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Compulsory Pilotage in Straits Used for International Navigation

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MV Selendang Ayu (2004)  
The ship ran aground off Unalaska Island (US), resulting in the death of six crew members and the crashing of a US Coast Guard helicopter. In addition, the grounding of the vessel caused an oil spill. The rescue mission took nearly sixty hours.  
Sources: Ocean Conservancy; Alaska Public Media; AMSA (2009) p 88-89

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Thank you, my beloved little brother and my dear friends and fellow students. And thank you, prof. dr. Hey, for being so chill. Special thanks to my best friend, Anneke. You have been amazing. I would not be here if it was not for you, and I will always be grateful for that.

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## **ABSTRACT**

Over the last years, maritime traffic in the Bering Strait has increased. This is the result of alterations in the Arctic environment, e.g. the melting of ice. One of the consequences of increased shipping activities is the higher risk of incidents. Especially in bodies of waters such as the Bering Strait, which are subject to extreme weather conditions. This thesis focusses on promoting safe navigation in the Bering Strait. To that end, it explores the legal feasibility of implementing a system of compulsory ice pilotage in the Bering Strait. It uses the compulsory pilotage system applicable in the Torres Strait and Great North East Channel as a case study.

**Key words** Bering Strait – straits used for international navigation – compulsory pilotage

# TABLE OF CONTENT

<b>ACKNOWLEDGEMENTS .....</b>	<b>II</b>
<b>ABSTRACT .....</b>	<b>III</b>
<b>TABLE OF CONTENT .....</b>	<b>IV</b>
<b>ACRONYMS, ABBREVIATIONS AND DEFINITIONS .....</b>	<b>VI</b>
<b>1 INTRODUCTION .....</b>	<b>1</b>
1.1 A WHOLE NEW WORLD OPENING UP.....	1
1.1.1 <i>Welcome to the Bering Strait</i> .....	1
1.1.2 <i>Problems on the Horizon</i> .....	4
1.1.3 <i>Killing Two Birds with One Stone: Introducing the Ice Pilot</i> .....	5
1.1.4 <i>Research Question</i> .....	6
1.2 METHODOLOGY.....	6
1.3 OVERVIEW.....	7
<b>2 LEVELS OF GOVERNANCE IN THE BERING STRAIT .....</b>	<b>8</b>
2.1 INTRODUCTION.....	8
2.2 GLOBAL GOVERNANCE .....	8
2.3 REGIONAL GOVERNANCE .....	10
2.4 BILATERAL GOVERNANCE.....	11
2.5 CONCLUSION.....	13
<b>3 INTRODUCING COMPULSORY ICE PILOTAGE IN THE BERING STRAIT BASED ON THE AUSTRALIAN CASE STUDY .....</b>	<b>14</b>
3.1 INTRODUCTION.....	14
3.2 PILOTAGE .....	14
3.3 CASE STUDY: COMPULSORY PILOTAGE IN THE TORRES STRAIT.....	15
3.3.1 <i>The Torres Strait</i> .....	15
3.3.2 <i>The Establishment of Compulsory Pilotage in the Torres Strait</i> .....	16
3.3.3 <i>Aftermath</i> .....	18
3.4 IMPLEMENTING COMPULSORY ICE PILOTAGE IN THE BERING STRAIT.....	21
3.4.1 <i>Determining the Level of Governance</i> .....	23
3.4.1.1 Bilateral Implementation.....	23
3.4.1.2 Regional Implementation .....	23
3.4.1.3 Global Implementation.....	24
3.5 CONCLUSION.....	25
<b>4 PART I - THE BERING STRAIT AS A PARTICULARLY SENSITIVE SEA AREA (PSSA) .....</b>	<b>26</b>
4.1 INTRODUCTION.....	26
4.2 STEP 1: SIGNIFICANT CHARACTERISTICS IN THE BERING STRAIT.....	26
4.3 STEP 2: VULNERABILITY TO SHIPPING INCIDENTS .....	27
4.4 CONCLUSION.....	28
<b>5 PART II: COMPULSORY PILOTAGE AS AN ASSOCIATED PROTECTIVE MEASURE (APM).....</b>	<b>29</b>
5.1 INTRODUCTION.....	29
5.2 STEP 3A: EFFECTIVENESS.....	29
5.3 STEP 3B: LEGAL BASIS .....	29
5.3.1 <i>Legal Basis 1: The Right of Transit Passage</i> .....	30
5.3.1.1 Strait States' Limited Jurisdiction in Straits Where Transit Passage Applies – Section 2 Part III UNCLOS	32
5.3.1.2 Enforcement of Measures Applicable to Straits used for International Navigation - Article 233 UNCLOS	34
5.3.1.3 Applying Legal Basis 1 to the Bering Strait .....	35
5.3.2 <i>Legal Basis 2: Provisions Regarding the Protection of the Marine Environment</i> .....	35
5.3.2.1 Applying Legal Basis 2 to the Bering Strait .....	37

- 5.4 CONCLUSION..... 37
- 6 CONCLUSION..... 39**
- 6.1 SUMMARY ..... 39
- 6.2 HOW CAN A SYSTEM OF COMPULSORY ICE PILOTAGE IN THE BERING STRAIT BECOME LEGALLY FEASIBLE? ..... 39
- 6.3 CONCLUDING REMARKS ..... 40
- 7 INDEX OF AUTHORITIES..... 41**
- 7.1 BOOKS AND JOURNALS ..... 41
- 7.2 INTERNATIONAL INSTRUMENTS ..... 46
- 7.3 CASE LAW ..... 50
- 7.4 REPORTS ..... 50
- 7.5 WEBSITES..... 51
- 7.6 MISCELLANEOUS..... 57

## ACRONYMS, ABBREVIATIONS AND DEFINITIONS

<b>AMSA</b>	Arctic Marine Shipping Assessment
<b>APM</b>	Associated Protected Measure
<b>Arctic Five</b>	Russia, the USA, Canada, Norway and Denmark (as far as it concerns Greenland)
<b>Arctic States</b>	Russia, the USA, Canada, Norway and Denmark (as far as it concerns Greenland), Iceland, Sweden, Finland
<b>CAFF</b>	Conservation of Arctic Flora and Fauna (Arctic Council working group)
<b>China</b>	People's Republic of China
<b>EEZ</b>	Exclusive economic zone
<b>IMO</b>	International Maritime Organization
<b>km</b>	Kilometres
<b>UNCLOS</b>	United Nations Convention on the Law of the Sea
<b>MARPOL</b>	International Convention for the Prevention of Pollution from Ships
<b>MEPC</b>	Marine Environment Protection Committee (IMO committee)
<b>m</b>	Meter
<b>nm</b>	Nautical mile
<b>Northern Sea Route Rules</b>	Rules of navigation in the water area of the Northern Sea Route (2020)
<b>p</b>	Page
<b>PAME</b>	Protection of the Arctic Marine Environment (Arctic Council working group)
<b>para</b>	Paragraph
<b>Polar Code</b>	International Code for Ships Operating in Polar Waters
<b>PSSA</b>	Particularly Sensitive Sea Area
<b>Russia</b>	Russian Federation
<b>SOLAS</b>	International Convention for the Safety of Life at Sea
<b>STCW</b>	International Convention on Standards of Training, Certification and Watchkeeping for Mariners
<b>US</b>	United States of America

# 1 INTRODUCTION

## 1.1 A Whole New World Opening Up

### 1.1.1 Welcome to the Bering Strait

In February 2021, icebreaker and LNG Tanker *Christophe de Margerie* sailed from Jiangsu (the People's Republic of China (China)) to Sabetta (the Russian Federation (Russia)) (figure 1).<sup>1</sup> *Prima facie* not a spectacular fact. However, the *Christophe de Margerie* used the Russian Northern Sea Route to sail to the Arctic terminal. That makes her the first large-tonnage cargo vessel ever to conduct such a voyage in mid-winter.<sup>2</sup> Normally, the eastern part of the Northern Sea Route is only available for navigation from July-November.<sup>3</sup> Thanks to the *Christophe de Margerie*, that navigation window has just become wider.<sup>4</sup>

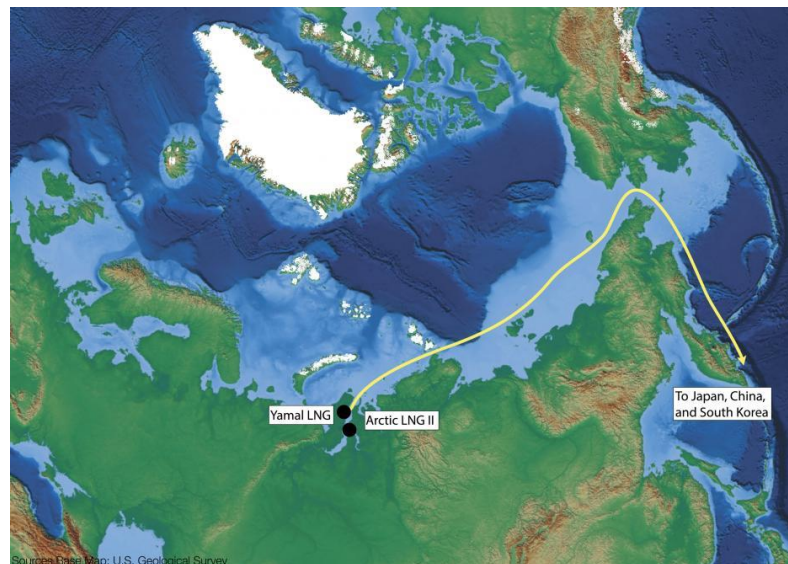


Figure 1 Estimated route of the *Christophe de Margerie* in February 2021<sup>5</sup>

The portal through which the *Christophe de Margerie* can sail from the Pacific Ocean to Sabetta on the Yamal Peninsula, is called the Bering Strait. This strait lies between the Seward Peninsula (Alaska, the United States of America (the US)) and the Chukchi Peninsula (Siberia, Russia) (figure 2). It is a shallow body of water with an average depth of 50 meters (m).<sup>6</sup> The maximum depth is 90m.<sup>7</sup> At its most narrow point the strait is 47 nautical miles (nm) ( $\approx$  87 kilometres (km)) wide.<sup>8</sup> Within that narrow point lie two islands and one rock:

- Big Diomedede Island or Ratmanova Island (Russian territory);

<sup>1</sup> Arctic shipper shows off a historical icebreaking voyage (thebarentsobserver.com). LNG stands for liquefied natural gas (ship-technology.com)

<sup>2</sup> *Christophe de Margerie* finalising first (Northern Sea Route, ed) NSR transit in February (offshore-energy.biz); Tanker embarks on first ever mid-winter voyage on Northern Sea Route ((thebarentsobserver.com)

<sup>3</sup> *Christophe de Margerie* finalising first (Northern Sea Route, ed) NSR transit in February (offshore-energy.biz)

<sup>4</sup> Arctic shipper shows off a historical icebreaking voyage (thebarentsobserver.com)

<sup>5</sup> Humpert (2021)

<sup>6</sup> Bering Strait (worldatlas.com)

<sup>7</sup> Bering Strait (worldatlas.com)

<sup>8</sup> Berkman et al. (2016) p 186

- Little Diomed Island or Krusenstern Island (US territory);
- Fairway Rock (US territory).<sup>9</sup>

According to the 1990 Maritime Boundary Agreement (also known as the Baker-Shevardnadze Agreement), the waters inside the strait are divided between Russia (at the time the Union of Soviet Socialist Republics) and the US.<sup>10</sup> Following the point of division, 65° 30' North, 168° 58' 37" West, east of the Bering Strait falls under Russian sovereignty and west of the Bering Strait under American sovereignty (figure 2).<sup>11</sup> Although both States adhere to the agreement, Russia has yet to ratify it.<sup>12</sup> Meanwhile, the US deems the delineated maritime boundary customary international law.<sup>13</sup> For the waters outside of the Bering Strait, both Russia and the US have established an exclusive economic zone (EEZ) (figure 2).<sup>14</sup>

The Bering Strait is identified as a strait used for international navigation where vessels and airplanes enjoy the right of transit passage.<sup>15</sup> When it comes to adopting and enforcing measures that promote safety of navigation and environmental protection within such straits, the jurisdiction of coastal States is limited.<sup>16</sup> Moreover, the effectuation of the measures cannot lead to discrimination or "(...) denying, hampering or impairing the right of transit passage (...)"<sup>17</sup> Strait States are only allowed to take enforcement measures in *extraordinary* situations caused by violations of Articles 42.1(a) and (b) of the United Nations Convention on the Law of the Sea (UNCLOS).<sup>18</sup> As will become clear, what constitutes "hampering" is disputed.<sup>19</sup>

The Bering Strait is part of a larger area called the Bering Strait Region (figure 2).<sup>20</sup> This region consists of the southern part of the Chukchi Sea, the northern part of the Bering Sea and the associated coastal zones.<sup>21</sup> According to the definition of the Conservation of Arctic Flora and Fauna (CAFF), which is an Arctic Council Working Group, the Bering Strait Region falls within the geographical scope of the Arctic Region (figure 3).<sup>22</sup> This may be different according to other definitions, since there is no consensus between scholars regarding the geographical scope of this region.<sup>23</sup> The Arctic Region is centred around the Arctic Ocean. Five States are considered as ocean's littoral States, i.e. Russia, the US, Canada, Norway and Denmark (as far as it

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<sup>9</sup> Berkman et al. (2016) p 189

<sup>10</sup> Agreement with the Union of Soviet Socialist Republics on the maritime boundary (1990); Berkman et al. (2016) p 186; Kaczynski (2007) p 2

<sup>11</sup> Article 2(1) 1990 maritime Boundary Agreement; Young et al. (2020) p 11

<sup>12</sup> Kaczynski (2007) p 4

<sup>13</sup> Kaczynski (2007) p 2

<sup>14</sup> Agreement with the Union of Soviet Socialist Republics on the maritime boundary (1990)

<sup>15</sup> Articles 37 and 38 UNCLOS, AMSA (2009) p 109. See 5.3.1

<sup>16</sup> Article 42.1 UNCLOS. This in contrast to the territorial sea, to which the sovereignty of the coastal State is extended and the right of innocent passage applies – see Part II, Section 1 UNCLOS

<sup>17</sup> Article 42.2 UNCLOS

<sup>18</sup> Article 233 UNCLOS Van Dyke (2014) p 40; Neher (2009) p 340

<sup>19</sup> See chapters 3.3.2 and 5.3.1

<sup>20</sup> Berkman et al. (2016) p 187-190

<sup>21</sup> Young et al. (2020) para 1.3.1

<sup>22</sup> This is according to the 10°C isotherm set by CAFF. The Arctic is set as the region where during the summer the temperature, on average, doesn't rise above 10°C. Evidently, this demarcation of the Arctic Region is not set in stone. Due to global warming, the 10°C line is moving, decreasing the region - see Molenaar (2017) p 26; Golitsyn (2014) para 17.1

<sup>23</sup> Oude Elferink et al. (2013) p 9 and 11-12



concerns Greenland).<sup>24</sup> Together, these five States are called the Arctic Five.<sup>25</sup> In turn, the Arctic Five in conjunction with the other circumpolar States, i.e. Iceland, Finland and Sweden, are known as the Arctic States.<sup>26</sup>



Figure 2 The Bering Strait Region<sup>27</sup>

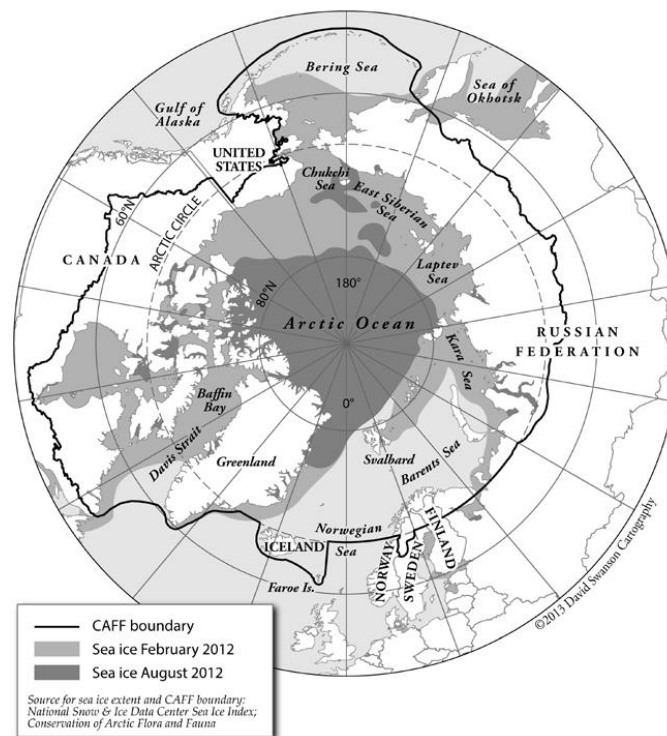


Figure 3 The Arctic Region according to the 10 °C isotherm definition of CAFF<sup>28</sup>

<sup>24</sup> Koivurova et al. (2020) p 419-420

<sup>25</sup> Ilulissat Declaration (2008); Koivurova et al. (2020) p 419-420; Golitsyn (2014) para 17.1

<sup>26</sup> Golitsyn (2014) para 17.1

<sup>27</sup> Young et al. (2020) para 1.3.1

<sup>28</sup> Oude Elferink et al. (2013) p 12

The Bering Strait is of great importance for many reasons, including, but not limited to, the following grounds:

- 1) the Bering Strait is the exit/entry point of three major trans-Arctic shipping corridors.<sup>29</sup> These are the Northeast Passage (via Russia), the Northwest Passage (via Canada) and the Transpolar route (via the Central Arctic Ocean) (figure 4).<sup>30</sup> Within the Northeast Passage lies the Northern Sea Route. According to Russian legislation, this commercial shipping route ranges from Zhelaniya Cape to the Bering Strait, i.e. Dezhneva Cape (66° North).<sup>31</sup> These routes provide a shorter seaway between the Pacific and the Atlantic Ocean - compared to the traditional shipping routes via the Panama Canal or Suez Canal.<sup>32</sup> Out of all these routes, the Northern Sea Route is considered to be the most practical one;<sup>33</sup>
- 2) the strait has close proximity to Asian heavyweight traders, such as China, Japan and the Republic of Korea.<sup>34</sup> This gives the strait a strategic advantage;<sup>35</sup>
- 3) the strait has a wealth of marine biodiversity.<sup>36</sup> It is considered "(...) one of the most ecologically significant places on the planet".<sup>37</sup> In addition, and like the rest of the Arctic, the environment of the Bering Strait Region is fragile;<sup>38</sup>
- 4) the strait is home to several indigenous peoples whose survival depends on that fragile environment.<sup>39</sup>

### 1.1.2 Problems on the Horizon

Due to the outcome of Christophe de Margerie's voyage, the prospect of year-round navigation throughout the entire Russian Arctic has become reality.<sup>40</sup> As made clear by reasons 1 and 2, the Bering Strait as a seaway provides many benefits and not only for the circumpolar States. At the same time, reasons 3 and 4 show that an increase of (trans-)Arctic shipping will pose dangers to the fragile environment, with all that this implies. Furthermore, navigating the Arctic waters remains extremely dangerous and few search and rescue possibilities are available, among other things.<sup>41</sup> That said, there is no way back: the Bering Strait is open. This does not mean, however, one has to sit idle. It is clear what challenges lie ahead and therefore, it is time to propose solutions.

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<sup>29</sup> Solski (2018) p 3

<sup>30</sup> Shipping in the Bering Strait (oceanconservancy.org); Rothwell (2013) p 91

<sup>31</sup> Article 5.1 Merchant Shipping Code, as amended (1999); The water area of the Northern Sea Route (nsra.ru). The full description of the boundaries of the Northern Sea Route can be found in Annex 3.II of the Rules of navigation in the water area of the Northern Sea Route. The Bering Strait is district 28

<sup>32</sup> AMSA (2009) p 44; Holroyd (2020) p 322

<sup>33</sup> Solski (2018) p 4

<sup>34</sup> Rothwell (2013) p 91

<sup>35</sup> Rothwell (2013) p 91

<sup>36</sup> Young et al. (2020) para 1.3.1; Lee et al. (2020) p 25

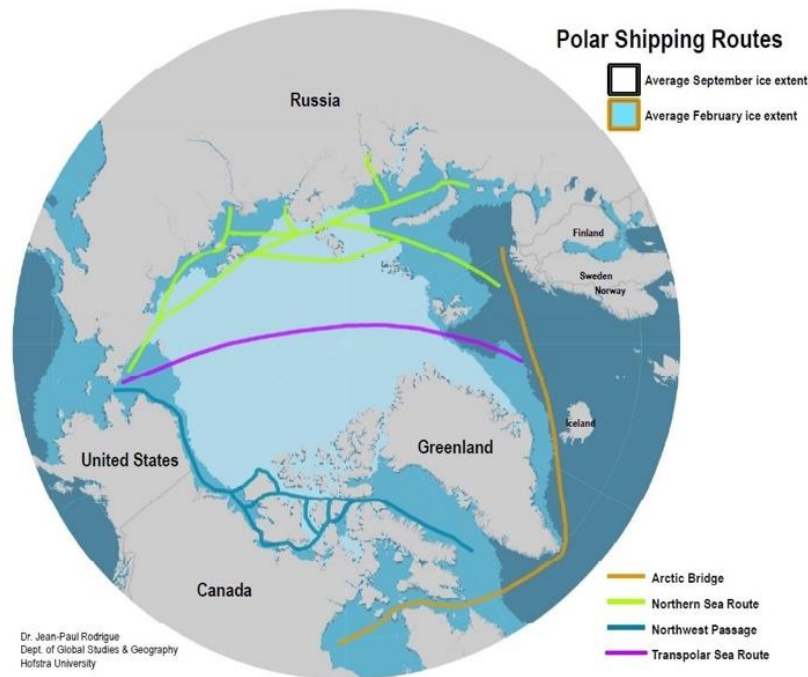
<sup>37</sup> IMO Announces Safety Measures for the Bering Strait, One of the Most Ecologically Significant Places on the Planet (oceanconservancy.org)

<sup>38</sup> AMSA (2009) p 119, 127

<sup>39</sup> E.g. food security – see Raymond-Yakoubian & Zdor (2020) para 4.4; Ilulissat Declaration (2008); AMSA (2009) p 106 and 126-127

<sup>40</sup> Tanker embarks on first ever mid-winter voyage on Northern Sea Route (thebarentsobserver.com); Christophe de Margerie finalising first (Northern Sea Route, ed) NSR transit in February (offshore-energy.biz)

<sup>41</sup> AMSA (2009) p 171

Figure 4<sup>42</sup>

### 1.1.3 Killing Two Birds with One Stone: Introducing the Ice Pilot

The Bering Strait is not the only strait used for international navigation where transit passage applies, where it is dangerous to navigate and where there is a fragile environment that needs protection. A parallel can be drawn with the Australian Torres Strait where an unconventional protective measure is implemented. Since 6 October 2006, it is mandatory for merchant vessels that meet certain criteria to employ a pilot when they navigate through the Torres Strait using the Great North East Channel.<sup>43</sup> Pilots can guide the vessels safely through the strait because of their extensive knowledge of the local waters.<sup>44</sup> That is to say, pilotage increases the safety of navigation and thus reduces the risk of shipping incidents (and consequently damage to life and environment).<sup>45</sup> Pilots are usually employed in waters that fall under the full territorial sovereignty of the coastal State, i.e. ports and internal waters.<sup>46</sup> Introducing compulsory pilotage where vessels enjoy the right of transit passage, and where the coastal State's jurisdiction is thus limited, is a novice, and not without controversy.<sup>47</sup> Some maritime States, with the US and Singapore leading the way, assert *inter alia* that this system of compulsory pilotage is contrary to the law of the sea.<sup>48</sup> Put simply, according to those States the obligation to employ a pilot hampers transit passage.<sup>49</sup> Nevertheless, all States have complied with the Australian law from the start and even

<sup>42</sup> Russia's New Rules for Northern Sea Route Violate International Law (polygraph.info)

<sup>43</sup> Semaphore (2007) p 1; Tanaka (2019) p 128

<sup>44</sup> See chapter 3.2

<sup>45</sup> See chapter 3.2

<sup>46</sup> Solksi (2018) p 349; Rothwell (March 2021) para 3; Tanaka (2019) p 104

<sup>47</sup> Australia acknowledges the Torres Strait as a strait used for international navigation where transit passage applies in the Great North East Channel – LEG 89/15 paras 20-21. See chapter 3.3 for more information about Australia's system of compulsory pilotage

<sup>48</sup> Semaphore (2007) p 2

<sup>49</sup> Article 44 UNCLOS; Semaphore (2007) p 2. See chapter 5.3.1 for more information about transit passage

after fifteen years, compliance rates remain very high.<sup>50</sup> This offers perspective for the Bering Strait, especially since a small part of this strait already has a system of compulsory pilotage in place. The Russian Ministry of Transport used its coastal State jurisdiction to implement several navigation rules for the Northern Sea Route.<sup>51</sup> One of these rules is compulsory ice pilotage.<sup>52</sup> This rule is applicable to all commercial vessels and throughout the whole route, therefore including the northern part of Russia's Bering Strait share.<sup>53</sup> However, Russia's full territorial sovereignty over the entire Northern Sea Route is debated.<sup>54</sup> The US claims that the route includes several straits used for international navigation where transit passage applies.<sup>55</sup> Just like the Torres Strait and Great North East Channel-discussion, it is unclear whether Russia has jurisdiction to adopt mandatory ice pilotage for those parts of the route.

#### 1.1.4 Research Question

Introducing a scheme of compulsory (ice) pilotage in a strait used for international navigation is an example of long standing friction between coastal and maritime States.<sup>56</sup> The coastal States promote safety of navigation and protection of the environment; the maritime States promote the right of unhampered transit passage.<sup>57</sup> Even though the call for environmental protection becomes louder and is especially strident when it comes to the Arctic, introducing compulsory ice pilotage in the entire Bering Strait remains challenging.<sup>58</sup> The subject-matter of this thesis is examining on what legal basis ice pilotage can hypothetically be made mandatory for merchant vessels sailing through the Bering Strait. This leads to the following research question:

How can a system of compulsory ice pilotage in the Bering Strait become legally feasible?

## 1.2 Methodology

The methodology used in this thesis is legal doctrinal research by means of several different sources. Primary legal sources such as Australian and Russian national legislation and Resolutions from the International Maritime Organization (IMO) were used. In addition, secondary legal sources were used, including journals and handbooks. To be able to carry out proper research, it was important to get context

<sup>50</sup> Principal Advisor - Coastal Pilotage Operations of the Australian Maritime Safety Authority, email message to author, 5 May 2021

<sup>51</sup> Northern Sea Route Rules (2020). In full: Rules of Navigation in the Water Area of the Northern Sea Route (2020). The Ministry of Transport is authorized to establish such rules on the basis of Article 5.1(3) 1999 Merchant Shipping Code, as amended

<sup>52</sup> Rule 26 Northern Sea Route Rules (2020)

<sup>53</sup> Article 2 1999 Merchant Shipping Code as amended in conjunction with Rule 26 Northern Sea Route Rules (2020)

<sup>54</sup> Tanaka (2019) p 120

<sup>55</sup> Tanaka (2019) p 120

<sup>56</sup> Anton (2014) p 50

<sup>57</sup> Anton (2014) p 50; Tanaka (2019) p 128; Solski (2018) para 3.2

<sup>58</sup> Anton (2014) p 50; Ntovas (2014) para 3.8; Bateman & White (2009) p 199

vis-a-vis the ecological aspects of the research topic. For this, desktop research was used utilizing official governmental sources, national policy reports and news Articles.

### 1.3 Overview

This thesis tries to answer the question how a system of compulsory ice pilotage in the Bering Strait can become legally feasible. Chapter two provides context by discussing the different levels on which the Bering Strait is governed. Chapter three introduces ice pilotage in the Bering Strait as a hypothetical additional measure to the already existing instruments. In that context, pilotage in general as well as the establishment of the system of compulsory pilotage in the Torres Strait and Great North East Channel are discussed. This chapter ends with a concise discussion on which governance level the measure should be implemented in the Bering Strait. After deciding on a way forward, chapter four explores the possibility of proposing the Bering Strait as a Particularly Sensitive Sea Area (PSSA). Such a proposal must always be accompanied by an Associated Protective Measure (APM). Chapter five examines on what legal grounds mandatory ice pilotage can be adopted as an APM for the Bering Strait as a PSSA. Chapter six concludes this thesis by providing a short summary of the previous four chapters followed by the answer to the research question and concluding remarks.

## 2 LEVELS OF GOVERNANCE IN THE BERING STRAIT

### 2.1 Introduction

The Arctic region, including the Bering Strait, is currently centre stage to a multitude of changes.<sup>59</sup> One of which is the change in sea ice cover due to global warming.<sup>60</sup> This leads to *inter alia* an increase in (trans-)Arctic shipping activities.<sup>61</sup> During the period of 2008-2018, the Bering Strait has already seen its sea traffic expand with nearly 150 percent.<sup>62</sup> Such an upsurge has both positive and negative consequences.<sup>63</sup> The negative consequences of increased Arctic navigation can be mitigated via regulatory navigational instruments. Implementation thereof can take place on a multitude of governmental levels.

Navigation in the Bering Strait is governed on a global, regional, bilateral and unilateral level. Adopting navigational instruments must therefore be done on one of those four levels. This chapter provides an overview on all these levels of governance, with the exception of the unilateral level. Any navigational instrument adopted for the Bering Strait as a whole must be the result of consultations between both Russia and the US. It must also be agreed upon by both States. Hence, it falls without the scope of this thesis to discuss the unilateral governance of these two strait States.

This chapter commences with a discussion of global governance in paragraph 2.2. This is followed by an examination of the regional level in paragraph 2.3. The last level of governance, bilateral, is reviewed in paragraph 2.4. Paragraph 2.5 concludes this chapter.

### 2.2 Global Governance

The key global instrument for governing navigation in the Bering Strait, is the 1982 United Nations Convention on the Law of the Sea (UNCLOS).<sup>64</sup> The Convention provides a legal framework for "(...) all issues relating to the law of the sea".<sup>65</sup> This includes provisions relating to passage through straits used for international navigation (Part III) and protection and preservation of the marine environment (Part XII).<sup>66</sup> Furthermore, the UNCLOS has a specific provision regarding ice-covered areas: Article 234. This "Arctic exception" provides the Arctic States with wider prescriptive and enforcement jurisdiction when it comes to vessel-source pollution.<sup>67</sup> Russia uses Article 234 as the legal basis for its Northern Sea Route Rules.<sup>68</sup> However, the scope

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<sup>59</sup> Young et al. (2020) paras 1.3 and 5.3.1

<sup>60</sup> Young et al. (2020) para 5.2. The ice in the Arctic Ocean is decreasing with an average of 4.7% per decade and dwindling by 10-15% - see Summary for policymakers (2018) p 1; Arctic governance (cfr.org)

<sup>61</sup> Larsen (2014) para 28.2.6.1; Young et al. (2020) para 5.2; Shipping in the Bering Strait Region (oceanconservancy.org)

<sup>62</sup> Shipping in the Bering Strait Region (oceanconservancy.org)

<sup>63</sup> Young et al. (2020) para 1.3.1; Shipping in the Bering Strait Region (oceanconservancy.org)

<sup>64</sup> Molenaar (2017) p 32, Bankes & Das Neves (2020) p 376

<sup>65</sup> Preamble UNCLOS

<sup>66</sup> Part III UNCLOS

<sup>67</sup> Bankes & Das Neves (2020) p 383-384; Tanaka (2019) p 384

<sup>68</sup> Solksi (2018) p 270; AMSA (2009) p 66; Boone (2014) p 68



and use of Article 234 is not without controversy.<sup>69</sup> Scholars, for example, disagree on whether or not Article 234 covers solely the EEZ or includes the territorial sea as well.<sup>70</sup>

Most of the UNCLOS is considered to be a codification of customary international law.<sup>71</sup> Consequently, the provisions are binding even for States that are not a party to it. Of the eight Arctic States, the US is the only State that is not party to the UNCLOS.<sup>72</sup> Yet, the US has recognized the provisions of the UNCLOS as customary international law.<sup>73</sup> Moreover, in the 2008 Ilulissat Declaration, the Arctic Five, which includes the US, have emphasized the importance of the law of the sea and their commitment to it.<sup>74</sup>

Since the UNCLOS is a framework Convention, additional instruments are necessary to elaborate and further regulate (navigational) issues.<sup>75</sup> This is done via a multitude of (bi- and multilateral) Conventions, Regulations, Generally Accepted International Rules and Standards, and more, both on a global and on a regional level.<sup>76</sup> The UNCLOS leaves these “(...) other rules of international law” to the “(...) competent international organization (...)”.<sup>77</sup> When it comes to regulating global shipping, the competent international organization is the International Maritime Organization (IMO).<sup>78</sup> This United Nations agency has a mandate for preventing vessel-source pollution and promoting safe navigation.<sup>79</sup> The IMO is comprised of 174 Member States, including the US, and consists of an Assembly, a Council and several (sub)committees.<sup>80</sup> Several of its Conventions and instruments are already applicable to the Bering Strait, e.g. the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL).<sup>81</sup> Since 2017, the Bering Strait is subject to a polar specific IMO instrument: the Polar Code, of which parts have become legally binding by virtue of the integration into SOLAS, MARPOL and the International Convention on Standards of Training, Certification and Watchkeeping for Mariners (STCW).<sup>82</sup> The Code provides a global framework regarding the safety of navigation and environmental protection, tailor-made for polar regions.<sup>83</sup> It is a flexible instrument, making it easy to add additional measures in the future.<sup>84</sup> Currently, the Code is only binding for certain

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<sup>69</sup> Tanaka (2019) p 383-385. See chapter 5.3.2 for more information regarding Article 234 UNCLOS

<sup>70</sup> Tanaka (2019) p 383-384

<sup>71</sup> Bankes & Das Neves (2020) p 376

<sup>72</sup> Bankes & Das Neves (2020) p 376

<sup>73</sup> With the exception of Part XI The Area – see Oceans Policy Statements (1983); Berkman et al. (2016) p 192

<sup>74</sup> Bankes & Das Neves (2020) p 377; Arctic Strategy (2013) p 14

<sup>75</sup> Evans (2018) p 638

<sup>76</sup> Bankes & Das Neves (2020) p 375

<sup>77</sup> E.g. Articles 34(2) (“(...) other rules of international law”) and 41(4) (“(...) competent international organization (...)”) UNCLOS; Rothwell (March 2012) para 3

<sup>78</sup> Beckman (2007) p 326

<sup>79</sup> Introduction to the IMO (imo.org)

<sup>80</sup> E.g. the Maritime Safety Commission, the Maritime Environmental Protection Commission (MEPC) and the Legal Committee (LC) - structure of IMO (imo.org); Member States (imo.org); Hebban et al. (2020) p 238

<sup>81</sup> Golitsyn (2014) para 17.2

<sup>82</sup> In full: The International Code for Ships Operating in Polar Waters – see MEPC 68/21/Add.1 Annex 10; Milestone for polar protection as comprehensive new ship regulations come into force (imo.org). See chapter 2.2 for more information about the Polar Code

<sup>83</sup> Shipping in Polar waters (imo.org); Brigham (2020) p 404; Milestone for polar protection as comprehensive new ship regulations come into force (imo.org)

<sup>84</sup> Young et al. (2020) para 5.3.1

vessels within the scope of SOLAS or MARPOL.<sup>85</sup> In the future, the scope of the Polar Code will be extended to include non-SOLAS vessels as well.<sup>86</sup> In anticipation of this amendment, the Assembly has adopted a Resolution in December 2019.<sup>87</sup> Via that Resolution, the Assembly urges all Member States to voluntarily implement the Polar Code safety measures for non-SOLAS vessels.<sup>88</sup>

### 2.3 Regional Governance

At regional level, the Arctic Council is of great importance.<sup>89</sup> During the 1980's and 1990's, the Arctic Region was thought of as a distinct, low-tension region and a zone of peace.<sup>90</sup> Authority to control the region was appropriated by the circumpolar States.<sup>91</sup> For this reason, the Arctic States established the Arctic Council in 1996.<sup>92</sup> Aside from these eight States (in this setting called Members), the Arctic Council consists of six Permanent Participants representing indigenous peoples living in the Arctic Region and thirty-eight Observers.<sup>93</sup> As of 2019, the IMO has the status of Observer in the Arctic Council.<sup>94</sup>

The Arctic Council is not a regulatory body.<sup>95</sup> It is an inter-governmental discussion forum tasked with management of the region by promoting international cooperation, coordination and interaction between the Members.<sup>96</sup> Decision-making is based on consensus between the Members.<sup>97</sup> Its material scope includes sustainable development and overall environmental protection.<sup>98</sup> The Council makes assessments, recommendations and guidelines based on information derived from its Working Groups and Task Forces.<sup>99</sup> In the context of this thesis, the Protection of the Arctic Marine Environment (PAME) Working Group and its 2009 Arctic Marine Shipping Assessment (AMSA) are of great importance.<sup>100</sup> Outcomes from negotiations in Task Forces can result in legally binding agreements between the Members.<sup>101</sup> It is important to recognize that these binding agreements are not adopted through the Council but *under its auspices*. Thus far, three legally binding agreements have been

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<sup>85</sup> Shipping in Polar waters (imo.org)

<sup>86</sup> Shipping in Polar waters (imo.org)

<sup>87</sup> A 31/Res.1137

<sup>88</sup> A 31/Res.1137 p 2

<sup>89</sup> Wiseman (2020) p 349

<sup>90</sup> Young (2019) para 1

<sup>91</sup> Young (2019) para 2

<sup>92</sup> Article 1(b) Ottawa Declaration (1996). The Arctic Council is the successor of the Arctic Environmental Protection Strategy (AEPS), which was established in 1991 by the Rovaniemi Declaration

<sup>93</sup> About the Arctic Council, Arctic States, Permanent Participants, Observers (arctic-council.org). See also Articles 2 and 3 Ottawa Declaration

<sup>94</sup> IMO gets observer status at Arctic Council (imo.org). See chapter 2.3 for more information regarding the Arctic Council

<sup>95</sup> About the Arctic Council (arctic-council.org)

<sup>96</sup> International cooperation in the Arctic (arctic-council.org)

<sup>97</sup> Preamble Ottawa Declaration (1996)

<sup>98</sup> Article 1(a) Ottawa Declaration

<sup>99</sup> Koivurova (2009) p 148; How We Work, Working Groups (arctic-council.org)

<sup>100</sup> PAME (arctic-council.org); About PAME (pame.is); Arctic Marine Shipping Assessment (AMSA) (pame.is)

<sup>101</sup> Koivurova et al. (2020) p 415; Task Forces And Expert Groups (arctic-council.org)



adopted, i.e. Search and Rescue (SAR) (2011), Oil Spill Preparedness and Response (2013) and Enhancing International Arctic Scientific Cooperation (2017).<sup>102</sup>

## 2.4 Bilateral Governance

As adjacent States of the Bering Strait, Russia and the US have worked together on multiple occasions. Their first Bering Strait Region-related act of cooperation originates from 1867, when the US purchased Alaska from the Russians.<sup>103</sup> One hundred five years later the second act of cooperation was established: the 1972 Agreement on Cooperation in the Field of Environmental Protection.<sup>104</sup> In the succeeding 49 years, the need for (environmental) collaboration grew and more bilateral agreements followed (figure 5).<sup>105</sup>

A recent example of a cooperative act between Russia and the US is their joint proposal to the IMO Sub-Committee on Navigation, Communications and Search and Rescue in 2017.<sup>106</sup> They proposed to establish six two-way routes and six “precautionary areas” in the Bering Strait Region (figure 6).<sup>107</sup> Precautionary areas are areas that demand extra vigilance when navigating.<sup>108</sup> The recommendation of these measures is a direct result of the increase in shipping activities in the Arctic.<sup>109</sup> The aim is to reduce the risk of maritime casualties and ecological disasters.<sup>110</sup> The proposal was adopted by the IMO during the 99<sup>th</sup> session of the Maritime Safety Committee in 2018.<sup>111</sup> It is the first time the IMO adopted shipping routes in polar waters since the introduction of the Polar Code.<sup>112</sup> The new routes are intended for both international and domestic vessels of 400 gross tonnage and above.<sup>113</sup> Compliance with these measures is on a voluntary basis.<sup>114</sup> In 2020, a first review was published regarding adherence to the measures in 2019.<sup>115</sup> It concluded that in general vessels complied with the adopted shipping routes.<sup>116</sup>

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<sup>102</sup> In full: the Agreement on Cooperation on Aeronautical and Maritime Search and Rescue in the Arctic (2011); the Agreement on Cooperation on Marine Oil Pollution Preparedness and Response in the Arctic (2013); the Agreement on Enhancing International Arctic Scientific Cooperation (2017) – see About the Arctic Council ([arctic-council.org](http://arctic-council.org))

<sup>103</sup> Treaty concerning the Cession of the Russian Possessions in North America by his Majesty the Emperor of all the Russias to the United States of America

<sup>104</sup> Agreement on Cooperation in the Field of Environmental Protection Between the United States of America and the Union of Soviet Socialist Republics

<sup>105</sup> For a more in-depth overview on the important areas where the US and Russia have cooperated with each other and the instruments that resulted from those collaborations see Pincus (2020) p 341-345

<sup>106</sup> NCSR 5/3/7; U.S., Russia Propose Voluntary Bering Strait Shipping Routes ([defense.gov](http://defense.gov)). See also the preliminary findings of a six-year investigation of the USA coast guard: Bering Strait PARS Final Report 12.27.16

<sup>107</sup> NCSR 5/3/7 para 1; U.S., Russia Propose Voluntary Bering Strait Shipping Routes ([defense.gov](http://defense.gov))

<sup>108</sup> Ships' routeing ([imo.org](http://imo.org))

<sup>109</sup> U.S., Russia Propose Voluntary Bering Strait Shipping Routes ([defense.gov](http://defense.gov)); NCSR 5/3/7 paras 4-7

<sup>110</sup> U.S., Russia Propose Voluntary Bering Strait Shipping Routes ([defense.gov](http://defense.gov)); Shipping in Polar waters ([imo.org](http://imo.org))

<sup>111</sup> Maritime Safety Committee (MSC), 99<sup>th</sup> session 16-25 May 2018 ([imo.org](http://imo.org))

<sup>112</sup> Bai & Chircop (2020) p 274

<sup>113</sup> U.S., Russia Propose Voluntary Bering Strait Shipping Routes ([defense.gov](http://defense.gov)); Shipping in Polar waters ([imo.org](http://imo.org))

<sup>114</sup> Shipping in Polar waters ([imo.org](http://imo.org))

<sup>115</sup> Fletcher et al. (2020)

<sup>116</sup> Fletcher et al. (2020) p 28

Acts of cooperation between the USA and Russia which are applicable to the Bering Strait Region	Year
Treaty concerning the cession of the Russian possessions in North America by his majesty the emperor of all the Russias to the United States of America	1867
Agreement on Cooperation in the Field of Environmental Protection Between the United States of America and the Union of Soviet Socialist Republics	1972
Uniform Interpretation of Rules of International Law Governing Innocent Passage	1989
Agreement Between the USSR and the USA Concerning Cooperation in Combating Pollution in the Bering and Chukchi Seas in Emergency Situations	1989
Agreement between the government of the United States of America and the government of the Union of Soviet Socialist Republics concerning mutual visits by inhabitants of the Bering Straits region	1989
Agreement between the government of the United States of America and the government of the Union of Soviet Socialist Republics concerning the Bering Straits regional commission	1989
The Agreement Between the United States of America and the Union of Soviet Socialist Republics on the Maritime Boundary, with Annex	1990
Shared Beringian Heritage Program	1991
Agreement between the government of the Russian Federation and the government of the United States of America on scientific and technical cooperation	1993
Agreement Between the Government of the United States of America and the Government of the Russian Federation on Cooperation in the Field of Protection of the Environment and Natural Resources	1994
Agreement on the Conservation and Management of the Alaska-Chukotka Polar Bears Population	2000
Memorandum of understanding for cooperation in the areas of meteorology, hydrology and oceanography between the National Oceanic and Atmospheric Administration of the Department of Commerce of the United States of America and the Federal Service for Hydrometeorology and Environmental Monitoring of the Russian Federation	2005
Joint Statement of the President of the United States of America and the President of the Russian Federation on Cooperation in the Bering Strait Region	2011
Joint Statement of Secretary of State Hillary Clinton and Foreign Minister Sergey Lavrov on Cooperation in the Bering Strait Region	2012
Memorandum of Understanding between the Government of the United States of America and the Government of the Russian Federation Symbolically Linking National Parks in the Bering Strait Region	2013
Agreement Between the Government of the United States of America and the Government of the Russian Federation on Cooperation for the Purposes of Preventing, Deterring and Eliminating Illegal, Unreported, and Unregulated Fishing	2015
Voluntary Bering Strait Shipping Routes	2018

Figure 5<sup>117</sup>


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<sup>117</sup> Berkman, Vylegzhanin & Young (2016), p. 191-192

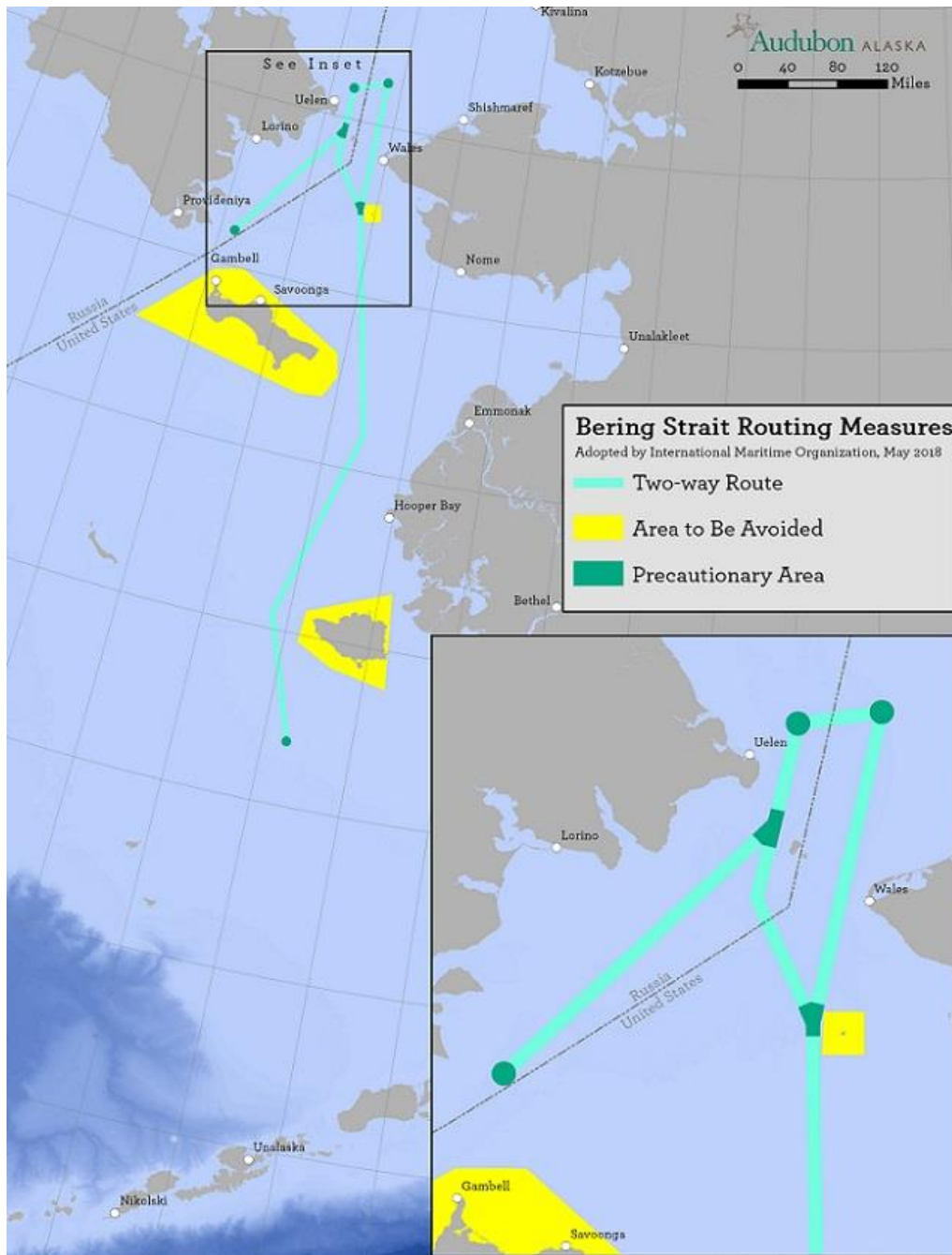


Figure 6 Voluntary shipping routes in the Bering Strait Region as adopted by the IMO<sup>118</sup>

## 2.5 Conclusion

Shipping activities in the Bering Strait are steadily increasing. Navigational measures can mitigate the negative consequences of this development. In the Bering Strait, such measures can be implemented on four different levels, i.e. at global, regional, bi- and unilateral level.

<sup>118</sup> IMO Authorizes New Bering Sea Routing (maritime-executive.com)

### 3 INTRODUCING COMPULSORY ICE PILOTAGE IN THE BERING STRAIT BASED ON THE AUSTRALIAN CASE STUDY

#### 3.1 Introduction

This chapter introduces compulsory ice pilotage as a hypothetical future additional measure. To this end, paragraph 3.2 gives a brief overview of pilotage and why it should be introduced as an additional measure. Paragraph 3.3 presents the case study: compulsory pilotage in the Torres Strait and Great North East Channel. Paragraph 3.4 discusses the level of governance at which compulsory ice pilotage in the Bering Strait can best be introduced. The chapter ends with a conclusion in paragraph 3.5.

#### 3.2 Pilotage

As is clear, the Bering Strait is facing serious challenges due to global warming opening up the Arctic for (trans-)Arctic shipping. Already there are several legal instruments in place which aim to prevent and/or mitigate shipping incidents in the Arctic in general and the Bering Strait in particular. As discussed above, these instruments, tailor-made for the Arctic, promote safe navigation and/or protect the marine environment.<sup>119</sup> Given the severity of the current situation in the Arctic and the serious implications of increased (trans-)Arctic shipping, the question arises what more can be done. A system of compulsory ice pilotage could provide a solution.

For over centuries, pilots have been (mandatorily) deployed to prevent shipping incidents.<sup>120</sup> Consequently, lives and the marine environment have been protected as well. Due to their experience with and knowledge of the local geographies, pilots are able to safely navigate vessels through extremely hazardous waters.<sup>121</sup> Ice pilots are marine officers who are especially trained to navigate through the different categories of ice.<sup>122</sup> The pilot does not take over command of the entire ship, that responsibility is still bestowed upon the captain.<sup>123</sup> The sole responsibility of the pilot is to guide the vessel safely through the piloted area.<sup>124</sup> To that end, the pilot shares its knowledge with the captain and provides support.<sup>125</sup> In 1968, the IMO adopted a Resolution on pilotage, acknowledging the role of pilots in increasing the safety of navigation in particular areas.<sup>126</sup> In the following years, the IMO has recommended the use of pilots in several areas.<sup>127</sup>

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<sup>119</sup> In case of the Polar Code: tailor-made for the circumpolar regions, thus including Antarctica – Shipping in polar waters (imo.org)

<sup>120</sup> Solski (2018) p 349; Pilotage (imo.org)

<sup>121</sup> Bateman & White (2009) p 187; Rothwell (March 2012) p 2

<sup>122</sup> Ice pilot (merriam-webster.com). For general information regarding the different categories of ice see Sea ice: types and forms (canada.ca)

<sup>123</sup> About coastal pilotage (amsa.gov.au)

<sup>124</sup> Master-pilot exchange (cultofsea)

<sup>125</sup> About coastal pilotage (amsa.gov.au); Master-pilot exchange (cultofsea)

<sup>126</sup> A.159/ES.IV

<sup>127</sup> Pilotage (imo.org)

At first, pilotage was only prescribed in certain harbours and other internal waters, based on the sovereignty of the coastal or port State in these areas.<sup>128</sup> Australia has shown that a compulsory pilotage regime can be successfully introduced in a strait used for international navigation, notwithstanding hot debate amongst the international maritime community and lasting disapproval by some States regarding the legal basis to do so.<sup>129</sup> Over the years, talks of introducing this measure in other straits used for international navigation have taken place, but words never turned into deeds.<sup>130</sup> The Bering Strait might change that. It would not be the first time a bold legal instrument was adopted in the fight for preserving the Arctic environment.<sup>131</sup> The follow-up question is if compulsory pilotage in the Bering Strait should be introduced via the same course of action as was done for the Torres Strait and Great North East Channel. The next paragraph describes what that course of action entailed.

### 3.3 Case Study: Compulsory Pilotage in the Torres Strait

Paragraph 3.3.1 offers a short, general overview of the Torres Strait. Paragraphs 3.3.2 and 3.3.3 describe the process of how Australia introduced a compulsory pilotage regime in the Torres Strait and Great North East Channel and its aftereffects.

#### 3.3.1 The Torres Strait

The Torres Strait is a shallow body of water between Cape York Peninsula (Australia) and Papua New Guinea.<sup>132</sup> It is approximately 90 nm ( $\approx$  167 km) wide and 150 nm ( $\approx$  278 km) long with depths averaging between 30-50 m (east) and 10-15m (west).<sup>133</sup> The Torres Strait is a strait used for international navigation and transit passage is applicable to vessels navigating the Great North East Channel.<sup>134</sup> The waters are divided between Australia and Papua New Guinea according to the 1978 Torres Strait Treaty.<sup>135</sup> The strait includes parts of the territorial sea and internal waters of both Australia and Papua New Guinea but falls mostly within the EEZ of either States.<sup>136</sup>

Within the strait lie about 150 islands, islets, shoals, coral reefs and cays.<sup>137</sup> These geographies provide habitat for a diverse and unique marine biodiversity.<sup>138</sup> Furthermore, this area is home to approximately 30.000 indigenous inhabitants (both

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<sup>128</sup> Solski (2018) p 349; Rothwell (March 2012) p 2. The presence of the pilot as a safety net adds value to a port – see Agripino de Castro & Cesar Luiz Pasold (2016) para 16.1

<sup>129</sup> See chapters 3.3.2 and 3.3.3

<sup>130</sup> I.e. the Straits of Malacca and Singapore and the Strait of Bonifacio – Hazmi bin Mohd Rusli (2011) p 514-515 and Anton (2014) p 78-79, respectively

<sup>131</sup> In 2018, the Arctic Five, together with China, the EU, Iceland, Japan and South Korea signed the Agreement to Prevent Unregulated High Seas Fisheries in the Central Arctic Ocean (CAO Fisheries Agreement). This agreement presents a milestone because it is the first agreement that prohibits unregulated fishing in the high sea even *before* commercial fishing is possible – see Bankes & Das Neves (2020) p 387

<sup>132</sup> MEPC 49/8 para 3.1

<sup>133</sup> MEPC 49/8 paras 2.2 and 4.1.2.2

<sup>134</sup> Bateman & White (2009) p 187; LEG 89/15 para 9

<sup>135</sup> In full: Treaty between Australia and the Independent State of Papua New Guinea concerning Sovereignty and Maritime Boundaries in the area between the two Countries, including the area known as Torres Strait, and Related Matters. The treaty entered into force in 1985 – see Australian Treaty Series 1985 No 4 (dfat.gov.au)

<sup>136</sup> MEPC 49/8 para 2.4

<sup>137</sup> MEPC 49/8 para 2.2

<sup>138</sup> E.g. the endangered flatback turtle and the dugong - MEPC 49/8 paras 2.2 and 3.1.2; Anton (2014) p 51



of Australian and Papua New Guinea nationality), who depend on the fragile marine ecosystem for their livelihoods.<sup>139</sup> Due to the uniqueness of the area, the strait is a beloved location for tourists, scientific researchers and others.<sup>140</sup> This gives the strait, aside from ecological significance, economic, cultural and scientific importance as well.<sup>141</sup>

The strait is used as a marine highway between the South Pacific Ocean and the Indian Ocean.<sup>142</sup> Unfortunately, it is hazardous to navigate.<sup>143</sup> In addition to the topographical features and its shallow waters, the strait is subject to complex tidal streams and unexpected storms and squalls which can impair visibility.<sup>144</sup> Some parts of the strait are isolated and remote, adding to the dangers as well.<sup>145</sup> The strait is also used by fishing and pleasure boats, giving rise to an extra risk of collisions.<sup>146</sup>

### 3.3.2 The Establishment of Compulsory Pilotage in the Torres Strait

Evidently, safety of navigation in the Torres Strait is a real concern.<sup>147</sup> Moreover, the consequences of a shipping incident can be disastrous for the fragile ecosystem.<sup>148</sup> For this reason, the Torres Strait already had a regime of *voluntary* pilotage in place since the late nineteenth century.<sup>149</sup> However, as the years went by, compliance with the voluntary pilotage regime declined.<sup>150</sup> In 1995, compliance rates for eastbound voyages were 70 percent and for westbound voyages 55 percent.<sup>151</sup> By August 2002, only 32 percent of eastbound voyages and 38.5 percent of westbound voyages complied with the voluntary pilotage scheme.<sup>152</sup> Despite having other protective measures in effect, the Australian government believed the Torres Strait was no longer adequately protected under these low compliance rates.<sup>153</sup> According to research, if the Torres Strait would have a scheme of compulsory pilotage, risks of shipping incidents would be reduced with 35 percent.<sup>154</sup> Upon this, Australia and Papua New Guinea combined their forces and submitted a proposal to the Maritime Environmental Protection Committee (MEPC) of the IMO in 2003.<sup>155</sup> They proposed to amend the 1990 Resolution in which the Great Barrier Reef was designated as a Particularly Sensitive Sea Area (PSSA), to include the Torres Strait.<sup>156</sup> A PSSA is an area which

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<sup>139</sup> MEPC 49/8 para 2.2; MEPC.133/53 Annex 21 para 2.3

<sup>140</sup> MEPC 49/8 para 3 in conjunction with MEPC.133/53 Annex 21 para 2.4

<sup>141</sup> MEPC 49/8 para 3 in conjunction with MEPC.133/53 Annex 21 para 2.4

<sup>142</sup> Anton (2014) p 5

<sup>143</sup> Bateman & White (2009) p 185

<sup>144</sup> Bateman & White (2009) p 185; Semaphore (2007) p 1

<sup>145</sup> MEPC.133/53 Annex 21 para 3

<sup>146</sup> Bateman & White (2009) p 187

<sup>147</sup> MEPC.133/53 Annex 21 para 3

<sup>148</sup> MEPC 49/8 para 1.3; Bateman & White (2009) p 189

<sup>149</sup> Bateman & White (2009) p 187

<sup>150</sup> Rothwell (March 2012) para 4

<sup>151</sup> LEG 89/15 para 6

<sup>152</sup> MEPC 49/8 para 5.9

<sup>153</sup> In 1996, the IMO approved Australia's proposal to introduce a compulsory ship reporting system (REEFREP) in the Torres Strait and Inner Great Barrier Reef Route - MSC.52/66 Annex 10. The legal basis for this system is found in SOLAS – see Rothwell (March 2012) para 4; Semaphore (2007) p 1

<sup>154</sup> Semaphore (2007) p 1; Bateman & White (2009) p 187

<sup>155</sup> MEPC 49/8. For an extensive overview on this proposal and the rest of the process, see Beckman (2007) p 330-336

<sup>156</sup> MEPC 49/8 para 1; Beckman (2007) p 329-330. The Great Barrier Reef was the first ever PSSA – see Anton (2014) p 58; MEPC.45/30. Currently, there are 17 areas designated as PSSA – see Particularly Sensitive Sea Areas (imo.org)

is in need of “(...) special protection through action by IMO (...)” against vessel-source pollution due to its valuable characteristics.<sup>157</sup> PSSA proposals include associated protective measures (APM’s).<sup>158</sup> These measures are proposed to “(...) prevent, reduce, or eliminate (...)” vessel-source pollution.<sup>159</sup> The APM adopted for the Great Barrier Reef as a PSSA concerns compulsory pilotage in the Inner Great Barrier Reef Route for specific vessels.<sup>160</sup> Australia and Papua New Guinea proposed that this measure should also extend to the Torres Strait.<sup>161</sup> They proposed a second APM as well, i.e. the designation of a two-way route through the strait.<sup>162</sup>

According to the 2001 PSSA guidelines, in order to be designated as a PSSA, the nominated area needed to fulfil the following three cumulative criteria:

- 1) attributes in the area must fall under at least one of the ecological, socio-economic, or scientific criteria set in Section 4.4 of the guidelines;
- 2) the area must be vulnerable to vessel-source pollution; and
- 3) the proposed APM must be able to “(...) prevent, reduce, or eliminate (...)” vessel-source pollution risks and be adopted by the IMO.<sup>163</sup>

Criteria 1 and 2 were obvious.<sup>164</sup> The Torres Strait has significance on multiple levels and its unique marine environment is extremely vulnerable to vessel-source pollution.<sup>165</sup> Criterion 3 posed a problem as far as it pertained to the compulsory pilotage APM. Evidently, compulsory pilotage would reduce the risks related to international shipping activities.<sup>166</sup> It was also one of the measures identified as an APM in the 2001 PSSA guidelines.<sup>167</sup> However, the area in which the APM would apply concerns a strait used for international navigation where the right of transit passage applies. The question arose whether there was a legal basis to implement a compulsory pilotage regime in such an area.<sup>168</sup> Australia and Papua New Guinea believed the UNCLOS provided a legal basis, more specifically Articles 39.2, 41.4, 194.1, 194.3(b), 194.5 and 211.6(a).<sup>169</sup> The measure could be enforced on the basis of Article 233.<sup>170</sup> Several States disagreed with this reasoning and referred to the UNCLOS to prove the opposite. According to these them, such a scheme violates Articles 38.1, 42.2 and 44 UNCLOS.<sup>171</sup> Some States also held that the IMO did not

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<sup>157</sup> A.982/24 para 1.2; Beckman (2007) p 327

<sup>158</sup> A.982/24 para 1.4

<sup>159</sup> A.982/24 para 1.4

<sup>160</sup> A.710/17; Great Barrier Reef Marine Park Act 1975; Beckman (2007) p 329

<sup>161</sup> MEPC 49/8 para 1; Beckman (2007) p 330

<sup>162</sup> MEPC 49/8 para 1; Anton (2014) p 60

<sup>163</sup> A.927/22; Beckman (2007) p 327

<sup>164</sup> MEPC 49/22 para 8.19

<sup>165</sup> See chapter 3.3.1

<sup>166</sup> Semaphore (2007) p 1; Bateman & White (2009) p 187

<sup>167</sup> A.927/22 para 6.1.3

<sup>168</sup> The MEPC had delegated the review of the PSSA proposal to a sub-committee, i.e. the Informal Technical Group. This sub-committee referred the question regarding the legality of the compulsory pilotage measure to the Safety of Navigation commission. This commission could not reach agreement on the matter. It reported back and advised the MEPC to forward the issue to the Legal Committee. The Legal committee could not come to a consensus either – see Beckman (2007) p 330-333

<sup>169</sup> MEPC 49/8 paras 5.12-5.16; LEG 89/15 paras 19-27. With the exception of Article 211.6(a), these Articles will be further discussed in chapter 5.3

<sup>170</sup> MEPC 49/8 para 6.2

<sup>171</sup> Bateman & White (2009) p 195. These Articles will be further discussed in chapter 5.3.1

have jurisdiction to adopt this measure because its own instruments did not provide for a legal basis.<sup>172</sup>

In 2005, Australia and Papua New Guinea proposed a compromise in which any language as to compulsory pilotage had been removed.<sup>173</sup> The MEPC agreed and adopted Resolution MEPC 133(53). This Resolution extends the Great Barrier Reef PSSA to include the Torres Strait and adopts the two-way route through the strait as an APM (figure 7).<sup>174</sup> Regarding the pilotage APM, the Resolution refers to paragraph 3.<sup>175</sup> This paragraph follows the text of the original Great Barrier Reef PSSA Resolution of 1990 and recommends flag States to follow Australia's system of pilotage.<sup>176</sup> In 2006, Australia implemented a scheme of compulsory pilotage in the Torres Strait and the Great North East Channel by amending its national law (figure 8).<sup>177</sup> The measure is applicable to certain vessels navigating that route.<sup>178</sup> The Australian government had used Resolution MEPC 133(53) as the legal basis for this implementation.<sup>179</sup> The amendments included provisions regarding enforcement. A vessel that did not take a pilot would not be denied passage.<sup>180</sup> Nevertheless, the owner, master or operator of the non-compliant vessel would face severe penalties next time she entered an Australian port.<sup>181</sup> This would also be the case if the vessel did not initially call upon a port and only passed through the strait.<sup>182</sup>

### 3.3.3 Aftermath<sup>183</sup>

After publicising its amended national law, many States (with the US and Singapore at the forefront) as well as large shipping companies expressed their discontent regarding this action.<sup>184</sup> Their main arguments against the compulsory pilotage scheme boil down to the following three points:

- 1) Resolution MEPC 133(53) does not provide a legal basis as it speaks in recommendatory terms;
- 2) a strait State is not allowed to implement a scheme of compulsory pilotage because in effect such a measure hampers transit passage; and
- 3) this scheme sets a precedent for other strait States which endangers the freedom of navigation.<sup>185</sup>

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<sup>172</sup> Anton (2014) p 61

<sup>173</sup> This was during the Maritime Safety Committee meeting of December 2004 – Beckman (2007) p 333; Anton (2014) p 63

<sup>174</sup> MEPC.133/53 Annex 21 p 1; Rothwell (March 2012) p 14-15

<sup>175</sup> MEPC.45/30; Semaphore (2007) p 2. Resolution MEPC.133/53 revoked Resolution MEPC.45/30 – see MEPC.133/53 Annex 21 p 1

<sup>176</sup> MEPC.133/53 Annex 21 p 1

<sup>177</sup> Semaphore (2007) p 1; Rothwell (March 2012) p 15; Navigation Act 1912 part IIIA div. 2 (now Navigation Act 2012)

<sup>178</sup> It applies to (a) all vessels of 70 meters and longer; and (b) all oil tankers and chemical/liquefied gas carriers, irrespective of their lengths – Article 162.1 Navigation Act 2012

<sup>179</sup> Rothwell (March 2012) p 15

<sup>180</sup> Semaphore (2007) p 2

<sup>181</sup> Semaphore (2007) p 2; Beckman (2007) p 326

<sup>182</sup> Anton (2014) p 66

<sup>183</sup> For an extensive overview of what States have said about this matter between 2004-2013, see Anton (2014) para 4.1

<sup>184</sup> Beckman (2007) p 337

<sup>185</sup> Semaphore (2007) p 2; Anton (2014) p 62



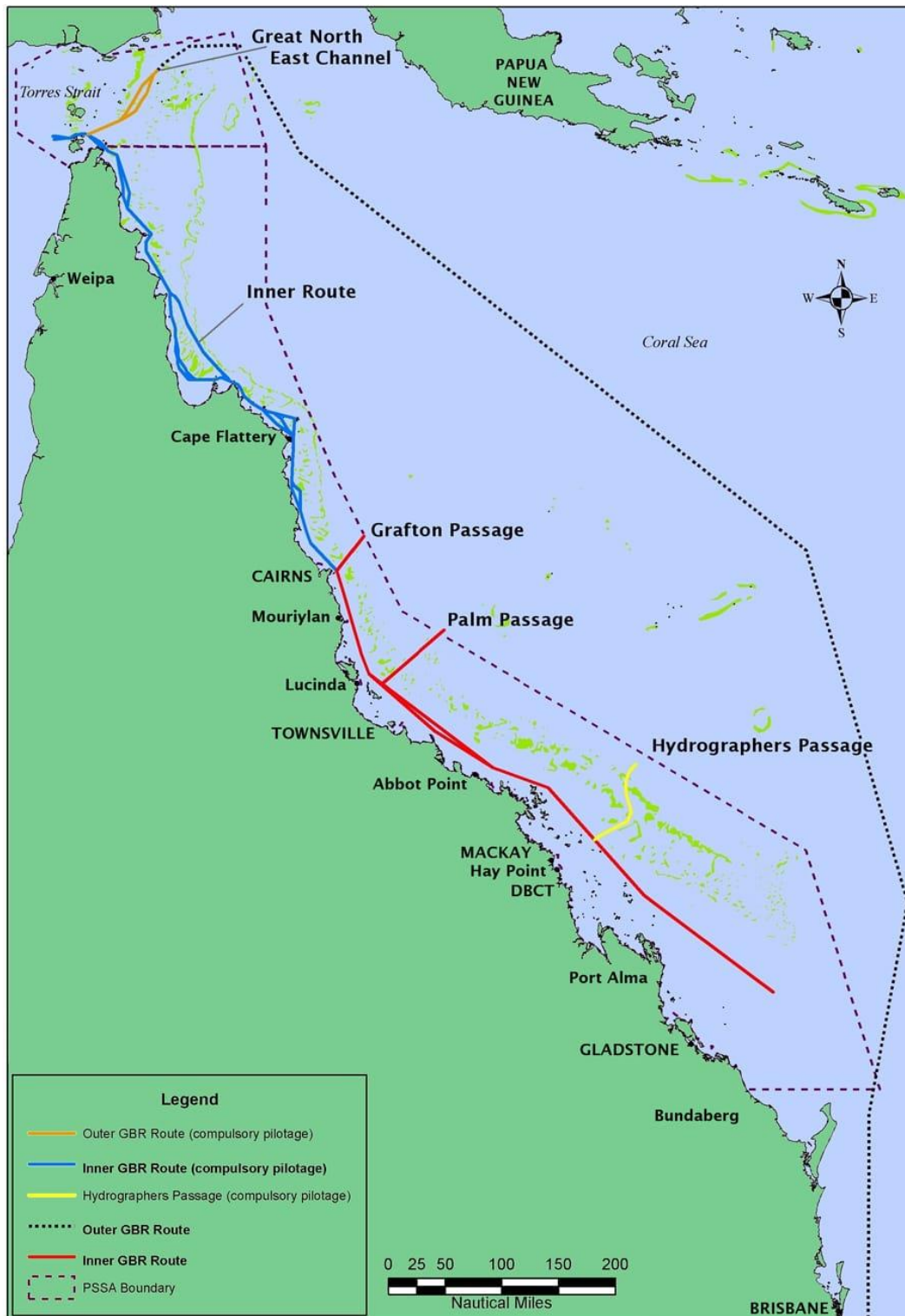


Figure 7 Chart of the Great Barrier Reef and Torres Strait PSSA and their compulsory pilotage routes<sup>186</sup>

<sup>186</sup> Shipping Routes & Maps (torrespilots.com.au)

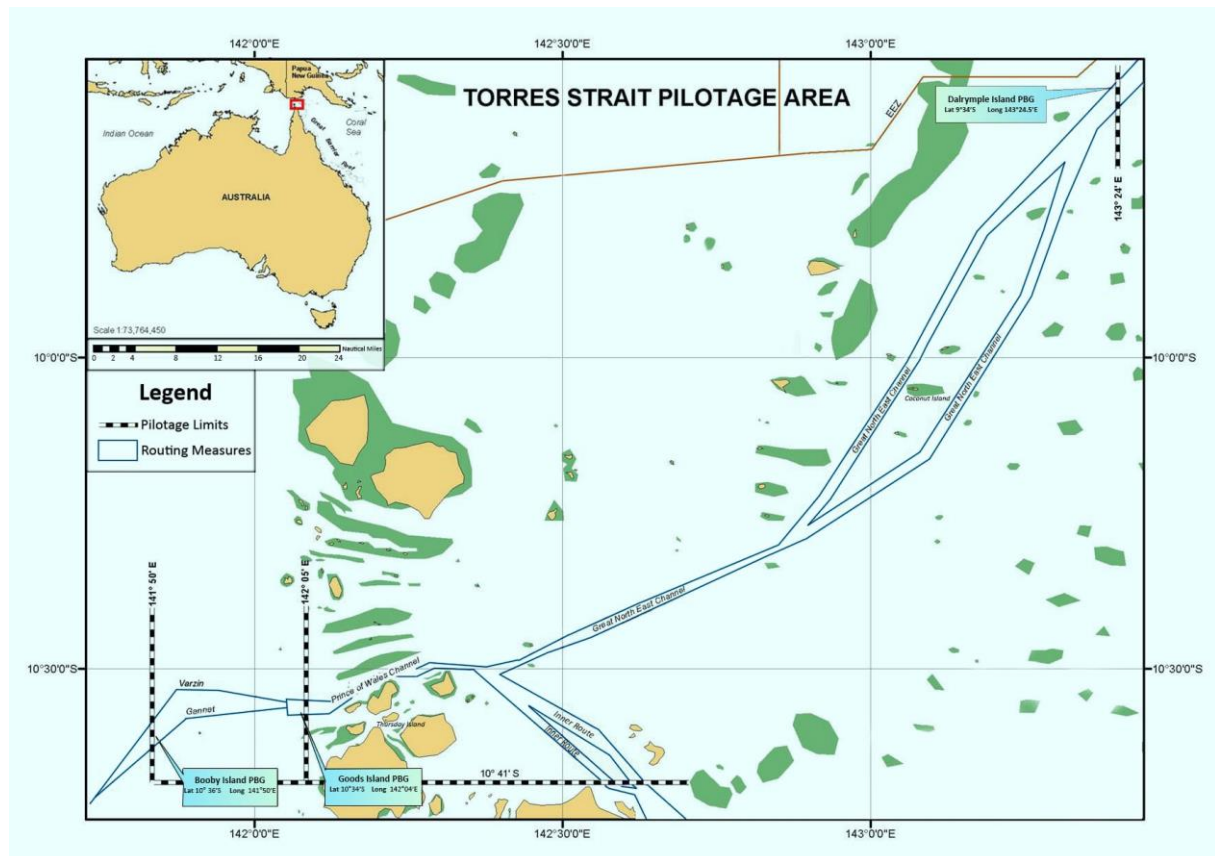


Figure 8 Torres Strait and Great North East Channel pilotage area<sup>187</sup>

Adversaries of the measure voiced their dismay at the next MEPC meeting in October 2006.<sup>188</sup> Prior to that meeting, Singapore and the US had already published Diplomatic Notes, both urging Australia to bring its national law in compliance with international law.<sup>189</sup> Australia did not yield, *inter alia* arguing that:

- 1) Resolution MEPC 133(53) does provide a legal basis for the Torres Strait compulsory pilotage scheme.<sup>190</sup> It uses the same wording as the 1990 Resolution designating the Great Barrier Reef PSSA and adopting its APM.<sup>191</sup> That wording was used to implement a scheme of compulsory pilotage for the Inner Great Barrier Reef Route in 1991;
- 2) the measure does not hamper transit passage.<sup>192</sup> It is an “(...) appropriate and necessary APM (...)” for the goal of improving safety of navigation and preventing environmental damage.<sup>193</sup> In addition, the fee for employing a pilot is not a fee for transit, but a reasonable commercial cost;<sup>194</sup> and
- 3) the measure does not set a precedent. The Torres Strait is unique and approved as a PSSA.<sup>195</sup> As a result, the scheme of compulsory pilotage is adopted as an

<sup>187</sup> Shipping Routes & Maps (torrespilots.com.au)

<sup>188</sup> Beckman (2007) p 338-340

<sup>189</sup> Beckman (2007) p 337-338

<sup>190</sup> Semaphore (2007) p 2

<sup>191</sup> Beckman (2007) p 339

<sup>192</sup> Semaphore (2007) p 2; Beckman (2007) p 339

<sup>193</sup> Anton (2014) p 62 and 73; Bateman & White (2009) p 185. The Safety of Navigation commission called the measure ‘(...) operationally feasible and largely proportionate (...)’ - LEG 89/16 p 33

<sup>194</sup> Semaphore (2007) p 2; Bateman & White (2009) p 196

<sup>195</sup> Bateman & White (2009) p 197

APM. Therefore, implementing compulsory pilotage in other straits depends on their own status as a PSSA.<sup>196</sup>

The disagreement about the legality of the measure never stood in the way of complying with it. Not even after the MEPC itself confirmed the text of Resolution MEPC 133(53) to be of a recommendatory nature.<sup>197</sup> Many States had acknowledged the need for special protection of the Torres Strait.<sup>198</sup> Even the shipping companies agreed vessels navigating in the Torres Strait and Great North East Channel should employ a pilot.<sup>199</sup> So it did not come as a surprise that compliance rates had been 100 percent in the period between 6 October 2006 and 30 September 2007.<sup>200</sup> Notwithstanding this, in 2009, Australia discretely came to a compromise with the US.<sup>201</sup> Between 2008-2009, the US and Australia had classified consultations together.<sup>202</sup> They agreed that non-compliant vessels that *only* transit the strait will no longer be prosecuted when they call upon an Australian port during their next voyage.<sup>203</sup> At most, the owner, master or operator of non-compliant vessels may become susceptible "(...) to a non-custodial penalty under Australian law (...)".<sup>204</sup> The practical effect of this compromise is that the nature of the measure is altered from compulsory to voluntary.<sup>205</sup> However, this end result was not codified into Australia's national law nor did it change the compliance rates.<sup>206</sup> Since the implementation of compulsory pilotage, shipping incidents in the Torres Strait have been kept to a minimum.<sup>207</sup> In conclusion, the measure achieved its goal of promoting safe navigation and environmental protection.

### 3.4 Implementing Compulsory Ice Pilotage in the Bering Strait

The Australian case study provides valuable lessons for the search for legal feasibility of compulsory ice pilotage in the Bering Strait. With these lessons in mind, this paragraph examines what level of governance is most suited for the implementation of this measure. Russia has already started by unilaterally implementing compulsory ice pilotage in the Northern Sea Route based upon its coastal State jurisdiction.<sup>208</sup> However, Russia's claim of full sovereignty over the Northern Sea Route is not uncontested, influencing acceptance of this and other rules.<sup>209</sup> Furthermore, in its AMSA report of 2009, PAME has recommended a uniform regime for the Arctic.<sup>210</sup>

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<sup>196</sup> Semaphore (2007) p 2; Anton (2014) p 78

<sup>197</sup> This was during the MECP meeting in October 2006 – see Rothwell (March 2012) p 15; Beckman (2007) p 338-340

<sup>198</sup> Anton (2014) p 70 and 79

<sup>199</sup> Anton (2014) p 70

<sup>200</sup> Bateman & White (2009) p 188-189

<sup>201</sup> Anton (2014) p 80

<sup>202</sup> This was published via WikiLeaks - Anton (2014) p 80; Reef safeguard cut back (smh.com.au)

<sup>203</sup> Marine Notice 7/2009

<sup>204</sup> Anton (2014) p 80

<sup>205</sup> Marine Notice 7/2009; Rothwell (March 2012) p 17

<sup>206</sup> Principal Advisor - Coastal Pilotage Operations of the Australian Maritime Safety Authority, email message to author, 5 May 2021; Anton (2014) p 80

<sup>207</sup> Hazmi bin Mohd Rusli (2011) p 511

<sup>208</sup> Rule 26 Northern Sea Route Rules 2020; Russia sets out stringent new rules for foreign ships on the Northern Sea Route (arctictoday.com)

<sup>209</sup> Jan Jakub Solski has written a dissertation on Russia's jurisdiction over the Northern Sea Route – see Solski (2018)

<sup>210</sup> AMSA (2009) p 6

Following that train of thought, a compulsory ice pilotage scheme should be implemented for the entire Bering Strait, and not only on either part of the strait. Two separate systems of compulsory pilotage, one Russian and one American, is likewise undesirable.<sup>211</sup> For example, such a situation could lead to a different interpretation of the measures or a difference in fees.<sup>212</sup> Any variation between both sides of the strait has the potential of undermining the “less favourable route”.<sup>213</sup> Therefore, implementing a compulsory ice pilotage regime for the Bering Strait as a whole should start with a coordinated action between the two strait States.

To that end, it is important to acknowledge the fact that the US is among the States that was heavily opposed to the compulsory pilotage scheme in the Torres Strait.<sup>214</sup> The US is a strong advocate of freedom of navigation.<sup>215</sup> That point of view lies at the root of its dispute with Russia over the Northern Sea Route and its dispute with Canada over the Northwest Passage.<sup>216</sup> Therefore, it is difficult to imagine the US ever agreeing to compulsory pilotage in a strait used for international navigation where transit passage applies. However, the US might feel differently when it comes to being a strait State itself - bordering a unique and specific marine environment.<sup>217</sup> Furthermore, the Bering Strait holds strategic power as an Arctic chokepoint connecting Europe with the Far East and with regards to other economic and industrial activities.<sup>218</sup> The risks concerning global shipping are plentiful in that area.<sup>219</sup> This includes loss of life, (accidental or intentional) pollution and (permanent) physical damage to the fragile marine environment.<sup>220</sup> Not to mention the costs involved in *inter alia* clean-up or delays due to blockage of the strait.<sup>221</sup> Moreover, the US has always complied with Australia’s measure in the Torres Strait.<sup>222</sup> It even employs pilots on their warships, whilst these types of vessels are excluded from the mandatory pilotage scheme.<sup>223</sup> Lastly, the US takes its role as an Arctic State very seriously. It has on multiple occasions confirmed its responsibility over the High North and the need for “(...) bold, innovative thinking (...)” when it comes to cooperation.<sup>224</sup> Regarding its cooperation

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<sup>211</sup> Owens (2011) para IV

<sup>212</sup> Owens (2011) p 106

<sup>213</sup> Owens (2011) p 106

<sup>214</sup> The US sent a diplomatic note after the Australian government had implemented a system of compulsory pilotage in the Torres Strait and Great North East Chanel – Beckman (2007) p 337

<sup>215</sup> The US Department of Defense (DoD) considers preserving the freedom of navigation a vital national interest – see FON Program Fact Sheet (2017) p 1. Since 1979, the DoD even has a Freedom of Navigation-Program (FON). The FON releases an annual report, identifying which excessive maritime claims the US has challenged that year – see Annual FON Report (2020)

<sup>216</sup> In a nutshell: Russia and Canada claim these passages consist of internal waters. This means vessels need permission to navigate these waters and both States can deny them passage. The latter only in the event vessels breach the national rules of Russia and Canada, respectively. The legal basis for these rules is Article 234 UNCLOS. The US asserts that the straits within the Northwest Passage and Northern Sea Route are straits used for international navigation where transit passage applies. This navigational right cannot be hampered with and according to the US, the exceptions given by Article 234 UNCLOS do not change that fact – Burgess (2017) p 61-63; Tanaka (2019) p 119

<sup>217</sup> Van Dyke (2014) p 43. See also chapter 4.2

<sup>218</sup> Rothwell (2010) p 16l Owens (2011) p 89-90

<sup>219</sup> See chapter 4.3

<sup>220</sup> A.982/24 para 2.2.1. See chapter 4.3

<sup>221</sup> A good example of a blockage is the Ever Given in the Suez canal. The vessel blocked the Suez canal for seven days, delaying the journey of over 350 vessels and costing the world economy over \$ 6-10 Billion a day – see Suez canal: Ever Given container ship freed after a week (theguardian.com); Rothwell (March 2012) p 10

<sup>222</sup> Bateman & White (2009) p 188-189

<sup>223</sup> Bateman & White (2009) p 196

<sup>224</sup> National Strategy for the Arctic Region (2013); The first page in the United States Coast Guards report on Arctic Strategy mentions the following quote: ‘Ensure safe, secure, and environmentally responsible maritime activity in the Arctic.’ – Arctic Strategy (2013) p 2

with Russia, in its Arctic Strategy report of 2013, the US Coast Guard explicitly mentioned the need for consultations with Russia.<sup>225</sup> Moreover, both States have shown they are capable of collaborating, even in times of political tensions.<sup>226</sup>

Whether the US will endorse a scheme of compulsory pilotage in the Bering Strait and propose such a measure together with Russia, is of political nature. Nevertheless, the aforementioned arguments show there is some latitude for the US to change its mind in this particular situation. The hypothesis in this thesis is that the US will endorse such a measure and additionally cooperate with Russia.

### 3.4.1 Determining the Level of Governance

#### 3.4.1.1 *Bilateral Implementation*

When it comes to introducing a scheme of compulsory ice pilotage in the Bering Strait, the first option would be to govern it via a bilateral agreement. In that case, consensus need only be reached between Russia and the US, rendering this option relatively simple.<sup>227</sup> The drawback of a bilateral agreement is the adage *pacta tertiis nec nocent nec prosunt*. Simply put: a treaty cannot bind non-party members.<sup>228</sup> Any bilateral agreement between Russia and the US would only be applicable to vessels flying the flag of either of those two States.<sup>229</sup> Moreover, the right to regulate foreign vessels in straits used for international navigation is constrained.<sup>230</sup>

#### 3.4.1.2 *Regional Implementation*

Taking compulsory ice pilotage to regional levels might generate more support from the international community. Therefore, the second option would be to use the Arctic Council. An advantage of the council over bilateral agreements is the participation of indigenous peoples' organizations (as Permanent Participants) and non-circumpolar States (as Observers). Nevertheless, these parties are not full Members and their influence on decision-making will be limited.<sup>231</sup> Since the council cannot create legally binding instruments, its role would be to provide a platform for negotiations. These negotiations can lead to a legally binding agreement, but it would be established outside of the council and only bind the Arctic States.<sup>232</sup> That would lead to the same concern as with the bilateral agreement, i.e. a treaty does not bind non-party members. It could, however, motivate vessels to *voluntarily* comply with the measure.<sup>233</sup> Yet, as seen in the Torres Strait, compliance to a scheme of voluntary pilotage can wane, exposing the vulnerable area to unacceptable risks after all. Preference is given to

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<sup>225</sup> Arctic Strategy (2013) p 13

<sup>226</sup> US-Russia showdown looms as top diplomats meet in Iceland (apnews.com). Nevertheless, during the Cold war, both States were still capable of working together on matters relating to the Bering Strait – see figure 5. More recently, in 2018, Russia and the US were able to submit a mutual proposal regarding shipping routes in the Bering Strait Region – see chapter 2.4

<sup>227</sup> Hartsig et al. (2012) p 63

<sup>228</sup> *Pacta tertiis nec nocent nec prosunt* (oxfordreference.com)

<sup>229</sup> Hartsig et al. (2012) p. 63

<sup>230</sup> Part III UNCLOS; Rothwell (March 2012) p 2. See also chapter 5.3.1

<sup>231</sup> Young (2019) para 3

<sup>232</sup> Burgess et al. (2017) p 64

<sup>233</sup> Hartsig et al. (2012) p 64



mandatory measures.<sup>234</sup> Another possibility is that a regional agreement introducing compulsory ice pilotage would set the stage for a future measure of similar content, adopted by or under the auspices of an international organization such as the IMO.<sup>235</sup>

### 3.4.1.3 Global Implementation

Australia and Papua New Guinea did not choose to wait for any future involvement of the IMO. They introduced their pilotage measure at global level and involved the IMO from the start.<sup>236</sup> A clear advantage of this organization over bilateral and regional agreements is the involvement of the international maritime community. The IMO also enjoys an advantage over the Arctic Council in specific since it makes no distinction between circumpolar and non-circumpolar States.<sup>237</sup> The organization is in the position to give a platform to all parties involved, i.e. States and non-State actors.<sup>238</sup> It can balance their different and sometimes opposing interests, which may lead to more generally agreed upon measures.<sup>239</sup> Arguably, the development of the semi-mandatory Polar Code set a precedent for the fruitful involvement of the IMO in Arctic-related matters.

The importance of using the IMO to create uniform and harmonized regulations was already voiced in 2009 by PAME.<sup>240</sup> Furthermore, the Working Group recommended special environmental protection of Arctic areas by designating them as marine protected areas, explicitly suggesting the concept of PSSA's.<sup>241</sup> At the request of a State/States, the MEPC can categorize vulnerable marine ecosystems as PSSA's and adopt APM's that help protect the area as a whole.<sup>242</sup> Hence, the third option for Russia and the US would be to follow the Australian route. In other words: submit a proposal identifying and designating the Bering Strait as a PSSA and include compulsory ice pilotage as the APM. It is highly probable the legitimacy of this measure would be debated - just like with the proposal of Australia and Papua New Guinea in 2003. However, by designating the Bering Strait as a PSSA, the strait's value and vulnerability becomes internationally apparent.<sup>243</sup> This, combined with a growing emphasis on safe navigation and environmental protection, may lead to a different interpretation of certain UNCLOS provisions.<sup>244</sup> In addition, the Bering Strait is part of the Arctic region. A legal basis for compulsory ice pilotage can be sought in polar specific instruments as well. All of this makes investigating this option worthwhile.

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<sup>234</sup> AMSA (2009) p 4

<sup>235</sup> Hartsig et al. (2012) p 64

<sup>236</sup> See chapter 3.3.2

<sup>237</sup> This distinction is under pressure: an increasing amount of non-circumpolar States consider themselves Arctic Stakeholders rather than Observer – see Heininen, Exner-Pirot & Barnes (2020). The only distinction the IMO makes is between Members and Associate Members – see Part III of the IMO Convention 1948 (then called the International Maritime Consultative Organization)

<sup>238</sup> E.g. A.982/24 para 1.4.2

<sup>239</sup> Boone (2013) p 212

<sup>240</sup> AMSA (2009) p 7

<sup>241</sup> AMSA (2009) p 7; A.982/24 para 1.1; Tanaka (2019) p 419

<sup>242</sup> A.982/24 para 1.2; Tanaka (2019) p 418

<sup>243</sup> Hillmer-Pegram & Robards (2015)

<sup>244</sup> Bateman & White (2009) p 194

### 3.5 Conclusion

Pilotage is a valuable and widely accepted tool for improving safety of navigation (and indirectly protecting the environment). Yet, implementing a compulsory pilotage regime in the Torres Strait and Great North East Channel did not go without a fight. Fifteen years later, parties are still not on the same page when it comes to the legality of the measure. Nevertheless, the measure exists and is complied with well. For the introduction of compulsory ice pilotage as a hypothetical future additional navigational measure in the Bering Strait, the Torres Strait provides a useful case study. After considering the different levels of governance, adopting compulsory ice pilotage via the IMO is thought to be the best alternative. More specifically, the option of proposing the Bering Strait as a PSSA and compulsory ice pilotage as its APM – just like with the Torres Strait.

## 4 PART I - THE BERING STRAIT AS A PARTICULARLY SENSITIVE SEA AREA (PSSA)

### 4.1 Introduction

The previous chapter determined the way forward in the pursuit of hypothetically introducing a compulsory ice pilotage scheme in the Bering Strait in a successful manner. According to the IMO's Revised Guidelines for the Identification and Designation of PSSA's of 2005 (PSSA Guidelines 2005), a valid Bering Strait PSSA proposal needs to consist of three parts.<sup>245</sup> The first part must show how the Bering Strait has valuable characteristics that fall under one of three categories, i.e. environmental, socio-economic and/or scientific and educational.<sup>246</sup> The second part needs to discuss how these significant characteristics are particularly vulnerable to global shipping activities.<sup>247</sup> The third part has to present an Associated Protective Measure (APM) and its legal basis and explain how this measure can help prevent, reduce or eliminate the dangers discussed in step two.<sup>248</sup>

This chapter presents the first part of this action plan, i.e. examining the feasibility of the Bering Strait as a PSSA. The first step of this process corresponds with paragraph 4.2. Paragraph 4.3 follows the second step of the PSSA proposal. Paragraph 4.4 features the conclusion. Step 3 of the proposal, the presentation of the APM, will be discussed in chapter 5.

### 4.2 Step 1: Significant Characteristics in the Bering Strait

The first step of the PSSA proposal is determining whether the Bering Strait has characteristics that fall under (at least) one of the categories mentioned in paragraph 4 of the PSSA Guidelines 2005.

The first category of criteria concerns ecological characteristics. The Bering Strait meets at least four of these criteria. The strait is a migratory corridor for many marine animals and a breeding ground for seabirds.<sup>249</sup> It is also home to endangered species, e.g. polar bears and bearded seals.<sup>250</sup> Furthermore, the strait has a high diversity of fish as well as an "(...) incredibly high biological productivity".<sup>251</sup> The second category of criteria concerns socio-economic criteria. The Bering Strait meets at least two of

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<sup>245</sup> A.982/24 paras 1.2 and 3. See also chapter 3.3.2

<sup>246</sup> A.982/24 para 4

<sup>247</sup> A.982/24 para 5

<sup>248</sup> The proposal may include more than one protective measure – see A.982/24 para 6

<sup>249</sup> A.982/24 paras 4.4.3 and 4.4.7; The Bering Strait Marine Life and Subsistence Data Synthesis (2014) chapters 4-5; Hartsig et al. (2012) p 35 and 39; Ship Strikes and Underwater Noise (oceanconservancy.org); Shipping in the Bering Strait Region (oceanconservancy.org)

<sup>250</sup> A.982/24 paras 4.4.1 and 4.4.2. On 8 January 2021, the National Oceanic and Atmospheric Administration proposed to enlist the bearded seal as an endangered species under the Endangered Species Act - Endangered and Threatened Species; Designation of Critical Habitat for the Beringia Distinct Population Segment of the Bearded Seal (federalregister.gov); Hartsig et al. (2012) p 39

<sup>251</sup> A.982/24 paras 4.4.5 and 4.4.6; The Bering Strait Marine Life and Subsistence Data Synthesis (2014) chapter 6; Pincus (2020) p 336



these criteria. The strait is essential for the indigenous peoples who are living in that area since time immemorial.<sup>252</sup> They depend on the marine resources for their "(...) lives, cultures and livelihoods (...)"<sup>253</sup> In addition, the Bering Strait has significant scientific value. There is a lack of hydrographical, meteorological and oceanographical knowledge of the Arctic Region due to centuries of inaccessibility. For example, some nautical charts used in the Bering Strait include information attained over a century ago.<sup>254</sup> In addition, the current global warming and its impact on the Arctic Region is unprecedented.<sup>255</sup> Scientific research is of vital importance for understanding the Arctic region as well as the feedback mechanisms of global warming.<sup>256</sup> According to the US, the only way to successfully address the changing Arctic Region is by a pro-active and disciplined approach based on "(...) science-informed decision-making (...)"<sup>257</sup> Furthermore, due to the hitherto limited shipping activities, the Bering Strait can, at least for the moment, act as a standard for observational studies.<sup>258</sup>

#### 4.3 Step 2: Vulnerability to Shipping Incidents

After identifying the characteristics that are of significant value, the second step in the Bering Strait PSSA proposal is explaining how these characteristics are vulnerable to shipping activities.<sup>259</sup>

The Bering Strait is subject to heavy storms, dense fog, moving ice and cold temperatures.<sup>260</sup> In addition, the area knows extended periods of daylight or darkness and is subject to solar flare activities.<sup>261</sup> This leads to an increased risk of shipping incidents, such as groundings and collisions, ship strikes with marine mammals and oil spills.<sup>262</sup> These incidents are harmful for the valuable Bering Strait traits.<sup>263</sup> Groundings and collisions can lead to the deaths of seafarers and marine animals as well as the destruction of the vessel and its cargo.<sup>264</sup> Lost hazardous cargo could wash up ashore, which can potentially harm the environment and the indigenous peoples who live there.<sup>265</sup> Incidents can easily cause a marine congestion due to the geographic and oceanographic features of the strait.<sup>266</sup> Timely and/or adequate assistance and clean-up in case of an emergency is restricted due to the remoteness of the strait, its lack of maritime infrastructure and its meteorological features.<sup>267</sup> There

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<sup>252</sup> Arctic Vessel Traffic in the Bering Strait (2014) p 1

<sup>253</sup> A.982/24 paras 4.4.12 and 4.4.13; Berkman et al. (2016) p 199; Pincus (2020) p 337; AMSA (2009) p 5 and 122-133; The Bering Strait Marine Life and Subsistence Data Synthesis (2014) chapter 1.1.1; Fletcher & Robertson (2016) p 5

<sup>254</sup> NCSR 5/3/7 paras 3.5 and 17; AMSA (2009) p 5 For general information about hydrography – see What Is Hydrography? (oceanservice.noaa.gov)

<sup>255</sup> National Strategy for the Arctic Region (2013) p 5

<sup>256</sup> AMSA (2009) p 7 and 105

<sup>257</sup> National Strategy for the Arctic Region (2013) p 4 and 35

<sup>258</sup> A.982/24 para 4.4.16

<sup>259</sup> A.982/24 para 5

<sup>260</sup> Arctic Vessel Traffic in the Bering Strait (2014) p 2; Lee et al. (2020) p 28

<sup>261</sup> AMSA (2009) p 155

<sup>262</sup> A.982/24 para 2.1; Heavy Fuel Oil (oceanconservancy.org); Ship Strikes and Noise (oceanconservancy.org); Hartsig et al. (2012) p 36; AMSA (2009) p 146-147; Arctic Vessel Traffic in the Bering Strait (2014) p 2

<sup>263</sup> AMSA (2009) p 147

<sup>264</sup> Anton (2014) p 56. Anton speaks about the consequences of shipping incidents in the Torres Strait. Considering its own significant characteristics, these remarks apply *mutatis mutandis* to the Bering Strait; AMSA (2009) p 147

<sup>265</sup> AMSA (2009) p 124

<sup>266</sup> Anton (2014) p 56; AMSA (2009) p 147

<sup>267</sup> AMSA (2009) p 5 and 147; Hartsig et al. (2012) p 36; Arctic Vessel Traffic in the Bering Strait (2014) p 2

are only six ports in the entire Bering Strait Region, three on the Russian side of the strait and three on the American side.<sup>268</sup> All these circumstances are likely to worsen the degree of damage caused by an incident, as happened in the incident with the MV Selendang Ayu in 2004.<sup>269</sup> Oil spills and spills of other hazardous and noxious substances can cause serious (long-term) harm to the marine environment and consequently to the indigenous people living in that area.<sup>270</sup> In some cases it can even lead to the ecosystem being ruined.<sup>271</sup> Oil spills are especially worrisome since the low water temperatures alter the structure of the oil, making it even harder to clean up.<sup>272</sup>

#### 4.4 Conclusion

A proposal to designate the Bering Strait as a Particularly Sensitive Sea Area will most likely be adopted by the IMO. The strait presents an area of great ecological, socio-economic and scientific importance.<sup>273</sup> In addition, navigating the Bering Strait holds high risks of shipping incidents. The consequences of these incidents are harmful for the significant features of the strait.

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<sup>268</sup> The US ports are Nome, Kotzebue and the Delong Mountain Transportation system port; the Russian ports are Provideniya, Anadyr and Egvekinot – see AMSA (2009) p 108

<sup>269</sup> A.982/24 para 5.2.1; Hartsig et al. (2012) p 36; Arctic Vessel Traffic in the Bering Strait (2014) p 2; AMSA (2009) p 88-89; Addressing Dramatic Changes in the Bering Strait Region Requires Governance Adaptations (2020) p 7

<sup>270</sup> Anton (2014) p 56; AMSA (2009) p 147

<sup>271</sup> Anton (2014) p 56

<sup>272</sup> Heavy Fuel Oil (oceanconservancy.org)

<sup>273</sup> A.982/24 para 4.4.15

## 5 PART II: COMPULSORY PILOTAGE AS AN ASSOCIATED PROTECTIVE MEASURE (APM)

### 5.1 Introduction

The final step in the Bering Strait PSSA proposal concerns the request for the associated protective measure (APM).<sup>274</sup> The request must elaborate on the effectiveness of the APM in dealing with the dangers mentioned in step two.<sup>275</sup> In addition, it must provide the legal basis according to which the measure can be established.<sup>276</sup>

The Bering Strait PSSA proposal would request the adoption of a system of compulsory ice pilotage throughout the entire strait. The effectiveness of this measure in protecting the significant characteristics of the strait is discussed in paragraph 5.2. Paragraph 5.3 examines two options that potentially provide a legal basis for a system of compulsory ice pilotage in the Bering Strait. The Polar Code is not included, since nothing in the code presents a connecting factor to the issue at hand. Paragraph 5.4 concludes this chapter.

### 5.2 Step 3A: Effectiveness

Pilots can navigate vessels through the hazardous waters of the Bering Strait in a safe manner. As already mentioned in chapter 3.2, pilots have extensive knowledge of the geographic features in the area. In addition, ice pilots have particular experience with navigating through ice. Consequently, the risk of shipping incidents will decrease and this in turn will lower the dangers for the strait's significant characteristics. To illustrate, since the introduction of compulsory pilotage in the Inner Great Barrier Reef Route, shipping incidents have dwindled over 50 percent.<sup>277</sup>

### 5.3 Step 3B: Legal Basis

The case study has shown that the Australian government claims the legal basis to implement compulsory pilotage as an APM is provided for in the UNCLOS.<sup>278</sup> In particular, the provisions related to straits used for international navigation where transit passage applies (Article 41.4) and the provisions related to environmental protection (Articles 194.1, 194.3(b) and 194.5).<sup>279</sup> The Australian government also relied on Article 211.6(a) UNCLOS.<sup>280</sup> However, this Article is exclusively applicable to the EEZ.<sup>281</sup> As the Bering Strait consists of territorial sea only, these waters fall outside

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<sup>274</sup> A.982/24 para 6

<sup>275</sup> A.982/24 para 6

<sup>276</sup> A.982/24

<sup>277</sup> MEPC 49/8 para 6.1.4

<sup>278</sup> MEPC 49/8 para 5.12

<sup>279</sup> MEPC 49/8 paras 5.13-16

<sup>280</sup> LEG 89/15 para 27

<sup>281</sup> Article 211.6(a) UNCLOS

the scope of this Article.<sup>282</sup> The Australian government based their enforcement jurisdiction on Article 233 UNCLOS.<sup>283</sup>

Similar to the Torres Strait, the Bering Strait is used for international navigation where transit passage applies. Therefore, the search for a legal basis for the implementation and enforcement of a compulsory ice pilotage scheme in the Bering Strait starts with examining the provisions regarding transit passage, i.e. Articles 41.4 and 233 UNCLOS. After that, the provisions in respect of environmental protection are discussed, i.e. Article 194 and Article 234 UNCLOS concerning ice-covered areas.

### 5.3.1 Legal Basis 1: The Right of Transit Passage

Passage through straits used for international navigation is in principle governed by Part III UNCLOS.<sup>284</sup> Vessels and airplanes using these straits enjoy the right of:

- 1) transit passage;
- 2) innocent passage which shall not be suspended; or
- 3) whatever has been agreed upon in time-honoured international Conventions.<sup>285</sup>

Vessels that want to navigate through the strait in a nonstop and speedy manner can exercise their right of transit passage.<sup>286</sup> This regime allows for more freedom than innocent passage but is slightly more restrictive than the freedom of the high seas.<sup>287</sup> For example, whilst exercising their right of innocent passage, submarines must resurface with their flag visible.<sup>288</sup> Submarines are not required to do so during transit passage.<sup>289</sup> For a strait to fall under the navigational regime of transit passage, it must meet two cumulative conditions. This follows from the Corfu Channel case from 1949.<sup>290</sup> These criteria are codified in Article 37 UNCLOS. The first and foremost condition regards the geographical aspect of the strait.<sup>291</sup> The body of water must lie between parts of the high seas or EEZ on both sides.<sup>292</sup> The second condition concerns the aspect of functionality.<sup>293</sup> The strait must be used for international navigation. To that end it does not matter if the strait is used as main route, or merely provides a *useful* alternative.<sup>294</sup>

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<sup>282</sup> Young et al. (2020) p 11

<sup>283</sup> MEPC 49/8 para 6.2.1

<sup>284</sup> Article 36 holds the exception: 'This Part does not apply to a strait used for international navigation if there exists through the strait a route through the high seas or through an exclusive economic zone of similar convenience with respect to navigational and hydrographical characteristics; in such routes, the other relevant Parts of this Convention, including the provisions regarding the freedoms of navigation and overflight, apply'

<sup>285</sup> Articles 38.1, 45 and 35.1(c) UNCLOS

<sup>286</sup> Article 38.2 UNCLOS

<sup>287</sup> Solski (2018) p 78; Article 87 UNCLOS

<sup>288</sup> Article 20 UNCLOS

<sup>289</sup> Lapidoth (2018) Para C13

<sup>290</sup> Corfu Channel Case (I.C.J. Reports 1949) p 28

<sup>291</sup> Tanaka (2019) p 118

<sup>292</sup> Article 37 UNCLOS; I.C.J. Reports (1949) p 28

<sup>293</sup> Tanaka (2019) p 119

<sup>294</sup> I.C.J. Reports (1949) p 28; Evans (2018) p 647

Geographically speaking, the Bering Strait consists of four channels (from east to west) (figure 9):

- |   |           |                           |
|---|-----------|---------------------------|
| 1) between Russia's mainland and Big Diomede Island<br>(the Bering Strait-east) | ≈ 19.6 nm | (≈ 36 km) <sup>295</sup>  |
| 2) between the islands of Big and Little Diomede<br>(the Diomede Channel)       | ≈ 2 nm    | (≈ 3.7 km) <sup>296</sup> |
| 3) between Little Diomede Island and Fairway Rock                               | ≈ 8.7 nm  | (≈ 16 km) <sup>297</sup>  |
| 4) between Fairway Rock and the US mainland<br>(the Bering Strait-west)         | ≈ 15.6 nm | (≈ 29 km) <sup>298</sup>  |



Figure 9 The four channels in the Bering Strait: 1) the Bering Strait-east, 2) the Diomede Channel, 3) the area between Little Diomede and Fairway Rock, and 4) the Bering Strait-west<sup>299</sup>

In line with the shipping routes adopted by the IMO, the focus for the rest of the chapter will lie on channels 1 and 4.<sup>300</sup> The Bering Strait consists solely of territorial sea of either Russia or the US.<sup>301</sup> It has no EEZ or high seas corridors. The strait borders the Chukchi Sea in the north and the Bering Sea in the south.<sup>302</sup> These seas have both EEZ and high seas zones.<sup>303</sup> As a result, the Bering Strait meets the geographical condition of Article 37 UNCLOS. The strait also fulfils the functional condition since

<sup>295</sup> Rothwell (2013) p 92. According to this Article, both the Bering Strait-east and the Bering Strait-west are about 22.5 miles in width. However, Rothwell does not take the channel between Fairway Rock and the US mainland into consideration.

<sup>296</sup> Young et al. (2020) p 11

<sup>297</sup> Fairway Rock in Detail (alaska.guide)

<sup>298</sup> Fairway Rock in Detail (alaska.guide)

<sup>299</sup> MISR Sights of the Bering Strait (jpl.nasa.gov)

<sup>300</sup> See paragraph 2.5.3 for the voluntary shipping routes in the Bering Strait

<sup>301</sup> Young et al. (2020) p 11

<sup>302</sup> Young et al. (2020) p 8

<sup>303</sup> Berkman et al. (2016) p 192



international vessels use it for navigation.<sup>304</sup> The Bering Strait does not meet the criteria from Articles 45 and 35.1(c) UNCLOS which allow for a navigational regime other than transit passage.<sup>305</sup> In conclusion, the Bering Strait is used for international navigation where transit passage applies, and its navigational regime is covered by Part III UNCLOS. This has been recognized by PAME in its 2009 AMSA report and by the US, among others.<sup>306</sup> Up to now, Russia has only implicitly recognized this conclusion because the Arctic Council approved the AMSA report during its 6<sup>th</sup> ministerial meeting.<sup>307</sup>

### *5.3.1.1 Strait States' Limited Jurisdiction in Straits Where Transit Passage Applies – Section 2 Part III UNCLOS*

Since the Bering Strait is a strait used for international navigation where transit passage applies, Section 2 of Part III UNCLOS is applicable. This Section consists of the rights and duties of strait States as well as the vessels transiting the strait. Following Article 42 UNCLOS, strait States have a right to adopt measures related to transit passage, albeit restricted. Article 42.1 specifies the first restriction, i.e. the adopted measures must fall within any or all of the following four particular areas:

- a) navigational safety and regulating marine transportation in line with the measures stipulated in Article 41 UNCLOS, i.e. sea lanes and traffic separation schemes;
- b) avoiding, mitigating and controlling certain pollutants by effectuating related international regulations;
- c) warding off fishing; and
- d) violations of certain rules of the strait State when loading/unloading goods, people or currencies.<sup>308</sup>

Measures that fall under the scope of Article 42.1 UNCLOS are further restricted by Article 42.2 UNCLOS.<sup>309</sup> The adopted measures cannot give rise to discrimination or the factual outcome that transit passage is denied, hampered or impaired.<sup>310</sup>

Whether a compulsory ice pilotage measure falls within the scope of Article 42.1 UNCLOS depends on one's interpretation of that provision. According to Robert Beckman, Articles 42.1(a) and (b) UNCLOS do not provide a strait State with jurisdiction to adopt such a matter.<sup>311</sup> Compulsory (ice) pilotage does not fall under one of the areas listed and Article 42.1 must be interpreted in a restrictive manner.<sup>312</sup> This is different if one follows the argument that Article 42.1(a) consists of two separate

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<sup>304</sup> E.g. German vessels in 2009 – see German ships successfully make "Arctic Passage" (reuters.com). The Christophe de Margerie mentioned in chapter 1 flies the flag of Cyprus (marinetraffic.com); AMSA (2009) p 109; Rothwell (2013) p 94-95; Berkman et al. (2016) p 192

<sup>305</sup> Thomas & Duncan (1999)

<sup>306</sup> Thomas & Duncan (1999) p 207; AMSA (2009) p 109

<sup>307</sup> Tromsø Declaration (2009) p 4

<sup>308</sup> Article 42.1 UNCLOS

<sup>309</sup> Beckman (2007) p 344

<sup>310</sup> Beckman (2007) p 344-345

<sup>311</sup> Beckman (2007) p 344. Evidently, Articles 41.1(c) and (d) are not relevant for this discussion

<sup>312</sup> Beckman (2007) p 344

areas.<sup>313</sup> In that case, the first area concerns navigational safety in general; the second area concerns maritime traffic, limited to sea lanes and traffic separation schemes.<sup>314</sup> However, according to Sam Bateman and Michael White, this is a purely theoretical argument.<sup>315</sup>

Australia and Papua New Guinea claim compulsory pilotage can be a necessity for securing safe navigation in certain designated sea lanes and prescribed traffic separation schemes. The measure can thus indeed fall under one of the areas of Article 42.1(a).<sup>316</sup> As stipulated in Article 42.1(a) in connection with Article 41.1 UNCLOS, States can establish sea lanes and traffic separation schemes to improve safety of navigation.<sup>317</sup> These measures must be necessary, in line with Generally Accepted International Regulations and referred to the IMO for adaptation.<sup>318</sup> Due to particular geographical, meteorological and oceanological characteristics, some designated shipping routes remain dangerous for navigation.<sup>319</sup> Extra measures are then needed to procure the aspired level of navigational safety, e.g. a system of compulsory (ice) pilotage.<sup>320</sup> In those instances, the compulsory (ice) pilotage scheme acts as an essential adjunct to the measures cited in Article 41.1 UNCLOS. Accordingly, by virtue of adopting the proposed sea lanes and traffic separation schemes, the IMO adopts the navigational measure that necessarily relates to this, i.e. the compulsory (ice) pilotage scheme.<sup>321</sup>

Beckman does not agree with this reasoning.<sup>322</sup> He claims neither the language nor the *travaux préparatoires* of Article 41.1 UNCLOS give leeway to include adjunct measures to sea lanes and traffic separation schemes.<sup>323</sup> However, already in the 1970's, Malaysia and Singapore followed a similar reasoning as Australia and Papua New Guinea.<sup>324</sup> The Straits of Malacca and Singapore are very shallow.<sup>325</sup> This can become a navigational and ecological hazard when certain large vessels transit through the strait.<sup>326</sup> The strait States adopted a measure setting a minimum requirement for under keel clearance for vessels transiting the Straits of Malacca and Singapore.<sup>327</sup> The measure was combined with the establishment of a traffic separation scheme.<sup>328</sup> In 1977, the IMO adopted both the traffic separation scheme and the minimum requirement for under keel clearance.<sup>329</sup>

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<sup>313</sup> Bateman & White (2009) p 194

<sup>314</sup> Bateman & White (2009) p 194

<sup>315</sup> Bateman & White (2009) p 194

<sup>316</sup> MEPC 49/8 para 5.14; Article 42.1(a) in conjunction with Article 41.4 UNCLOS

<sup>317</sup> Article 42.1(a) in conjunction with Article 41.1 UNCLOS

<sup>318</sup> Articles 41.3 and 41.4 UNCLOS; Solski (2018) p 81

<sup>319</sup> E.g. the two-way shipping route through the Torres Strait - MEPC 49/8 paras 5.2 and 5.10

<sup>320</sup> LEG 89/15 para 24

<sup>321</sup> LEG 89/15 para 24

<sup>322</sup> Beckman (2007) p 345

<sup>323</sup> Beckman (2007) p 345

<sup>324</sup> Neher p 347-348

<sup>325</sup> Hazmi bin Mohd Rusli (2011) p 505

<sup>326</sup> Hazmi bin Mohd Rusli (2011) p 505

<sup>327</sup> Neher p 347-348; Hazmi bin Mohd Rusli (2011) p 505. Under keel clearance refers to '(...) the distance between the seabed and a ship's keel' – see Hazmi bin Mohd Rusli (2011) p 505

<sup>328</sup> Neher p 348; Hazmi bin Mohd Rusli (2011) p 505

<sup>329</sup> A.375/X; Neher p 347-348

It thus appears that measures adjunct to designated sea lanes and prescribed traffic separation schemes *may* fall within the scope of Article 42.1 UNCLOS.<sup>330</sup> Notwithstanding, some States claim it is still not possible to adopt a system of compulsory pilotage. They argue that the measure violates the right of vessels and the duties of the strait States in the following manner:

- 1) the measure impedes the right of transit passage (Article 38.2 UNCLOS);
- 2) the measure leads to *de facto* hampering, impeding, denying transit passage (Article 42.2 UNCLOS); and
- 3) strait States that adopt this measure hamper or suspend transit passage (Article 44 UNCLOS).<sup>331</sup>

Arguments in favour of this viewpoint are *inter alia* that the vessel must pay a fee for the pilotage service and that she must interrupt her voyage in order to let the pilot board.<sup>332</sup> Whether such obligations burden vessels during transit passage depends on the specifics of the scheme and the pilotage services in place.<sup>333</sup> It can be considered obstructing passage if the provided services were inadequate or the fees were disproportionate.<sup>334</sup> At the same time, the Australian system in the Torres Strait shows vessels need not stop for the boarding of pilots.<sup>335</sup> In addition, paying a competitive fee for adequate services that enhance navigational safety can lead to a more honest distribution of the financial burden strait States bear.<sup>336</sup>

#### 5.3.1.2 *Enforcement of Measures Applicable to Straits used for International Navigation - Article 233 UNCLOS*

A measure that is mandatory on paper becomes *de facto* voluntary when it cannot be enforced. If a system of compulsory (ice) pilotage is considered violating Articles 38.2, 42.2 and/or 44 UNCLOS, the question regarding enforcement is irrelevant. The opposite is true for parties that claim strait States have jurisdiction to implement such a measure.

There are no provisions regarding enforcement in Part III UNCLOS. However, Article 233 UNCLOS provides strait States safeguards in the event a violation committed by a foreign vessel meets two cumulative criteria. First, the violation must be the result of non-compliance with the measures referred to in Articles 42.1(a) and (b) UNCLOS. Second, the violation must threaten or actually cause great ecological harm to the marine environment of the strait. When a violation meets these criteria, strait States "(...) may take appropriate enforcement measures (...)".<sup>337</sup> These include preventing

<sup>330</sup> Again, the interpretation that Article 42.1(a) consists of two separate areas is a purely theoretical one

<sup>331</sup> Bateman & White (2009) p 195

<sup>332</sup> Beckman (2009) p 345

<sup>333</sup> Bateman & White (2009) p 196; Rothwell (March 2012) p 10

<sup>334</sup> Bateman & White (2009) p 196

<sup>335</sup> Pilots board the vessels in the Great North East Channel by launch – see Pilot Boarding Grounds & Transfer Methods (torrespilots.com.au)

<sup>336</sup> Rothwell (March 2012) p 10. In this respect, Malaysia and Singapore have cooperated with the stakeholders by sharing the financial burden of keeping the Straits of Malacca and Singapore sustainable. This is called the Cooperative Mechanism – see Van Dyke (2014) p 38-39

<sup>337</sup> Article 233 UNCLOS



and barring a vessel from proceeding passage.<sup>338</sup> Singapore and Malaysia use Article 233 as the legal basis to enforce their minimum requirement for under keel clearance.<sup>339</sup> Australia relies on this provision to enforce its system of compulsory pilotage in the Torres Strait and Great North East Channel.<sup>340</sup> Following that line of thought, strait States have enforcement jurisdiction regarding non-compliance of the measures adopted as adjunct to designated sea lanes or traffic separation schemes.

### *5.3.1.3 Applying Legal Basis 1 to the Bering Strait*

Navigating the Bering Strait is a dangerous undertaking and the impact of shipping incidents on its significant characteristics is high.<sup>341</sup> For that reason, Russia and the US proposed voluntary shipping routes in the Bering Strait Region.<sup>342</sup> It is doubtful whether these shipping routes alone provide sufficient safety. For example, the extreme weather conditions vessels can encounter when navigating the Bering Strait do not bypass shipping routes. Employing a seasoned marine officer with specialized knowledge on board every vessel navigating the strait will reduce the risk of incidents, as is observed in the Torres Strait and Great North East Channel.<sup>343</sup> A system of compulsory ice pilotage is therefore a necessary adjunct to any shipping route in the Bering Strait. The IMO has already adopted Russia and the US' shipping route proposal.<sup>344</sup> As a result, the sheer implementation of a compulsory ice pilotage scheme in the Bering Strait as an adjunct to those sea lanes is permitted under Article 42.1(a) in conjunction with Article 41.1 UNCLOS. The particular contents of the scheme and evidence of its execution will eventually decide if the scheme violates any of the other provisions of Section 2 of Part II UNCLOS. Where the measure does not violate any UNCLOS provisions, its enforcement will be based on Article 233 of same.

### *5.3.2 Legal Basis 2: Provisions Regarding the Protection of the Marine Environment*

Under Article 192 UNCLOS, States have a general duty "(...) to protect and preserve the marine environment". In addition, Article 194.1 stipulates they have a specific duty to implement measures that "(...) prevent, reduce and control pollution of the marine environment". This includes measures to prevent vessel-source pollution caused by accidents as well as measures that are essential for the preservation of fragile environments.<sup>345</sup>

Section 8 of Part XII consists of a provision tailor-made for the protection of ice-covered areas, i.e. Article 234. This Article provides coastal States wider jurisdiction for the unilateral implementation of measures preventing, reducing or controlling vessel-source pollution in ice-covered areas.<sup>346</sup> Consequently, these States can adopt

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<sup>338</sup> Rothwell (March 2012) p 11

<sup>339</sup> Van Dyke (2014) p 40

<sup>340</sup> MEPC 49/8 para 6.2.1

<sup>341</sup> See chapters 4.2 and 4.3

<sup>342</sup> NCSR 5/3/7 para 1

<sup>343</sup> 49/8 para 6.1.4

<sup>344</sup> Maritime Safety Committee (MSC), 99th session 16-25 May 2018 (imo.org)

<sup>345</sup> Articles 194.3 and 194.5 UNCLOS

<sup>346</sup> Pharand (2007) p 47

measures that are stricter than generally accepted international rules.<sup>347</sup> Moreover, measures based on this article can be unilaterally implemented and do not need the approval of the IMO.<sup>348</sup> As a result, there is no need for strait States to propose the designation of an area as a PSSA if they use the Arctic exception as their legal basis. However, as observed by the Australian law professor Donald Rothwell “(...) unilateral efforts to implement compulsory pilotage will not win support from the international maritime community”.<sup>349</sup>

The full text of Article 234 UNCLOS reads as follows:

*“Coastal States have the right to adopt and enforce non-discriminatory laws and regulations for the prevention, reduction and control of marine pollution from vessels in ice-covered areas (1) within the limits of the exclusive economic zone, (2) where particularly severe climatic conditions and the presence of ice covering such areas for most of the year create obstructions or exceptional hazards to navigation, and pollution of the marine environment could cause major harm to or irreversible disturbance of the ecological balance. 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.”*<sup>350</sup>

The use of Article 234 UNCLOS is controversial because the text is still considered the most ambiguous of the whole Convention.<sup>351</sup> As a result, the interpretation of this provision raises many questions.<sup>352</sup> For the purpose of this paragraph, three questions stand out. First and foremost is the question related to the spatial/territorial scope of Article 234 UNCLOS (marked in the above quotation as number 1).<sup>353</sup> The second question concerns the specification of the applicable area (number 2); the third question regards the relationship between Articles 234 and 233 UNCLOS.<sup>354</sup>

With regards to the first question, the wording of the provision leaves room for debate. “[W]ithin the limits of the exclusive economic zone (...)” can be interpreted in two different ways. The first interpretation leads to a spatial scope including the territorial sea, the second interpretation leads to a spatial scope excluding the territorial sea.<sup>355</sup> Both Russia and the US follow the first interpretation.<sup>356</sup> This leads to the next follow-up question: does the provision apply to straits used for international navigation?<sup>357</sup> This question was answered in the affirmative by PAME for according to its AMSA report of 2009 Article 234 is applicable to straits.<sup>358</sup> The second question concerns the

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<sup>347</sup> Banks & Neves (2020) p 384

<sup>348</sup> Bartenstein (2010) p 23, 36-37; Tanaka (2019) p 384

<sup>349</sup> Rothwell (March 2012) p 20

<sup>350</sup> Numbers as emphasis added

<sup>351</sup> Bartenstein (2010) p 23

<sup>352</sup> Banks & Das Neves (2020) p 384

<sup>353</sup> Tanaka (2019) p 383-384; Bartenstein (2010) p 28

<sup>354</sup> Tanaka (2019) p 384

<sup>355</sup> Tanaka (2019) p 383-384; Bartenstein (2010) p 28

<sup>356</sup> Solski (2018) p 146-147. This interpretation is also known as the ‘broad’ interpretation – see Tanaka (2019) p 383-384

<sup>357</sup> AMSA (2009) p 53

<sup>358</sup> AMSA (2009) p 53. The US has confirmed its position concerning the application of Article 234 UNCLOS to straits used for international navigation in its Diplomatic Note to Russia in 2015 – see Digest Of United States Practice In International Law (2015)

water area to which the measure can be applied. According to the text, this area needs to be covered in ice for most of the year. However, it is difficult to specify these conditions, e.g. ice does not develop in the same manner as the previous year.<sup>359</sup> This premise is especially relevant considering the effects of global warming.<sup>360</sup> Last but not least, the third question pertains to enforcement jurisdiction. Article 233 UNCLOS regarding the enforcement of strait States explicitly stipulates that Sections 5-7 of Part XII do not affect the legal regime of straits used for international navigation. The provision does not mention Section 8, i.e. Article 234 UNCLOS. Therefore, strait States have jurisdiction to enforce the measures they implemented on the legal basis of the Arctic exception itself.<sup>361</sup>

#### 5.3.2.1 Applying Legal Basis 2 to the Bering Strait

All measures taken by strait States based on Part XII must be in line with the rest of the Convention.<sup>362</sup> As a result, the restrictions of Section 2 Part III UNCLOS remain in place. Furthermore, enforcing these measures is limited to the situations set out in Article 233 UNCLOS. As a result, Article 194 UNCLOS does not provide a legal basis for the implementation of a compulsory ice pilotage scheme in the Bering Strait.

Article 234 UNCLOS is the exception to the rule. According to Russia and the US, this article is applicable to straits used for navigation. What constitutes an area that is covered in ice for most of the year is unclear. Joshua Owens claims Article 234 will most likely remain applicable to the Bering Strait.<sup>363</sup> He reasons those vessels navigating this strait have just entered or left the Chukchi Sea, which is undeniably covered in ice most of the year.<sup>364</sup> Any measures applicable to straits used for international navigation and implemented based on Article 234 can be enforced by the strait States. The question then becomes whether such a system meets the remainder criteria set out in Article 234 UNCLOS. The provision stipulates *inter alia* that the measure must take navigation into account. That is where one sees similarities with the discussion regarding transit passage. Hence, implementing a system of compulsory ice pilotage in the Bering Strait under the Arctic exception is possible, provided there are no incompatibilities with navigation.

## 5.4 Conclusion

This chapter discussed the final step of the PSSA proposal, i.e. the APM. It is clear employing (ice) pilots on board vessels is an effective measure to reduce navigational risks. Consequently, it is a measure that offers protection to the significant characteristics of the Bering Strait. Whether or not the measure has a legal basis under

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<sup>359</sup> Tanaka (2019) p 384

<sup>360</sup> Tanaka (2019) p 384; Owens (2011) p 98-99

<sup>361</sup> Pharand (2007) 46-47

<sup>362</sup> Article 194.1 UNCLOS

<sup>363</sup> Owens (2011) p 99

<sup>364</sup> Owens (2011) p 99

the UNCLOS depends on one's interpretation of inconsistencies with the applicable navigational regime.

## 6 CONCLUSION

### 6.1 Summary

The world is changing, and most visible in the Arctic. Due to human activities, the earth is becoming increasingly warmer. Consequently, the ice in the Arctic region is melting, subsequently giving way to maritime traffic. Over the last few years, the Arctic region has indeed seen an upsurge in shipping activities. This presents both opportunities and dangers, especially in an Arctic chokepoint such as the Bering Strait. Australia had a related predicament regarding the Torres Strait and Great North East Channel during the 1990's and early 2000's. To promote navigational safety and environmental protection, Australia adopted a system of compulsory pilotage in these waters. Despite causing an uproar within the international maritime community, the measure is well complied with, and incident rates have declined. That is why the implementation of a compulsory pilotage scheme in the Torres Strait and Great North East Channel is used as a case study for the implementation of a similar measure in the Bering Strait. This led to an action plan: propose the Bering Strait as a PSSA and request a system of compulsory ice pilotage as the APM. Bottleneck of this plan is the fact that the Bering strait, like the Torres Strait and Great North East Channel, is used for international navigation and transit passage applies. And so, there is a chance that the proposed measure will cause a stir in this case too.

Following the PSSA Guidelines of the IMO, the Bering Strait is a strong candidate for a successful designation as a PSSA. The strait has multiple significant characteristics which are all vulnerable to shipping incidents. Furthermore, a compulsory ice pilotage scheme is effective in reducing the risks of incidents. In addition, it is legally feasible to implement such a scheme as an APM. Analysis of Australia's argumentation and State practice reveals that strait States can have jurisdiction to adopt a compulsory (ice) pilotage scheme if the measure can be seen as an adjunct to designated sea lanes and prescribed traffic separation schemes. As part of an ice-covered area, or at least connected to it, the Bering Strait also falls under the scope of Article 234 UNCLOS. Under certain circumstances, this provision can provide for a legal basis as well.

### 6.2 How Can a System of Compulsory Ice Pilotage in the Bering Strait Become Legally Feasible?

A system of compulsory ice pilotage can be legally implemented following the provisions of both UNCLOS Section 2 - Part III and Section 8 - Part XII. That viewpoint is without prejudice to the measure as not to hamper, deny or impede transit passage or present any other inconsistencies with the navigational regime to which it applies. In addition, the remaining requirements must be met.

### 6.3 Concluding Remarks

To hamper or not to hamper, that is the main question when it comes to compulsory (ice) pilotage. A question no one has the answer to, nor wants an answer to. The IMO, for instance, when it revised its PSSA guidelines in 2005, removed pilotage as an explicit option for an APM and is now silent on the issue. Message received, but what a shame. Especially since legal feasibility of a compulsory (ice) pilotage scheme in a strait where transit passage applies is one tough nut to crack. Not in the slightest because the related provisions of the main legal maritime instrument, or at least related by some account, are open to many interpretations. Some of which can result in creative ways of implementing measures to promote safe navigation and environmental protection. As is the case in the Torres Strait and the Straits of Singapore and Malacca. These strait States show that Article 42.1(a) in conjunction with Article 41 UNCLOS opens a whole new array of possibilities. Albeit it is safe to say these possibilities are most likely not mentioned in the *travaux préparatoires*. Yet, what matters is what happens *after* the implementation of this controversial measure. If a state's practice is consistent with a navigational measure that has no, or at best a highly contestable, legal basis, what does that say about current maritime law or the international maritime community itself? Perhaps it is time to recognise that the ongoing climate crisis requires something that the main international legal instruments do not (yet) provide. Looks like there is work to be done.



## 7 INDEX OF AUTHORITIES

### 7.1 Books and Journals

#### **Agripino de Castro & Cesar Luiz Pasold (2016)**

Oswaldo Agripino de Castro and Cesar Luiz Pasold, 'Law of Harbours and Pilotage, in Attard et al. (eds) *The IMLI Manual on International Maritime Law: Volume II: Shipping Law* (OSAIL 2016)

#### **Anton (2014)**

Donald K. Anton, 'Making or Breaking the International Law of Transit Passage? Meeting Environmental and Safety Challenges in the Torres Strait with Compulsory Pilotage' in Caron and Oral (eds), *Navigating Straits Challenges for International Law* (Brill Nijhof 2014)

#### **Bai & Chircop (2020)**

Jiayu Bai and Aldo Chircop, 'The Regulation of Heavy Fuel Oil in Arctic Shipping: Interests, Measures, and Impacts' in Chircop et al. (eds), *Governance of Arctic Shipping Rethinking Risk, Human Impacts and Regulation* (Springer 2020)

#### **Bankes & Das Neves (2020)**

Nigel Bankes and Maria Madalena das Neves, 'The United Nations Convention on the Law of the Sea and the Arctic Ocean' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

#### **Bartenstein (2011)**

Kristin Bartenstein, 'The "Arctic Exception" in the Law of the Sea Convention: A Contribution to Safer Navigation in the Northwest Passage?' *Ocean Development & International Law* 42 (1-2): 22-52 (2011)

#### **Bateman & White (2009)**

Sam Bateman and Michael White, 'Compulsory Pilotage in the Torres Strait: Overcoming Unacceptable Risks to a Sensitive Marine Environment' *Ocean Development & International Law* 40 (2): 184-203 (2009)

#### **Beckman (2007)**

Robert C. Beckman, 'PSSAs and Transit Passage—Australia's Pilotage System in the Torres Strait Challenges the IMO and UNCLOS' *Ocean Development & International Law* 38 (4): 325-357 (2007)

#### **Berkman et al. (2016)**

Paul Arthur Berkman, Alexander N. Vylegzhanin and Oran R. Young, 'Governing the Bering Strait Region: Current Status, Emerging Issues and Future Options' *Ocean Development & International Law* 47 (2): 186-217 (2016)

**Brigham (2020)**

Lawson W. Brigham, 'Arctic Policy Developments and Marine Transportation' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

**Boone (2013)**

Laura Boone, 'International Regulation of Polar Shipping' in Molenaar et al. (eds), *The Law of the Sea and the Polar Regions* (Martinus Nijhoff Publishers 2013)

**Burgess et al. (2017)**

John Burgess, Lucia Foulkes, Philip Jones, Matt Merighi, Stephen Murray and Jack Whitacre, 'The Law of the Sea Primer Project' the Fletcher School of Law and Diplomacy Tufts University (2017)

**Evans (2018)**

Malcolm Evans (ed), *International Law* (5<sup>th</sup> edn OUP 2018)

**Golitsyn (2014)**

Vladimir Golitsyn, 'The Legal Regime of the Arctic' in Attard et al. (eds), *The IMLI Manual on International Maritime Law: Volume I: The Law of the Sea* (OSAIL 2014)

**Hartsig et al. (2012)**

Andrew Hartsig, Ivy Fredrickson, Carmen Yeung and Stan Senner, 'Arctic Bottleneck: Protecting The Bering Strait Region From Increased Vessel Traffic' *Ocean and Coastal L. J.* 18 (1): 35-87 (2012)

**Hazmi bin Mohd Rusli (2011)**

Mohd Hazmi bin Mohd Rusli, 'The Application of Compulsory Pilotage in Straits Used for International Navigation: A Study of the Straits of Malacca and Singapore' *Asian Politics & Policy* 3 (4): 501–526 (2011)

**Hebbar et al. (2020)**

Anish Arvind Hebbar, Jens-Uwe Schröder-Hinrichs, Maximo Q. Mejia, Heike Deggim and Sascha Pristrom, 'Chapter 12 The IMO Regulatory Framework for Arctic Shipping: Risk Perspectives and Goal-Based Pathways, in Chircop et al. (eds), *Governance of Arctic Shipping Rethinking Risk, Human Impacts and Regulation* (Springer 2020)

**Heininen, Exner-Pirot & Barnes (2020)**

Lassi Heininen, Heather Exner-Pirot and Justin Barnes, 'Climate Change and the Arctic: Global Origins, Regional Responsibilities?' *Arctic Yearbook* (2020)

**Hillmer-Pegram & Robards (2015)**

Kevin Hillmer-Pegram and Martin D. Robards, 'Relevance of a Particularly Sensitive Sea Area to the Bering Strait Region: a Policy Analysis Using Resilience-Based Governance Principles' *Ecology and Society* 20 (1) (2015)

**Holroyd (2020)**

Carin Holroyd 'East Asia (Japan, South Korea and China) and The Arctic' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

**Kaczynski (2007)**

Vlad M. Kaczynski, 'US-Russian Bering Sea Marine Border Dispute: Conflict over Strategic Assets, Fisheries and Energy Resources' *Russian analytical digest* 20 (07) (2007)

**Koivurova****I. Koivurova (2009)**

Timo Koivurova, 'Limits and possibilities of the Arctic Council in a rapidly changing scene of Arctic governance' *Polar Record* 46 (2): 146-156 (2010)

**II. Koivurova et al. (2020)**

Timo Koivurova, Pirjo Kleemola-Juntunen and Stefan Kirchner, 'Emergence of a New Ocean: How to React to the Massive Change?' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

**Lapidoth (2018)**

Ruth Lapidoth, 'Straits, International', *Max Planck Encyclopaedias of International Law (MPIL)* (2018)

**Lee et al. (2020)**

Olivia Lee, Jon L. Fuglestad and Lyman Thorsteinson, '2 Ecosystems of the Bering Strait Region' in Young, Berkman and Vylegzhnin (eds), *Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea volume 1* (Springer 2020)

**Molenaar (2017)**

Erik J. Molenaar, 'The Arctic, the Arctic Council, and the Law of the Sea' in Beckman et al. (eds), *Governance of Arctic Shipping* (Brill Nijhoff 2017)

**Neher (2009)**

Capt. Patrick J. Neher, 'Compulsory Pilotage in the Torres Strait' in Nordquist et al. (eds), *Freedom of Seas, Passage Rights and the 1982 Law of the Sea Convention* (Martinus Nijhoff Publishers 2009)

**Ntovas (2014)**

Alexandros XM Ntovas, 'Straits Used for International Navigation' in Attard et al. (eds), *The IMLI Manual on International Maritime Law: Volume I: The Law of the Sea* (OSAIL 2014)

**Oude Elferink et al. (2013)**

Alex g. Oude Elferink, Erik J. Molenaar and Donald R. Rothwell, 'The Regional Implementation of the Law of the Sea and the Polar Regions' in Molenaar et al. (eds), *The Law of the Sea and the Polar Regions* (Martinus Nijhoff Publishers 2013)

**Owens (2011)**

Joshua Owens, 'The Legal Status of the Bering Strait' *China Oceans L Rev* (14): 85-113 (2011)

**Pharand (2007)**

Donat Pharand, 'The Arctic Waters and the Northwest Passage: A Final Revisit' *Ocean Development & International Law*, 38 (1-2): 3-69 (2007)

**Pincus (2020)**

Rebecca Pincus, 'The History of USA-Russia Relations in the Bering Strait' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

**Raymond-Yakoubian & Zdor (2020)**

Julie Raymond-Yakoubian and Eduard Zdor, '4 Sociocultural Features of the Bering Strait Region' in Young, Berkman and Vylegzhanin (eds), *Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea volume 1* (Springer 2020)

**Rothwell****I. Rothwell (2010)**

Donald R. Rothwell, 'Arctic Choke Points and the Law of the Sea' ANU College of Law Research Paper No. 10-81, Presented at 2010 Canadian Council of International Law Annual Meeting, Ottawa, 28-30 (October 2010)

**Rothwell (2012)**

Donald R. Rothwell, 'International Straits and Trans-Arctic Navigation' *Ocean Development & International Law* 43 (3): 267-282 (2012)

- II. Rothwell (March 2012)  
Donald R. Rothwell, 'Compulsory Pilotage and the Law of the Sea: Lessons learned from the Torres Strait' ANU College of Law Research Paper No. 12-06 (March 2012)
- III. Rothwell (2013)  
Donald R. Rothwell, 'International Law and Arctic Shipping' Michigan State International Law Review 22 (1) (2013)

**Solksi (2018)**

Jan Jakub Solksi, 'Russian Coastal State Jurisdiction over Commercial Vessels Navigating in the Northern Sea Route' University of Tromsø (2018)

**Tanaka (2019)**

Yoshifumi Tanaka, *The International Law of the Sea* (3<sup>rd</sup> edn CUP 2019)

**Thomas & Duncan (1999)**

A.R. Thomas & James C. Duncan (eds), 'Annotated Supplement to The Commanders Handbook on the Law of Naval Operations' INT'L LEGAL STUD. 73 205 (1999)  
<<https://digital-commons.usnwc.edu/cgi/viewcontent.cgi?Article=1556&context=ils>>  
(accessed 23 May 2021)

**Van Dyke (2014)**

Jon M. van Dyke, 'Rights and Responsibilities of Strait States' in Caron and Oral (eds), *Navigating Straits Challenges for International Law* (Brill Nijhof 2014)

**Wiseman (2020)**

Matthew S. Wiseman, 'The Future of the Arctic Council' in Coates and Holroyd (eds), *The Palgrave Handbook of Arctic Policy and Politics* (Palgrave Macmillan 2020)

**Young**

- I. Young (2019)  
Oran R. Young, 'Is It Time for a Reset in Arctic Governance?' Sustainability 11 (16): 4497 (2019)
- II. Young et al. (2020)  
Oran R. Young, Paul Arthur Berkman and Alexander N. Vylegzhanin, '1 Governing Arctic Seas: Sustainability in the Bering Strait and Barents Sea Regions' in Young, Berkman and Vylegzhanin (eds), *Governing Arctic Seas:*

*Regional Lessons from the Bering Strait and Barents Sea volume 1* (Springer 2020)

- III. Young et al. (2020)  
Oran R. Young, Paul Arthur Berkman and Alexander N. Vylegzhanin, '5 Governing the Bering Strait Region' in Young, Berkman and Vylegzhanin (eds), *Governing Arctic Seas: Regional Lessons from the Bering Strait and Barents Sea volume 1* (Springer 2020)

## 7.2 International Instruments

### **Agreement with the Union of Soviet Socialist Republics on the maritime boundary (1990)**

The Agreement between the United States of America and the Union of Soviet Socialist Republics on the maritime boundary, with annex (1990) 101st Congress 2d Session, Senate, treaty doc. 101-22

### **CAO Fisheries Agreement (2018)**

Agreement to prevent unregulated high seas fisheries in the Central Arctic Ocean, 3 October 2018

### **Digest Of United States Practice In International Law (2015)**

CarrieLyn D. Guymon (ed), 'Digest Of United States Practice In International Law' Office of the Legal Adviser United States Department of State (2015)

### **Enhancing International Arctic Scientific Cooperation (2017)**

Agreement On Enhancing International Arctic Scientific Cooperation, Fairbanks (USA), 2017

### **Great Barrier Reef Marine Park Act (1975)**

Great Barrier Reef Marine Park Act 1975, No.85, 1975  
<<https://www.legislation.gov.au/Details/C2017C00279>> (accessed 15 May 2021)

### **Ilulissat Declaration (2008)**

The Arctic Ocean Conference, 'The Ilulissat Declaration', Ilulissat, Greenland, 27–29 May 2008

## **IMO**

- I. A.159/ES.IV  
Recommendation on Pilotage, IMO Assembly, Agenda item 4 (27 November 1968)



- II. A.375/X  
Navigation through the Straits of Malacca and Singapore, IMO Assembly, 10<sup>th</sup> Sess., Agenda item 8(b) (adopted on 14 November 1977)
- III. A.710/17  
Use of Pilotage Services in the Torres Strait and the Great North East Channel, IMO Assembly, 17th Sess., Agenda item 10 (adopted on 6 November 1991)
- IV. A.927/22 Annex 2  
Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, IMO Assembly, 22nd Sess., Agenda item 11 (adopted on 29 November 2001)
- V. A.982/24  
Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas, IMO Assembly, 24th Sess., Agenda item 11 (adopted on 1 December 2005)
- VI. A 31/Res.1137  
Interim safety measures for ships not certified under the SOLAS Convention operating in polar waters, IMO Assembly, 31<sup>st</sup> Sess., Agenda item 6(b) (adopted on 4 December 2019)
- VII. IMO Convention (1948)  
Convention on the Intergovernmental Maritime Consultative Organization, E/CONF.4/61 (6 March 1948)  
< [https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg\\_no=XII-1&chapter=12&clang=\\_en](https://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=XII-1&chapter=12&clang=_en) > (accessed 20 May 2021)
- VIII. LEG 89/15  
Torres Strait PSSA Associated Protective Measure - Compulsory Pilotage Submitted by Australia and Papua New Guinea, Legal Committee 89th Sess., Agenda item 15 (24 August 2004)
- IX. LEG 89/16  
Report of the Legal Committee 89th Sess., Agenda item 16 (4 November 2004)
- X. MEPC 49/8  
Extension of Existing Great Barrier Reef PSSA to include the Torres Strait Region, submitted by Australia and Papua New Guinea, Marine Environment Protection Committee (MEPC), 49th Sess. (10 April 2003)

- XI. MEPC 49/22  
Report of the Marine Environment Protection Committee (MEPC), 49th Sess., Agenda item 22 (8 August 2003)
- XII. MEPC.133/53 Annex 21  
Designation of the Torres Strait as an extension of the Great Barrier Reef Particularly Sensitive Sea Area, Marine Environment Protection Committee (MEPC) (adopted on 22 July 2005)
- XIII. MEPC 68/21/Add.1 Annex 10  
International Code for Ships Operating in Polar Waters (Polar Code), Marine Environment Protection Committee (MEPC) (adopted on 15 May 2015)
- XIV. MSC.52/66 Annex 10  
Mandatory Ship Reporting Systems, Marine Safety Committee (MSC) (adopted on 30 May 1996)

**UNCLOS (1982)**

United Nations Convention on the Law of the Sea, 10 December 1982, 1833 U.N.T.S. 397

**MARPOL**

International Convention for the Prevention of Pollution from Ships (MARPOL), 2 November 1973 and 1978 Protocol of Amendment, 1226 U.N.T.S. 237, as amended (17 February 1978)

**Merchant Shipping Code, as amended (1999)**

The Federal Law of July 28, 2012, N 132-FZ "On Amendments to Certain Legislative Acts of the Russian Federation Concerning State Regulation of Merchant Shipping on the Water Area of the Northern Sea Route"

<[http://www.nsra.ru/en/ofitsialnaya\\_informatsiya/zakon\\_o\\_smp.html](http://www.nsra.ru/en/ofitsialnaya_informatsiya/zakon_o_smp.html)>

(accessed 11 May 2021)

**Navigation Act**

- I. Navigation Act 1912  
Navigation Act 1912, Act No. 4 of 1913 as amended, 11 October 2006, taking into account amendments up to Act No. 109, 2006
- II. Navigation Act 2012  
Navigation Act 2012, Act No.128 of 2012, Compilation No. 11, 13 September 2019, includes amendments up to Act No. 57, 2019

**Northern Sea Route Rules (2020)**

Rules of navigation in the water area of the Northern Sea Route, Russian Federation Government Decree, No. 1487 (2020)

<[http://www.nsra.ru/files/fileslist/137-en5894-2020-11-19\\_rules.pdf](http://www.nsra.ru/files/fileslist/137-en5894-2020-11-19_rules.pdf)> (accessed 9 May 2021)

**Oil Spill Preparedness and Response (2013)**

Agreement On Cooperation On Marine Oil Pollution Preparedness And Response In The Arctic, Kiruna (Sweden) 2013

<<https://oaarchive.arctic-council.org/handle/11374/529>> (accessed 28 February 2021)

**Ottawa Declaration (1996)**

Declaration on the Establishment of the Arctic Council, 16 September 1996, reprinted in I.L.M. 35 (1996): 1387

**SAR (2011)**

Agreement On Cooperation On Aeronautical And Maritime Search And Rescue In The Arctic, Nuuk (Greenland), 2011

<<https://oaarchive.arctic-council.org/handle/11374/531>> (accessed 28 February 2021)

**SOLAS**

International Convention for the Safety of Life at Sea (SOLAS), 1184 U.N.T.S. 2, as amended (1 November 1974)

**Torres Strait Treaty**

1979 Treaty between Australia and the Independent State of Papua New Guinea concerning Sovereignty and Maritime Boundaries in the area between the two Countries, including the area known as Torres Strait, and Related Matters (Sydney, 18 December 1978)

<<https://www.dfat.gov.au/geo/torres-strait/Pages/the-torres-strait-treaty#:~:text=The%20Torres%20Strait%20Treaty%20was,of%20the%20common%20border%20area>> (accessed 15 May 2021)

**Tromsø Declaration (2009)**

Tromsø Declaration on the occasion of the Sixth Ministerial Meeting of The Arctic Council (29 April 2009) Tromsø, Norway

<[https://oaarchive.arctic-council.org/bitstream/handle/11374/91/06\\_tromso\\_declaration\\_2009\\_signed%20%281%29.pdf?sequence=1&isAllowed=y](https://oaarchive.arctic-council.org/bitstream/handle/11374/91/06_tromso_declaration_2009_signed%20%281%29.pdf?sequence=1&isAllowed=y)> (accessed 27 May 2021)

### 7.3 Case Law

#### **Corfu Channel Case (I.C.J. Reports 1949)**

United Kingdom v. Albania (Corfu Channel Case) International Court of Justice, Decision of 9 April 1949

### 7.4 Reports

#### **AMSA (2009)**

Arctic Council, 'Arctic Marine Shipping Assessment 2009 Report' Protection of the Arctic Marine Environment (Arctic Council working group)

#### **Annual FON Report (2020)**

Annual Freedom of Navigation Report Fiscal Year 2020, Department of Defense Report to Congress, pursuant to Section 1275 of the National Defense Authorization Act for Fiscal Year (FY) 2017 (P.L. 114-328), as amended

#### **Arctic Strategy (2013)**

United States Coast Guard, 'Arctic Strategy' (May 2013)

#### **The Bering Strait Marine Life and Subsistence Data Synthesis (2014)**

Oceana and Karewak inc., 'The Bering Strait Marine Life and Subsistence Data Synthesis' (October 2014)

<<https://oceana.org/publications/reports/the-bering-strait-marine-life-and-subsistence-data-synthesis>> (accessed 27 May 2021)

#### **Bering Strait PARS Final Report 12.27.16 (2016)**

Preliminary findings, 'Port Access Route Study: In the Chukchi Sea, Bering Strait, and Bering Sea' (2016) [Docket Number USCG-2014-0941 and USCG-2010-0833] Seventeenth Coast Guard District

<<https://www.regulations.gov/document/USCG-2014-0941-0040>>

(accessed 28 march 2021)

#### **Fletcher**

I. Fletcher & Robertson (2016)

Sierra Fletcher and Tim Robertson, 'Bering Sea Vessel Traffic Risk Analysis' Nuka Research and Planning Group LLC (December 2016)

<<https://oceanconservancy.org/wp-content/uploads/2017/01/bering-sea-vessel-traffic-1.pdf>> (accessed 27 May 2021)

II. Fletcher et al. (2020)

Sierra Fletcher, dr. Bretwood Higman, Alisha Chartier, and Tim Robertson, 'Adherence to Bering Strait Vessel Routing Measures in 2019' Nuka Research and Planning Group LLC (2020)

<<https://www.pewtrusts.org/en/research-and-analysis/white-papers/2020/04/adherence-to-bering-strait-vessel-routing-measures-in-2019>> (accessed 27 May 2021)

### **Larsen (2014)**

Joan Nymand Larsen, Oleg A. Anisimov et al, 'Polar regions' in Barros et al (eds) *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part B: Regional Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (CUP 2014)

### **National Strategy for the Arctic Region (2013)**

National Strategy for the Arctic Region, The White House, Washington (10 May 2013)

<[https://obamawhitehouse.archives.gov/sites/default/files/docs/nat\\_arctic\\_strategy.pdf](https://obamawhitehouse.archives.gov/sites/default/files/docs/nat_arctic_strategy.pdf)> (accessed 26 May 2021)

### **NCSR 5/3/7**

Routeing Measures and Mandatory Ship Reporting Systems, Sub-Committee on Navigation, Communications and Search and Rescue (NCSR) 5th session Agenda item 3 (17 November 2017)

### **Summary for policymakers (2018)**

Summary for policymakers, Special Report: Global Warming of 1.5 °C, (2018) Intergovernmental Panel on Climate Change (IPCC)

<<https://www.ipcc.ch/sr15/chapter/spm/>> (accessed 1 April 2021)

## 7.5 Websites

### **Addressing Dramatic Changes in the Bering Strait Region Requires Governance Adaptations**

Harvard Kennedy School Belfer Center for Science and International Affairs, 'Addressing Dramatic Changes in the Bering Strait Region Requires Governance Adaptations' (12 November 2020)

<<https://www.belfercenter.org/publication/addressing-dramatic-changes-bering-strait-region-requires-governance-adaptations>> (accessed 31 May 2021)

### **Alaska Public Media**

Annie Ropeik, '10 Years On, Selendang Ayu Spill's Legacy Still Evolving' Alaska Public Media (12 December 2014)

<<https://www.alaskapublic.org/2014/12/12/10-years-on-selendang-ayu-spills-legacy-still-evolving/>> (accessed 14 March 2021)

## Arctic Council

- I. About the Arctic Council  
<<https://arctic-council.org/en/about/>> (accessed 26 February 2021)
- II. Arctic States  
<<https://arctic-council.org/en/about/States/>> (accessed 23 February 2021)
- III. How we work  
<<https://arctic-council.org/en/explore/work/>> (accessed 26 February 2021)
- IV. Observers  
<<https://arctic-council.org/en/about/observers/>> (accessed 23 February 2021)
- V. PAME  
<<https://arctic-council.org/en/about/working-groups/pame/>>  
(accessed 28 February 2021)
- VI. Permanent Participants  
<<https://arctic-council.org/en/about/permanent-participants/>>  
(accessed 23 February 2021)
- VII. Task Forces And Expert Groups  
<<https://arctic-council.org/en/about/task-expert/>> (accessed 25 May 2021)

## Arctic governance

- 'Arctic governance challenges and opportunities' Council on Foreign Relations (29 November 2018)  
<<https://www.cfr.org/report/arctic-governance>> (accessed 1 April 2021)

## Australian Maritime Safety Authority

- I. About coastal pilotage  
'About coastal pilotage', Australian Maritime Safety Authority, Australian Government  
< <https://www.amsa.gov.au/safety-navigation/navigating-coastal-waters/about-coastal-pilotage>> (accessed 1 June 2021)
- II. Principal Advisor - Coastal Pilotage Operations of the Australian Maritime Safety Authority  
'Principal Advisor - Coastal Pilotage Operations of the Australian Maritime Safety Authority', Australian Maritime Safety Authority, Australian Government, email message to author (5 May 2021)

## The Barents Observer

- I. Atle Staalesen, 'Arctic shipper shows off a historical icebreaking voyage'



(19 February 2021)

<<https://thebarentsobserver.com/en/2021/02/arctic-shipper-shows-historical-icebreaking-voyage>> (accessed 10 May 2021)

- II. Atle Staalesen, 'Tanker embarks on first ever mid-winter voyage on Northern Sea Route' (3 February 2021)

<<https://thebarentsobserver.com/en/arctic-Ing/2021/02/tanker-embarks-first-ever-mid-winter-voyage-northern-sea-route>> (accessed 10 May 2021)

### **Christophe de Margerie finalising first NSR transit in February**

Sanja Pekic, 'Christophe de Margerie finalising first NSR transit in February' Offshore Energy (19 February 2021)

<<https://www.offshore-energy.biz/christophe-de-margerie-finalising-first-nsr-transit-in-february/>> (accessed 10 May 2021)

### **German ships successfully make "Arctic Passage"**

Reuters Staff, 'German ships successfully make "Arctic Passage"' Reuters (12 September 2009)

<<https://www.reuters.com/Article/us-climate-shipping-arctic-idUSTRE58B01K20090912>> (accessed 23 May 2021)

### **Humpert (2021)**

Malte Humpert, 'A New Dawn for Arctic Shipping – Winter Transits on the Northern Sea Route' High North News (19 January 2021)

<<https://www.highnorthnews.com/en/new-dawn-arctic-shipping-winter-transits-northern-sea-route>>

(accessed 20 May 2021)

### **Ice pilot**

Merriam-Webster

<<https://www.merriam-webster.com/dictionary/ice%20pilot>> (accessed 19 May 2021)

### **International Maritime Organization**

- I. IMO gets observer status at Arctic Council (7 May 2019)

<<https://imo.org/en/MediaCentre/Pages/WhatsNew-1285.aspx>> (accessed 24 February 2021)

- II. Introduction to the IMO

<<https://www.imo.org/en/About/Pages/Default.aspx>> (accessed 24 February 2021)

- III. Maritime Safety Committee (MSC), 99th session 16-25 May 2018  
<<https://www.imo.org/en/MediaCentre/MeetingSummaries/Pages/MSC-99th-session.aspx>> (accessed 28 March 2021)
- IV. Member States  
<<https://www.imo.org/en/About/Membership/Pages/MemberStates.aspx>>  
(accessed 14 May 2021)
- V. Milestone for polar protection as comprehensive new ship regulations come into force (1 January 2017)  
<<https://www.imo.org/en/MediaCentre/PressBriefings/Pages/02-Polar-Code.aspx>> (accessed 25 February 2021)
- VI. Particularly Sensitive Sea Areas  
<<https://www.imo.org/en/OurWork/Environment/Pages/PSSAs.aspx#:~:text=These%20guidelines%20include%20criteria%20to,cultural%20and%20economic%20criteria%2C%20such>> (accessed 16 May 2021)
- VII. Pilotage  
<<https://www.imo.org/en/OurWork/Safety/Pages/Pilotage.aspx>> (accessed 21 May 2021)
- VIII. Ships' Routing  
<<https://www.imo.org/en/OurWork/Safety/Pages/ShipsRouting.aspx>>  
(accessed 1 June 2021)
- IX. Shipping in polar waters  
<<https://www.imo.org/en/MediaCentre/HotTopics/Pages/Polar-default.aspx>>  
(accessed 31 March 2021)
- X. Structure of IMO  
<<https://www.imo.org/en/About/Pages/Structure.aspx>> (accessed 14 May 2021)

### **IMO Authorizes New Bering Sea Routing**

IMO Authorizes New Bering Sea Routing, The Maritime Executive (26 May 2018)

<<https://www.maritime-executive.com/Article/imo-authorizes-new-bering-sea-routing>> (accessed 20 May 2021)

### **MarineTraffic**

Christophe de Margerie, Marine Traffic

<[https://www.marinetraffic.com/en/ais/details/ships/shipid:4327709/mmsi:212611000/imo:9737187/vessel:CHRISTOPHE\\_DE\\_MARGERIE](https://www.marinetraffic.com/en/ais/details/ships/shipid:4327709/mmsi:212611000/imo:9737187/vessel:CHRISTOPHE_DE_MARGERIE)> (accessed 23 May 2021)

### **Master-pilot exchange**

Cult of Sea, 'Master-pilot exchange'

<<https://cultofsea.com/navigation/master-pilot-exchange-duties-responsibilities-and-elements-of-effective-relationship/>> (accessed 1 June 2021)

### **MISR Sights of the Bering Strait**

MISR Sights of the Bering Strait, Jet Propulsion Laboratory, California Institute of Technology 27 December 2000 <<https://www.jpl.nasa.gov/images/misr-sights-the-bering-strait>> (accessed 31 May 2021)

### **Ocean Conservancy**

#### I. Heavy Fuel Oil

<<https://oceanconservancy.org/ls/shipping-bering-strait-region/heavy-fuel-oil/>> (accessed 27 May 2021)

#### II. IMO Announces Safety Measures for the Bering Strait, One of the Most Ecologically Significant Places on the Planet (25 May 2018)

<<https://oceanconservancy.org/news/Statement-imo-announces-safety-measures-bering-strait-one-ecologically-significant-places-planet/>> (accessed 30 March 2021)

#### III. Shipping in the Bering Strait Region

<<https://oceanconservancy.org/ls/shipping-bering-strait-region/overview/>> (accessed 1 June 2021)

#### IV. Ship Strikes and Underwater Noise

<<https://oceanconservancy.org/ls/shipping-bering-strait-region/ship-strikes-underwater-noise/>> (accessed 27 May 2021)

### **Pacta tertiis nec nocent nec prosunt**

Oxford reference

<<https://www.oxfordreference.com/view/10.1093/oi/authority.20110803100300498#:~:text=Quick%20Reference,A%20Dictionary%20of%20Law%20Enforcement%20%C2%BB>> (accessed 19 May 2021)

### **PAME**

#### I. About PAME

<<https://pame.is/shortcode/about-us>> (accessed 28 February 2021)

- II. Arctic Marine Shipping Assessment (AMSA)  
<<https://pame.is/projects/arctic-marine-shipping/amsa>> (accessed 26 May 2021)

### **Reef safeguard cut back**

Philip Dorling, 'Reef safeguard cut back' The Sidney Morning Herald (12 September 2011)

<<https://www.smh.com.au/environment/conservation/reef-safeguard-cut-back-20110911-1k4b3.html>> (accessed 17 May 2021)

### **Russia sets out stringent new rules for foreign ships on the Northern Sea Route**

Atle Staalesen, 'Russia sets out stringent new rules for foreign ships on the Northern Sea Route' Arctic Today (8 March 2019)

<<https://www.arctictoday.com/russia-sets-out-stringent-new-rules-for-foreign-ships-on-the-northern-sea-route/>> (accessed 20 May 2021)

### **Russia's New Rules for Northern Sea Route Violate International Law**

'Russia's New Rules for Northern Sea Route Violate International Law' Polygraph.info (12 March 2019)

<<https://www.polygraph.info/a/fact-check-russia-claim-arctic/29817535.html>> (accessed 20 May 2021)

### **Sea ice: types and forms**

Sea ice: types and forms, Government of Canada

<<https://www.canada.ca/en/environment-climate-change/services/ice-forecasts-observations/latest-conditions/educational-resources/sea/types-forms.html>> (accessed 27 May 2021)

### **Torres Pilots**

- I. Pilot Boarding Grounds & Transfer Methods, Torres Pilots  
<<https://torrespilots.com.au/pilot-info/pilot-boarding-grounds-transfer-methods/>> (accessed 1 June 2021)
- II. Shipping Routes & Maps, Torres Pilots  
<<https://torrespilots.com.au/shipping-info/shipping-routes-maps/>> (accessed 20 May 2021)

### **Suez canal: Ever Given container ship freed after a week**

Michael Safi, Helena Smith and Martin Farrer, 'Suez canal: Ever Given container ship freed after a week' The Guardian (29 March 2021)

<<https://www.theguardian.com/world/2021/mar/29/suez-canal-attempt-re-float-ever-given-delay-salvage-tugboats>> (accessed 19 May 2021)

### **U.S., Russia Propose Voluntary Bering Strait Shipping Routes**

Walter Ham, 'U.S., Russia Propose Voluntary Bering Strait Shipping Routes' US Department of Defense (25 January 2018)

<<https://www.defense.gov/Explore/News/Article/Article/1423960/us-russia-propose-voluntary-bering-strait-shipping-routes/>> (accessed 28 March 2021)

### **US-Russia showdown looms as top diplomats meet in Iceland (apnews.com)**

Matthew Lee, 'US-Russia showdown looms as top diplomats meet in Iceland' AP News (18 May 2021)

<<https://apnews.com/Article/business-donald-trump-iceland-europe-middle-east-aeed7773fc80941862fa2acf6bb4335>> (accessed 19 May 2021)

### **The Water Area of the Northern Sea Route**

'The Water Area of the Northern Sea Route' Federal State Budgetary Institution, The Northern Sea Route Administration

<[http://www.nsra.ru/en/ofitsialnaya\\_informatsiya/granici\\_smp.html](http://www.nsra.ru/en/ofitsialnaya_informatsiya/granici_smp.html)> (accessed 20 May 2021)

### **What Is Hydrography?**

National Oceanic and Atmospheric Administration, 'What Is Hydrography?', National Ocean Service Website, Department of Commerce

<<https://oceanservice.noaa.gov/facts/hydrography.html>> accessed (27 May 2021)

### **WorldAtlas**

'Bering Strait' World Atlas

<<https://www.worldatlas.com/straits/bering-strait.html>> (accessed 10 May 2021)

## 7.6 Miscellaneous

### **Arctic Vessel Traffic in the Bering Strait**

The Pew Charitable Trusts, 'Arctic Vessel Traffic in the Bering Strait' (April 2014)

<[https://www.pewtrusts.org/-/media/legacy/oceans\\_north\\_legacy/arctic\\_vessel\\_for\\_print\\_200copiesmay20141.pdf](https://www.pewtrusts.org/-/media/legacy/oceans_north_legacy/arctic_vessel_for_print_200copiesmay20141.pdf)> (accessed 1 June 2021)

### **Endangered and Threatened Species; Designation of Critical Habitat for the Beringia Distinct Population Segment of the Bearded Seal**

National Oceanic and Atmospheric Administration, 'Endangered and Threatened Species; Designation of Critical Habitat for the Beringia Distinct Population Segment of the Bearded Seal, Department of Commerce, Federal Register / Vol. 86, No. 5 50 CFR Parts 223 and 226 [Docket No.: 201228–0358] RIN 0648–BJ65 (8 January 2021)

<<https://www.govinfo.gov/content/pkg/FR-2021-01-08/pdf/2020-29006.pdf>>  
(accessed 27 May 2021)

### **FON Program Fact Sheet (2017)**

U.S. Department of Defense Freedom of Navigation (FON) Program, Fact Sheet (28 February 2017)

<<https://policy.defense.gov/Portals/11/DoD%20FON%20Program%20Summary%2016.pdf?ver=2017-03-03-141350-380>> (accessed 20 May 2021)

### **Oceans Policy Statements (1983)**

Ronald Reagan, 'Statement on United States Oceans Policy' Presidential Library & Museum (10 March 1983)

<<https://www.reaganlibrary.gov/archives/speech/Statement-united-states-oceans-policy>> (accessed 1 March 2021)

### **Semaphore (2007)**

Newsletter of the Sea Power Centre – Australia, Department of Defence issue 7 (April 2007)

<<https://www.navy.gov.au/media-room/publications/semaphore-compulsory-pilotage-torres-strait>> (accessed 12 May 2021)