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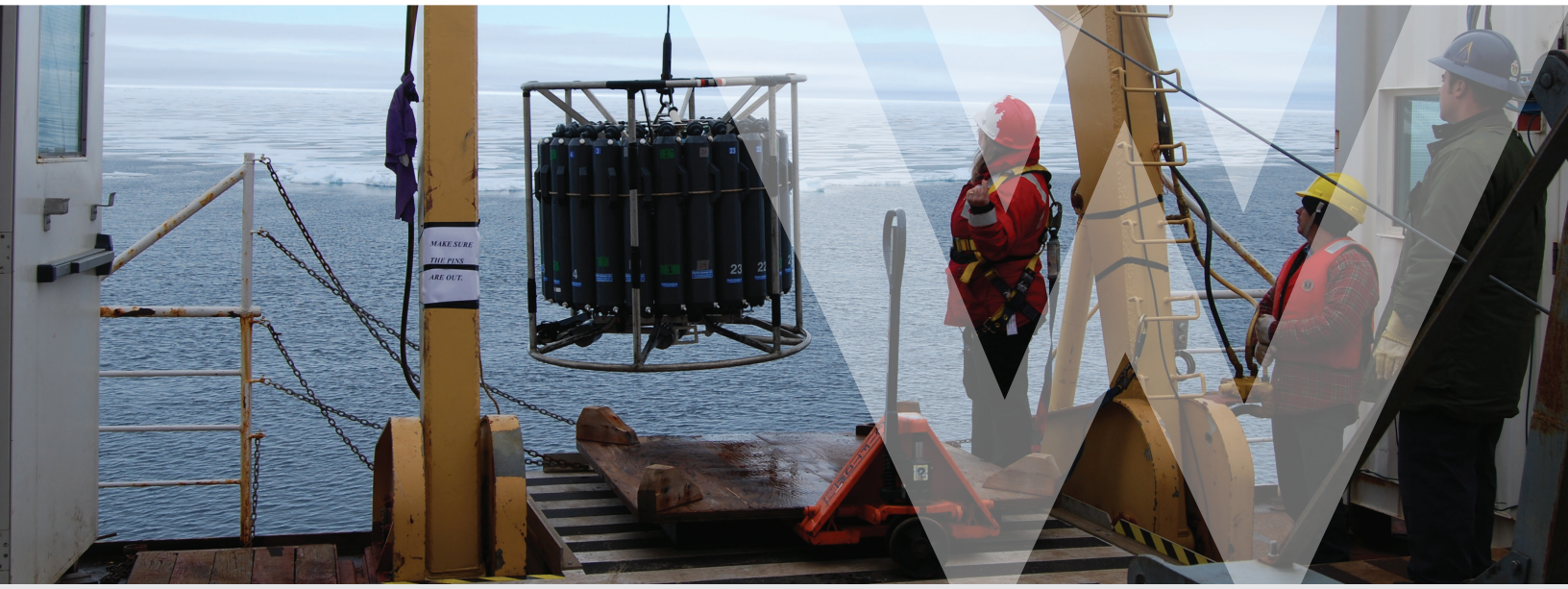

Deployment of a "rosette" from the CCGS Louis S. St-Laurent to take samples of the Beaufort Sea water column

How Non-Government Actors Helped the Arctic Fisheries Agreement

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GEOGRAPHY OF THE HIGH SEAS AND EEZS IN THE ARCTIC AND SUBARCTIC

Under the provisions of the 1982 *United Nations Convention on the Law of the Sea (UNCLOS)* (United Nations 1982), coastal states can exercise jurisdiction over fisheries zones/Exclusive Economic Zones

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(EEZs) extending 200 nautical miles seaward from coastal baselines. In some instances, the EEZs of adjacent and/or opposite states are geographically positioned such that they totally enclose an area of the "high seas" outside their fisheries jurisdiction. Vessels from any state in principle have the right to fish in these high seas areas, unless they have entered into an international agreement specifying otherwise.

There are a number of such high seas areas in the Arctic and sub-Arctic region (Figure 1). These have imaginative names such as the Norwegian Sea "Banana Hole" (surrounded by the EEZs of Norway, Greenland, the Faeroe Islands and Iceland); the Barents Sea "Loop Hole" (surrounded by the EEZs of Russia and Norway); the "Peanut Hole" in the Sea of Okhotsk (surrounded entirely by the Russian EEZ), and the Bering Sea "Donut Hole" (surrounded by the EEZs of Russia and the United States). The largest such high seas area is the Central Arctic Ocean (CAO) (surrounded by the EEZs of Canada, Denmark/Greenland, Norway, Russia and the United States), which has an area of approximately 2.8 million sq. km., virtually the same size as the Mediterranean Sea.

The experience with overfishing in the high seas of the Bering Sea Donut Hole (Bailey 2011) was a key driver in the desire to avoid a similar situation in the CAO, where summer sea ice recession has created at least potential fisheries access. In 1987 fishing vessels from China, Japan, the Republic of Korea and Poland caught 1.7 million tons of pollock (*Theragra chalcogramma)* in the Donut Hole. By 1992, vessels from these states only managed to catch 10,000 tons. This collapse has been described as: "… the most spectacular fishery collapse in North American history, dwarfing the famous crashes of the northern cod and Pacific sardine

FIG. 1 - Arctic and Sub-Arctic High Seas

Map concept courtesy of Ocean Conservancy (with permission)
Based on a presentation by Dr. Vyacheslav Zilanov at the "GLACIER" Conference (AK) on August 31, 2015
Source: Flanders Marine Institute (2019a)

CCGS Louis S. St-Laurent in the Beaufort Sea

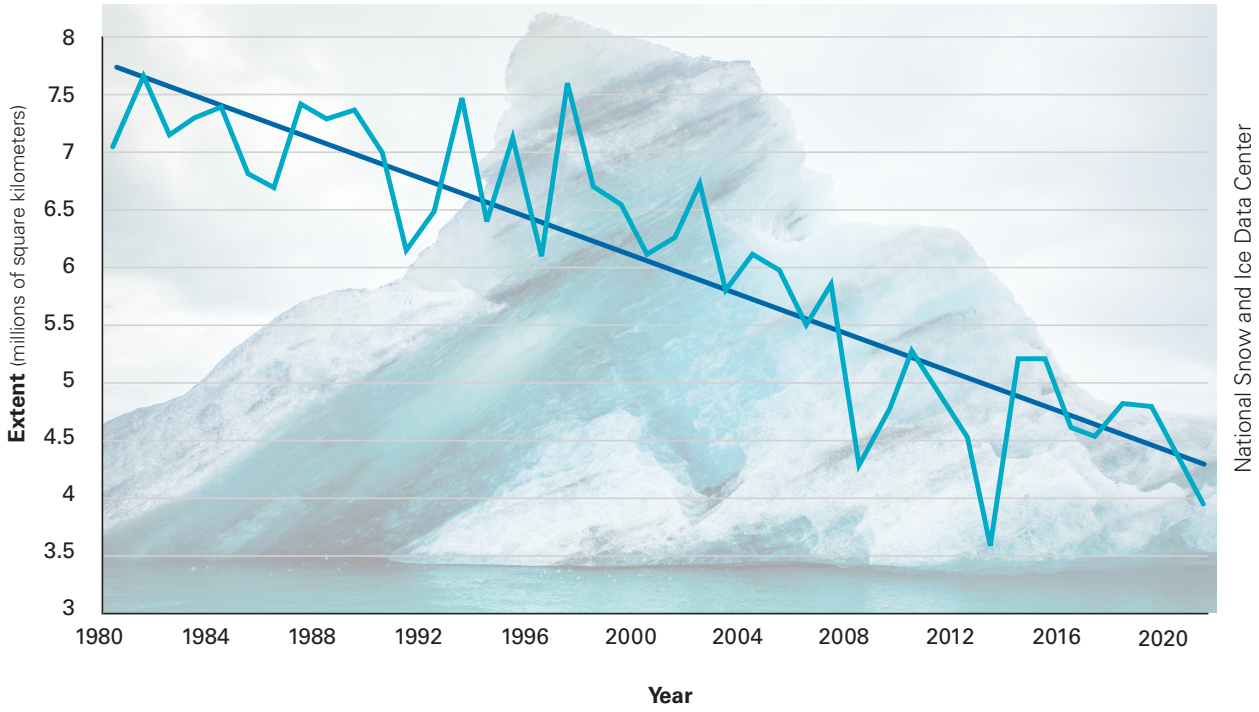
(Sarinus sagax)" (Bailey 2011). Negotiations began in earnest in the early 1990's to develop a treaty to deal with the situation in the Donut Hole (Balton 2001). Those negotiations ultimately produced the *Convention on the Conservation and Management of Pollock Resources in the Central Bering Sea* concluded in 1994, but the conclusion of that treaty came too late to prevent the crash of the once valuable pollock stock (NOAA 1994).

If this story were to be repeated in the CAO for its fish population, it would be potentially disastrous for the entire Arctic marine ecosystem (Zou and Huntington 2018).

THE CENTRAL ARCTIC OCEAN: DIMINISHING SEA ICE

Arctic sea ice is undergoing very rapid change. Freeze-up in the fall is happening later in the year, and ice-melt in the spring is occurring earlier than has been the case historically. Sea ice extent, thickness and geographical distribution are all diminishing on average (NSIDC 2020). The CAO remains fully or partially ice-covered from October to May, but at some year likely prior to 2050 the CAO could well be ice-free for a period of time during the summer months (NOAA 2020).

FIG. 2 - Average Monthly Sea Ice Extent (September 1979-2019)



NSIDC Sea Ice Index: https://nsidc.org/data/G02135/versions/3
ftp://sidads.colorado.edu/DATASETS/NOAA/G02135/north/monthly/data/

Minimum extent of Arctic sea ice usually occurs in mid-September. As can be seen in Figure 2, the downward trend in spatial coverage is significant. In 2012 minimum sea ice coverage was the lowest on record, and it has now been confirmed by the National Snow and Ice Data Center (NSIDC) that 2020 was the second lowest on record (NSIDC 2020a).

The reduction in sea ice is the greatest in the "Pacific Sector" of the Arctic Ocean (Figure 3). In this figure, the EEZs of Canada, Denmark/Greenland, Norway, Russia and the United States are shown by a continuous line which surrounds the high seas portion of the CAO. Notional fishable depths (less than 2,000 metres) are shown in the red area.

Given the sea ice trends, it is feasible that at some future date fishing vessels could enter the CAO via the Bering Strait and – unless a regulatory regime is in place – embark in an unregulated commercial fishery. The paucity of scientific knowledge about the marine ecosystem of the CAO means that such a scenario could be catastrophic. This potential crisis has led to significant action by a number of affected states, other jurisdictions and parties including Indigenous communities and organizations.

FIG. 3 - The Central Arctic Ocean
Arctic EEZ's; summer sea ice extent; fishable depths

Map concept courtesy of Ocean Conservancy (with permission)
Sources: Sea ice extent: F. Fetter et al. 2017 (updated daily). 200 NM maritime boundary: Flanders Marine Institute 2019. Fishable depths: GEBCO Compilation Group 2020. 200 NM maritime boundary: Flanders Marine Institute (2019). Fishable depths: GEBCO Compilation Group 2020

GOVERNMENT ACTIONS

Faced with the potential for a Bering Sea "Donut Hole" type disaster in the CAO, a number of governments have been pro-active in developing preventive measures.

In 2008 a Joint Resolution of the U.S. Congress resulted in Public Law 110-243:

"Directing the United States to initiate international discussions and take necessary steps with other Nations to negotiate an agreement for managing migratory and transboundary fish stocks in the Arctic Ocean" (United States Congress 2008).

In 2010 the United States effectively closed its EEZ north of Alaska to commercial fishing. Canada followed suit in 2014: the "Beaufort Sea Fish Management Framework", which was a partnership between the Department of Fisheries and Oceans (DFO), the Inuvialuit Regional Corporation, the Inuvialuit Game Council and the Fisheries Joint Management Committee. It determined "Potential commercial fisheries will only be considered in light of scientifically supportable estimates of surplus and sustainable stocks" (Fisheries and Oceans Canada 2009).

Following several rounds of bilateral discussions, in February 2014 Canada, Denmark/Greenland, Norway, Russia and the United States issued the "Nuuk Statement" calling for action on the CAO issue (Pew Charitable Trusts 2014). These same states signed the non-binding "Oslo Declaration" the following year in which they agreed not to allow their commercial fleets to fish in the CAO until such time as there is a sound scientific base and an appropriate management regime in place (Norway 2015).

The Oslo Declaration also recognized that other nations/jurisdictions with distant-water fishing capacity needed to be engaged on this issue. In December 2015, negotiations began among the five states that signed the Oslo Declaration as well as China, the European Union (which has competence over fisheries policy on behalf of its member states), Iceland, Japan and the Republic of Korea. Six negotiating sessions were held in Washington D.C. (December 2015, April 2016, November 2017); Iqaluit, Canada (July 2016); Tórshavn, Faeroe Islands (November 2016); and Reykjavik, Iceland (March 2017), with an agreement reached at the final meeting in Washington D.C. in November 2017. The legally binding "Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean" was signed by all ten in Ilulissat (Greenland) on October 3rd, 2018 (Fisheries and Oceans Canada 2018; Ocean Conservancy 2018). As of August 2020, all Signatories except China had completed the ratification process for the Agreement.

Once it enters into force, the Agreement will commit the parties not to authorize their vessels to engage in commercial fishing in the high seas portion of the CAO. The Agreement also provides for a "Joint Program of Scientific Research and Monitoring" (JPSRM) in Article 4. The Agreement will be in place for sixteen years, renewable in increments of five years unless any Party objects.

Meetings of scientific experts on fish stocks in the CAO (FiSCAO) was also convened, some of which took place in parallel with the diplomatic negotiations. Five have been held to date, from Anchorage, Alaska, in June 2011 to Ottawa, Canada, in October 2017 (FiSCAO 2018). These meetings reviewed available information about the physical and biological environment in the CAO and surrounding seas and identified potential research and monitoring activities as well as needs for data management and related topics. To prepare for creation of the JPSRM, preliminary scientific meetings have been held in Arkhangelsk, Russia, in April 2019 and in Ispra, Italy, in February 2020, though creation of the actual program will occur only after the Agreement comes into force.

INVOLVEMENT OF ARCTIC INDIGENOUS PEOPLES

Article 4.4 of the Agreement requires that "the Parties shall ensure that the JPSRM takes into account the work of relevant scientific and

A midsummer night in the Beaufort Sea

technical organizations, bodies and programs, as well as indigenous and local knowledge, " laying a foundation for establishing a formal relationship with Indigenous Peoples. The Inuit Circumpolar Council (ICC), a major international non-government organization representing approximately 180,000 Inuit of Alaska, Canada, Greenland, and Chukotka (Russia), was one of the most active, and welcomed enthusiastically the signing of the 2015 Oslo Declaration. The ICC remained involved in developing the Agreement and in particular, has worked with the Signatories (including participation at Signatories' events) to highlight the importance of Indigenous Knowledge and how it should be utilized in the scientific research program to be established under the Agreement.

As an increasing number of nations demonstrate interest in the Arctic, the Inuit have conveyed the importance of their engagement in international decision-making. At its General Assembly in Alaska in 2018, the ICC signed the Utqiagvik Declaration, a strategic document that outlines some of the ways forward for Inuit on issues ranging from education and economic development, to wildlife management and food security (Inuit Circumpolar Council 2018). Of note, the document has a section exclusively dedicated to Indigenous Knowledge," defined as "a systematic way of thinking applied to phenomena across biological, physical, cultural and spiritual systems and includes insights based on evidence acquired through direct and long-term experiences and extensive and multigenerational observations, lessons, and skills." In this section, ICC is instructed "to engage appropriate international forums … in all aspects of Arctic science and research… contributing to activities that achieve partnerships and reflects the utilization of both Inuit Knowledge and science." Also, in support of Inuit sustainable development goals defined in the Declaration, specific reference is made to "Utilize Indigenous Knowledge to advise all future processes of the Central Arctic Ocean Moratorium on Commercial Fisheries."

Efforts are underway to achieve this. In 2020, ICC Canada is leading the organization and conduct of a series of online roundtables involving circumpolar

Inuit representatives, the timing of which has been interrupted by the travel restrictions and other measures taken in response to the COVID-19 pandemic. The purpose of the roundtables is to discuss and contribute to developing approaches/options/models for (a) Indigenous involvement in the implementation of the Agreement (in particular the JPSRM); and (b) the acquisition, contribution and integration of Indigenous Knowledge and local knowledge in the work associated with the JPSRM. The first virtual roundtable, organized by the ICC Canada, was held on June 29, 2020.

CONTRIBUTIONS OF NON-GOVERNMENT ACTORS

The negotiation of the CAO Fisheries Agreement happened relatively quickly. The formal negotiations took just less than two years, in part because they built on previous bilateral discussions as well as the work of the original five coastal states that had culminated in the Oslo Declaration.

Equally important, but for different reasons, were a number of activities and meetings that were organized *outside* the formal negotiation process with the intention of promoting a broader dialogue on and awareness of CAO fisheries issues, while potentially informing the negotiators and negotiations.

Pressure/Advice from the Global Science Community

Many scientists around the world had expressed concern about the potential for an unregulated and potentially devastating commercial fishery in the CAO as they observed the changes in sea ice conditions in the CAO. In 2012 over two thousand scientists signed an "open letter" to governments and other decision-makers, pressing for international action to prevent yet another ecosystem catastrophe (Pew Charitable Trusts 2012). The letter received significant attention at the International Polar Year (IPY) Conference "From Knowledge to Action," which was held in Montreal in April 2012 and attended by over 3,200 participants.

The letter received wide coverage and, according to many, was an important driver in promoting action by governments. Indeed, Ambassador David Balton – who chaired the CAOFA negotiations – has written that:

> In 2012, at an International Polar Year meeting in Montreal, some 2000 scientists put their names on an open letter that stated, in pertinent part:
>
> > 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 further, before fishing begins and political pressure increases, and before precautionary management is no longer an option.
>
> Buoyed by such public support, the five States whose fisheries zones surround the high seas pocket in the Central Arctic Ocean began formal negotiations, which culminated in their signing the Oslo Declaration in 2015 (Balton, 2018).

In addition, Central Arctic Ocean scientific questions continue to be discussed at the annual Arctic Science Summit Week (ASSW) conference (organized by the International Arctic Science

Committee (IASC)) and in other venues, helping identify what can be done and how to support the aims of the CAO Fisheries Agreement. Several scholarly papers have been written about the CAO Fisheries Agreement, most regarding policy aspects and international relations, though some (Van Pelt et al. 2017) about scientific research needs.

The CAO Asia Dialogues

Following the signing of the Oslo Declaration, the need to engage other jurisdictions became evident, particularly Asian states that have the distant-water fleet capacity to undertake commercial fishing in the CAO. This led to a series of non-governmental CAO *"Asia Dialogues"* (Shin and Harrison 2019). Participants in the *Dialogues* included individuals who also served on their national delegations during the negotiations of the CAO Agreement. In the opinion of a number of these participants, the Dialogues were effective in broadening the understanding of the issues at hand and in helping to raise questions about how to proceed with the necessary science and how to organize its coordination.

1. Shanghai, January 2015

The first dialogue, the "Roundtable on Central Arctic Ocean (CAO) Fisheries Issues", was held on January 15th and 16th, 2015 at Tongji University (Shanghai) to:

> "assess how precautionary approaches can be applied in the CAO prior to any commercial fishing activity taking place".

This Roundtable brought together experts from different backgrounds and jurisdictions and, since it took place prior to the beginning of formal negotiations later that year, focused on "why an Agreement was needed" and "what it should look like".

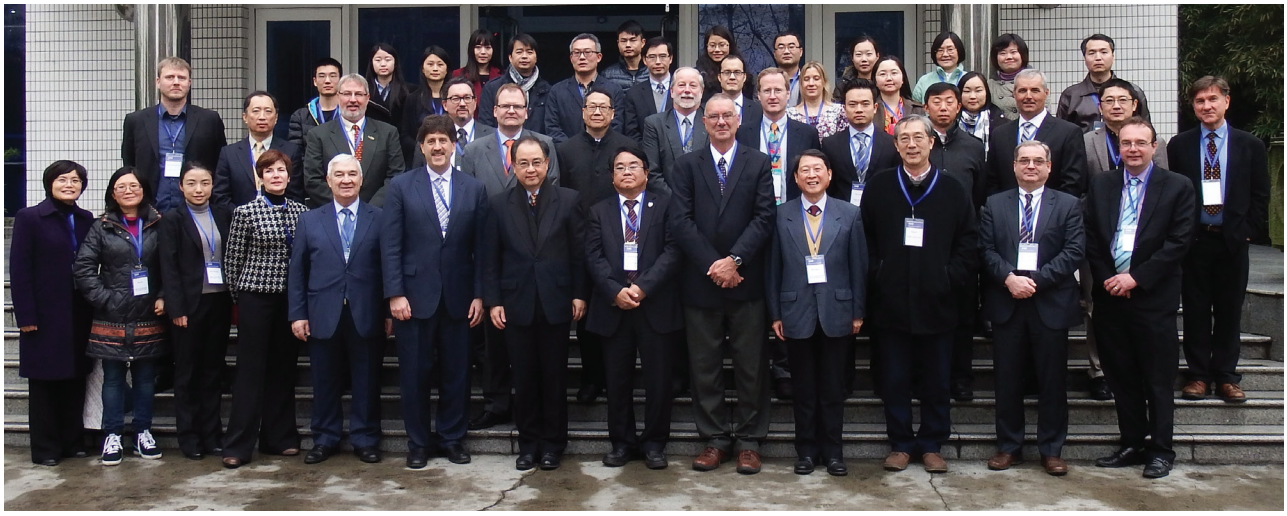
The Roundtable recognized that commercial fishing in the CAO was unlikely in the near future - but could occur at some point. It was therefore urgent to develop an agreement with interim measures that included major Asian fishing jurisdictions such as China, Japan and the Republic of Korea. The need for scientific evidence and data sharing led to the importance of a focus on science and international scientific cooperation in any eventual agreement. Indeed, the China, Japan and the Republic of Korea have significant Arctic research capacity, and stronger links with the international scientific community should be developed and supported. The need for an "international scientific advisory body" for the CAO was also identified.

2. Incheon, March 2016

The second *Asia Dialogue* took place at the Korea Polar Research Institute (KOPRI) (Incheon) on March 30th and 31st, 2016. It was entitled: "Roundtable on Ecosystem and Fisheries Issues in the Central Arctic Ocean (CAO)." Negotiations including all ten jurisdictions had begun the previous December, so the context of this roundtable was significantly different than the Shanghai event.

This Roundtable noted that instruments such as UNCLOS and the 1995 United Nations Fish Stocks Agreement provided a sound basis for an eventual agreement on CAO fisheries, and that the existing trust and peaceful relations in the Arctic region boded well for a positive outcome to the negotiations. Applying the "precautionary approach" was seen to be an absolute necessity, and there was consensus that effective management of Arctic marine resources requires both scientific understanding and the involvement of stakeholders and communities, including Indigenous Peoples.

Critically, it was concluded that until the right information and knowledge is in hand, "it would be unwise to allow a commercial fishery in the CAO" and while the CAO issue is fisheries-focused, the



Participants at the Roundtable on Central Arctic Ocean (CAO) Fisheries Issues, *Tongji University, Shanghai, January 15-16, 2015*

science should focus on the marine ecosystem, not just a potential commercial fishery (which in fact is reflected in the final agreement). This will require an interdisciplinary approach based on the establishment of shared goals, data standards, and data bases.

Looking to the future, the Roundtable concluded, even more vehemently than at the Shanghai roundtable, in the event of a successful agreement, consideration should be given to the creation of a dedicated, independent science co-ordinating organization for the CAO to lead and facilitate the ensuing scientific process.

3. Sapporo, December 2016

The third *Asia Dialogue* took place at the Arctic Research Center, Hokkaido University (Sapporo) December 16 – 18, 2016 in the form of a "Working Session" on the specific key topic that had been raised in the previous *Dialogues:* "An International Coordinating Organization for the Central Arctic Ocean (CAO)". Official negotiations had progressed sufficiently by this time that it was evident that this topic had become an important issue to be sorted out quickly upon the finalization and entry into force of an agreement. However it is done, developing a science base for decisions in the CAO will require significant cooperation and coordination among jurisdictions and existing science/research organizations such as the International Council for the Exploration of the Sea (ICES), the Pacific Arctic Group (PAG), the IASC and a number of others.

The working session also focused on a mandate for and the principles governing such a potential organization. The vision was to create a platform to determine the scientific priorities and monitoring requirements under the Agreement, to integrate CAO research with existing scientific efforts, and to provide appropriate analysis for decision-making by the Parties to the Agreement.

The proposed organization would employ ecosystem principles and would involve participation by all Parties to the Agreement as equal partners.

Provision would be made for the direct participation by Indigenous Peoples/Indigenous Knowledge holders and local representatives in CAO scientific endeavours. Open data sharing and transparency for all data acquired in the CAO under the Agreement would be a central tenet. And, importantly, any such new organization should be modest in size with a small secretariat to serve as coordinator of activities, keeper of records, and a point of international contact.

4. Incheon, December 2018

The fourth *Asia Dialogue,* a one-day Workshop on the implementation of the recently signed Agreement, was held at the Korea Polar Research Institute (KOPRI) (Incheon) on December 6th, 2018, just prior to the *Arctic Circle Forum 2018* - which was took place in Seoul on December 7th and 8th, 2018. The purpose of the Workshop was to help maintain the momentum on the implementation of the CAO Fisheries Agreement and to present an update thereon to the Arctic Circle Forum.

The format of the Workshop was significantly different from the previous three Dialogues. Specific presentations were made on 1) the Provisions of the CAO Fisheries Agreement: context, history and conditions for future success; 2) Indigenous (Inuit) involvement in the Agreement; 3) the challenges and opportunities in implementing the Agreement; 4) Science and the Agreement 5) an update on the ICES/PICES/PAME working group (WGICA) on an integrated ecosystem assessment for the CAO (ICES 2019); and 6) a step-wise progression to fisheries ecosystem-based science in the CAO: a Pacific to Pan-Arctic perspective.

The participants further refined the recommendation of the Sapporo *Dialogue* that a stand-alone science organization should be created. The proposal that received unanimous support was that even before the creation of a formal organization, the Parties to the Agreement would usefully consider the creation of an interim CAO Fisheries Science Committee.

This Workshop conclusion was reported out to the participants at the *Arctic Circle Forum* the following

Dangerous summer sea ice conditions: "growlers" and "bergy bits" in the Beaufort Sea

day and received both recognition and support.

More recently, two of the key contributors to the negotiation process have reviewed the challenge of creating a CAO science program and a scientific organization within the context of existing Arctic Ocean governance institutions – particularly the Arctic Council and IASC (Balton and Zagorski 2020). They too have concluded that the special nature of the CAO and its ecosystems requires the creation of a stand-alone science organization and posit a potential role for IASC in future CAO science, including the potential to coordinate the overall CAO science effort.

LOOKING AHEAD

As ratification/approval of the Agreement got underway, the Signatories began preparatory work to ensure prompt and smooth entry into to force, maintaining momentum. Since the signing of the Agreement in October 2018, several events have taken place including: the First Preparatory Meeting of the Signatories (May 29-30, 2019 – Ottawa, Canada); Co-production of Indigenous and Science Knowledge Workshop (November 13-14, 2019 Yellowknife, Canada); and the first Meeting of the Provisional Scientific Coordination Group (February 11-13, 2020 Ispra, Italy). A Preparatory Conference for the Agreement (meeting of the Signatories) is being planned for later in 2020/early 2021, and it is possible that by then the Agreement will have come into force (as noted above, as of August 2020 all of the signatories except China have completed the ratification process).

CONCLUSION

The CAO Fisheries Agreement is a landmark in both conservation and Arctic governance. It applies a precautionary approach involving China, the European Union, Japan, and the Republic of Korea as equal partners on a critical Arctic initiative, and formally recognizes the involvement of Indigenous Peoples in the Agreement's scientific activities, including taking into account Indigenous Knowledge and local knowledge. The Agreement matches actions taken by Canada and the United States within their Arctic EEZs and is an outcome of government initiative and effective diplomacy. That said, the Agreement did not come about in a vacuum, but with the engagement of civil society in organized and constructive ways. The 2012 letter from over 2000 scientists helped show that the importance of preventing illegal and unregulated fishing in the CAO was recognized around the world, and that prompt action by governments could avert such an outcome. The *Asia Dialogues* provided a means of engaging academics and officials in China, Japan, and the Republic of Korea beyond the formal negotiating sessions.

In this way, the ideas behind the Agreement could be raised and discussed, building a degree of mutual understanding and trust. The progression of discussions through the four dialogues illustrates this journey in parallel with the negotiations, as an idea that had started in one country became the shared accomplishment of all ten working on equal terms. Concerns that the coastal states were acting to protect their own EEZs at the expense of access by others (e.g., Zou and Huntington 2018) were allayed alongside concerns that the others might be seeking short-term advantage over long-term ecosystem health. It is worth noting that even amid wider tensions among many of the signatories, all

ten cite the CAO Fisheries Agreement as a powerful example of what can be accomplished through cooperation and a commitment to basic principles of conservation. As the Agreement is implemented over time, the involvement of organizations such as the ICC will continue to be essential for success.

The involvement of non-government actors may not have been the ultimate deciding factor that led to the conclusion of the CAO Fisheries Agreement. But it is fair to state that the parallel dialogues and similar actions outside the scope of the diplomatic negotiations contributed toward a wider and better-informed engagement of experts and interested parties. Understanding and trust was built over time among different stakeholders, from repeated interactions often in different settings. This would not have been possible had it been limited to a single approach or only an official mode of communication. The development of the CAO Fisheries Agreement is a testament to the power of multi-pronged engagement and a willingness to cooperate. Non-government actors may be able to further pursue a more significant role in advancing the Agreement, such as facilitating the dialogue between science and Indigenous Knowledge.

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