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Ingvild Ulrikke Jakobsen / Elise Johansen

Efforts of the Arctic Council  
to Protect Sensitive Arctic  
High Sea Areas from  
the Impact of Shipping

# Efforts of the Arctic Council to Protect Sensitive Arctic High Sea Areas from the Impact of Shipping

Ingvild Ulrikke Jakobsen / Elise Johansen



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Sjørettsfondet  
University of Oslo  
Scandinavian Institute of Maritime Law  
P.O. box 6706 St. Olavs plass 5  
N-0130 Oslo  
Norway

Phone: 22 85 96 00  
E-post: [sjorett-adm@jus.uio.no](mailto:sjorett-adm@jus.uio.no)  
Internet: [www.jus.uio.no/nifs](http://www.jus.uio.no/nifs)

Editor: Professor dr. juris Trond Solvang –  
e-mail: [trond.solvang@jus.uio.no](mailto:trond.solvang@jus.uio.no)

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# **Preface**

This article is based on a presentation delivered on the Transatlantic Science Week (TSW) in Boston, USA, November 4–6, 2015. The title of the 2015 TSW was “Blue Futures” and the presentation was a contribution to the session “Stewardship of the Sea and Socioeconomics of the Ocean”, moderated by Erik Røsæg, University of Oslo.

Oslo, November 2016

Ingvild Ulrikke Jakobsen and Elise Johansen



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# 1 Introduction

## 1.1 Protecting the Arctic marine environment

The Arctic environment is under pressure from the impacts of climate change and from polluting activities that take place in and outside the region. The rapid melting of the sea ice is affecting Arctic ecosystems and species directly as well as having global environmental implications which are causing global warming and changes in weather conditions.<sup>1</sup> At the same time, climate change creates new opportunities for human activities such as shipping, fishing, mining and exploitation of oil and gas resources. This article addresses the efforts of the Arctic Council to protect the high seas of the Arctic Ocean from the risks posed by international shipping activities, with special focus on the designation of an Arctic PSSA.

Shipping activities in the Arctic represent challenges from an environmental perspective. Any discharge of oil, operational or accidental, is likely to have more severe consequences in the Arctic than in other areas. Compared to oil spills in open water, the biological degradation rate of oil is slow in waters with near zero temperatures, and it is more complicated clean-up operations after oil spills in ice.<sup>2</sup> The poorly developed infrastructure complicates things even further and can make it difficult to respond to oil spills.<sup>3</sup> These factors make the environmental risks from shipping activities severe, even if the traffic rate is low or moderate. By

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<sup>1</sup> IPCC *Climate Change 2014: Synthesis Report*. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (Eds.)]. IPCC, Geneva, Switzerland, 151 p.

<sup>2</sup> Eger, Karl Magnus *Effects of Oil Spills in Arctic Waters*. Published in The ARCTIS Database, created and operated by the Centre for High North Logistics (CHNL), 2010. Available at: <http://www.arctis-search.com/Effects+of+Oil+Spills+in+Arctic+Waters> (last visited April 2016).

<sup>3</sup> Arctic Council, *The Arctic Marine Shipping Assessment 2009 Report* (AMSA Report 2009), p. 5. Available at: <https://oaarchive.arctic-council.org/handle/11374/54> (last visited April 2016).



introducing alien species through the ballast water, noise pollution, as well as physical damage of habitats, shipping also has other impacts on the environment and marine biological diversity than pollution.<sup>4</sup>

## 1.2 Regulatory approaches for protecting the Arctic

The United Nations Convention on the Law of the Sea (LOSC) provides the legal framework for regulating all activities carried out in the oceans and seas,<sup>5</sup> including the marine Arctic.<sup>6</sup> However, concerns have been expressed in legal literature about the current legal regime and its sufficiency to address the environmental threats to the Arctic.<sup>7</sup> The legal writer Pharand brought forward the need of an Arctic Region Council and made a proposal of a treaty for protecting the Arctic, based on inspiration of the Antarctic model already in 1992.<sup>8</sup> However, in recent years commentators have taken a different approach, arguing that there is a comprehensive legal framework based on the LOSC that provide the legal basis for the governance of the Arctic marine environment.<sup>9</sup> While Arctic and Antarctic waters have similarities, there are also significant differences. For one, the Arctic is an ocean surrounded by continents, while the Antarctic is a continent surrounded by an ocean. Secondly, the Arctic region has a large population where the Antarctic

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<sup>4</sup> Ibid., p. 145–150.

<sup>5</sup> *United Nations Convention on the Law of the Sea*, opened for signature 10 December 1982; in force 16 November 1994; 1833 U.N.T.S. 397 (hereafter LOSC).

<sup>6</sup> There is no legal definition for the term “marine Arctic” and many different definitions are applied. See Jakobsen, Ingvild Ulrikke “The Adequacy of the Law of the Sea and International Environmental Law to the Marine Arctic: Integrated Ocean Management and Shipping,” *Michigan State International Law Review* Vol. 22, 2013, p. 291–320, at p. 295.

<sup>7</sup> Nowlan, Linda *Arctic Legal Regime for Environmental Protection*. IUCN, Gland, Switzerland and Cambridge, UK and ICCEL, Bonn, Germany, 2001. xii + 70 pp.

<sup>8</sup> Pharand, Donat “The Case of for an Arctic Region Council and a Treaty Proposal,” *Revue générale de droit*, Vol. 23, 1992, p. 163–195.

<sup>9</sup> Hoel, Alf Håkon “Do we Need a New Legal Regime for the Arctic Ocean?,” *The International Journal of Marine and Coastal Law*, Vol. 24, 2009, p. 443–456, at p. 454–455. See also Young Oran, “Arctic Tipping Points: Governance in Turbulent Times,” *AMBIO*, Vol. 41, 2012, p. 75–84 at p. 82.

is nearly uninhabited.<sup>10</sup> The Arctic region has, for economic reasons, the last decade attracted global interests. About a quarter of the world's reservoirs for oil and gas is predicted to be situated in the Arctic region.<sup>11</sup> These factors create both practical and regulatory challenges. With the adoption of the International Code for Ships Operating in Polar Waters (Polar Code), rules and regulations applicable for Arctic shipping are in place.<sup>12</sup> However, several hazards were not addressed in the Polar Code, such as the banning of heavy fuel oil and navigation in areas that are vulnerable due to their ecological significance or in migratory areas of marine mammals.<sup>13</sup> Hence, regulatory gaps still exist.

The Arctic coastal States play an important regulatory role due to their jurisdictional competence in their respective maritime zones. However, unilateral initiatives do not meet the regulatory needs of the Arctic as a whole or for parts of the Arctic that are under no coastal State jurisdiction, such as the high seas and the Area. The same can be said for some aspects of the regulatory competence the coastal State enjoys in its EEZ.<sup>14</sup> In particular, the coastal State jurisdiction over vessel source pollution is restricted to adopting regulations and standards that comply with "generally accepted international rules and standards."<sup>15</sup> An exception to this is LOSC Article 234 that provides the coastal States with a broader

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<sup>10</sup> Depending on the definition of the boundaries to the region, the Arctic is home to some 4 million inhabitants. <http://www.grida.no/publications/vg/arctic/page/2664.aspx> (last visited April 2016).

<sup>11</sup> Abate, Randall (Ed) *Climate Change Impacts on Ocean and Coastal Law: U.S. and International Perspectives*. 2015, p. 277.

<sup>12</sup> *The International Code for Ships Operating in Polar Waters* (Polar Code) is made mandatory under both the International Convention for the Safety of Life at Sea (SOLAS) and the International Convention for the Prevention of Pollution from Ships (MARPOL), MSC 94/21 item 3.61 and MEPC 67 /20 item 9.44. The Polar Code is expected to enter into force on 1 January 2017.

<sup>13</sup> Henriksen, Tore "Protecting polar environment: coherency in regulating Arctic shipping," in *Research Handbook on International; Marine Environmental Law*, Rayfuse, Rosemary (ed.), p. 363 – 384, at p. 371. Cheltenham, 2015.

<sup>14</sup> According to LOSC Art. 56, coastal States have sovereignty only for "... the purpose of exploring and exploiting, conserving and managing the natural resources ...," and jurisdiction in regard to some selected activities/issues.

<sup>15</sup> LOSC Art. 211(5).

prescriptive and enforcement jurisdiction for ice-covered areas than in other areas.

Through the Arctic Council, which was established in 1996 by the Ottawa Declaration, a new high level forum for cooperation in the Arctic was created.<sup>16</sup> The Arctic Council is today the leading intergovernmental forum promoting cooperation, coordination and interaction among the Arctic states and is the only intergovernmental initiative involving all the Arctic states.<sup>17</sup> With the two primary objectives of promoting environmental protection and sustainable development, the Council has taken upon itself an important role as a policy maker, collaborating with other organizations and bodies. The Council does not have the capacity to adopt legally binding obligations, and, for this reason, has been described as a decisional and catalytic forum rather than a regulatory decision-making entity.<sup>18</sup> Negotiation of legally binding instruments has nevertheless been undertaken under the Council's auspices, giving rise to the notion of the Arctic Council System.<sup>19</sup> The five Arctic coastal States – Canada, Denmark, Norway, Russia and United States, have also emphasized in the Ilulissat Declaration that the LOSC provides a “solid foundation for responsible management” of the Arctic Ocean.<sup>20</sup> The five

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<sup>16</sup> *Declaration on the establishment of the Arctic Council*. 19 September 1996. 35 ILM 1387 (1006), Ottawa, Canada. (Hereinafter the Ottawa Declaration). Art 1.

<sup>17</sup> The eight member states are: Canada, the Kingdom of Denmark, Finland, Iceland, Norway, the Russian Federation, Sweden and the United States. In addition to the eight member states, six organizations representing Arctic Indigenous peoples have status as Permanent Participants: the Aleut International Association, the Arctic Athabaskan Council, the Gwich'in Council International, the Inuit Circumpolar Council, the Russian Arctic Indigenous Peoples of the North, and the Saami Council. It is also possible to gain observer status for non-Arctic states; inter-governmental and inter-parliamentary organizations, global and regional; and non-governmental organizations. See the Ottawa Declaration (fn. 14), para 3.

<sup>18</sup> Koivurova, Timo and David VanderZwaag “The Arctic Council at 10 Years: Retrospect and Prospects,” *University of British Columbia Law Review*, Vol. 40:1, 2007, p. 121–194, at p. 161.

<sup>19</sup> Molenaar, Erik J. *The evolution of the Arctic Council in the Context of International Law*. Unpublished presentation held at Arctic Frontiers, Tromsø, January 2016.

<sup>20</sup> *Ilulissat Declaration*, Arctic Ocean Conference, Ilulissat, Greenland, 27–29 May 2008. Available at: [https://www.regjeringen.no/globalassets/upload/ud/080525\\_arctic\\_ocean\\_conference\\_outcome.pdf](https://www.regjeringen.no/globalassets/upload/ud/080525_arctic_ocean_conference_outcome.pdf) (last visited April 2016).

coastal States also express that they have a stewardship role in protecting the Arctic Ocean, and that they will take steps:

in accordance with international law both nationally and in cooperation among the five states and other interested parties to ensure the protection and preservation of the fragile marine environment of the Arctic Ocean.<sup>21</sup>

The five coastal States, moreover, assert that they intend to work together, including through the IMO, both to strengthen existing measures and develop new measures to improve the safety of maritime navigation and prevent the risk of ship-based pollution in the Arctic Ocean.<sup>22</sup>

### 1.3 Area-based management tools

In this article, we are addressing efforts made of the Arctic Council to protect sensitive high seas areas from the impact of shipping. Based on the findings of the Arctic Marine Shipping Assessment Report (AMSA), the Arctic Council has initiated work with the object to explore the need for internationally designated areas for the purpose of environmental protection in regions of the Arctic Ocean.<sup>23</sup> Area-based management is used as a tool for implementing an ecosystem-based approach, which provides an integrated ocean management based on the principles of precautionary and sustainability.<sup>24</sup> However, there are several kinds of protected areas and area-based management tools that vary both by level of protection and management objective. The concept of marine protected area (MPA) is one of the most widely accepted area-based management tools.<sup>25</sup> There is no formal legal definition of MPA, but there are varying types and definitions of them. The International Union for Conservation

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<sup>21</sup> Ibid.

<sup>22</sup> Ibid.

<sup>23</sup> AMSA Report 2009 (fn. 3).

<sup>24</sup> Roberts, Julian, Aldo Chircop and Siân Prior “Area-based Management on the High Seas: Possible Application of the IMO’s Particularly Sensitive Sea Area Concept,” *The International Journal of Marine and Coastal Law* Vol. 5:4, 2010, p. 483–522 at p. 484.

<sup>25</sup> Ibid.

of Nature (IUCN) has adopted a definition that is often applied and that has served as a starting point for definitions of MPAs within various legal instruments. According to this definition an MPA is:

Any area of intertidal or subtidal terrain, together with its overlying water and associated flora, fauna, historical and cultural features, which has been reserved by law or other effective means to protect part or all of the enclosed environment.<sup>26</sup>

On the basis of the AMSA recommendations, the Arctic Council has explored the need for specially designated marine areas in the Arctic high seas that are both available under the IMO and are adequate to protect sensitive areas. Currently, no legal framework exists that provides for the establishment of MPAs on the high seas, where shipping activities also are regulated. As of today, only 0,25 percent of sea area beyond national jurisdiction (ABNJ) are covered by MPAs.<sup>27</sup> The coverage of MPAs in the marine Arctic is particularly low.<sup>28</sup> In this region no MPAs have yet been established in areas beyond national jurisdiction. This gap in conservation effort, compared to the target of 10 percent protection of marine areas, can be explained by the many challenges with which the concept of MPAs is faced. A particular challenge is the lack of a comprehensive international legal framework for MPAs on the high seas.<sup>29</sup> The application of the available area-based management measures under the IMO such as the PSSA<sup>30</sup> and MARPOL<sup>31</sup> Special Areas on the high seas can, however,

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<sup>26</sup> Kelleher, Graeme (ed.) *Guidelines for Marine Protected Areas*. Gland, Switzerland and Cambridge, UK, IUCN, 1999. Executive Summary.

<sup>27</sup> Protected Planet Report 2014, United Nations Environment Programme, ISBN: 978-92-807-3416-4, Available at: [http://wdpa.s3.amazonaws.com/WPC2014/protected\\_planet\\_report.pdf](http://wdpa.s3.amazonaws.com/WPC2014/protected_planet_report.pdf). (last visited April 2016)

<sup>28</sup> OSPAR Commission, 2014 Status Report on the OSPAR network on Marine Protected Areas, 16.

<sup>29</sup> Roberts, Chircop and Prior (fn. 24), p. 486.

<sup>30</sup> *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea Areas*, IMO Assembly Resolution A. 24/Res. 982, 6 February 2006.

<sup>31</sup> International Convention for the Prevention of Pollution from Ships, 1973, and the Protocol of 1978 Relating Thereto, 1340 UNTS 62.

contribute to ensure protection of the sensitive areas as they may ensure adequate protection from the impacts of shipping activities.

According to Article 86 of the LOSC, high seas are areas beyond national jurisdiction, i.e. “all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State.” In this paper, Arctic high seas refer to the high seas region of the Arctic Ocean that is beyond the EEZ of the Arctic littoral states.<sup>32</sup>

#### **1.4 Other ongoing processes to establish area-based protection beyond national jurisdiction**

The need to protect marine areas beyond national jurisdiction is being addressed in several forums. An ongoing negotiating process is considering the development of an internationally binding instrument under the LOSC on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.<sup>33</sup> Protection of areas beyond national jurisdiction is considered as being of “... critical importance, owing to its shared, transboundary nature and its interconnectedness to coastal ecosystems.”<sup>34</sup> Based on the work of the General Assembly Ad Hoc Open-ended Informal Working Group, the General Assembly has decided to develop an international legally binding instrument under the LOSC on the conservation and sustainable use of marine biological

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<sup>32</sup> This is the definition used by Det Norske Veritas in their report for the Norwegian Environment Agency for the work under PAME in relation to protecting sensitive sea areas from the impact of shipping. *Specially Designated Marine Areas in The Arctic High Seas*, Report No./DNV Reg No.: 2013-1442/17JTMM1D-26, Rev 2. (Hereinafter DNV report). Available at <https://www.cbd.int/doc/meetings/mar/absaws-2014-01/other/absaws-2014-01-submission-finland-en.pdf> (last visited April 2016).

<sup>33</sup> United Nations General Assembly, *Development of an international legally-binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction*, UN Doc. A/RES/69/292

<sup>34</sup> Outcome of the working group, including recommendations and co-chairs’ summary of discussions, issued as document A/69/780

diversity of areas beyond national jurisdiction.<sup>35</sup> A preparatory committee has been given the mandate to make substantive recommendations to the General Assembly on the elements of a draft text of an international legally-binding instrument under the LOSC.<sup>36</sup>

There have also been attempts at the regional level to develop MPAs on the high seas. The OSPAR Commission has already established high seas MPAs in the north Atlantic,<sup>37</sup> and are currently working on a proposal for the designation of an Arctic Ice High Seas MPA.<sup>38</sup> The OSPAR proposal takes note of the work done by the Arctic Council to consider part of the Central Arctic Ocean high seas as a Particularly Sensitive Sea Area (PSSA) by stating that such an initiative “has so far not received support by Arctic states.”<sup>39</sup> The OSPAR government officials will decide whether the proposal for a high seas MPA will gain support when they meet in June 2016 in Spain for their annual OSPAR Commission Meeting. The Arctic states Denmark and Iceland have, however, opposed this proposal, whereas Norway has expressed that a process of establishing the Arctic High Seas High MPA must be seen in the light of future developments under the Arctic Council.<sup>40</sup>

Any regulatory attempt is dependent on the approval of the states’ parties to the regulatory or facilitating body in question. Whether the

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<sup>35</sup> Resolution 69/292 of 19 June 2015. *Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction.*

<sup>36</sup> The Preparatory Committee started its work in 2016 and will conclude by the end of 2017. The first session of the Preparatory Committee took place in New York, from 28 March to 8 April 2016.

<sup>37</sup> Bergen Statement, Ministerial Meeting of the OSPAR Commission, Bergen: 23–24 September 2010, Available at [http://www.ospar.org/site/assets/files/1498/ospar\\_2010\\_bergen\\_statement.pdf](http://www.ospar.org/site/assets/files/1498/ospar_2010_bergen_statement.pdf) (last visited April 2016)

<sup>38</sup> *Revised proposal for the designation of an Arctic Ice High Seas MPA*, Presented by Tim Packeiser (DE) as task lead on behalf of the Arctic Ice High Seas MPA Task Group at the Meeting of the Biodiversity Committee (BDC), Gothenburg, Sweden: 29 February – 4 March 2016, BDC 16/5/4.

<sup>39</sup> *Ibid.*, p. 49.

<sup>40</sup> OSPAR Commission, Meeting of the Intersessional Correspondence Group on Marine Protected Areas (ICG-MPA), Lisbon, Portugal: 13–15 October 2015, ICA-MPA15/9/1-E, para. 4.4.

proposals made by working groups under both the OSPAR Commission and the Arctic Council get the necessary endorsements remains to be seen. Chapter 2 will present an overview of the work carried out under the Arctic Council to protect the Arctic high seas from the impact of shipping. In chapter 3, we present the concept of Particularly Sensitive Sea Areas (PSSA) and the main criteria for establishing a PSSA. Chapter 4 is devoted to specific legal questions arising from the application of the PSSA concept on the high seas of the Arctic Ocean. Chapter 5 contains concluding remarks.



## 2 The Arctic Council's work with protecting the environment from the impact of shipping

### 2.1 The Arctic Council's focus on marine safety and marine environmental protection

In 2004, The Arctic Council undertook a major study of the Arctic climate, which resulted in the Arctic Climate Impact Assessment (ACIA).<sup>41</sup> One of the key findings was that “reduced sea ice is very likely to increase marine transport and access to resources.”<sup>42</sup> That same year the Arctic Council Ministers presented the Council's strategic goals for protecting the Arctic marine environment in the Arctic Marine Strategic Plan (AMSP).<sup>43</sup> The AMSP stated the need for a comprehensive assessment of Arctic marine shipping and for future application of an ecosystem approach to the Arctic Ocean, including the establishment of marine protected areas.<sup>44</sup> Based on these two reports, work focused on Arctic marine shipping was initiated by the Arctic Council with the 2009 AMSA report.<sup>45</sup>

The AMSA report singled out the release of oil through accidental or illegal discharge as the most significant threat to the Arctic from ships.<sup>46</sup> In addition, ship strikes on marine mammals, the introduction of alien species, disruption of migratory patterns of marine mammals,

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<sup>41</sup> *Arctic Climate Impact Assessment*. ACIA Overview report. Cambridge University Press, 2005. 140 p. Available at: <http://www.amap.no/documents/doc/impacts-of-a-warming-arctic-2004/786> (last visited April 2016).

<sup>42</sup> *Ibid.*, p. 11.

<sup>43</sup> *Arctic Marine Strategic Plan*, 2005. Adopted at the fourth Arctic Council meeting in November 2004. Available at: [https://oaarchive.arctic-council.org/bitstream/handle/11374/72/AMSP\\_Nov\\_2004.pdf?sequence=1&isAllowed=y](https://oaarchive.arctic-council.org/bitstream/handle/11374/72/AMSP_Nov_2004.pdf?sequence=1&isAllowed=y) (last visited April 2016).

<sup>44</sup> *Ibid.*, Section 7.1.5, 7.3.2 and 7.4.

<sup>45</sup> *Arctic Marine Shipping Assessment* (fn. 3).

<sup>46</sup> *Ibid.*, p. 152.

and anthropogenic noise produced from marine shipping activity was identified as additional potential negative impact of Arctic shipping.<sup>47</sup> It was pointed out that with the exception of the coast of Norway and areas along the northwest of Russia, there is a general lack of marine infrastructure in the Arctic.<sup>48</sup> Gaps in hydrographic data, a need for more meteorological and oceanographic data, and information on sea ice and icebergs, together with the potential risk for accidents in significant portions of the primary shipping routes, make it important to support safe navigation.<sup>49</sup>

The report stressed that changes in Arctic sea ice not only will provide for longer seasons of navigation but also may result in increased interaction between migrating species and ships.<sup>50</sup> The report summarized its findings on the topics of environmental considerations and impacts by saying that: “From an environmental point of view, Arctic shipping poses a threat to the region’s unique ecosystems. This threat can be effectively mitigated through careful planning and effective regulation in areas of high risk.”<sup>51</sup>

The outcome of this assessment was a list of recommendations which were developed to provide a guide for future actions by the Arctic Council and the Arctic states. The list of recommendations had three main categories: I. Enhancing Arctic Marine Safety; II. Protecting Arctic people and the Environment; III. Building the Arctic Marine Infrastructure.<sup>52</sup>

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<sup>47</sup> Ibid.

<sup>48</sup> Ibid., p. 5.

<sup>49</sup> Ibid., p. 186–187

<sup>50</sup> Ibid., p. 35 and 152.

<sup>51</sup> Ibid., p. 152.

<sup>52</sup> Ibid., p. 6–7.

## 2.2 AMSA recommendation II D

Relevant for this article is recommendation D under category II regarding the need for internationally designated areas for the purpose of environmental protection in regions of the Arctic Ocean.<sup>53</sup> Recommendation II D refers to “Special Areas” under MARPOL and Particularly Sensitive Sea Areas (PSSA) as examples of what could be appropriate tools for protecting sensitive sea areas. The phrasing of recommendation II D indicates that the Arctic Council is calling for an assessment of the suitability of available IMO measures to protect vulnerable areas in the Arctic. In addition, recommendation II C, regarding areas of heightened ecological and cultural significance, is pertinent for the regulation of shipping for the protection of sensitive sea areas.

The wording of recommendation II D is broad and does not limit this task to any specific geographical areas or jurisdictions. In the early phases, the description of action plans for recommendation II D encompassed both areas under national jurisdiction and areas beyond national jurisdiction.<sup>54</sup> PAME did, however, later limit the task to only encompassing the high seas.<sup>55</sup> Designating an area for the purpose of environmental protection in the high seas would not restrict or interfere with the exclusive right of a coastal State to designate marine protected areas within their own maritime zones. Subsequently, the Arctic Council has developed a framework as a response to recommendation II C to inform the development of MPA networks under the national jurisdiction of the Arctic.<sup>56</sup>

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<sup>53</sup> Recommendation II D reads: “Specially Designated Arctic Marine Areas: That the Arctic states should, taking into account the special characteristics of the Arctic marine environment, explore the need for internationally designated areas for the purpose of environmental protection in regions of the Arctic Ocean. This could be done through the use of appropriate tools, such as “Special Areas” or Particularly Sensitive Sea Areas (PSSA) designation through the IMO and consistent with the existing international legal framework in the Arctic.”

<sup>54</sup> PAME Working Group Meeting Report, NO: PAME I-2009, 30 Sept-2 Oct 2009, Oslo, Norway, p. 11.

<sup>55</sup> PAME Working Group Meeting Report, NO: PAME I-2012, 26–27 March 2012, Stockholm, Sweden.

<sup>56</sup> PAME, *Framework for a Pan-Arctic Network of Marine Protected Areas*, April 2015. Available at: [https://oaarchive.arctic-council.org/bitstream/handle/11374/417/MPA\\_final\\_web.pdf?sequence=1&isAllowed=y](https://oaarchive.arctic-council.org/bitstream/handle/11374/417/MPA_final_web.pdf?sequence=1&isAllowed=y) (last visited April 2016).

The result of the work done by the co-leads on project II D was a report made by Det Norske Veritas (DNV) submitted to PAME in March 2014.<sup>57</sup> The report explored the need for protection of the Arctic, focusing solely on the high seas area of the Arctic Ocean, and described the traffic volume and vulnerability of the area. The report also reviewed potential available IMO measures suited to protect the vulnerable areas, especially focusing on the Special Areas- and the Particularly Sensitive Sea Area-options.

As for Special Areas under MARPOL, the report concluded that there is not

any significant gap between the current levels of protection offered through the designation of Special Areas in the Arctic high seas, and the normal MARPOL requirements for ships operating in the Arctic high seas.<sup>58</sup>

Due to the relatively low ship traffic in the high seas Arctic, the report stated that the reduction potential for regular operational discharges with Special Area designation seemed low

especially if one consider the overlap with equal upcoming requirements in the Polar Code and today's industry standards for ships to be operated in the Arctic.<sup>59</sup>

The report explored three different options for protecting the high seas area by designating an area as a PSSA with associated protective measures. Option number one is described as being a potentially very effective shielding of sensitive areas and includes designating the entire Arctic high seas area as a PSSA.<sup>60</sup> The associated protective measures are vessel traffic service (VTS) with ships reporting system (SRS) to monitoring traffic, and area to be avoided (ATBA) established and enforced in a dynamic fashion reflecting the movement of the ice edge. The report

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<sup>57</sup> DNV report (fn. 32).

<sup>58</sup> *Ibid.*, p. 53.

<sup>59</sup> *Ibid.*

<sup>60</sup> *Ibid.*, p. 55–56.

questioned whether this option is possible because this would impose such restrictions on the freedom of navigation that gaining political acceptance would be difficult.<sup>61</sup>

The two other options were more moderate versions. The second version would designate the entire Arctic high seas as a PSSA but without ATBA as an associated protective measure.<sup>62</sup> The third is described as defining one or more “core sea ice areas” as PSSAs, with ATBA as a protective measure.<sup>63</sup> These two options are more likely to gain political endorsement. On the other hand, the report questioned whether option number two actually represented any direct added protection and that under model three, large areas would be left without added protection.<sup>64</sup>

In the aftermath of the AMSA II D report, PAME has decided to take several interim steps before pursuing any action relevant to the IMO. Two of these are: firstly, to develop a paper exploring whether it would be possible for the IMO to establish dynamic areas to be avoided, and secondly, to develop a paper that explores whether it would be possible for the IMO to designate a PSSA located exclusively on the high seas.<sup>65</sup> This case is still pending according to the latest status report.<sup>66</sup>

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<sup>61</sup> Ibid.

<sup>62</sup> Ibid., p. 56.

<sup>63</sup> Ibid.

<sup>64</sup> Ibid., p. 56–57.

<sup>65</sup> PAME II 2014 Working Group Meeting Report, 16–18 September 2014, Whitehorse, Yukon, Canada, p. 4.

<sup>66</sup> Arctic Council *Status on Implementation of the AMSA 2009 Report Recommendations*, April 2015.

## 3 PSSA – concept and criteria

### 3.1 Background

The concept of PSSA was developed and adopted in guidelines by the IMO in 1991.<sup>67</sup> A PSSA is defined by the IMO as

an area that needs special protection through action by IMO because of its significance for recognized ecological, socio-economic, or scientific attributes where such attributes may be vulnerable to damage by international shipping activities.<sup>68</sup>

The backdrop of the development of this new environmental concept within the IMO was the recognition of the need to protect sensitive sea areas from the negative effects of international shipping. The IMO and its member states were also encouraged in the Agenda 21 to assess the need for additional measures to address the degradation of the marine environment and to assess the state of pollution caused by ships in particularly sensitive sea areas.<sup>69</sup> Following the adoption of the PSSA Guidelines, three meetings of legal experts were arranged in 1990, 1992 and finally in 1994 to study the legal implications of the concept of PSSA and its associated protective measures in international law as well as to explore the further development of the concept of PSSA.<sup>70</sup>

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<sup>67</sup> *Guidelines for the Designation of Special Areas and the Identification of particularly Sensitive Sea Areas*, IMO Assembly Resolution A.720 (17), 6 November 1991. Revised Guidelines was adopted by the IMO Assembly in 2005.

<sup>68</sup> *Revised Guidelines for the Identification and Designation of Particularly Sensitive Sea areas*. IMO Assembly Resolution A. 24/Res. 982. (Hereinafter the PSSA Guidelines). 6 February 2006, para. 1.2.

<sup>69</sup> Agenda 21, para. 17.30 and 17.30 (a) (iv).

<sup>70</sup> See Lahonde, Suzanne “The IMO’s PSSA mechanism and the Northwest Passage debate,” in *Polar Oceans Governance in an Era of Environmental Change*, Stephen, Tim and David L VanderZwaag (eds.) Cheltenham, 2014, p. 166–189 at p. 169–170. For more on the development of the concept of PSSA see, Gjerde, Kristina and David Freestone “Particularly Sensitive Sea Areas – An Important Environmental Concept at a Turning –Point,” *The International Journal of Marine and Coastal Law* Vol. 9:4, 1994, p. 425–468.

The PPSA concept was developed and adopted by the IMO in Guidelines and is therefore a soft law instrument with no legally binding effect in itself. However, the associated protective measures which have a legal basis in other IMO instruments will be legally binding, when the measure is provided for in for instance the MARPOL Convention, COLREG<sup>71</sup> or SOLAS.<sup>72</sup>

The Guidelines open up for the establishment of PSSA both within and beyond the limit of the territorial sea.<sup>73</sup> In this way the concept of PSSA may facilitate a more integrated approach to protection of the marine environment as it provides for measures across the jurisdictional boundaries of the different maritime zones.<sup>74</sup> As shown above there are not yet any appropriate legal instruments that provide for the establishment of MPAs beyond national jurisdiction. In particular, there is a lack of a legal framework and basis for establishing MPAs on the high seas where shipping activities are restricted or regulated.<sup>75</sup> As vessels operating on the high seas are only subject to global regulations adopted by the IMO, the establishment of PSSAs on the high seas may supplement the protection of sensitive or valuable areas by ensuring protection of the environment against shipping through the use of area-based measures. The possible application of PPSA on the high seas is addressed further below.

## 3.2 Criteria

To be identified as a PSSA, an area, as described in the PSSA Guidelines, must be vulnerable due to ecological, social, economic, cultural, or scientific criteria.<sup>76</sup> As outlined in the PSSA Guidelines, the area should meet “at least one of the criteria.”<sup>77</sup> The PSSA Guidelines, thus, provide a broad set of

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<sup>71</sup> Convention on the International Regulations for Preventing Collisions at Sea, 1972, 1050 UNTS 16.

<sup>72</sup> International Convention for the Safety of Life at Sea 1978, 1184 UNTS, 278.

<sup>73</sup> PSSA Guidelines, (fn. 67) para. 4.3.

<sup>74</sup> Jakobsen, (fn. 6), p. 317.

<sup>75</sup> Roberts, Chircop and Prior (fn. 24), p. 486.

<sup>76</sup> PSSA Guidelines (fn. 67), para. 4.

<sup>77</sup> *Ibid.*, para.4.4.

criteria for which a PSSA may be adopted by the IMO. As for the ecological criteria, the Guidelines clarifies that the area must be unique or rare, an area which includes critical habitats, representative, an area with rich diversity, high productivity, an area that may be a critical spawning, breeding or nursery area for marine species, or a fragile area, etc. The question whether and which criteria the proposed area of the Arctic high seas is addressed below. In addition to the ecological criteria or one of the other listed criteria such as social, cultural, economic or scientific standards, the area should, also to be identified as a PSSA, be at risk from international shipping activities.<sup>78</sup> Although the shipping traffic in the Arctic is increasing, the volume of shipping, in particular on the high seas of the Arctic, is limited. Another question further addressed below is whether a planned PSSA in this area complies with these criteria.

### **3.3 Associated protective measures**

According to the PSSA Guidelines, an associated protective measure that addresses the threat of or the vulnerability of international shipping activities must have been approved or adopted by IMO at the time of the designation of the PSSA.<sup>79</sup> Further, in the application for the designation of a PSSA, a proposal for an associated measure must according to the PSSA Guidelines be included.<sup>80</sup> The PSSA Guidelines show which measures are possible. First, the area may be designated as a special area under MARPOL Annex I, II, V or a SOx emission control area under MARPOL VI. Second, routing measures or reporting systems under the SOLAS Convention may be adopted.<sup>81</sup> The shipping traffic may, for instance, be led outside the most critical part of the area, through the use of routing measures such as sea lanes. Finally, according to the PSSA Guidelines, other new measures may be developed and adopted to protect a specific sensitive sea area, provided that it has an identified legal basis.<sup>82</sup>

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<sup>78</sup> *Ibid.*, para. 5.1.

<sup>79</sup> *Ibid.*, para. 1.2.

<sup>80</sup> *Ibid.*, para. 7.4.

<sup>81</sup> *Ibid.*, para. 6.1.1.

<sup>82</sup> *Ibid.*



The Guidelines clarify what the “identified legal basis” may be in para. 7.5.2.3. First, the legal basis may be any measure that is available under an existing IMO instrument or any measure that could become available through amendment or adoption of a new instrument. Moreover, the Guidelines also provide that any measure that may be proposed in the territorial sea or on the basis of article 211 (6) in the LOS Convention may be adopted within the PSSA. Thus, the identification of a PSSA primarily means the application of a protective measure that could be adopted also without the establishment of a PSSA. However, the PSSA Guidelines provide flexibility as new measures tailored to protect a particular sensitive area that are not already available in the IMO instruments may be developed and adopted. Also, protective measures that coastal States may adopt in their territorial sea or within special areas under Article 211 (6), according to the PSSA Guidelines para. 7.5.2.3. (iii), may be adopted within a PSSA. This last category of legal bases leaves it open as to what measures may be adopted. In particular, the scope of what measures Article 211 (6) provides for is unclear. The PSSA Guidelines para. 7.5.2.3 (iii) is accompanied by a footnote which states that this “provision does not derogate from the rights and duties of coastal States in the territorial sea as provided for in the United Nations Convention on the Law of the Sea.” The PSSA Guidelines also emphasize both in the Preamble and in paras. 7.5.2.5., 7.9. and 9.2 that the associated protective measures must be consistent with the LOSC.

The precise limit of what impact on navigations is acceptable when adopting protective measures within the PSSAs, is not clarified.<sup>83</sup> However, as pointed out by Ringbom, the protective measures that have been approved within the PSSAs by the IMO, so far, have not been controversial.<sup>84</sup> Nevertheless, the PSSA concept provides a possibility and a flexibility for the IMO to develop and adopt new measures to ensure appropriate protection of a sensitive sea area in exceptional cases where the available IMO instruments are not adequate.

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<sup>83</sup> Roberts, Chircop and Prior (fn. 24), p. 507.

<sup>84</sup> Ringbom, Henrik *Vessel-source pollution*. In Rayfuse, Rosemary (Ed.) *Research Handbook on International Marine Environmental Law*, Cheltenham, 2015, p. 123.

## **4 The application of PSSA on the high seas of the Arctic Ocean**

### **4.1 Introduction**

This chapter addresses specific legal questions arising from the application of the concept of PSSA on the high seas of the Arctic Ocean. First, the legal bases for identifying areas on the high seas as PSSAs and the possibility to adopt associated protective areas within these are examined. Following is a discussion whether the high seas of the Arctic Ocean comply with the criteria for identifying PSSAs, as provided for in the Guidelines.

As described in chapter 2.2, the DNV report concluded that one option in which the Arctic high seas is designated as a PSSA in its entirety with vessel traffic systems (VTS), ship-reporting systems (SRS), as well as ATBAs that are flexible so that they are reflective of the movement of the ice, would provide the best protection for sensitive areas of the Arctic high seas.<sup>85</sup> The report argued, however, that the most feasible option was to establish a “core sea ice area” with ATBA as an associated protective measure. A consequence of this option is that large areas of the Arctic high seas remain unprotected from the impact of shipping activities. The report argued, however, that this option ensured protection of the core areas and will likely not impede on the freedom of navigation on the high seas.

The two final sections in this chapter aim to investigate the option presented in the DNV report where the Arctic Ocean is designated as a PSSA in its entirety with VTS, SRS and the use of flexible and dynamic ATBAs. The questions becomes if and how the size of a PSSA, covering the entire Arctic high seas area and/or the use of dynamic ATBAs can be lawfully adopted, or whether this option really would impede on the freedom of navigation and, therefore, not be in accordance with the LOSC.

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<sup>85</sup> DNV report (fn. 32), p. 55–57.

## 4.2 Application on the high seas

The call from the Arctic Council to explore the possibilities for designating high seas PSSAs can be viewed in light of the legal status of the high seas according to the LOSC. No state has sovereign rights on the high seas. This is codified in Article 89, which states: “No State may validly purport to subject any part of the high seas to its sovereignty.” Furthermore, one of the fundamental legal characteristics of the high seas is the freedom that every state enjoys. The freedoms listed and laid down in the LOSC specifically refer to the freedom of navigation.<sup>86</sup> However, the listed freedoms is not to be understood as without restrictions.<sup>87</sup> It follows from the LOSC Article 87(2) that these freedoms “shall be exercised by all States with due regard for the interests of other States ...”. The LOSC imposes the duty to protect and preserve the marine environment and to conserve marine living resources, including a duty to cooperate in this task.<sup>88</sup> The obligations of the states to protect and preserve the marine environment, including fragile ecosystems, are unlimited in geographical scope, which means they also apply to the high seas. The obligation to protect and preserve the marine environment,<sup>89</sup> the duty to cooperate on a global and regional basis,<sup>90</sup> and the obligation to adopt, enact, and enforce internationally agreed standards for protecting the marine environment at the national level,<sup>91</sup> is decisive for the understanding and definition of the term “freedom” in LOSC Part VII. Hence, the freedom of the high seas must be interpreted in the light of applicable relevant rules of international law and may also be restricted by other specific treaties that lay down obligations for conservation of living resources and protection

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<sup>86</sup> LOSC art. 87.

<sup>87</sup> Rayfuse, Rosemary and Robin M. Warner, “Securing a sustainable future for the oceans beyond national jurisdiction: The legal basis for an integrated cross-sectoral regime for high seas governance for the 21st century,” *The International Journal of Marine and Coastal Law*, Vol 23:3, 2008, p. 399–421 at p. 400.

<sup>88</sup> LOSC Art. 192.

<sup>89</sup> LOSC Art. 192 and 194.

<sup>90</sup> LOSC Art. 197.

<sup>91</sup> LOSC Art. 194 and also 211(2).

of the marine environment.<sup>92</sup> In other words, “freedom” is not absolute; it must be balanced against other rights and duties of the states, especially in relation to the protection of the marine environment.

While it is widely perceived that the legal regimes for establishing successful high seas cross-sectoral MPAs are inadequate,<sup>93</sup> some high seas management and protection instruments do exist within the current legal framework. The establishment of a PSSA is not a cross-sectoral designation, despite the management objective, which is to protect and preserve the marine environment.<sup>94</sup> PSSA-status only grants the right to adopt associated protective measures aimed at regulating shipping. It is generally accepted that a single sector regulation is not an MPA in the broad meaning of the term.<sup>95</sup>

The PSSA Guidelines’ Chapter 4 describes the criteria for the identification of PSSAs.<sup>96</sup> According to para 4.3, the criteria relates to PSSAs “within and beyond the limits of the territorial sea.” The phrasing “beyond the territorial sea” is not limited to only the EEZ but is, in general, interpreted to encompass the high seas.<sup>97</sup> The freedom of navigation is a cornerstone of the description of the legal characteristic of the EEZ.<sup>98</sup> The jurisdiction granted in LOSC Article 56(I) b) iii to the coastal States

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<sup>92</sup> Oude Elferink, Alex G. “Governance Principles for Areas beyond National Jurisdiction,” *The International Journal of Marine and Coastal Law*, Vol. 27:2, 2012, p. 205–259 at p. 212.

<sup>93</sup> Roberts, Chircop and Prior (fn. 24), p. 486, Rayfuse and Warner (fn. 87), p. 399–421. Molenaar, Erik J. “Managing Biodiversity in Areas Beyond National Jurisdiction,” *The International Journal of Marine and Coastal Law*, Vol 22:1, 2007, p. 89–124, at p. 95. Ardron, Jeff, Kristina Gjerde, Sian Pullen and Virginie Tilot, “Marine spatial planning in the high seas,” *Marine Policy*, Vol 32:5, 2008, p. 832–839, at p. 833. See also A/RES/69/292 for the work of the UNGA working group.

<sup>94</sup> See the PSSA Guidelines (fn. 67).

<sup>95</sup> Roberts, Chircop and Prior (fn. 24), p. 498.

<sup>96</sup> See Chapter 3 of this article.

<sup>97</sup> Roberts, Chircop and Prior (fn. 24), p. 501. See also the discussion in Gjerde, Kristina *Protecting particularly sensitive sea areas from shipping: A review of IMO’s new PSSA guidelines*. In Thiel, Hjalmar and J. Anthony Koslow (Eds.) *Managing Risks to Biodiversity and the Environment on the High Sea, Including Tools Such as Marine Protected Areas— Scientific Requirements and Legal Aspects*, 43 BfN-Skripten (German Federal Agency for Nature Conservation, Bonn, 2001) p. 123–131, at p. 127.

<sup>98</sup> LOSC Art. 58(1).

in the EEZ to protect and preserve the marine environment is mainly a reference to the articles in part XII giving coastal states jurisdiction to prevent, reduce, and control pollution from vessels in the EEZ.<sup>99</sup> In the EEZ, the vessel shall, according to Article 58(3), exercise its navigational rights with “due regard to the rights and duties of the coastal State” and “comply with the laws and regulations adopted by the coastal State.” However, the limited prescriptive and enforcement powers granted to the coastal States in the relevant articles of part XII of the LOSC, is a result of the primacy of the freedom of navigation in the EEZ. The objective is to protect the freedom of navigation equally both in the EEZ and in the high seas. Hence, there is no reason to distinguish between the EEZ and the high seas when interpreting the phrase “beyond the territorial sea” in para. 4.3. of the Guidelines.

As explained above in Chapter 3, the designation of a PSSA, in itself, does not involve attributions of rights and/or obligations of states. It is through the application of associated protective measures that the legal basis for regulation of shipping is provided. Neither of the measures that already is available under an existing IMO instrument actually prohibits the applications of legal measures on the high seas. As a starting point, any associated protective measure that violates the principle of freedom of navigation would not be acceptable. It is easy to imagine that this would be the case for establishing the protective measure, areas to be avoided (ATBA). However, the United Nations Division for Ocean Affairs and the Law of the Sea (DOALOS) argued that even measures that, as a starting point, represent a breach of the navigational freedom, will be in accordance with the LOSC due to the IMO-process of establishing such measures and the endorsement by the member states this process provides.<sup>100</sup>

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<sup>99</sup> LOSC Art. 211(1) and (5), 220 (3)(5) and (6).

<sup>100</sup> IMO, Comments made by the Division for Ocean Affairs and the Law of the Sea of the United Nations (DOALOS) in Connection with Issues Raised in Document LEG 87/16/1 (October 2003), IMO Doc. LEG 87/17, Annex 7, p. 2.

Accordingly, there is no legal barrier to why the concept of PSSA and the application of associated protective measures could not be extended to the high seas areas.<sup>101</sup>

### **4.3 Do the high seas of the Arctic Ocean comply with the criteria for identification of a PSSA?**

The AMSA II C Recommendation in the AMSA report called for the Arctic states to identify areas of heightened ecological and cultural significance in light of changing climate conditions and increasing multiple marine uses.<sup>102</sup> The AMSA II C Recommendation concluded that the drifting pack ice of the central Arctic Ocean is globally unique and identified the whole area as an area of heightened ecological significance.<sup>103</sup> Also, due to climate change and the diminishing ice, the drifting pack ice in the central Arctic Ocean is a threatened habitat for many ice dependent species.<sup>104</sup> The DNV report concluded that fauna associated with the drifting pack ice, such as the polar bear, the Ivory and Ross' gull, the Bowhead whale, as well as the Arctic cod, are sensitive to potential oil spills.<sup>105</sup> In the DNV report, the sensitivity of species found in the Arctic high seas to shipping activities was addressed and the report found that there is potential overlap between shipping activities and the occurrence of species such as of polar bears and Ivory and Ross' gull.<sup>106</sup> In conclusion, the DNV report stated that the area was in compliance with several of the attributes that are required for the area to be identified as a PSSA.<sup>107</sup> The ecological criteria for the identification of an area as a PSSA are very broad, which means that many areas with different characteristics may

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<sup>101</sup> The same conclusion is drawn by Roberts, Chircop and Prior (fn. 24), p. 501.

<sup>102</sup> AMSA Report 2009 (fn. 3), p. 6–7.

<sup>103</sup> AMAP/CAFF/SDWG, 2013. Identification of Arctic marine areas of heightened ecological significance: Arctic Marine Shipping Assessment (AMSA) IIC. Arctic Monitoring and Assessment Programme (AMAP), Oslo, p. 61–63.

<sup>104</sup> DNV report (fn. 32), p. 38.

<sup>105</sup> *Ibid.*, p. 39–44.

<sup>106</sup> *Ibid.*

<sup>107</sup> *Ibid.*, p. 53.

comply with them. As pointed out by Roberts in the legal literature, due to the broad criteria it is unlikely that an area would not comply with at least one of these criteria.<sup>108</sup> Thus, the high seas of the Arctic Ocean, with its drifting pack ice – a critical habitat to many species, – its sensitive and unique environment, as well as its vulnerability to human activities, in particular to acute pollution from oil, complies with several of the ecological criteria listed in the PSSA Guidelines.

A more open question is whether the area is at risk from international shipping activities, which is the second criterion for an area to be identified as a PSSA.<sup>109</sup> When deciding upon this, the PSSA Guidelines set out a list of factors that should be considered.<sup>110</sup> This includes vessel traffic characteristics such as operational factors including types of maritime activities, vessel types, and harmful substances carried such as cargo or fuel that would be harmful if it is released into the sea. Furthermore, natural factors such as hydrographical, meteorological, and oceanographic factors needed to be taken into account. Other factors that are listed as relevant in the assessment of vulnerability to impacts of shipping are: any evidence that “shipping activities are causing or may cause damage to the attributes of the proposed area” including also the “significance or risk of potential damage,” and the “the degree of harm that may be expected to cause damage.”<sup>111</sup> The history of groundings, collisions, and spills in the area and their consequences as well as stresses from other environmental sources are relevant to consider.<sup>112</sup> The formulations in the PSSA Guidelines such as “other information that might be helpful” in para. 5.2. 5, suggest, however, that the PSSA Guidelines do not provide an exhaustive list of factors that should be considered in the assessment of whether the area is vulnerable to international shipping activities.

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<sup>108</sup> Roberts, Julian *Marine Environment Protection and Biodiversity Conservation: The Application and Future Development of the IMO’s Particularly Sensitive Sea Area Concept*, Heidelberg, 2007, p. 105.

<sup>109</sup> PSSA Guidelines (fn. 67), para. 5.1.

<sup>110</sup> *Ibid.*

<sup>111</sup> *Ibid.*, para. 5.2.1.

<sup>112</sup> *Ibid.*, para. 5.2.2.4.

The maritime activities in the Arctic, especially in the central Arctic Ocean, is limited. Even though the shipping activities are increasing, there is a low volume of ships in the Arctic. This raises the question whether the area may be characterized as an area that is at risk from international shipping activities as required in the PSSA Guidelines para. 5.1. The DNV report described as part of its analyses of the application of area-based measures, the shipping traffic volumes in the high seas of the Arctic Ocean.<sup>113</sup> The DNV report built into its analyses different studies of Arctic shipping activities and concluded that considerable uncertainties exist in the estimated traffic.<sup>114</sup> To help handle the uncertainties, the DNV report set out three scenarios to predict the future traffic in the high seas of the Arctic Ocean: scenario low, scenario medium and scenario high. The Report considered the medium scenario as the reference scenario in its assessments as this was the more likely than the other two scenarios.<sup>115</sup> However, even if the high scenario comes true, the future volume of ship traffic still will be very low.<sup>116</sup> The report also found that the risk of accidents must also be considered very low.<sup>117</sup>

A strict interpretation and application of the condition of the vulnerability to impacts from international shipping can therefore imply that the condition is difficult to meet for the high seas of the central Arctic Ocean. It has been, however, demonstrated that Arctic shipping poses a threat to the unique ecosystems in the Arctic.<sup>118</sup> The most serious threat is the release of oil and other toxic chemicals. The consequences of an oil spill may also be more serious in the marine Arctic than in other areas.<sup>119</sup> Also, the drifting pack ice in the central Arctic Ocean is considered globally unique, and species such as Polar bears, Bowhead whale, and Ivory and Ross' gulls are particularly sensitive to shipping activities, especially oil

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<sup>113</sup> DNV report (fn. 32), p. 10–18.

<sup>114</sup> *Ibid.*, p. 15.

<sup>115</sup> *Ibid.*

<sup>116</sup> *Ibid.*, p. 44.

<sup>117</sup> *Ibid.*, p. 4.

<sup>118</sup> AMSA Report 2009 (fn. 3), p. 152.

<sup>119</sup> *Ibid.*, p. 136–138.



spills but also ship strikes, disturbances, and noise.<sup>120</sup> A precautionary approach could be justified, however, even though there are relative few ships navigating at least in some parts of this region.<sup>121</sup> In the literature, Chircop argues that:

a low volume of shipping that qualitatively has the potential of greater impact could provide sufficient justification for PSSA designation, as long as the threat is demonstrated.<sup>122</sup>

The IMO has also adopted guidelines for the implementation of the precautionary approach and, thereby, acknowledged the need for applying this approach in the regulation of shipping activities.<sup>123</sup> Hence, a precautionary approach should be applied by IMO and its member states when evaluating the conditions for identifying the area as a PSSA, as the consequences of an accident with oil spills may be much more severe in the sensitive Arctic environment than in other areas.<sup>124</sup> The DNV report did not address this question in detail, but established that the Arctic high seas is vulnerable to damage by international shipping mainly due to acute pollution but also from disturbance and air emissions.<sup>125</sup>

According to the PSSA Guidelines, there is a requirement that the proposed protective measures provide protection from the identified vulnerability of international shipping.<sup>126</sup> The requirement of a link between the threat and the protection is significant for the effectiveness

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<sup>120</sup> DNV report (fn. 32), p. 34–44.

<sup>121</sup> Henriksen argues similarly for the criteria for special areas under the MARPOL Convention, in Henriksen, Tore *The future of navigation in ice-covered areas: a view from the Arctic*, in Caddell, Richard and Rhidian Thomas (Eds.) *Shipping, Law and the Marine Environment in the 21st Century: Emerging challenges for the Law of the Sea – legal implications and liabilities*, 2013, p. 25.

<sup>122</sup> Chircop, Aldo *The Growth of International Shipping in the Arctic: Is a Regulatory Review Timely?* In *The International Journal of Marine and Coastal Law* Vol 24, 2009, p. 355–380, at p. 376.

<sup>123</sup> IMO Resolution MEPC. 67(37) adopted on 15 September 1995. *Guidelines on Incorporation of the Precautionary Approach in the Context of Specific IMO Activities*.

<sup>124</sup> DNV report (fn. 32), p. 43–44.

<sup>125</sup> *Ibid.*, p. 53.

<sup>126</sup> PSSA Guidelines (fn. 67), para. 1.5. and 7.5.2.1.

of a PSSA.<sup>127</sup> The DNV report concluded that it would be difficult to find support for the designation of special areas under the MARPOL due to the limited traffic in the area.<sup>128</sup> A difference between the MARPOL Special Areas and the PSSA is, however, that the first provide for stricter standards for operation discharges and the latter provides for a variety of protective measures that can be applied to address the primary vulnerability from shipping activities in the high seas of the Arctic Ocean. This includes protective measures to address the risk of oil spills from accidents in addition to ship strikes and noise and disturbance of wildlife. The DNV report also concluded that this vulnerability is addressed by the use of other suitable measures such as routing or ship reporting systems and other measures provided for in the PSSA Guidelines.<sup>129</sup>

#### **4.4 Geographical limits and size of the PSSA**

In order to be identified as a PSSA, the area must as shown to meet one of the criteria listed in the PSSA Guidelines under either the ecological, social, cultural, or economic criteria. It follows from the PSSA Guidelines that at least one of these criteria must be present “throughout the entire proposed area.”<sup>130</sup> The same criterion, nonetheless, does not have to present in the entire area. As the criteria are very broad and cover many different ecological characteristics, it would not be difficult to argue that the entire Arctic high Seas meet the ecological criteria.<sup>131</sup> The AMSA II C Report also identified the whole Arctic Ocean as an area of heightened ecological significance. This suggests that the whole Arctic high Seas may be identified as a PSSA. Another question is if the size in itself is impeding with the freedom of navigation and the LOSC. The PSSA Guidelines do not include any provisions on how large the area that is identified as a PSSA may be. The fact that the Guidelines open

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<sup>127</sup> Roberts, Julian (fn. 108), p. 115.

<sup>128</sup> DNV report (fn. 32), p. 49–52.

<sup>129</sup> *Ibid.*, p. 47.

<sup>130</sup> PSSA Guidelines (fn. 67), para. 4.4.

<sup>131</sup> See also the analyses of the proposal of a PSSA in the Southern Ocean in Roberts, Chircop and Prior (fn. 24).

for the use of Special Areas as an associated protective measures under the PSSAs, suggest that the Guidelines are quite liberal when it comes to the size of the area that may be designated as a PSSA.<sup>132</sup> The Antarctic is, for instance, designated a Special Area under Annexes I, III and V of the MARPOL Convention.<sup>133</sup>

In the practice under the IMO, the question of the size of the Western European PSSA was discussed when this area was proposed as a PSSA.<sup>134</sup> During the proceedings on the proposal of the Western European PSSA, some of the delegations expressed the view that the proposed area was too extensive and that it was comprised of different ecosystems.<sup>135</sup> The size of the area was commented upon by the DOALOS in a report to the legal committee (LC) of the IMO stating:

As to the size of the area, article 211(6) only requires that it be “a particular, clearly defined area of their respective exclusive economic zones.” While it appears from this phrase that the area, in principle, should not include the entire exclusive economic zone, there is no maximum restriction on size. In fact, if the entire EEZ were proven to be particularly sensitive and vulnerable to maritime traffic, it could be argued that it should be protected.<sup>136</sup>

The proposed area covering an area stretching from the Shetland Islands north of Scotland to the southern Portuguese–Spanish border was also approved and adopted as a PSSA.<sup>137</sup> This suggests that also the Arctic high seas in its entirety may be identified as a PSSA and still be in conformity

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<sup>132</sup> See PSSA Guidelines, para. 6.1.1. See also Markus Detjen, “The Western European PSSA – Testing a unique international concept to protect imperiled marine ecosystems,” *Marine Policy* 30 (2006), p. 442–453 at p. 452.

<sup>133</sup> <http://www.imo.org/en/OurWork/Environment/SpecialAreasUnderMARPOL/Pages/Default.aspx>

<sup>134</sup> See Detjen (fn. 132), p. 452.

<sup>135</sup> IMO, Report of the Legal Committee on the Work of its Eighty-Seventh Session, LEG 87/17, para.197.

<sup>136</sup> *Ibid.*, Annex 7.

<sup>137</sup> IMO, Identification and Protection of Special Areas and Particularly Sensitive Sea Areas, Designation of a Western European Particularly Sensitive Sea Area, MEPC 49/8/1, para. 5.

with the PSSA Guidelines and the LOSC. As for the associated protected measures adopted within the PSSA, they still must not impede the freedom of navigation and must be in accordance with the LOSC as prescribed in the PSSA Guidelines.<sup>138</sup>

Adopting a very large area as a PSSA may take away the attention from the most sensitive areas and weaken the effect of the protection of the areas that are in most need of the special status as PSSAs.<sup>139</sup> The PSSA Guidelines, moreover, highlights that when assessing the proposals of PSSAs, the IMO should consider whether the size of the area is “commensurate with that necessary to address the identified need.”<sup>140</sup> Further, the effectiveness of the associated measures adopted within the PSSA is dependent on the efforts of the flag states in ensuring compliance by the use of enforcement measures. A more appropriate way of ensuring protection of the sensitive environment in the Arctic high seas, therefore, might be the preferred option in the DNV report of designating one or more “core sea ice areas” as a PSSA.

#### **4.5 Dynamic areas to be avoided**

The report from the DNV recognized that adopting and enforcing areas to be avoided (ATBA) in the PSSA in a dynamic fashion that reflects the movement of the ice edge potentially provides a very effective shielding of sensitive areas.<sup>141</sup> The criteria for establishing ATBA as an associated protective measure was laid down in the IMO guidelines for routing measures.<sup>142</sup> According to the guidelines para 2.1.1.13, ATBA are defined as:

A routing measure comprising an area within defined limits in which either navigation is particularly hazardous or it is exceptio-

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<sup>138</sup> PSSA Guidelines, Preamble, paras. 7.2.5.2, 7.9 and 9.2.

<sup>139</sup> Roberts, Chircop and Prior (fn. 24), 504.

<sup>140</sup> PSSA Guidelines, para. 8.2.

<sup>141</sup> DNV report (fn. 32), p. 57.

<sup>142</sup> *General Provisions on Ships' Routing*, adopted Nov. 20, 1985, IMO Resolution A.572 (14), as amended, para 2.1.13.

nally important to avoid causalities and which should be avoided by all ships, or certain classes of ship

The definition states that the ATBA areas limits must be defined. However, the need to recognize the limits of the area does not necessarily exclude a dynamic use of the associated protective measures. The rationale behind requiring defined limits is the need for predictability for the navigating vessel and for ships in general in order to plan and execute a voyage. An ATBA that reflects the movement of the ice edge could still offer predictability if sufficient information about the at any time set limits are available. Hence, neither the wording of the IMO guidelines nor the rationale underlying the ATBA definition is to be understood as a prohibition for establishing set but yet flexible limits of an ATBA.

Coastal States both unilaterally and under the IMO have initiated flexible use of protective measures. The effort to reduce ships strikes to North Atlantic right whales serves as an example of the flexible use of protective measures. Several measures that work together have been adopted for the protection of the whale. Among these are speed restrictions that are operational only for certain periods of the year,<sup>143</sup> and two mandatory ship reporting systems with one operational only for parts of the year including the calving season for the right whales in the area.<sup>144</sup> Both measures demonstrate temporal flexibility. Flexibility in geographical space is more challenging under the ATBA definition due to the demand for “defined limits.” Nevertheless, the rationale behind dynamic ocean management is a strong argument for not interpreting the ATBA definition in a limited way.

The idea of dynamic ocean management is not new.<sup>145</sup> Dynamic ocean management has been generally defined as “management that

<sup>143</sup> Unilateral adopted by the US Government, Department of Commerce National Oceanic and Atmospheric Administration, 73 FR 60173. Available at: <https://federalregister.gov/a/E8-24177>. (Last visited April 2016).

<sup>144</sup> Adopted by the IMO, and the Maritime Safety Committee (MSC) at its 70th session December 7, 1998. Resolution MSC.85(70).

<sup>145</sup> Hobday, Alistair, Sara M Maxwell, Julia Forgie, Jan McDonald, Marta Darby, Katy Seto, Helen Bailey, Steven J. Bograd, Dana K. Briscoe, Daniel P. Costa, Larry B. Crowder, Daniel C Dunn, Sabrina Fossette, Patrick N Halphin, Jason R. Hartog, Elliott L. Hazen,

changes rapidly in space and time in response to the shifting nature of the ocean and its users based on the integration of new biological, oceanographic, social and/or economic data in near real-time.”<sup>146</sup> The main argument for pursuing a dynamic approach to ocean management is that the human-environmental system we are attempting to manage is dynamic.<sup>147</sup> Having a management regime that reflects this would not only provide better opportunities for protecting an area based on an ecosystem approach, it is also argued that dynamic ocean management has the potential for reducing conflicts arising as a result of competing objectives in ocean management.<sup>148</sup>

The movement of the sea ice is a good example of temporal and spatial variability in the ocean. A static management regime, as protection options number 2 and 3 in the DNV report illustrated, would imply either protection of large areas from shipping or no added protection at all. A dynamic approach would allow for the establishment of ATBA in the areas close to the ice edge, following the movement of the ice, but without having to permanently prohibit navigation in areas that some periods would be part of an ATBA.

To date, dynamic ocean management has been applied i.e. in fishery management using both voluntary and compulsory measures.<sup>149</sup> Based on the experience so far, dynamic ocean management has presented some

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Ben G. Lascelles, Rebecca L. Lewison, Gregory Poulos and Ann Powers *Dynamic Ocean Management: Integrating Scientific and Technological Capacity with Law, Policy, and Management*. In *Stanford Environmental Law Journal*, Vol. 33:2, 2014.

<sup>146</sup> Maxwell, Sara M., Elliott L. Hazen, Rebecca L. Lewison, Daniel C. Dunn, Helen Bailey, Steven J. Bograd, Dana K. Briscoe, Sabrina Fossette, Alistair J. Hobday, Meridith Bennett, Scott Benson, Margaret R. Caldwell, Daniel P. Costa, Heidi Dewar, Tomo Eguchi, Lucie Hazen, Suzanne Kohin, Tim Sippel and Larry B Crowder *Dynamic ocean management: Defining and conceptualizing real-time management of the ocean*. In *Marine Policy*, Vol 58, 2015, p. 42–50.

<sup>147</sup> Hobday et al. (fn. 145), p. 127.

<sup>148</sup> *Ibid.*, p. 128.

<sup>149</sup> Dunn, Daniel C., Andre M Boustany and Patrick N. Halpin “Spatio-temporal management of fisheries to reduce by-catch and increase fishing selectivity,” *Fish and Fisheries*, Vol 12:1, 2011, p. 110–119; Little, Alyson S., Coby L. Needle, Ray Hilborn, Daniel S. Holland and C. Tara Marshall “Real-time spatial management approaches to reduce bycatch and discards: experiences from Europe and the United States,” *Fish and Fisheries*, Vol 16:4, 2015, p. 576–602.

legal challenges. One major obstacle for a shift from static management measures to dynamic management measures is the lack of predictability.<sup>150</sup> Predictability is a key consideration in most legal frameworks and so also in the law of the sea. However, a dynamic ATBA would not necessarily amount to an unpredictable situation. Moreover, it does not necessarily represent a fundamental breach with the system as it is currently understood and implemented.

When deciding whether or not to adopt a routing system such as ATBAs, the IMO must consider whether the proposed ATBA may significantly protect the marine environment and whether the size of the protected area could have the “effect of unreasonably limiting the sea area available for navigation.”<sup>151</sup> With dynamic ATBAs, the area encompassed, arguably, would at any one time be smaller than a static ATBA, whose limits have to be designed around the movement of the ice and the vulnerable areas, making the ATBA area larger. Therefore, dynamic ATBAs are not in themselves too restrictive on the freedom of navigation and may be adopted in accordance with the LOSC.

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<sup>150</sup> Hobday et al. (fn. 145), p. 129.

<sup>151</sup> General Provisions on Ships' Routing, (fn. 142) para. 3.6.

## 5 Conclusions

With the pressing need to protect the sensitive marine environment in the Arctic high seas against the increasing threat posed by the anticipated increase in Arctic shipping, the initiative of the Arctic Council to address available IMO measures that are suited to protect sensitive areas is a promising step. Without a comprehensive environmental treaty for the marine Arctic, it is important that the Arctic states cooperate with each other and make use of the available area-based measures to ensure protection of the sensitive marine environment. The efforts made by the Arctic states under the Arctic Council are, consequently, essential for ensuring protection of the high seas of the Arctic Ocean from the risks posed by shipping activities.

The PSSA concept does not have any legal effect in itself. Yet, most of the associated protective measures may be adopted without identifying an area as a PSSA. Also, the associated protective measures adopted within the PSSA still have to be enforced by the flag states. What is, then, the added value of special designation an area within the high seas of the Arctic Ocean? The designation of a PSSA does have a strong symbolic effect. With the notion of the Arctic as the last wilderness on the earth, as well as the pressing need to protect the sea ice as a critical habitat for species such as polar bears, the symbolic effect may be particularly important. Furthermore, the PSSA concept provides flexibility and the opportunity to adopt protective measures that are particularly tailored to protect a sensitive area from the risks of international shipping. The adoption of dynamic ATBAs stands out as a measure that can accommodate the threat that international shipping represents and as a measure that IMO could adopt within the PSSA on the basis of the PSSA Guidelines and in compliance with the LOSC.



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