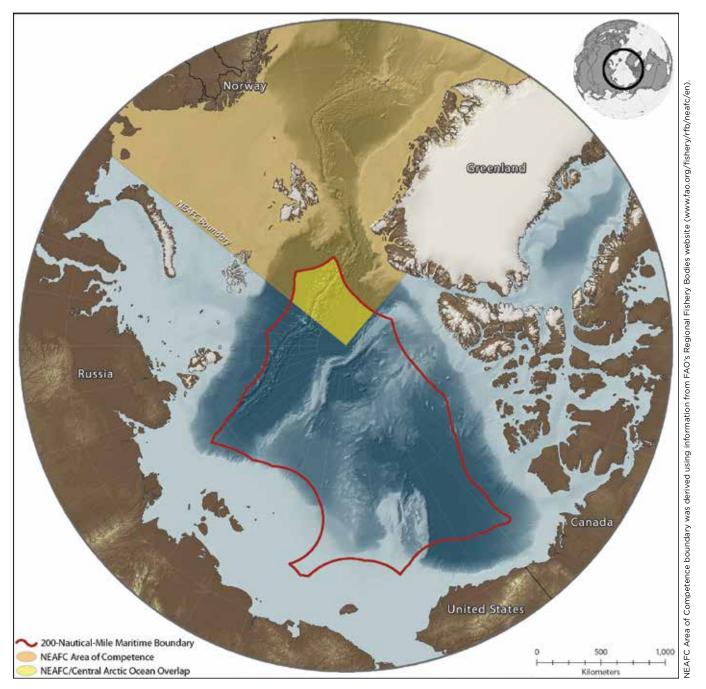
Sea ice data source: National Snow and Ice Data Center (http://nsidc.org)

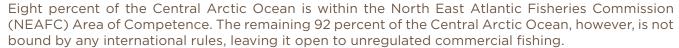


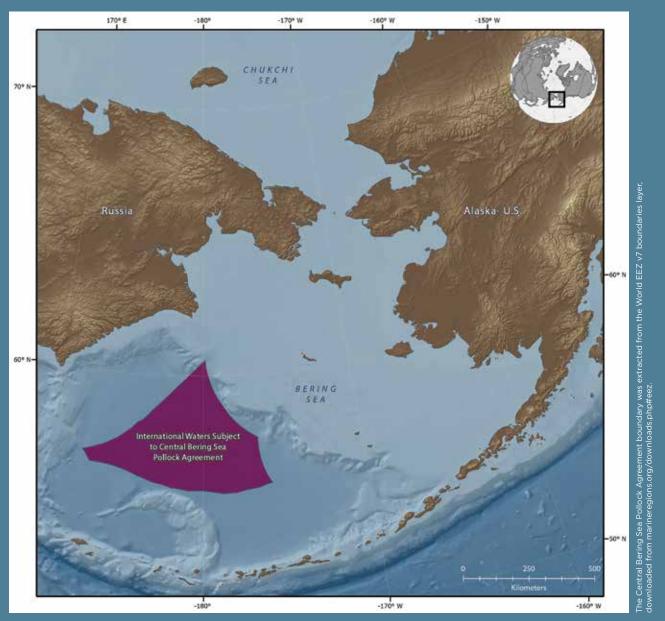
In summer 2012, four of the five Arctic coastal countries had open water on their maritime boundary with the Central Arctic Ocean.



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.







In the late 1970s and early 1980s, fishing fleets from South Korea, China, Poland, Japan, and other countries congregated in international waters in the central Bering Sea to catch pollock. The lack of scientific assessment and regulation led to overfishing, prompting the United States and Russia to seek an international response. The Central Bering Sea Pollock Agreement was signed by the United States, Russia, Japan, South Korea, Poland, and China and closed the area to pollock fishing until conservation conditions are met. It also established scientific standards and enforcement mechanisms. A similar agreement should be made before unregulated commercial fishing starts in the Central Arctic Ocean.

### www.arctic-fisheries-letter.com

### INTERNATIONAL SCIENTISTS URGE ARCTIC LEADERS: MORE THAN 2,000 SCIENTISTS found 1 counting have idented and the under of the second agreement to generation and agreement to generation agreement to ge Protect Fisheries in the Central Arctic Ocean The function



More than 2,000 scientists from 67 countries have signed a letter urging Arctic governments to develop an international agreement to protect fisheries in the Central Arctic Ocean based on sound scientific and precautionary principles. Those from the five Arctic coastal countries are leading the charge with more than 1,300 signatures.



É.	under feine Aufer bereichten einer um für dem Aufer-	built fit he is been dealers by here of	the state of the state of the state of the	near here a before this same three here into a
	Road holders from the second size in the second	these darks resource of other later, but a high index :	when you had not there say had been a house	- Mart Sectors is inside storm - and where with some stores.
	mante agreed high storingst investor of some on individual	within a pharman with the set into another of the set in the	" dor togened with most con "reside Represents that Landage II	student lowers " appropriate test, April, an easily a structure descent."
	or we'r og all. Mit, weller i'r tear'r yng weigine fef.	"wanted in Printing " has been body been been been and the printing of	Alternative rest and a second se	NAME AND ADDRESS OF TAXABLE PARTY AND ADDRESS OF TAXABLE PARTY.
-	considered and a residence state, place while story a	Proceedings of the first state of the second state.	WALLBOAR MARK ALL MARKED IN COMPARISON &	"HINE MERICAL TANK AND AND " MANA" ADDRESS.
20	"blins   10, balan M.S. Mongel Space & Tolk Woods	the foreign of the second seco	per the local difference in the second second	NOT PRESS IF THE SHAP WELL MINE B.P. MARKED
	House degree \$1.5 Station of Stated Livin Robert \$1.5	1 Mar. Hillings. M.M. Land, Physical, J. West, Nucl. Soll, 19884	In the International Control of Management and Advances of Street	"And South Fellowith J. Branne (S.S., Hara, Speed Science,
		Densities for France, Party Rev. M.H. Howard, Silling,	Submaring a little for fair the balance little and	Adapt. Here Steven, S.A. Specker (Mean of Mark Adult)
	and Robertog a list long (Ref.). How get the low to these Manufactures		new New Arris for Division Statements, Name of Street Street,	(Bits 5 Name Tech Village Street) (where taken) (hereigner Street)
		Hare Bull. And Consents a Roman Andy Bull. Internity of Performance.	And South Parks in Street Westminister (1)	West Consequences and a second state of the second strends of
		to have the state of the state	Standilly Fault, State States 1 (Figs. 1 ) and \$5.4, 101 (Figs. 10)	hine has balanced bars blin has been been been a
۰.		Warn' compositions - American, Apr. 7000141 - Home Sales	reading a fit will have a strend build be had	screet internation, App, "memory of Applications," international
		Mult, here a rule instanciation inter that we have	present of Participation Real Action Provide Georgenetics	- when between the orned to such that - when
	compared to these - the loss farged in the destruction where and	compare a design dani, dani, fearring or organ a cloud franger,	hand the present to have the day have a state of the	through their income of colleges, which has been then in-
				WARNEN STORES FOR THE MERICAL PROPERTY AND A
	IT WE YEAR TALKED AN TRUE A TWO THE NO. NOT	NUMBER OF STREET, STRE	have been by Transmissing Science Section Reads, Mary 11	THE R. P. LEWIS CO., LANSING MICH. 41, NO. 71

### PEW

The Arctic Ocean is encircled by five coastal states, but there is a significant portion of the central Arctic Ocean that lies outside the Exclusive Economic Zones (EEZs) of the Arctic rim nations. These international waters are not at present governed by any specific international fisheries agreements or regulations. Until recently, the region has been covered with sea ice throughout the year, creating a physical barrier to fisheries.

In recent summers, however, the loss of permanent sea ice has left open water in as much as 40% of these international waters. This region is no more remote from major fishing ports and fishing fleets than many areas of the world to which pelagic fleets travel already. A commercial fishery in the central Arctic Ocean is now possible and feasible.

The ability to fish is not the same as having the scientific information and management regimes needed for a well-managed fishery. The science community currently does not have sufficient biological information to understand the presence, abundance, structure, movements, and health of fish stocks and the role they play in the broader ecosystem of the central Arctic Ocean. Absent this scientific data and a robust management system, depletion of fishery resources and damage to other components of the ecosystem are likely to result if fisheries commence.

Although scientific research, observations, and modeling provide persuasive evidence of continued decrease of summer sea ice, far less is known about the present and future fisheries biology of these waters. Research is needed to develop a basic model of the central Arctic ecosystem, including estimates of abundance and distribution of potential target fish stocks and other key species in the food web

Data and analysis also will be required to understand the effects of fishing removals on other components of the Arctic Ocean such as seals, whales and polar bears and the effect this may have on the peoples of the Anctic who rely on those resources for their subsistence and way of life. Time and effort will be required before scientific knowledge improves to the level required to support sound fisheries management in this remote region.

The central Arctic Ocean provides both a challenge and an opportunity. The challenge is that exploratory fisheries, and subsequent claims of access to these international waters, could commence in the next few years. The opportunity is that the international community can take action now to protect these waters until we have the science and governance in place to ensure sustainable development of fisheries.

Now is the time for the international community to create a precautionary management system for central Arctic Ocean fisheries. Such a system should postpone fishing activity until such time as the biology and ecology of the region are understood sufficiently well to allow for setting scientifically sound catch levels. Such a system should also require that a robust management, monitoring, and enforcement regime be established before fishing is allowed. This system should be put in place before sea ice retreats farther, before fishing begins and political pressure increases, and before precautionary management is no longer an option.

We, the undersigned scientists, call on Arctic advertments to take a lead in developing an international agreement to address fisheries in the central Arctic Ocean, based on sound scientific and precautionary principles, and starting with a catch level of zero as a reflection of the state of understanding of the fisheries ecology of the region.

(The scientists who have signed this letter have done so in their personal capacities. Institutional affiliations are provided only for identification purposes, and do not imply any institutional position on Arctic Ocean fisheries.)

	David Sarber, Ph.D., Centre for Earth Observation Science, University of Manitoba, Canada	Peter Rack Moller, Ph.D., Natural History Museum of Denmark, University of Copenhages, Denmark
the	Stanislav Ne. Belikov, Ph.D., All-Russian Research Institute for Nature Protection, Moscow, Russia	Daniel Pauly, Ph.D., Fisheries Centre & Zoology Department, University of British Columbia, Canada
	M.V. Rint, Ph.D., Shishov Institute of Oceanology, Aussian Academy of Sciences, Moncow, Russia	Alan Springer, Ph.D., School of Fisheries and Ocean Sciences. University of Fairbanks Alaska, USA
	Acciae Grebmeier, Ph.D., Cheraposiae Biological Laboratory, University of Maryland Center for Environmental Science, USA	Paul Wessmann, Ph.D., Faculty of Biosciences, Fisheries and Economics, University of Transa, Norway
100	Henry R Huntington, Ph.D., Pew Environment Group, Eagle River, Alaska, USA	

## MOMENTUM TOWARD AN AGREEMENT ngdom of Denmark

One Rundred Teath Congress United States of Americ TTHE S



Strategy for the Arctic 2011-2020

**2008: U.S.** law enacted making it government policy to pursue a fisheries agreement for the Central Arctic Ocean.



**2011: The Kingdom of Denmark** revises its Arctic policy to include a call for fisheries regulation before commercial fishing starts in the Central Arctic Ocean.



**Canada** issues a statement saying any commercial fisheries in this area must be based on international rules.



**Russia's** Expert Council on the Arctic and Antarctic issues a recommendation advising the chairman of the country's Council of Federation (the upper legislative house) that Arctic countries should cooperate to form a new international fisheries agreement preventing unregulated commercial fishing in the Central Arctic Ocean.



Scott Highleyman, director, International Arctic program The Pew Charitable Trusts +1 360-715-0063



### THE PEW CHARITABLE TRUSTS' INTERNATIONAL ARCTIC CAMPAIGN

is working with Arctic countries, scientists, the fishing industry, and indigenous peoples to achieve expanded support for an agreement that would protect the international waters of the Central Arctic Ocean and its living marine resources from unregulated or unsustainable commercial fishing.

Copyright © 2013 The Pew Charitable Trusts. All Rights Reserved.