Institutional navigation of oceans governance: Lessons from Russia and the United States Indigenous multi-level whaling governance in the Arctic

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Institutional navigation of oceans governance: Lessons from Russia and the United States Indigenous multi-level whaling governance in the Arctic

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A B S T R A C T

Oceans governance occurs through overlapping, multi-level institutions that often fail to recognize Indigenous sovereignty and self-determination. The International Whaling Commission (IWC) provides pathways for recognizing Indigenous rights. However, observed power asymmetries and cross-level local to international conflicts threatened subsistence rights and generated research and advocacy fatigue for Chukchi, Iñupiat, Saint Lawrence Island Yupik, and Siberian Yupik communities in the USA and Russia. We conduct an institutional analysis of Indigenous bowhead whaling governance based upon lived experiences of Indigenous authors, primary documents from co-management organizations, national agencies, the IWC, and extant literature. We explore how Indigenous co-management organizations increased sovereignty and self-determination for communities whose culture, identities, livelihoods, and origins are intimately connected to marine mammal hunting. Our study also provides lessons for the United Nations Decade for Ocean Science on the challenges of institutional navigation and the role of embodied resurgent practice amongst Indigenous communities within Earth system governance.

1. Introduction

The UN Decade for Ocean Science provides an opportunity to assess gaps in our understanding of oceans, human-ocean relationships, and how to govern these spaces to address sustainable development goals (Claudet et al., 2020).[1] However, less attention has been paid to Indigenous whaling within a multi-governance context and its intersections with embodied resurgent practice (Simpson, 2017; Stephen R. Braund & Associates, 2018b). Arctic Indigenous communities developed complex and heterogenous local governance regimes (Grey and Kuokkanen, 2020), including extensive customary laws and practices that co-evolved with hunting over millennia (Huntington et al., 2021). But, modern national and international whaling governance largely excluded Indigenous communities until the 1970s (Camerino, 1978 Chiropolos 1994; Young, 2010). The International Whaling Commission provided pathways for the recognition of Indigenous rights. Yet, observed power asymmetries and cross-level local to international conflicts threatened subsistence rights and institutions and generated research and advocacy fatigue (Lubell and Morrison, 2021) for Chukchi, Iñupiat, Saint Lawrence Island (SLI) Yupik, and Siberian Yupik communities. The evolution of whaling governance over the past half-century reflects (in part) global Indigenous movements embracing embodied resurgent practice and efforts of Indigenous communities to re-embed governance within long-enduring institutions, self-determination, sovereignty, and place-based relationality (Simpson, 2017).

We use the case of whaling governance to explore the role of embodied resurgent practice and institutional navigation within Earth system governance - the case provides insights into how communities

Abbreviations: IWC, International Whaling Commission; AEWC, Alaska Eskimo Whaling Commission; UN, United Nations; UNDRIP, United Nations Declaration of the Rights of Indigenous Peoples; DOI, Department of Interior; NOAA, National Oceanic and Atmospheric Administration.

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[1] An extant literature focuses on the emergence and implementation of international whaling agreements (e.g. Young 2010), understanding how these are connected to and spring from social imaginaries (Rethman, 2009), intersection of endangered species law and Indigenous whaling (e.g., Chiropolos 1994) and the ongoing tensions about the right to whale, particularly from anti-whaling interests (Ohmagari 2005).

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navigate, resist, and reshape multi-level oceans governance. The case illustrates how international conservation focuses on settler states' priorities and scientific knowledge often leading to Indigenous communities' fatigue, especially associated with continuous demands for research and advocacy (see Lubell and Morrison, 2021). We provide evidence of the importance of cross-level (local to international) and cross-domain (environmental, legal, economic) policy dynamics for sustainable oceans governance.

2. UN decade of Ocean Science

Both the 2030 Agenda for Sustainable Development (United Nations, 2015) and the Paris Agreement in 2015 explicitly acknowledged the critical role of the world's oceans in sustainable global futures. Following the proposal of the Intergovernmental Oceanographic Commission (IOC) of UNESCO, the United Nations General Assembly proclaimed the 2021–2030 decade an international Decade of Ocean Science for Sustainable Development. The idea of an Ocean Decade is to encourage full engagement across all ocean actors within a framework to implement ocean-related Agenda 2030 priorities. The Decade promotes the implementation of science-based fisheries management. It aims to provide scientific support to countries to achieve the Sustainable Development Goals and Aichi Biodiversity Targets. Sustainable Development Goals (SDGs) also explicitly consider Indigenous rights. Yet, Degai and Petrov (2021) argue there remains a need to Indigenize the SDGs, such as connecting more deeply to place and focusing on multi-generational embodied knowledge and practice, particularly within the Arctic context.

To put the Ocean Decade in place, the UN-mandated the IOC to develop and present an Implementation Plan (UNESCO-IOC, 2015). This effort to reverse the decline in the ocean's health was initiated and developed during a global pandemic, which demanded finding new (virtual) ways of solving problems related to the ocean. COVID-19 revealed new priorities and opportunities for the UN Ocean Decade. It highlighted the importance of science, its vital role in addressing the SDGs, and the importance of diverse knowledge systems, including Indigenous knowledge (Haas et al., 2021). The Implementation Plan recognizes the increasing complexity and dynamism of the world. A detailed monitoring and evaluation framework facilitates tracking of outcomes and achievements of the Ocean Decade (UNESCO-IOC, 2015).

Whaling governance is an important component of oceans governance - providing examples of the earliest bi-lateral oceans agreements amongst modern nation-states (Deal and Tomlins, 2016; Sellheim, 2020) and long enduring Indigenous governance systems (Huntington et al., 2021; Sakakibara, 2020). Investigating the whaling policy space provides lessons for multi-level oceans governance more broadly and contributes to the goals of the UN Ocean Decade. Yet the case below, also highlights the need for more place-based research, which in the future could be leveraged for comparative Earth system governance scholarship.

3. Extant governance literature

There are numerous calls to better understand how Indigenous communities navigate Earth system governance (see for example Burch et al., 2019; Kashwan et al., 2020); our work explores Indigenous governance intersections that cross national boundaries and feedback to international, national, and subnational governance processes. Using an institutional navigation framing (Lubell and Morrison, 2021), we examine how national and international governance systems shaped and sought to limit Chukchi, Iñupiat, SLI Yupik, and Siberian Yupik communities' self-determination and sovereignty. Then we explore how IWC policies, influenced by marine mammal conservation movements in the 1970s and 1980s, further threatened critical subsistence whaling rights. Building upon this institutional background, we turn our attention to how embodied resurgent practice and collective action amongst Indigenous Peoples ultimately reshaped multi-level whaling governance.

Oceans and whaling governance, like governance more generally, occurs through institutions (defined as rules, norms, and shared strategies (Ostrom, 2005)) that shape human decisions at all levels, from individual and household behaviors to nations joining international agreements (York et al., 2021). Indigenous institutions, including long-enduring rules and norms and more recent practices of Indigenous sovereignty and self-determination, exist within a multi-level governance system. Oceans governance extends beyond national boundaries and includes multiple policy domains (Shivakoti et al., 2021; Stokke, 2013; Young, 1996). Thus, oceans governance exemplifies multi-level governance with multiple government and non-governmental entities engaging in policymaking and decision-making across jurisdictions (Hooghe and Marks, 2003; Stephenson, 2013). Frequently, institutions in one environmental space affect another; Young (1996) characterized overlapping international treaties as embedded, nested, or clustered.

In a complementary space, the Ostrom school uses polycentricity to describe governance systems with "fragmentation of authority and overlapping jurisdictions (V. Ostrom, 1999: p 52)". Within polycentric governance systems, actors strategically navigate to join, create, resist, or adapt existing institutions, what Lubell and Morrison (2021) call institutional navigation. Institutions and actors are not power-neutral (Acemoglu and Robinson, 2008; Moe, 2005). Importantly, even with attempted erasure through settler colonialism, Indigenous communities, nations, and representative entities have actively resisted and advocated for self-determination and sovereignty both within and outside settler colonial states (Fondahl et al., 2001; Nuttall, 2018; Sulyandziga and Sulyandziga, 2020). Indigenous scholar Simpson (2017), building on resurgence scholarship (Hunt and Holmes, 2015), developed a complementary concept of embodied resurgent practice whereby everyday practices of living and being as Indigenous Peoples are forms of resistance disrupting the settler colonial state.

Integration of Indigenous knowledge and entities within co-management regimes may reproduce settler colonial structures (Charlie, 2020). Thus, inherent tensions revolve around histories of colonialism (including scientific colonialism) and questions of sovereignty and authority.

Indigenous communities and co-management entities continually negotiate for decision-making authority (Clark & Joe-Strack, n.d.; Herman-Mercer, 2021). Those entities working with state agencies face burdens associated with the failure of many western science-oriented ecosystem governance systems to understand, accept, and incorporate Indigenous science and knowledge (Watson, 2013). Indigenous co-management entities continue to fight and reimagine new decision-making frameworks in multi-level environmental spaces and oceans-related governance systems (Grey & Kuokkanen, 2020; Maxwell et al., 2020).

Building upon this literature, we conduct an analysis of all IWC governance entities relevant to subsistence whaling in Alaska and Chukotka, including co-management entities that emerged in the 1980s and 1990s. Our focal levels of analysis are at the international, national, subnational and community levels. Several Indigenous co-authors of the paper are active in Arctic Indigenous governance issues and whaling co-management specifically. We draw from their lived experiences, family and community narratives, and participant observations from critical debates about sovereignty and Indigenous rights to inform our understanding of Indigenous organizations' advocacy. In the following sections, we explore two major periods of multi-level governance, first

Fig. 1. Whaling villages in Alaska and Chukotka on both sides of the Bering Strait.

under an exemption that supported Indigenous whaling (1946–1977) and then Indigenous whaling with quotas granted by the IWC (1977-present) (see Fig. 2). The authors searched the digital IWC archives to understand decisions about the block quota for the bowhead (Table 1, below), the bi-lateral US-Russia coalition, consideration of Indigenous rights by the IWC, and use of Indigenous knowledge and science in decision-making. We consider how sovereignty and self-determination for Chukchi, Iñupiat, Saint Lawrence Island (SLI) Yupik, and Siberian Yupik communities influenced their ability to resist, collectively act, and continue everyday practice and life as peoples who whale.

4. Multi-level whaling governance

The International Convention for the Regulation of Whaling (ICRW) signed in 1946 protected many whale species by limiting whaling activities (Fig. 2). The ICRW established the International Whaling Commission (IWC) as the governing body to maintain whale stocks; early on the conservation focus was for commercial whaling.[3] The IWC was considered largely ineffective until additional multi-lateral environmental agreements were adopted (Fitzmaurice, 2013) and the US used unilateral action through the Pelly and Packwood-Magnuson Amendments (Caron, 1995 and see further discussion below). Like many international treaties, obligations in one treaty affect another (Young 1996). The Convention on the International Trade in Endangered Species of Wild Fauna and Flora (CITES) and UN Convention on the Law of the Sea (UNCLOS) both regulate trade of whales and their conservation (Fitzmaurice, 2013). The ICRW restricts whaling activity for all member states, even whaling that occurs within the state's 200-mile exclusive economic zone under UNCLOS (McDorman, 1998). "Aboriginal subsistence" hunting was initially exempted from oversight (Sellheim, 2020), but a growing environmental movement in the 1960s and 1970s (as reflected by CITES) led to a moratorium on commercial whaling and IWC's focus on Indigenous whaling (Schiffman, 2003). More recently, the UN Sustainable Development Goals (SDGs), affect international whaling governance, particularly in the context of assessments of its effectiveness for conservation (Cook et al., 2019). The UN Declaration for the Rights of Indigenous Peoples (UNDRIP) also has been a part of the conversation about the human right to whale (Wold, 2017) and has been invoked by Arctic Indigenous communities in debates about whaling at the IWC (Coté, 2016).

[2] Abbreviations used in figure: **BH**-Bowhead Whale; **NSB**-North Slope Borough**; NSBDWM**-North Slope Borough Department of Wildlife Management; AEWC: Alaska Eskimo Whaling Commission; **IRA**-Indian Reorganization Act; **ANCSA**-Alaska Native Settlement Claims Act; **NOAA**-National Oceanic and Atmospheric Administration; **ESA**-Endangered Species Act; **MMPA**-Marine Mammal Protection Act; **CITES**-Convention on International Trade in Endangered Species; **GCRW**-Geneva Convention for the Regulation of Whaling; **IARW**-International Agreement on Regulation of Whaling; **ICRW**-International Convention for the Regulation of Whaling; **IWC**-International Whaling Convention; **ICC**-Inuit Circumpolar Conference; **ASW**-Aboriginal Subsistence Whaling; **UNCLOS**-The United Nations Convention on the Law of the Sea; **UNDRIP**-United Nations Declaration for the Rights of Indigenous Peoples; **Korenizatsiia**-a Soviet period 1926 law that emphasized indigenization processes for local languages, local leaders and ethnic schools; **UMMH**-Union of Marine Mammal Hunters; **UMMHC**-Union of Marine Mammal Hunters of Chukotka; **ChAZTO**-Traditional Marine Mammal Hunters of Chukotka

[3] Early multilateral treaties and reliance on customary and common law frameworks were insufficient to grapple with overexploitation of whales by commercial whalers. The League of Nations created the Geneva Convention for the Regulation of Whaling signed in 1931, but several countries that did not sign began whaling in the 1930s. Thus, it became clear that a new convention was needed (Sellheim, 2020). Signed in 1937, the International Agreement on Regulation of Whales focused on newly emergent Antarctic whaling nations, such as Japan and Germany (Omura, 2019), although implementation stalled with World War II. In 1946 a new treaty was drafted, which forms the basis for modern whaling governance (Nystrom, 2013).

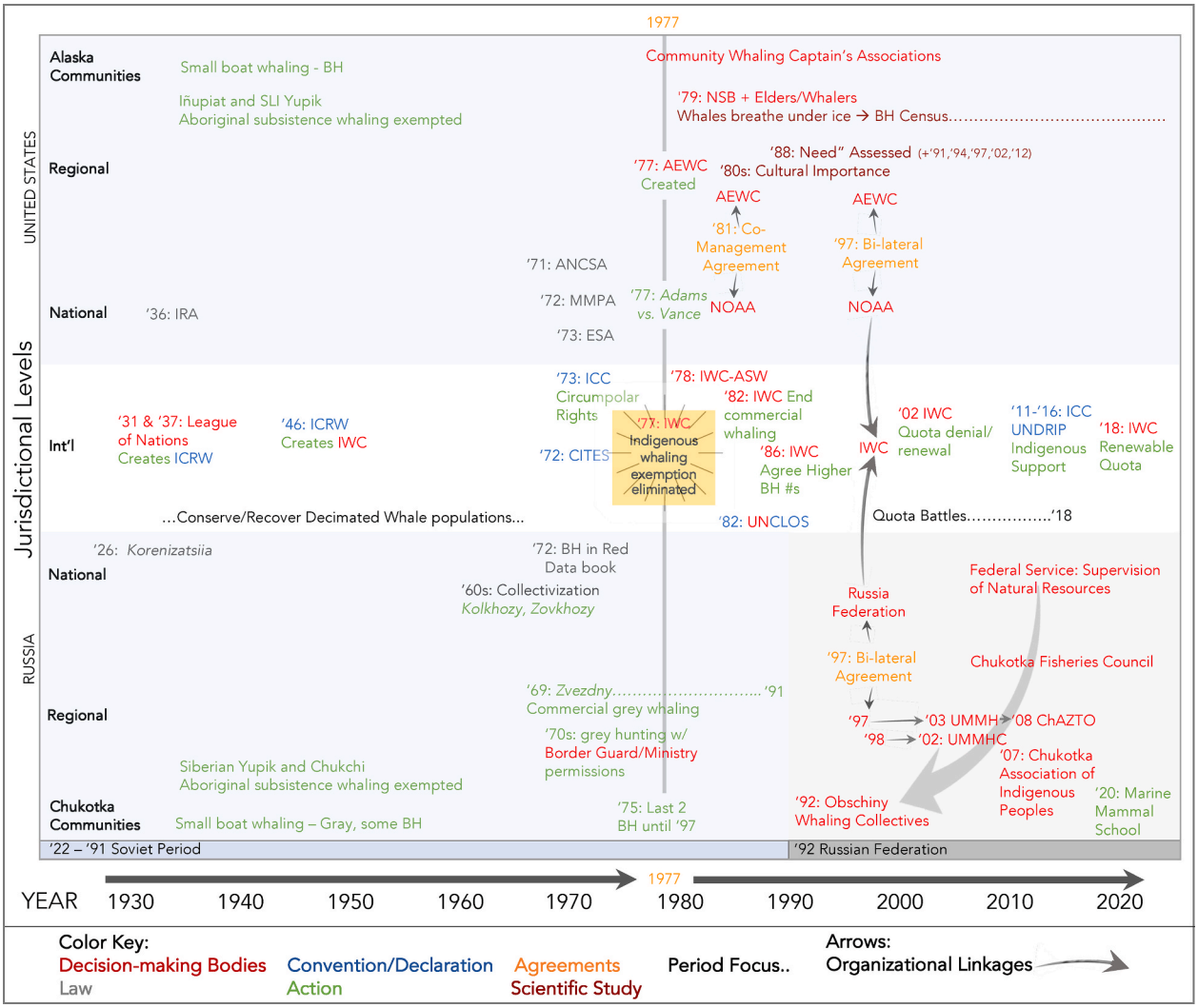

Fig. 2. Cross-level whaling governance in Russia and the USA from 1930 to 1977, when the IWC exemption for Indigenous whaling was eliminated (central orange box), and from 1977 to 2018, when Indigenous rights to whale were advocated for on the international stage. Colors designate decision-making bodies, actions and types of agreements put in place over time. Arrows indicate important linkages between decision-making bodies[2].

4.1. National policies that affect Indigenous sovereignty and livelihoods

Within multi-level oceans governance systems, national laws and policies are critical linkages between the international regime and communities (Shivakoti et al., 2021; Stokke, 2013). In this case, relevant national policy includes environmental and marine mammal laws and policies that shape Indigenous sovereignty and affect self-determination. Restrictions on organizing (Gray, 2005; Williams, 2009), passing on critical Indigenous knowledge (Cohen and Allen, 2013), the right to go to school locally (Barnhardt, 2001; Finkler, 1996; Tucker et al., 2016), providing or withholding healthcare (Burns et al., 2021; Kerttula, 2000), forced relocation (Krupnik and Chlenov, 2007) and the ability to access whaling resources (such as weapons and boats) or participate in whaling are levers that have been wielded consistently through national level legislation in the US and Russia.

The Indigenous Peoples on both sides of the Bering Strait, Chukchi, Iñupiat, Saint Lawrence Island (SLI) and Siberian Yupik, are closely connected historically through cultural, ethnic and family linkages, and ocean-based subsistence activities, many centered on human-whale connections, that sustained their livelihoods and cultures for generations (Huntington et al., 2020; Schweitzer and Golovko, 1995) (Fig. 1). At the same time, for over a hundred years, the Alaska and Chukotka coasts followed divergent economic and political development paths based on two distinct (and often adversarial) systems (Krupnik and Chlenov, 2013).

4.1.1. Alaska, USA

Alaska Native communities do not have treaties with the federal government. The United States ceased treaty-making with Indigenous nations in 1871 (Berger, 1985), shortly after the 1867 Treaty of Cessation with the transfer of Alaskan territory from Russia to the United States (Case and Dorough, 2006). However, the 1936 Alaska Indian Reorganization Act, an amendment to the 1934 Indian Reorganization Act, led to the recognition of 229 Alaska Native tribal entities (Den Ouden and O'Brien, 2013). New forms of Indigenous-led governance in Alaska emerged as Alaska became a state (1959) and the federal government attempted to resolve Indigenous claims to lands from time immemorial through the passage of the Alaska Native Settlement Claims Act (ANCSA) in 1971 (Berger, 1985). ANCSA provided much-needed funds, mechanisms to fund community infrastructure and granted economic self-determination through newly formed village and regional corporations. But ANCSA also shifted the region toward dependency on energy development with the completion of the Trans-Alaska Pipeline (Ahtuangaruak, 2015; Beradi, 1998). Ahtuangaruak (2015) describes the significant environmental burdens on Indigenous Peoples associated with oil development. Some argue that ANCSA served primarily to

Table 1
Bowhead quotas.

Years	Bowhead quota			
	Total Bowhead quota	USA	Russia	Notes
1978	Maximum of 18 strikes or up to 12 whales landed	Maximum of 18 strikes or up to 12 whales landed	–	Deleted "right" whales in prior schedule that provided Aboriginal rights to hunt - effectively creating a moratorium on bowhead hunting at June 1977 meeting; December 1977 agree to temporary quota.
1979	Maximum of 18 strikes or up to 12 whales landed	Maximum of 18 strikes or up to 12 whales landed	–	Amendment to Schedule paragraph 11 that had focused on Indigenous hunts in Greenland; now includes language on bowhead whales from Bering Sea stock taken by "aborigines"'; Resolution restricts hunt to "persons under jurisdiction of the Government of the United States" notably excluding USSR or Canada Indigenous peoples who also hunt bowhead
1980	Maximum of 27 strikes or up to 18 whales landed for **1 year period**	Maximum of 27 strikes or up to 18 whales landed for **1 year period**	–	Resolution for USA-led science and management of bowhead on annual schedule and ceiling for strikes and landed set by IWC; USSR and Canada agree to cooperate on research program; Resolution provides six factors for community needs assessment to be led by USA and to be presented in 1981.
1981–1983	Maximum of 65 strikes or 45 whales landed for **three-year period**, provided no more than 17 whales landed per year	Maximum of 65 strikes or 45 whales landed for **three-year period** provided no more than 17 whales landed per year	–	Resolution establishes ASW Working Group in 1981 made permanent in 1983; Resolution for "Annual Documentation of Aboriginal Need"; AEWC established as co-management entity; USA recommends reduction in whales landed per year from 18 to 17, even though quota insufficient for community needs
1984–1985*	43 strikes for **two-year period**, not to exceed 27 strikes in single year	43 strikes for **two-year period**, not to exceed 27 strikes in single year	–	The quota may be amended based on advice of the Scientific committee after the first year; USSR presents community needs assessment establishing long history of whaling in Chukotka (IWC 1985)
1985*-1987*	**Three-year period,** 26 strikes per year + strikes from previous year carried forward up to 32 strikes total/year	**Three-year period,** 26 strikes per year + strikes from previous year carried forward up to 32 strikes total/year	–	1985 quota amended to allow carry forward
1987*- 1988	**Two year period,** 1987 32 strikes allocated; 1988 35 strikes allocated	**Two-year period,** 1987 32 strikes; 1988 35 strikes	–	USSR requests 3–5 bowheads a year
1989–1991	**Three-year period**, 46 strikes per year and maximum of 41 landed + up to 3 carry forward strikes a year	**Three-year period**, 46 strikes per year and maximum of 41 landed + up to 3 carry forward strikes a year	–	
1992–1994	141 strikes for **three-year period,** up to a maximum of 54 strikes/41 landed per year + 10% carry forward on strikes	141 strikes for **three-year period,** up to a maximum of 54 strikes/41 landed per year + 10% carry forward on strikes	–	United States provides information that Little Diomede should receive quota allocation 1993; defers Little Diomede quota decision to IWC 1994 (International Whaling Commission, 1994)
1995–1998	204 strikes for **four-year period**, up to maximum of 68 strikes per year/51 landed with carry forward of up to 10 strikes	204 strikes for **four-year period**, up to maximum of 68 strikes per year/51 landed with carry forward of up to 10 strikes	–	1995 Russia indicates will request 5 bowheads at next meeting; USA indicates will request 5 Gy for Makah tribe; 1997 Russia-USA bi-lateral agreements on bowhead and gray assessments of culture and subsistence needs
1998–2002	280 strikes for **five-year period**	62 strikes/year + carryforward up to 12 strikes	5 strikes/year + up to 2 carry forward strikes	Russia and USA start to make joint request to IWC and trade between countries; Revision of the USA schedule for 1997–1998
2002–2008	280 strikes for **five-year period;** 67 strikes/year + carry forward 15 strikes	62 strikes/year + carryforward up to 12 strikes	5 strikes/year + up to 2 carry forward strikes	Denial of quota request at May 2002 meeting; approval in October 2002
2008–2012	280 strikes for **five-year period**; 67 strikes/year + carry forward 15 strikes from prior quota block	62 strikes/year + carryforward up to 12 strikes from prior quota block	5 strikes/year + up to 2 carry forward strikes from prior quota block	
2013–2018	336 strikes for **six-year period**; 67 strikes/year + carry forward 15 strikes from prior quota block	62 strikes/year + carryforward up to 12 strikes from prior quota block	5 strikes/year + up to 2 carry forward strikes from prior quota block	Change to a six-year block quota
2018-present	380 strikes for **seven-year period;** 67 strikes/year + carry forward of up to 50% of annual strike quota from the three prior quota blocks	62 strikes/year + carry forward of up to 50% of annual strike quota from the three prior quota blocks	5 strikes/year + carry forward of up to 50% of annual strike quota from the three prior quota blocks	Shift to automatic renewal of quotas unless IWC determines population decline, additional flexibility in the carry forward strikes

divide communities without providing resources to improve livelihoods for most Alaska Natives (e.g., Ford, 1997). Yet, others contend that Indigenous leaders shaped the corporations to advance local goals and transformed ANCSA to reimagine new futures (Allaway and Mallott, 2005). However, the impacts varied significantly by region and village. In northern coastal communities, settlements provided monies to outfit

new whaling crews, which led to an increase in whaling (Conrad, 1989; Huntington, 1992).

Historically, Iñupiat settlements dotted Alaska's northern coast and were linked to favorable constellations of seasonal resources and landscapes.[4] Some settlements became permanent with the addition of trading centers, commercial whaling activities, schools and churches (Jorgensen, 1990; Nelson, 1969), but diversity in language, culture and governance patterns across communities remained high (Ikuta, 2007, 2011). During the 1970s, Indigenous leaders organized around a larger entity, now known as the North Slope Borough, to advocate for villages and Indigenous Peoples drawing upon and leading Alaska Native civil rights actions (Sakakibara, 2020), Indigenous rights movements in the USA, and the 1973 establishment of the transnational Inuit Circumpolar Council (ICC) in Utqiaġvik (known then as Barrow) (Fig. 2). The newly formed ICC focused on transnational Inuit identities and pushed back against Western political imaginaries (Gerhardt, 2017). The ICC currently operates across the circumpolar North, including in Russia (Shadian, 2014).

4.1.2. Chukotka, Russia

In the US, Indigenous whaling largely remained outside of federal level surveillance and control until the 1970s. The situation was quite different in the former Soviet Union. Collectivization and industrialization efforts significantly reduced local control over traditional hunting and whaling beginning in the 1930s (Pelyasov et al., 2017). In the context of Indigenous communities in the Far East, the USSR recognized the difficulties governing resistant communities dispersed in remote villages. Thus to "properly" govern collective farms (*kolkhozy*) communities were merged around one collective farm – although initially not all villages were forcibly closed. However, the remote ancient villages retained traditional self-governance and became loci of resistance (Krupnik and Chlenov, 2007). In 1958, forced relocations and consolidation occurred across Chukotka with 91 villages reduced to 31 (Holzlehner, 2011; Krupnik and Chlenov, 2007) to surveil the Siberian Yupik population (Krupnik and Chlenov, 2013).

Central planning bodies determined technological development and distribution of resources and typically appointed highly educated newcomers as heads of *sovkhoz* (state collective farms). The Soviet government employed local marine hunters and reindeer herders, but these positions had limited autonomy (Nielsen, 2007; Pika et al., 1993; Tichotsky and Knapp, 1992). The new administrative hierarchy stood in contrast to traditional Siberian Yupik governance and sometimes conflicted with the larger Siberian Yupik community (Krupnik and Chlenov, 2013). By the end of the 1960s, *sovkhozy* replaced all *kolkhozy* (Khakhovskaya, 2011, p. 119), and the Soviet government began to introduce fur farms and use marine mammal meat as food for fur animals. Industrialization in Chukotka became a means to increase state use of marine mammals (gray and bowhead whales, walrus, and seals), particularly for commercial fur production (Nielsen, 2007).

Existing traditional forms of whaling and walrus hunting, based on crews and small boats, did not provide enough supply for the industrialized *sovkhozy*. To meet growing demand, the USSR began to centralize hunts on commercial whaling vessels in the 1940s - this was acknowledged and supported by the 1946 IWC Convention. In 1969 a professional whale-hunting ship was put into use (although the IWC did not know about the use of whale for fur farms and this became a point of global debate in later years (Jones, 2019)).[5] Without further communication with Indigenous hunters, the factory ship called "Zvezdny" took over whaling along the entire coast of the Chukchi Peninsula (Fig. 2). While the non-Indigenous crew of "Zvezdny'' was making use of the catch quota allocated to the Soviet Union, the Indigenous population was losing their traditional whale hunting skills and associated customary laws. Every year between 1969 and 1992 "Zvezdny" provided whales for Chukotka coastal communities with community members' participation in transporting whales to the shore and cutting the meat (Kolomiets, 2019). In Chukotka, hunters could only hunt by order of the *sovkhoz* authority; the *sovkhoz* sent hunters out to hunt with permission granted from the Federal Ministry of Fisheries and the Border Guard Service. The USSR also prohibited those under 14 years old from participating in hunting, which curtailed multi-generational knowledge sharing (Kerttula, 2000). Thus, while there was no specific law prohibiting traditional whaling by Russian Indigenous Peoples, there was a *de facto* restriction through the *sovkhoz* and domination of IWC quota by the "Zvezdny," and marine mammal hunter age restrictions that limited the ability to pass on multi-generational knowledge.

4.1.3. National marine mammal laws

In the US and Russia marine mammal protections extend to whale species. The US 1972 Marine Mammal Protections Act (MMPA) (United States, 1972) prohibited harassing, harming, or hunting regulated species. Administered by the Department of the Interior and the Department of Commerce, US marine mammal governance consists primarily of MMPA rules (Watters and Dugger, 1997). The MMPA also affects the ability of Indigenous Peoples to sell marine mammal products through importation bans – which some consider a human rights issue (Lynge, 1995) and violation of Indigenous sovereignty (Fakhri, 2017). In addition to the MMPA, the Endangered Species Act (1973) has a federal-level impact on whales and local whaling (United States, 1973) (Fig. 2). However, there is an exemption from the MMPA moratorium for Alaska Natives (Section 101B in the 1972 Act and included in the 1994 Amendments Pub. L. 103–238, §14, Apr. 30, 1994, 108 Stat. 558).

In the Soviet Union, the Ministry of Natural Resources implemented the 1946 IWC Convention. Environmental crimes are explicitly addressed in the national level Criminal Code of the Russian Federation. These laws have changed somewhat since the Soviet Era. Still, the Federal Law ''On Environmental Protection'', which includes a Red List of threatened species known as the Red Data Book Article 258.1 is a continuation of the initial Red Data Book of 1972 ("Rare and Endangered Species of Plants—The Soviet Side," n.d.) (Fig. 2). The Red Data Book of Endangered Species includes bowhead whales (conservation status 1) (Filatova et al., 2022). Whaling is permitted through the rights of the Federal Law "On guarantees of the rights of the Indigenous Peoples of the Russian Federation'', which extends a Soviet period 1926 law that emphasized *korenizatsiia* (Indigenization processes for local languages, local leaders and ethnic schools) setting a precedent for support and regulation of small Indigenous communities (Sidorova, 2019). The current law recognizes the rights of Indigenous small-numbered peoples of Russia to protect and use their original lands, traditional way of life and economic activities (Sobranie zakonodatel'stva Rossiiskoi Federatsii [Official Gazette of the Russian Federation], 1999).

5. Inclusion of Indigenous whaling in IWC

Until 1977, Indigenous bowhead whaling in Beringia existed outside the international regime, but domestic nation-state policies affected who

[4] For example, the Utuqqaġmiut, inland caribou people of the Utuqqak River, and the Kuugmiut, coastal marine people of the Kuk River both settled at Ulġuniq, named as Wainwright Inlet for the first non-native people to travel the lagoon in 1826.

[5] USSR is reported to have illegally caught bowhead in the Okhotsk Sea throughout the 1960s using factory ships (Ivashchenko et al., 2011), although the practice of factory ship whaling for Siberian Yupik and Chukchi began in 1969 (Kolomiets, 2019).

was considered Indigenous and affected coastal communities' economic and political self-determination. International whaling and colonial logics impacted Indigenous whaling communities (as described below). The inclusion of Aboriginal Subsistence hunts and IWC restriction of bowhead whaling shifted the locus of policy action significantly, whereby local Indigenous communities resisted and advocated for critical rights (Fig. 2) through embodied resurgent practice, collective action, and multi-level institutional navigation.

Fig. 2 illustrates the periods before and after the inclusion of Indigenous whaling in 1977, as well as the Soviet and Russian periods. Additionally, the figure highlights governance levels, as well as cross-domain flows. Although the cases in the US and Russia are distinct, there are similarities in influences across domains (economic, legal, political) and levels, as well as emerging cooperation between the nations and reemergence of cooperation among Chukchi, Iñupiat, Saint Lawrence Island (SLI) and Siberian Yupik. But let us begin with the inflection point in governance in 1977.

In June 1977, the International Whaling Commission met in Canberra, Australia, and eliminated the exemption that allowed Indigenous Peoples subsistence harvesting of 'right' whales (bowhead and right whales). The US opted not to file an objection, which would have made the change non-binding in the US, and therefore have no effect. The IWC's decision to eliminate the exemption for Aboriginal subsistence whaling of bowhead whales, and the US inaction in filing an objection, extended the whaling ban to Iñupiat and SLI Yupik (Mason 1977; Reeves 2002). The decision occurred without consultation or discussion with the affected communities (Ikuta, 2021). In the 1970s and 80s, many western scientists argued that bowhead in the western Arctic were so critically endangered that all whaling must cease (Gambell, 1983). However, these 1970s bowhead population estimates were inaccurate without inclusion of Indigenous science and knowledge (George et al., 1989). Additionally, Indigenous hunts were not a major threat to the western Arctic bowhead population, at that time, nor in recent decades, especially in comparison to global environmental change (see for example Stoett, 1997; Clapham et al., 1999).

5.1. Alaska Eskimo Whaling Commission

Nine North Slope and SLI Yupik whaling communities created the Alaska Eskimo Whaling Commission (AEWC) in 1977 to resist the whaling moratorium - the AEWC now includes 11 communities (Alaska Eskimo Whaling Commission, n.d.).[6] The AEWC organized initially to sue the US, *Adams v. Vance* (Mason, 1977); their suit was unsuccessful, but the US was concerned about further legal action related to the Whaling Convention Act of 1949.[7] Thus, in December 1977 the US returned to IWC to request a small quota and improved monitoring. Representatives from the AEWC and North Slope Borough argued that 18 whales harvested was the minimum necessary for subsistence; the Soviet Union supported this with a proposal granting a quota of 18 landed whales – and offered use of their commercial whaling ships to reduce the loss of whales struck but not captured - the US representatives declined the use of the Soviet whaling ship (Camerino, 1978). The Soviet proposal did not pass, but the IWC granted a temporary single-year quota in 1977 for 18 harpoon strikes for Iñupiat and SLI Yupik (Reeves, 2002) (Table 1). Beginning in 1981, the AEWC acted as a regional co-management entity with a cooperative agreement with NOAA conveying quotas from the IWC to whaling communities (Freeman, 1993). In the following years, the IWC created a new category of Aboriginal Subsistence Whaling (ASW), with an associated subcommittee, the ASW Working Group (Alexander, 2013) (Fig. 2).

During the 1970s, pressure to extend the whaling moratorium hinged on western scientific bowhead population estimates based on shore-based, visual counts of animals surfacing in open water leads. But Iñupiat argued these estimates undercounted whales, because bowhead could push up under the ice to surface and breathe (George et al., 1989). The North Slope Borough Department of Wildlife staffed by Indigenous and western scientists, incorporated the knowledge of elders and whaling captains and conducted new population counts using both sight and sonar technology (Fig. 2). These techniques validated Indigenous understanding - and led to much higher population estimates (Albert, 2001; Huntington, 2000). Corresponding with the period of Perestroika and a thawing of the "ice curtain", from 1992 Chukotka scientists also collaborated with the North Slope Borough Wildlife Department on bowhead population estimates; later Russian Indigenous hunters provided additional shore-based observations (Aho and Meek, 2020). The integration of western scientific and Indigenous traditional ecological knowledge became a dominant strategy of resistance and bi-national cooperation for Chukchi, Iñupiat, SLI Yupik, and Siberian Yupik at the IWC. This has been combined with impressive legal and diplomatic strategies positioning the AEWC, as a central policy actor.

6. Indigenous whaling in a dynamic multi-level governance system

Arctic Indigenous whaling occurs during seasonal spring or fall efforts by crews, made up of related (or unrelated) individuals and led by boat captain(s)[8] and their wives/partners, who hunt migrating bowhead whales using small craft. Visual spotting, use of a darting gun and harpoon to attach a float, and delivery of explosive charges from shoulder guns characterize the physical acts of hunting bowhead on open water. Giving of thanks, and a cessation of individual whaling crew efforts to tow in, land and divide (*autaq*) an animal cooperatively on beach or ice are processes equally integral to community whaling. Whaling across this vast area is characterized by significant cultural, organizational and institutional diversity, but one thing is common to all whaling - it is a social effort led by captains and crews that ultimately provides bowhead to more than one whaling household, one crew or one community (Fig. 3).

Whaling crews play central provisioning roles at numerous public feasts including a Captain's feast (immediately after a whale is landed), Thanksgiving, Christmas, and Spring *Nalukataq* (blanket toss) or *Qagruk* in Point Hope, USA, *Grulmyn* in Chukchi or *Pol'a* in Siberian Yupik (whaling festival). At this point, a successful captain's ice cellar (or freezer) should be empty from a full year of sharing and redistribution. Then the annual process begins again with captains and crews preparing, and perhaps businesses and community members helping to provision crews with gas, food, and equipment to get out onto the ice or open sea. Whales only give themselves to generous captains and their crews (Brewster, 2004), a cultural understanding that ties people to people, animals to people, and both to land and sea.

6.1. Iñupiat and Saint Lawrence Island Yupik whaling - Co-management Era

On the US side, the federal government conveys the US portion of each year's quota to the AEWC who manages the licenses for whaling captains based on NOAA fisheries regulations 50.CFR.230.5 and distributes the quota amongst the 11 whaling villages in Alaska. The AEWC is responsible for oversight and documentation of hunting activities by all active whaling crews, including use of strikes, struck but lost whales,

[6] AEWC later was incorporated as a co-management entity with a cooperative agreement with NOAA beginning in 1981(Alaska Eskimo Whaling Commission, n.d.).

[7] The legislation that enabled the US to join the IWC included a provision authorizing hunting by Indigenous people (Alexander, 2013; Harris, 2003).

[8] Boat captains are *umialik (umialgit)* in North Slope Iñupiaq, *angyalek (angyalegtaq)* in Yupigistun, spoken on SLI, *Umilyk* in Siberian Yupik, and *Ytweram* in Chukchi.

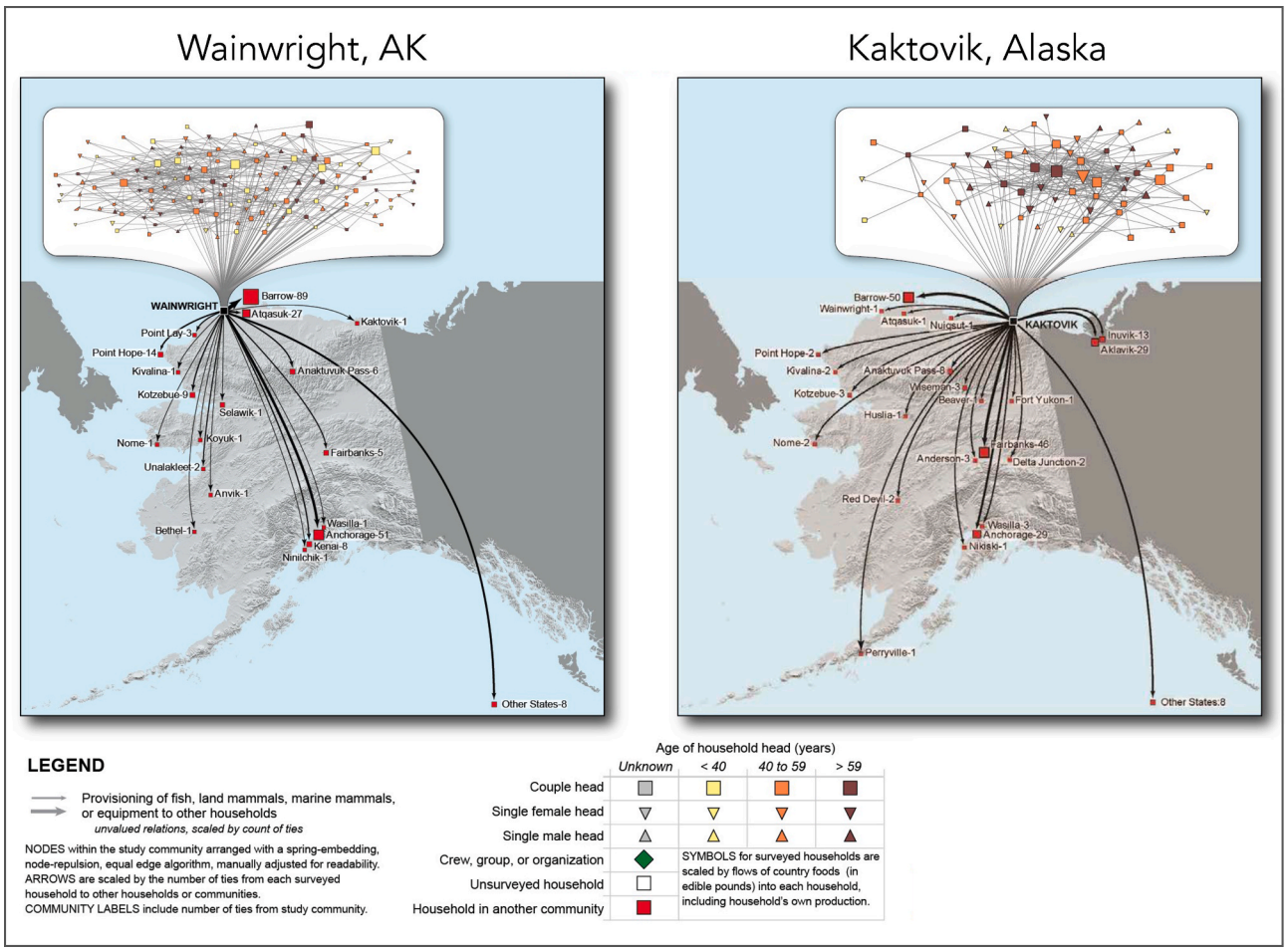

Fig. 3. Sharing of all wild food resources within and from two North Slope Borough/AEWC Whaling Communities. Marine mammals account for the majority of sharing from households. Adapted from figure in (Kofinas et al., 2016).

and biological characteristics of landed whales (size, sex, physical condition). AEWC communities can trade unused "strikes" with each other annually based on need and weather and ice conditions, a regular occurrence worked out between village-level whaling commissioners and captains. Each AEWC member community has a whaling captain's association and elects a commissioner who attends quarterly or tri-annual meetings for all commissioners. Annual conventions bring together commissioners, crews and federal co-management representatives, and meetings are opportunities to strategize upcoming or debrief past IWC meetings.

6.2. *Chukchi and Siberian Yupik whaling – Soviet Era to today*

In Chukotka, bowhead whales were the primary species hunted until the mid-20th century (Krupnik, 1987).[9] Throughout the Soviet Era, Chukchi and Siberian Yupik hunters concentrated on walrus and gray whales. Siberian Yupik and Chukchi had (and still have) norms and cultural practices for sharing whale amongst the crew, community, persons with greater need (e.g. widows), and those outside whaling communities; traditional hunting and cutting of whales were community endeavors requiring a great number of people (Kolomiets, 2019; Krupnik, 1987).

After the fall of the Soviet Union, the local economy collapsed in Chukotka and food insecurity became widespread (Kozlov, 2004; McNeill, 2001). The state-run factory ship "Zvezdny" stopped whaling, which led to a resurgence of small boat whaling (Nielsen, 2007). Building upon the renewed connections between Alaska and Chukotka that began with "friendship flights" and "friendship floats" during the Soviet period of *glasnost* in 1980s (McNeill, 2001), SLI Yupik and Iñupiat provided boats, weapons, and shared knowledge with Siberian Yupik and Chukchi. Increased hunting of marine mammals by local crews enabled communities to exercise traditional practice and ways of life, but also provided much-needed, cheaper accessible local foods during a period of significant stress and economic instability (Kozlov, 2004).

Today there is growing demand for local foods partially related to lower costs and greater access, as well as increasing desire for adherence to traditional foods, especially marine mammal meat and *maktuq*, *mangtuk*, or *itgilgyn*[10] amongst Siberian Yupik and coastal Chukchi, respectively (Kozlov et al., 2007). Dance and cultural performances continued throughout the 20th century, as allowable cultural practice (Krupnik and Vakhtin, 2002), but rituals and festival-related gatherings moved from public spaces to the home to avoid Soviet surveillance. In hunting bowhead (and gray) whales, local people continue to do what they learned from their parents, such as the rituals of the first launch of the boat in the spring and giving thanks for a successful whale hunt. With the collapse of the Soviet ideology, hunting festivals also became attractive to the tourism industry. Regional and local authorities initiate and organize reindeer sledding, dog sled races, and regattas on skin

[9] y whales were hunted to a lesser extent throughout the ancient and historic periods (Krupnik, 1987).

[10] *Maktuq* is whale skin and blubber in Iñupiat, *mantak* (or *mangtak)* in SLI and Siberian Yupik, and *itgilgyn* in Chukchi. We use *maktuq* throughout the paper.

boats followed by theatrical performances. Festival organizers sometimes also request a whale to be hunted. In these cases, the festival is the reason for the whale hunting. In contrast, in everyday life of communities' cultural practice, especially previously, a successful whale hunt was the reason for the festival.

After the fall of the Soviet Union, whaling has been governed through *obschiny*, or small Indigenous-run enterprises with whaling as their main activity, and organized around traditional territories, kin, friends or neighbors (Fig. 2). Villages where hunting occurs maintain organizations, similar to Soviet Era *sovkhozes*, with full-time administrators and hunters, and temporary workers. The state provides hunting supplies (boats, weapons, gear) and storage facilities (Zdor, 2021) and subsidize, through monthly state salaries to hunters and support for the purchase of whaling equipment, the whaling *obshchiny* in Chukotka (Kolomiets, 2019). While Indigenous hunters resumed whaling with small boats, there was partial loss of multi-generational knowledge during the Soviet Era, and renewed hunting resulted in several accidents and deaths in Chukchi communities (Zdor, 2021). Chukotka established a marine mammal hunting school to promote hunting practices for the younger generation in 2020 (TACC, 2020).

6.3. A US-Russian Federation bilateral agreement

In 1997, two decades after the elimination of an exemption for Indigenous whaling of bowheads, the US and Russian Federation signed a bilateral agreement to share the bowhead whale quota (Fig. 2). This agreement ended an effective ban on Indigenous bowhead whaling on the Russian side. Multiple conditions set the stage for this negotiated agreement. From a regional perspective, SLI Yupik and Siberian Yupik share kin, culture, and whaling histories; there were also ties between the AEWC and Indigenous Peoples of Chukotka. The general "thawing" of relationships between the new Russian Federation and the USA in this period (Huntington et al., 2020) also opened cooperation possibilities. Specifically related to whaling, the US wanted to share Russia's gray whale quota to fulfill trust obligations to the Makah tribe in Washington, which they were unable to meet directly through a new quota with the IWC (Firestone and Lilley, 2005); the gray whale agreement then spurred negotiations for joint quotas and management of the bowhead based upon growing genetic evidence of a shared bowhead population in the region (George et al., 2007).

Early active parties to the co-management arrangement were the US, NOAA (Lefevre, 2013), the AEWC, the Russian Federation, Chukotka Regional Government, and a newly formed Indigenous organization in Chukotka (Aho and Meek, 2020). Russian representatives consistently traveled to annual AEWC meetings to engage in science and policy discussions, strategize for upcoming IWC meetings, and participate in technology and weapons training, until recently.

6.4. Russian domestic politics and Chukotka marine mammal Co-management entities

On the Russian Federation side, communities receive quotas for gray whales and bowhead, which are issued by the Ministry of Natural Resources and Ecology and, until 2003, were given to Chukotka authorities to distribute. Since 2003, Indigenous organizations have administered quotas in Chukotka, starting with Association of Traditional Marine Mammal Hunters of Chukotka (ChAZTO) and, since 2007, the Chukotka Association of Indigenous Peoples (AKMNS). However, there is frequent tension between the Chukotka Fisheries Council, the Federal Service for Supervision of Natural Resources, the Indigenous co-management organization, and the whaling *obshchiny* (arrows, Fig. 2). The quota is divided amongst the whaling *obshchiny* who subsequently provide up to 14 villages with whale (both meat and *maktuq*). Still, there is often frustration amongst the *obshchiny* and hunters about the lack of transparency in decision-making around the federal to local distribution of the quota.

Another tension on the Russian Federation side is associated with internal regional politics. In 1997 under the name "Union of Marine Mammal Hunters'' (UMMH), Chukotka supported creation of a marine mammal co-management entity, a sister entity to the AEWC. In 1998, Alexander Nazarov, governor of Chukotka, supported the creation of another maritime hunting organization under an almost identical name, the Union of Marine Mammal Hunters of Chukotka (UMMHC). Roman Abramovich, the new governor of Chukotka, supported the UMMH in 2001, which was renamed Association of Traditional Marine Mammal Hunters of Chukotka (ChAZTO). ChAZTO acquired the right to self-government in Aboriginal whaling in 2003, which was a unique phenomenon for Russian Indigenous Peoples. Meanwhile, in 2002, Russian legislation of the nongovernmental sector required each registered nongovernmental organization to confirm its existence, and the UMMHC, without the support of the Chukotka government, did not respond to this demand and therefore was closed. In 2008, Abramovich resigned, and the new government of Chukotka reestablished opposition to ChAZTO. A new organization of marine hunters under the original (1997) name UMMH was registered in 2009 and still exists. ChAZTO was closed in 2019, officially due to lack of activity, in fact, under pressure from government agencies. Authorities curtailed the ability of Indigenous leaders and representatives to attend AEWC meetings further reducing their self-determination.

7. Navigating institutions during the quota battles

In this section, we describe the IWC's quota determination highlighting cross-level links between an Alaskan borough and co-management entity with the IWC, overlapping international institutions, particularly UNDRIP and IWC, as well as the shifting politics of IWC member states. The IWC bowhead quota is partially determined by community need and partially on the status of and risks to the bowhead whale population (Gambell, 1993). The US Department of the Interior, with the support and participation of the AEWC documents the cultural importance of whaling (Alaska Consultants, Inc. and Stephen R. Braund & Associates, 1984). Together they developed a methodology to translate "importance" into a numeric "need" for bowhead whale in communities (Braund et al., 1988). The resultant method pulled together two sources of information: 1) numbers of hunted bowhead by whaling communities for a historical base period (1910–1969) and 2) whaling community population data. On this basis, a calculated per capita availability of whale meat and *maktuq* established a baseline of "need." The per capita baseline is then adjusted for the population in each whaling community. The same method has been applied five additional times to calculate the need for bowhead, in '91, '94, '97, '02, '07 and '12 (Stephen R. Braund & Associates, 2012; 2007, 2002, 1997, 1994, 1992).

When the US initially fought for a bowhead quota in 1977, there was not a concurrent effort by the USSR. However, throughout the 1980s the Soviet Union argued that Indigenous communities in Chukotka prefer bowhead whales (see for example, International Whaling Commission, 1984). In 1987, the USSR requested that they receive 3–5 bowhead whales to support Chukotka communities (International Whaling Commission, 1988), but this was not approved. Then the Russian Federation requested consideration for a bowhead quota in 1995 (International Whaling Commission, 1996); ultimately a quota was made available to Chukchi and Siberian Yupik communities through the bilateral agreement in 1997.

Early on, the IWC repeatedly pushed for low single year quotas, notably advocating against using acoustic-based scientific methods that would increase the bowhead population numbers and focusing on the inefficiency of bowhead whale hunts (strikes relative to landed whales) (International Whaling Commission, 1983). Weapons technologies and actions of whaling captains were under a microscope, and the AEWC responded by collaborating with international cetacean and weapons experts to increase weapons efficiency and accuracy to decrease the

number of struck and lost whales and shorten time to death (Øen, 1995). The North Slope Borough and the AEWC also organized scientific conferences such as the "First Conference on the Biology of the Bowhead Whale" (International Whaling Commission, 1981) and invited IWC representatives to watch the spring census (International Whaling Commission, 1983) - efforts to gain traction for the science underpinning higher population estimates and improved hunting efficiency. By 1986, the IWC recognized that the standard population estimation techniques were undercounting whales and lauded "efficiency" gains of whaling captains (International Whaling Commission, 1986).

Throughout the 1990s and early 2000s, block quota numbers slowly increased, generally with longer periods of time and more flexibility (Table 1). However, this period was also punctuated by a denial of the five-year block quota for the bowhead whale in May 2002. The denial hinged on uncertainties surrounding subpopulations of the bowhead and environmental risks, such as those related to energy development, as well as ongoing political disagreements particularly with Japan[11] (International Whaling Commission, 2003). The US-Japan conflict stemmed from Japanese desire to reopen commercial whaling (Stoett, 1997) and small-scale subsistence whaling (Freeman, 1993). The same period witnessed shifts in politics amongst anti-whaling or animal rights and environmental organizations (Bailey, 2008) – with some of the latter reconsidering Indigenous whaling as a threat to marine mammal populations and instead shifting focus toward global environmental change as the primary challenge for whale recovery (Stoett, 1997).[12]

During the May 2002 meeting, a Chukotka representative "noted that the attitude of some Contracting Governments would result in the native people spending thousands of dollars each year on preparation of more reports, justifications, and on travel to meetings. They could not afford to do this. They needed to hunt to feed their families (International Whaling Commission, 2003, p. 21)." ASW nations objected to the scientific burden placed on whaling communities, including the USSR in 1984 (International Whaling Commission, 1985), Russian Federation in 1996 (International Whaling Commission, 1997), and Greenland in 1998 (International Whaling Commission, 1999). Indigenous communities either relied on member nation-states to conduct necessary research (which would limit inclusion of Indigenous knowledge in the process), or in the case of the AEWC in partnership with the NSB Department of Wildlife and NOAA, took on this tremendous scientific burden.

Following the May 2002 denial, the AEWC spearheaded an effort to link Traditional Ecological Knowledge with western science to demonstrate the health of the whale population and strengthen discourse around cultural and subsistence needs and rights for Chukchi, Iñupiat, SLI and Siberian Yupik communities. In October 2002 there was a reversal of the denial (Noongwook et al., 2007) related, in part, to a shift in the dialog about Indigenous rights in the ASW. In following years, Sweden furthered the new discourse by referencing the UN Declaration of the Rights of Indigenous Peoples (UNDRIP) (International Whaling Commission, 2009), and Switzerland used UNDRIP to frame understanding of collective rights and international treaties (International Whaling Commission, 2012). The growing Indigenous self-determination and knowledge narratives featured in Mexico's comment on Indigenous-led science and management in 2011,

> "(T)he bowhead whales of the Bering-Chukchi-Beaufort seas had been severely depleted by whaling and were protected in 1931. However, the stock is now over 10,500 animals. To a great extent this success is due to the excellent work of the Alaska Eskimos through their own Commission. They had been able to save the bowhead whale and they had been able to support whaling activities that are traditional. They had also promoted research activities for better management of the stock. Mexico considered that they had become an example for transparency and quality in their studies (International Whaling Commission, 2012, p. 16)."

Yet, the AWC scientific process continued to generate frustration and fatigue within the AEWC. In 2014, at the ASW Working Group meeting with Indigenous hunters in Maniitsoq, Greenland a discussion focused on concerns about quotas, particularly related to the determination of need for Indigenous Peoples (International Whaling Commission, 2015). Final workshop recommendations included stripping the word "need" from requests for catch/strike limit quotas. Because of intersections with international law, in 2016, the IWC invited an Iñupiaq expert member from the UN Forum on the Rights of Indigenous Peoples, Dr. Dalee Sambo Dorough ,[13] to present at the annual meeting (International Whaling Commission, 2017). Following the UNDRIP discussion, there was reflection again on whether quotas and needs-based assessments violated Indigenous rights and international law. There has been a significant evolution at the IWC from a focus on calculated "need" to member delegates recognizing Indigenous rights.

The culmination of this process of institutional navigation and the tireless efforts of the bi-lateral US-Russian delgation , led by the AEWC, and supported by NOAA, occurred at the 67th IWC meeting (Brazil) (International Whaling Commission, 2019). Instead of building a case for each successive 6-year IWC quota determination, a limited automatic renewal of all ASW catch/strike limit quotas is now set in perpetuity. The quota decision emphasized what Indigenous communities have long known - they are equipped to govern whaling themselves. Notably, the overall quota numbers have not changed for 26 years. Still, critically, the logic of the quota has shifted from a burden of proof on communities to demonstrate a lack of impact on the bowhead (annually then periodically) to an expectation of a continued quota. There is also growing evidence of a rebounding and increasingly healthy bowhead whale population in the region (Gerber et al., 2007), which bodes well for continuation of the new policy.

Looking back over this history of cross-level institutional navigation, local and regional actors and organizations leveraged arguments and strategies honed within larger Indigenous movements, such as those led by the ICC (Gerhardt, 2017; Sidorova, 2019; Young, 1996), and fought to ensure that the centrality of whaling to identity and sovereignty was not lost in numeric discussions of quotas, food security and whale numbers. In this process, science played the role of both ally and uneasy arbiter of species population health, cultural integrity, and human need. Quota determinations and implementation reflected dynamism of the governance process in terms of bi-national coordination and conflict, changing national political and economic contexts and subnational co-management governance (especially in Russia), shifting whaling politics, and understanding of obligations to other treaties, such as UNDRIP with a strengthened focus on Indigenous rights within the IWC.

8. Discussion

Embodied resurgent practice (Simpson, 2017) helps us understand how Indigenous communities shape, and are shaped by, formal agreements and hearings by entities within nation-states or international bodies, such as the IWC. A focus on practice aligns with earlier calls by Earth system governance scholars to include institutions created and maintained outside governments and highlights governance occurring with non-governmental actors and through norms, for example (Biermann et al., 2010). In this case, Chukchi, Iñupiat, SLI Yupik, and

[11] The debate also focused on accusations of discrimination and "double standards" regarding regulation of whaling in Japan and St. Vincent and The Grenadines versus ASW in USA and Russia (International Whaling Commission, 2002).

[12] Hunts by Iñupiat, SLI Yupik, Siberian Yupik and Chukchi in the Beringia region are not and have not been considered a threat to bowhead whale populations in recent decades (see for example Clapham et al., 1999).

[13] Dr. Dalee Sambo Dorough became chair of the ICC in 2018.

Siberian Yupik communities in the US and Soviet Union/Russia continued to whale and maintain human-whale entanglements in the face of adversarial -and in some cases violent - nation-state policies and international regimes. Community members, crews, captains, and commissioners' embodied resurgent practices are acts of resistance and integral to multi-level whaling governance. Scholars should extend their gaze to include everyday resistance and embodied resurgent practice to understand many, arguably most, examples of Earth system governance.

Earth system governance also requires investigation of cross-level (local to international) and cross-domain (legal, environmental, economic) flows. In this case, cross-level flows of expertise in community organizing and legal action by the AEWC led the US to shift their anti-whaling position within the IWC, at least regarding SLI Yupik and Iñupiat whaling. But, without cross-domain flows associated with ANCSA, the AEWC would not have had critical financial resources. These resources supported the legal and scientific work that transformed co-management of whaling and reshaped the international whaling regime. Likewise, with the fall of the Soviet Union, growing food insecurity fueled cross-border cooperation with SLI Yupik and Iñupiat restoring historic whaling community ties and driving reemergence of local hunting. This collective action reinforced political engagement within Russia, bi-national and international diplomacy, whaling co-management, and increased engagement with Indigenous solidarity movements. But recent Russian efforts to repress Indigenous rights reduced engagement internationally and bi-nationally. Further, the ongoing conflict with Ukraine, and resultant Russian isolation, has increased uncertainty about the future of the US-Russian co-management efforts.

This case makes clear the importance of moving beyond nested and embedded environmental policies within Earth system governance toward analyses that link self-determination and sovereignty, economic policy, and individuals' and communities' use of embodied resurgent practice. Chukchi, Iñupiat, SLI Yupik, and Siberian Yupik community whaling communities' interests, knowledge, practices, and (sometimes) kin ties transcend nation-state boundaries (Huntington et al., 2020). At the international level, Indigenous resistance and collective action shaped new norms of justice and human rights within the IWC (like processes described by Lawless et al., 2020).

Without multi-level resistance by communities, rights to whale would have been erased within an international regime dominated by western scientific practices, epistemologies, and conservation values. The sad irony is that these epistemologies, underpinned by the values of dominant settler colonial states helming the IWC, *initially* led to collapse of whale populations and then restricted peoples who have sustainably whaled for millennia. Chukchi, Iñupiat, SLI Yupik, and Siberian Yupik communities exemplified embodied resurgent practice through living and maintaining cultural practices, knowledge, and livelihoods that connect people, the sea and whales in both the past, now, and into the future. Communities, families, and individuals pushing back against dominant state ideologies and policies related to education, to organizing whaling crews, to voicing dissent, and simply being Indigenous face risks. Risk in the Chukotka and Alaska contexts are arguably different. Political security risks in Russia exist for individuals and Indigenous groups and whaling *obshchiny* deal with sometimes adversarial administration agencies and safety risks due to generational losses of whaling practice and skill. In the US and Russia, the financial requirements and physical risks associated with small boat whaling are constant. US communities face strains associated with extended travel and advocacy with audiences that are uneducated and sometimes overtly hostile to Indigenous whaling – all those engaging in whaling governance face what Lubell and Morrison (2021) describe as "fatigue."

Resistance on the Chukotka side has been hidden in some ways, but Indigenous peoples maintained their whaling practices throughout incredibly turbulent political periods. Even when collectivization and industrialization centralized whaling, communities persisted and revived whaling traditions once able to do so in the 1990s (Zdor, 2021). Strategic alliance between the AEWC and Chukotka whale hunters made these relationships more visible - and more successful. However, in some ways success was associated with increasing fragility of Russian co-management organizations as the profile of Indigenous marine mammal hunting organizations rose (leading to frequent organizational and leadership changes). Domestic changes in Russia, including changes in governorship and freedom to engage in political speech, limited Indigenous resistance in more visible ways, and so too did lack of economic resources.

The importance of resources for institutional navigation can also be seen on the American side, where ANCSA initially provided much needed monies to communities in the North Slope who were then able to mobilize for *Adams v. Vance*. Yet in recent years this funding has been significantly reduced generating concern about the ability of the AEWC to maintain high levels of research, legal, and diplomatic activities. North Slope Borough leaders, historically whaling captains or their partners themselves, were able to leverage their position and networks, staff a wildlife department, and provide resources to support the AEWC – social capital (and simply resources*)* were critical (see similar discussion in Lubell and Morrison, 2021). The AEWC built legal representation with personnel based in Washington DC, collaborated with scientists when interests aligned, and financed the travel of commissioners to AEWC and IWC meetings. After the fall of the USSR, Chukotka whale hunters were able to forge new relationships with AEWC through the new bi-lateral agreement. Collectively, through these mechanisms, US and Chukotka whale hunters advanced their interests through both institutional navigations up to the IWC and embodied resurgent practice at home.

9. Conclusion

The interconnectedness of domestic policy and other international treaties, as well as changing politics, Indigenous sovereignty and changing economies, generates new policy spaces for recognition, discussion, coordination, resistance and collective action. The AEWC emerged as a regional body for discourse building upon local Iñupiat and SLI Yupik whaling governance and connected to ICC and pan-Arctic Indigenous movements. On both sides of the Bering Strait, daily practices associated with being people who whale (as captain, crew, boat sewer, feast comer, processors on land, counter of whales, or as commissioner, advocate or speaker for whaling at the IWC) were forms of resistance and embodied resurgent practice. In the USSR, efforts to navigate collectivization and maintain multi-generational knowledge or in Russia's current domestic political turmoil, resurrecting village-based whaling are acts of resistance. Similarly in the US, prioritizing resources and capacity for scientific engagement and legal battles, while keeping whaling vibrant in communities across generations are acts of resistance. In all cases, underlying Indigenous governance arrangements with long-enduring pathways for community-based collective action facilitated solidarity within and across communities and nation-states.

Critically, the UN Decade of Ocean Science community should listen to Indigenous voices advocating for alternative, diverse governance arrangements and management assumptions, which are foundational to embodied resurgent practice. This requires paying attention to other relationalities, such as deeply enmeshed human-whale entanglements, as well as relationality to place, and what this implies for how people talk about, depend on, use and conserve non-human animals and resources. In so doing, governance moves beyond rights-based considerations of food sovereignty and toward relational understandings and (potentially) new kinds of emergent responsibilities (Coté, 2016). To advance understanding of oceans governance, more work must be done – we examine a single case that has generated relevant insights for the UN Decade of Ocean Science and strongly support a research agenda of comparative scholarship.

There is frustration that international conservation continues to focus on settler states' priorities and scientific knowledge, even as currently low whale populations are largely due to historic decimation -

by settler states, whalers and multinational companies. Despite this, Indigenous communities must still demonstrate that future engagement in core cultural practices that have been sustainable for millennia, will not harm whale populations. We suggest that where histories of Indigenous oceans resource engagement are present, shifting to a default that prioritizes Indigenous governance, recognizing and redressing historic harm, both to Indigenous Peoples and to species and ecologies that have been impacted by settler state actions, is a first step for multi-level oceans governance. Indigenous resistance will, of course, continue through practice, advocacy, legal action, and diplomacy, but the bar set by the IWC in 1977, requiring four decades of cross-level and cross-border alliance building and institutional navigation, and prohibitively expensive, non-stop, cultural translational advocacy is extremely high. Many communities entangled with other oceans species and resource contexts do not have the resources and history of collective action (closely tied to whaling) - making the hard fought "wins" in this case illustrative, but perhaps difficult to transfer.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data availability

Archives are publicly available and linked in the references.

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