Navigating Governance Systems & Management Practices for Pleasure Craft Tourism in the Arctic

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Pleasure craft are one of the fastest growing sectors of maritime transportation across the global Arctic and increasingly also in the Antarctic. The increase in interest among pleasure craft operators in traveling to polar regions presents a number of local economic development opportunities. However, current governance systems do not yet fully address the numerous safety, security and environmental concerns associated with developing this sector, which compounds an already precarious situation considering the remoteness and harshness of the polar environment. This study aimed to identify practices regarding the management and governance of pleasure craft in Arctic regions, including inventorying national, regional and local regulations. Using data from secondary sources, statistical information, and Coast Guard reports, this study discusses the diversity of management policies that exist throughout the Arctic that support and manage pleasure craft tourism, and concludes that harmonization of governance frameworks and improved reporting mechanisms among Arctic states could be beneficial.

A Complex Set of Governance Systems & Management Mechanisms in the Arctic: Introduction

Climate change is having disproportionately large impacts on the polar regions – including both biophysical changes and related socio-economic responses. For example, the reduction in the extent and thickness of sea ice has resulted in an increase in both industrial and private sector shipping and maritime transportation opportunities in the region (Melia et al., 2017). Increased access and open water season lengths in the Arctic bring both risks and opportunities. Quantitative assessments of Arctic shipping from 2011 to 2014 shows increasing activity, particularly for the Norwegian and Barents Seas (Eguiluz et al., 2016), but also around Svalbard and the western coast of Greenland, and to a lesser extent through the Northwest Passage in Arctic Canada (Dawson et al., 2017b; Dawson et al., 2018).

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There are good records of commercial shipping for the entire Arctic region as well as a large foundation of literature and research focused on Arctic commercial and expedition cruise tourism.[1] However, there is very little information and only a limited number of studies focused on the trends, movements, and impacts of pleasure craft (i.e. private yachts) in the Arctic (Krakau & Herata, 2013; Johnston et al., 2017). More attention has been given to understanding pleasure craft movements and management in the Antarctic and insight from these studies (and others) can be used to establish a better understanding of potential challenges in the Arctic (see Johnston et al., 2013). Furthermore, Orams (2010) underlines the fact that cruising yachts have the potential to produce similar environmental impacts as cruise ships, albeit on a smaller scale and therefore it is also useful to understand the impacts of these cruise vessels. Even still, the increase in private yacht tourism, requires focused management and research attention due to the unique range of potential impacts these vessels pose for the marine environment, biodiversity, safety, and security (Speckman et al., 2004; Keller et al., 2010; Bergmann & Klages, 2012). For example, pleasure craft can be a vector for the spread of invasive species, leading to biosecurity concerns (Hall & Wilson, 2010) and they are more nimble than larger vessels and thus have the option to travel into unknown and more dangerous and uncharted areas. In extreme cases there are recorded concerns about cruise ships and pleasure craft engaging in surreptitious operations to map the sea floor and spy on military operations and infrastructures, importing illegal goods, or having involvement in human or other trafficking activities (IMO, 2018a; Johnston et al., 2017; Dawson et al., 2014). Local residents across the Arctic have commented on their increasing concern about these potential impacts of marine tourism and have revealed a number of undesirable behaviour among some pleasure craft operators including trading drugs for local Indigenous art, causing general community disruptions – such as using fireworks nearby communities, disrespecting Inuit burial grounds and cultural heritage sites - and being culturally disrespectful in general (Stewart et al., 2012; Dawson et al., 2014). Compounding all of these concerns is the fact that pleasure craft are exempt from many of the regulatory mechanisms that are mandatory for larger ships meaning there are much less systematic data on smaller vessel movements and impacts as well as less oversight.

The majority of larger expedition style cruise vessels that are currently engaged in marine tourism activities in the Arctic are already required to carry an Automatic Identification System (AIS), which is a worldwide vessel tracking system, and it is mandatory for them to report when entering various national maritime authorities. Smaller vessels such as fishing vessels and pleasure craft are types of vessels that fall below the size requirements of the mandatory regulation established by the International Convention for the Safety of Life at Sea (SOLAS), and as such do not have the same level of traceability (Arctic Council, 2015). Another significant challenge associated with understanding the trends and impacts of pleasure craft is the fact that different jurisdictions and nations use dissimilar sampling, reporting protocols, and management approaches, which makes it difficult to estimate, compare, and understand traffic trends and implications (Johnston et al., 2017; Fay & Karlsdottir, 2011). As such, there is a pressing need to understand the implications of the increase of pleasure craft tourism across the polar regions – including related risks and opportunities. The harmonization of Arctic shipping rules and regulations for pan-Arctic polar waters to ensure consistent regulations within all exclusive economic zones across the Arctic region (Dawson et al., 2015; Fauchald, 2011) require the identification of various national regulations and the study of institutional governance structures and their interplay. This paper

attempts to respond to this challenge and aims to identify the management and governance practices of pleasure craft by reviewing existing literature on the governance structures that exist to manage pleasure craft across the polar regions (when data is available) and especially in the Arctic in order to draw global comparisons and understanding.

Governance, Institutional Structures and Legal Regimes

There is a diverse set of management and legal regimes that collectively serve to govern shipping operations in the Arctic. These governance structures are administered by a diverse set of multi-scale institutions that have been set up to serve specific purposes, including for example, building knowledge, strengthening norms, enhancing problem-solving capacity, or enforcing rule compliance (Stokke, 2012). As defined by Stokke (2012), "institutions are sets of rules, decision-making procedures, and programmatic activities that serve to define social practices and to guide the interactions of those participating in these practices". Two of the main international institutions involved in Arctic shipping governance (broadly defined) include: the International Maritime Organization (IMO) and the Arctic Council. There are many other relevant international, national and regional institutions and the most relevant of these are discussed in this paper.

The IMO works "… to protect ships and people aboard them, both seafarers and passengers, in the harsh environment of the waters surrounding the two poles" (IMO, 2018a). It is an institution that is further supported by a number of other non-governmental institutions that provide more specific guidance on how to fulfill international standards and that determine if requirements are fulfilled (Fauchald, 2011). The IMO institution serves in large part to build knowledge and to establish and suggest options for enforcing rule compliance. For example, the IMO was instrumental in the development of the Polar Code and has now adopted this international code for ships operating in polar waters making it mandatory under both the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL) (IMO 2018b). The Polar Code officially entered into force on 1 January 2017.

The Arctic Council is a "high level intergovernmental forum to provide a means of promoting cooperation, coordination and interaction among the Arctic states" (Arctic Council, 2015). Throughout most of the post cold-war period, there were few international regimes across the east-west divide in the Arctic region: relations were marked by the strategic sensitivity of the region. The initiative launched by Gorbachev in 1987 – the Glasnost and the Perestroïka - for broader collaboration and opening with the West– led to the implementation of the creation of the Arctic Council by the Ottawa Declaration ratified by eight states in 1996. In addition to several transnational associations of Arctic Indigenous peoples that have gained status as Permanent Participants, Switzerland (2017), China, Italy, Japan, India, Singapore and Korea (2013) joined other non-Arctic States approved as Observers such as Spain (2006), France (2000), Germany, Poland, the United Kingdom and the Netherlands (1998). Unlike the IMO, the Arctic Council mainly serves to build knowledge and to enhance problem solving capacity (again see Stokke, 2012). The Arctic Council has only eight official and full member states and lacks the ability to enforce legally binding rules (Stokke, 2012: 16). However, the institution is particularly well suited to produce knowledge relevant to Arctic shipping that is credible, legitimate, and salient and is thus still very capable of triggering political action and influencing formal governance structures.

International Frameworks

Various terms exist internationally to describe pleasure craft, including yachts, recreational vessels, small boats etc., but there is no uniform or single definition among Arctic states for these vessels. However, the International Maritime Organization (IMO) does specify that the category of 'pleasure craft' broadly defined are not subject to the International Convention for the Safety of Life at Sea (SOLAS) and they do not routinely engage in commercial activities such as carrying cargo or passengers for hire. The term pleasure craft is missing in the IMO Convention on the International Regulations for Preventing Collisions at Seas (COLREGs, 1972). Instead, the Organization developed non-mandatory guidelines on security aspects of the operation of vessels, such as pleasure craft, in order to ensure some coverage for vessels that do not fall within the scope of SOLAS Chapter XI-2 and the International Ship and Port Facility Security (ISPS) Code (2008).

The International Convention for the Prevention of Pollution from Ships (MARPOL), one of the most important international marine environmental conventions, was designed to minimize pollution from ships at sea, including from dumping, oil and exhaust emissions. All ships flagged under countries that are signatories to MARPOL are subject to its requirements. However, in terms of pleasure craft, MARPOL does not often apply considering are most vessels are under 400 Gross Tons (GT) and carry less than 15 persons. Annexe 1 states that yachts having a gross tonnage equal to or over 400 GT and are engaged in an international voyage must provide an International Oil Pollution Prevention Certificate. Annexe IV, which deals with sewage, is also only applicable to yachts with a gross tonnage equal to or over 400GT or carrying more than 15 people. In 2010, Annexe I was amended to ensure that any yacht or pleasure craft with a fuel tank capacity exceeding 30 cubic metres must be protected by a double hull (see Annexe 1 of Lasserre & Têtu (2015) for a synthesis) to prevent accidental spillage in case of collision or grounding.

The idea of creating a Polar Code (IMO 2018) dates back to the Exxon Valdez oil spill on the coasts of Alaska in March 1989 (Berlanga, 2017). With the 2018 IMO led implementation of the international polar code regime, management of global commercial shipping in the Arctic within a framework of ocean conservancy became the central objective. However, not all ships travelling in the Arctic are subject to all provisions of the Polar Code. Vessels that are not subject to SOLAS (fishing vessels, cargo ships of less than 500 GT (SOLAS, 1974), warships, pleasure yachts, ships not propelled by mechanical means and wooden ships of primitive build) all do not have to adhere to the core Part 1-A on Safety Provision of the Polar Code (IMO, 2018a). The Polar Code however has recommended that in the Arctic, the vessel's crew should include at least one ice navigator with documented evidence of having completed an ice navigational training program (O'Rourke, 2014).

Industry Association Initiatives

The Association of Expedition Cruise Operators (AECO) is an example of industry associations that has implemented environmental management on a voluntary basis to ensure safe tourism in what we refer to as the Euro-Russian Arctic and to a lesser extent in Arctic Canada. AECO members voluntarily agree to respect the guidelines issued by the association, but those guidelines typically apply to shore locations rather than regulations concerning marine activity, which in Svalbard is under the responsibility of both the Governor of Svalbard and the Norwegian Maritime

Authority (NMA) and in Canada is under the responsibility of the federal, territorial or Indigenous led governments. Recognizing the urgency of developing pleasure craft guidelines, AECO established a Yacht Working Committee in 2016 to look at the possible establishment of yacht (i.e. pleasure craft) guidelines. In Antarctica, the International Association of Antarctica Tour Operators (IAATO) plays a similar role to AECO and has led previous efforts to improve regulations of private and non-IAATO-members yachts with some success. In Svalbard, there is a clear need to continue this focus on yacht/pleasure craft voluntary or guidelines- based management considering the rapid increase in traffic. In Canada, where the increase has indeed been rapid, the numbers still remain small and thus it is less urgent in this region comparatively. However, it should be remembered that the risk and related consequences of a major pleasure craft accident are much higher in the Canada considering it is more remote and has less infrastructure and services. In general, the development of specific guidelines or management regimes for pleasure craft operation in the Arctic is needed to avoid development without the strategic benefit of an adequate mandatory system (Orams, 2010). Lessons from Antarctica can be applied in the Arctic and should be overseen in large part by industry associations.

National Frameworks and Initiatives

In Svalbard, the Spitsbergen Treaty provides the legal framework for maritime areas (Anderson, 2007). Article 2 and 3 of the Spitsbergen Treaty make explicit reference to the territorial sea where the Norwegian Marine Authority (NMA) ensures safety of navigation from 4 to 12 nautical miles (nm), and in the waters beyond to the outer limit of the Economic Exclusive Zone (EEZ) (200 nm) of Svalbard. Section 7 of the 2017 amended regulations No. 1400 of 2009 (NMA, 2017) contains provisions on the operation of vessels carrying 12 passengers or less and without a superstructure set Operating Limitations[2] within 12 nm of Svalbard (See Table 1 for a list of acts and regulations). Those small vessels must limit their activities in the territorial sea (12 nm) whenever they have or not a superstructure. Despite this regulation, it seems that there is a high level of pleasure craft involved in accidents, violating site visitation rules, and generally being unaware of risks of navigation in the Arctic waters (NCA, 2015). The Svalbard Environmental Protection Act (2002) amended in 2012 stipulates as a fundamental principle that "all access and passage in Svalbard shall take place in a way that does not harm, pollute or in any other way damage the natural environment or cultural heritage. Moreover, it should not result in unnecessary disturbance to humans or animals" noting that the area of its application extends to 12 nm from the coast. To limit the possibility of negative consequences, a number of local regulations and guidelines were developed for visitors (The Governor of Svalbard/Sysselmannen 2016: 69). "Safety precautions must be top priority when travelling in Svalbard" (ibid.) especially outside Management Area 10 (Isfjorden area) where planned trips will be evaluated on the need for insurance/bank guarantee to cover the cost of search and rescue operations and patient transportation should the need arise. A registration card is also mandatory. As such, all private boat operators travelling to Svalbard must "comply with the notification and SAR-insurance requirements" (ibid). Moreover, they are obligated to learn about local "regulations, particularly those dealing with environmental and safety precautions" (ibid).

Table 1. List of National Level management acts and regulations addressing Pleasure Craft in the Arctic

Area of application	Act	Regulations	Typology of Pleasure craft	Authority
All Canadian Waters for all vessels*	Canada Shipping Act (2001)	Small Vessel Regulations (2010)	Pleasure Craft	Transport Canada, Canadian Coast Guard
			Passenger carrying not more than 15 GT and ≥ 12 passenger	
			Workboat ≥ 15 GT	
			Human-powered vessel other than a pleasure craft	
			Not more than 6m; more than 6m but not more than 9m; more than 9, not more than 12; more than 12 but less than 24m; 23m or more	
NORDREG Area (Arctic) (EEZ, 0-200 nm)	Canada Shipping Act (2001)	NORDREG Typology	Pleasure Craft/adventurers	Canadian Coast Guard
Greenland's Water (0-3 nm); Danish Waters (3-200 nm),	Order on safety with recreational craft 1687 (2016);		New and existing recreational craft with a hull length > 24m;	Danish Maritime Authority
			Recreational craft with hull length < 24m (built before 2004)	
	Order for Greenland on safe navigation (1697) (2015)		Cargo ships of more than 150 Gross Tons and ships with 12 passenger or more	
	Technical Regulation no. 10 on small vessels carryings ≥ 12 passengers (2003)	Regulation 9 – Radio equipment; Regulation 10 – Measure to prevent pollution	12 passenger or less, Length > 15 meters and scantling numbers > 100	
Svalbard's water (0-12 nm); Norwegian Waters (4-200 nm)	Ship Safety and Security Act (2007)		Vessel carrying 12 passengers or less	Norwegian Maritime Authority

Russian Waters	CU TR 026/2012 "Safety of small-boats" (2012)	Vessels carrying 12 passengers or less, non-commercial purposes, and designed for recreation	Russian Ministry of Emergency Situations

Figure 1. Several pleasure crafts berth in a port of Longyearbyen, Svalbard. In background: the expedition vessel MS Fram owned by Hurtigruten. August 2017

Source: Julia Olsen

The implementation of regulations dealing with environmental and safety precautions is something that is also observed in the Canadian Arctic (Johnston et al., 2017). Under the Canada Shipping Act, 2001 (S.C. 2001, c.26) every vessel of 300 gross tons or more must report to the Northern Canada Vessel Traffic Services Zone (NORDREG), a system of management of shipping in the Arctic and administered by the Canadian Coast Guard's Marine Communications and Traffic Services (MCTS) when entering or leaving Canadian Arctic waters. In addition, vessels carrying more than 453 cubic metres of fuel are also required to notify the relevant authorities. However, pleasure craft, along with fishing vessels, tugboats, research vessels and other vessels, are not required to report to authorities. These categories of vessels are also not currently required to carry equipment that automatically tracks their movement, but a recommendation has been made by the Arctic Council to make carriage of AIS transponders by all tourism vessels in the Arctic mandatory (see Arctic Council, 2015). According to the Office of the Auditor General of Canada (VOA), the paucity of information on local weather conditions and the lack of mandatory reporting requirements for pleasure craft in the NORDREG area pose significant environmental risks relative to the enforcement mandate of the system (VOA, 2014). Most pleasure craft operators are aware of the risks posed by these challenges and according to Johnston et al (2017) the majority of operating pleasure craft report to the Canadian Coast Guard MCTS voluntarily because of the related benefits including access to ice and weather information and improved safety protocols.

In Canada, Transport Canada sets minimum requirements for pleasure craft and non-pleasure vessels. One program of particular relevance is the Office of Boating Safety (OBS), which helps educate boaters about these requirements with the help of tools such as guides for various areas, but no including the Arctic waters of the Northwest Territories and Nunavut. In the Canadian

Arctic (Northwest Territories and Nunavut), just like in Yukon as well as southern waterways, various safety organizations are working together such as the Canadian Safe Boating Council, the Canadian Red Cross and other agencies with prevention-based programs to reduce risks and environmental impacts of boating such as the National Defence and the Canadian Armed Forces, the Royal Canadian Mounted Police, etc. The harsh conditions and the vastness of the Canadian Arctic Archipelago is however an important constraint for search and rescue missions.

Figure 2. The SV 'Fine Tolerance' in Cambridge Bay, Canada

Source: Jackie Dawson/Emma Stewart

At the national scale, The Canada Shipping Act stipulates that in Canada a pleasure craft is defined as a vessel used for pleasure, holidays or daily life (Transport Canada, 2018). The Canada Shipping Act on Small Vessel Regulations (SOR/2010-91) states that pleasure craft respecting the safety equipment requirements of another country is not captured by Part 2 of the Act on the Safety Equipment for Pleasure Craft. However, the Small Vessels Regulations does not apply to pleasure craft in the NORDREG Area, but provides guidance on defining a pleasure craft (see Table 2 for a list of pleasure craft by length of hulls). For example, a rented charter vessel is a commercial vessel if the master is the owner or someone provided by the owner, or if it is used other than for pleasure (Transport Canada, 2018). Moreover, if an individual rents or charters a vessel without crew and either hires a master or operates it oneself, it is a pleasure craft only so long as it is used

solely for the purpose of pleasure, hunting, fishing, food harvesting, or for other daily living needs (Ministry of Justice of Canada, 2001).

Table 2 – List of 204 pleasure craft sailing in the Canadian Arctic waters (1990-2015), based on length of hulls

Length (m)	Number of Pleasure Craft	% of Total Pleasure Craft
1-5	3	1,47
6-10	19	9,31
11-15	100	49,02
16-20	27	13,24
21-25	15	7,35
26-30	5	2,45
31-40	6	2,94
41-50	10	4,90
51-60	4	1,96
61 or more	7	3,43
No data	8	3,92
Total	204	100

Source: CCG 2018

On the St Lawrence Seaway, a popular boating region in southern Canada, a guide for pleasure craft is available for those vessels that are equal to or more than 317.5 tons of displacement. Vessels less than 6 metres (20 feet) or less than one ton are not authorized to navigate the seaway. However, in all Canadian waters, every pleasure craft less than 12 metres in length and with a motor over 10 horsepower must be licenced through a free registration process and can be transferred to future owners. Transport Canada's newly drafted Canadian Guidelines for Passenger vessels operating in the Canadian Arctic make a distinction between pleasure craft and non-pleasure craft, but also states in section 1.3.4 that vessels such as pleasure craft are exempt from the environmental impact screening process (Transport Canada, 2017).

Similar to Canada and Norway, Greenland has a higher provision for maritime safety than is set out within the IMO's Polar Code. In Danish and Greenlandic waters, the Act on Safety at Sea (2002) sets administrative provisions relating to recreational crafts, but does not apply to the Faroe Islands and Greenland, according to section 36. Technical regulations on radio equipment and other measures to prevent pollution by small vessels carrying no more than 12 passengers were issued in 2003. Nearly two years after the Danish Act on Safety at Sea (2002) was put into force, a Danish royal decree (2004) amending the Land Regulations for the Protection of the Marine Environment of Greenland gave Nuuk full jurisdiction over the marine area up 3 nm from baseline. "This means the Greenlandic territorial sea consisting of inland waters on the landing side of the baseline of the territorial sea and the waters up to the outer boundary of the territorial sea. This is the line which at any point is at distance from the nearest point on the baseline corresponding to the latitude of the sea rhythm" (Department of Law and Justice of Greenland, 2004: Ch.1, par. 2). As stated on its website, the Government of Greenland is working on updating the regulations to enhance the protection of oceans to international standards. Danish maritime authorities have responsibilities for waters beyond 3 nm to 200 nm.

Figure 3. The increasingly diverse pleasure craft vessels in the Canadian Arctic increase challenges for coastal communities

Source: National Aerial Surveillance Program (NASP), Government of Canada

The transfer of jurisdictional authority by Copenhagen to Nuuk shares similitudes with the Principles in Law contained in both article 211 and 234 of the United Nations Convention on the Law of the Sea (UNCLOS) (Beckman et al., 2017). The Article 211 on pollution from vessels emphasize the need to harmonize policy and adopt laws and regulation for the prevention, reduction and control of marine pollution from foreign vessels exercising their right of innocent passage (UNCLOS, 1982, Section XII). Article 234 (Idem, Section 8) also stipulates that on ice-covered areas stipulates that coastal states have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution that could cause major harm or disturbance of the ecological balance. However, "such Laws and regulations shall have due regard to navigation and the protection and preservation of the marine environment based on the best available scientific evidence" (UNCLOS, 1982, Section XII). However, this argument has not been used by Copenhagen vis à vis Greenland just like Norway did around Svalbard; Oslo could have used this argument to reinforce maritime protection and safety around Svalbard waters by arguing that these areas are "ice-covered" in the sense of article 234 of UNCLOS (Fauchald, n.d.). Just like Canada and other states, Norway has the "right to adopt and enforce non-discriminatory laws and regulations for the prevention of marine pollution" within the territorial sea, as long as such standards do not hamper the right of innocent passage (UNCLOS, art. 17-21). However, states must respect the 'freedom of navigation' (Fauchald, 2011). While Norway could pass legislation that would only allow ships fulfilling certain standards into its ports or internal waters, such rules would not prevent ships that do not fulfill such requirements

from sailing in the territorial sea or the EEZ. On the Polar Code and guidelines, they cannot be regarded as any authoritative delimitation of the geographical scope of application of article 234 and constitute an evidence of states practicing an *opio juris* concerning the minimum extension of ice-covered areas (art. 31(3)(C) of Vienna Convention on Law of Treaties (ibid). Furthermore, Canada and Russia have adopted standards on vessel discharges and design construction equipment stricter than those agreed in regulations of the IMO.

In 2015, the Danish Maritime Authorities issued an order for Greenland on safe navigation (2015). The main purposes were to enhance safe navigation in Greenlandic waters, covering four types of vessels: 1) Cargo ships of more than 150 GT and ships carrying 12 passengers or more; 2) ships carrying more than 250 passengers; 3) all kind of foreign ships; and 4) ships of war, troopships and naval auxiliaries like other state-owned ships. Sections 7 and 13 of the order for Greenland on safe navigation are particularly relevant in the field of marine safety where the former underlines that ships shall have at least one person on board with the necessary competencies in ice-covered waters and documented relevant person's local knowledge of the waters to be navigated (Idem, Section 7). Section 13 states that the ship shall have an ice class corresponding, as a minimum, to the ice that it is navigating, but is much stricter when it comes to ships in the northern navigation zone of Greenland. Within this zone, it has stated that the ship shall have a minimum ice class 1C or equivalent ice class. In this regard, the *Crystal Serenity*, a cruise ship with a 1D-classification equivalent in the Baltic System that crossed the Northwest Passage in 2016 and 2017, wouldn't have been allowed in Greenland's waters, as illustrated by several Russians and French cruise ships with the same classification in coastal areas of Arctic Canada since 1990.

Data on the pleasure craft sailing along the coastline of Greenland is absent but there has been a large portion of pleasure craft or adventurers sailing in the Canadian Arctic since 1990 who wouldn't have been allowed to visit Greenland internal waters following these regulations. Finally and not the least importantly, Order 1687 issued by the Danish Maritime Authority in December 2016 regarding safety when operating recreational vessels addressed the category of smaller recreational craft with a length below 24 meters. A powerboat license confirming basic skills may be required depending on the hull length or power output of certain engine-drive pleasure craft.

In Russian Arctic waters, many foreigners need a visa to enter the Russian Federation. However, there are very few English speakers in Russian Arctic ports and most of the regulations are in Russian (Pashkevich et al., 2015). As explained by Pashkevich, there is no central authority in Russia to govern the growth marine tourism industry nor specific cruise or yacht management plans or guidelines except those on Franz Josef Land. In the frame of the Eurasian Customs Union Commission (2012) between Russia, Belarus and Kazakhstan, a Russian Federal Law came into force and changed the legislative acts of the Russian Federation relating to the definition of the term 'small-sized vessel'" (Eurasian Customs Union Commission, 2012; Solski, 2013; Gutsulyak, 2017). The law of the Eurasian economic commission on safety of small-size vessel (pleasure vessels) of 2012 introduced the notion of a pleasure craft, defined as a vessel with a total number of not more than 12 people, used for non-commercial purposes, and designed for recreation on water objects.

A Decentralized Regulation Process among Arctic States but Not Less Efficient: Discussion

The longer shipping seasons in the Arctic as well as increased access to Arctic waters bring both risks and opportunities and there are growing concerns regarding management of pleasure craft sailing in the Arctic. Given the range of potential socio-ecological impacts on marine environments and biodiversity that those pleasure craft could have, the aim of this paper was to review governance systems in Canada and to some extent in other polar and non-polar regions, in order to provide a global picture of an emerging and less studied challenge area and to identify areas for future research. Here we provide some comparative insights regarding the governance of pleasure craft across the Arctic and make some suggestions for potential research and policy needs.

Shipping is a global industry and despite complementarity between the IMO and the Arctic Council, the shipping and marine transport industry and relevant industry associations therefore typically prefer any region-specific rules to be hammered out within the IMO where their participation is well established. They also prefer to avoid spatially fragmented regulations or dealing with complementary or harmonized environmental protection regulations. In this regard, there was very little chance that the Arctic Council would emerge as the leader in the provision and implementation of a mandatory Polar Code. A mandatory Polar Code led by the Arctic Council would have touched underlying geopolitical controversies over coastal states' jurisdiction in Arctic waters. Moreover, the Polar Code seems to be much less stringent than Canadian regulations. In sum, the IMO seems to be the most suitable institutional body to implement a harmonized Polar Code for pleasure craft as underlined by Stokke (2012). A dual & complementary action by the United Nations IMO and the Arctic Council would be to enhance the strength of regulations, but the IMO is much more recognized at the world level which would have an impact on its authority to implement mandatory regulations. It can be argued that the adoption of a Polar Code does not affect the freedom of states to adopt measures in accordance with article 234. If the Polar Code were set up as a treaty, it would have been binding for the states that accept it and they would not have the right to invoke article 234 as a basis for regulatory jurisdiction.

The implementation of the Polar Code adds a new set of regulations for certain types of shipping across all polar regions, and is a promising initiative to deal with national data and management differences; but as of yet the Code does not specifically comment on or regulate smaller private tourism vessels such as pleasure craft. At the national level of Arctic states, there are some regulations covering different descriptions of what we usually use as 'pleasure craft' based on NORDREG's terminology in Canada but there are significant variations amongst each regime.

Canadian regulations applying to Canadian waters could provide a useful management system and typology, but currently do not apply to the waters of Nunavut and the Northwest Territories, and the NORDREG recording system is not mandatory for pleasure craft.

There is certainly a need for further discussion on what should be a pleasure craft and what should not, but in terms of monitoring, a large proportion of pleasure craft seem to report to NORDREG for the access to real-time information on sea ice, meteorological conditions, etc. Based on various datasets and auxiliary data from Environment Canada, there is a high possibility that there are in fact many more pleasure craft traversing the Canadian Arctic than statistical information reveals.

The lack of traceability of a vessel not carrying an AIS transponder such as pleasure craft and fishing vessels and the more private dimension of voyages organized by billionaires or mega-yacht owners are amongst some of the reasons.

The regulations established by the Danish Authority in partnership with Greenland's government and the Norwegian Authority regarding Svalbard are two good examples of how the precautionary safety principle has been integrated as a core principle in the management of marine and coastal environments. In both cases, the governments of Greenland and Svalbard are responsible for their coastal environments from the baseline to 3 and 4 nm from the shore respectively. The precautionary principle is a widely accepted general principle in environmental management that provides action to avoid environmental damage in advance of scientific certainty of damage, sometimes resulting in regulation forbidding human activities (Hagen et al., 2012).

Of importance to note is Danish Authority's 2003 Technical Regulation no. 10 on small vessels carrying 12 passengers or less, particularly the regulations providing measures to prevent pollution and regulation on the necessary radio equipment required. Regarding the type of vessels the regulations covers, (12 passenger or less, with a hull length of less than 15 meters), Arctic states could adopt these regulations on radio equipment and measures to prevent pollution such as the dumping of garbage and wastewater. The Order for Greenland on safe navigation of 2015, which applies to vessels of more than 150 gross tons and ships with 12 or more passengers, ensures that all vessels sailings in the northern navigation zone of Greenland must be classified at least as an ice-strengthened hull of category 1C.

These regulations differ from other jurisdictions, such as in Svalbard where the Governor of Svalbard implemented a fee system and regulation limiting as much as possible the activities of vessels with 12 or less passengers without a superstructure in the territorial sea. Additionally, and in collaboration with the AECO, the Governor of Svalbard for the cruise industry has already created guidelines, and the AECO is in the process of developing guidelines for pleasure craft, but this applies to lands and not seas.

Some regions of Svalbard also require pleasure craft to carry special insurance for SAR emergencies. Safety precautions are a top priority for the Svalbard government, especially outside the main Management Area 10 (Isfjorden area), and indeed seem to be a top priority for most governments, although approaches to safety precautions differ from jurisdiction to jurisdiction. A similar system fee and anchorage free as it is now could be interesting for coastal communities in Arctic Canada. The need to address the fiscal aspects of managing the cruise industry and pleasure craft tourism in order to present a common voice to federal partners is at the core of the Government of Nunavut 2016-2019 Marine Tourism Management Plan.

Finally, in Antarctica, governance of pleasure craft is even stricter, as there is a distinction between IAATO members and private yachts, with the latter highly encouraged to join the IAATO. A pleasure craft sailing in Antarctica with more than 12 passengers is automatically classified as an expedition vessel making landings, and as such could be required to provide a dockside observer scheme, highly encouraged to carry an IAATO observer on board, provide all planned Antarctic itineraries, and comply with all IAATO by-laws, objectives and standard operating procedures. Arctic regions should pay careful attention to lessons learned and to established governance (formal and informal) that exist in Antarctica where pleasure craft are already operating to a greater extent.

A major challenge is certainly the fact that different jurisdictions and nations use significantly different definitions, methods of sampling, reporting protocols, and management legislation. It could pose a problem for a crew circumnavigating the Arctic and not willingly committing illegal acts or not possessing required permits. Without interfering with the sovereign jurisdictions of nation states, there is certainly a need for more centralized information for pleasure craft on best practices for various sites and communities of the Arctic, especially in the Canadian Arctic. International mechanisms such as UNCLOS also exist and are managed by the Government of Greenland. Given Canada's position that the Northwest Passage constitutes internal waters, invoking section 7 and 13 of the UNCLOS could potentially increase the safety in the waters surrounding the Canadian archipelago. Canadian Rangers or any relevant local or regional body could be an important tool for ensuring local safety and security throughout light and rapid water patrols.

In sum, the melting of sea ice in the Arctic increase opportunities for shipping activities but also increase risks and challenges associated with understanding the impacts of pleasure craft in different jurisdictions using dissimilar reporting approaches. Shipping across the Arctic region requires sailing through various national regulations monitored by different institutional governance structures that interplay with each other's. By identifying the management and governance practices that exist to manage pleasure craft across the polar regions, this paper has attempted to respond to this challenge to draw global pan-Arctic comparisons and understandings. More research will be needed to understand behaviors, motives and their impacts on communities and shore locations. Exploring the possibility of introducing stricter Arctic safety equipment provisions for recreational boaters is an approach that deserves more research. As we have seen in recent years, drifting pack ice in the Canadian Arctic is a major safety and security challenge for Arctic ship owners and mariners.

Notes

1. See, among others, Maher, 2010; Dawson et al. 2014; Maher et al. 2014; Pizzolato et al. 2014; Viken, 2014; Lamers & Pashkevich, 2015; Lasserre and Têtu, 2015; Shirokiy, 2015; Borch et al. 2016; Lasserre et al. 2016; Pizzolato et al. 2016; Bystrowska & Dawson, 2017; Bystrowska & Dolnicki, 2017; Bystrowska et al. 2017; Huijbens & Lamers, 2017; Johnston et al. 2017; Lamers et al. 2017; Stewart et al. 2017; Têtu, 2018; Dawson et al. 2017a; 2018.
2. A superstructure is an extended construction of any building or platform that rises above the rest of the building or platform in a distinct manner.

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