



Protection of marine biodiversity. Norway's  
possibilities to regulate the exchange of ballast water  
in its coastal areas.

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# 1. INTRODUCTION

## 1.1 The problem

The issue of this dissertation is what measures Norway, as a port and coastal State, has to regulate the exchange of ballast water by foreign vessels in its coastal areas for the prevention of introduction of alien invasive species, which constitute a threat to the marine biological diversity.

On 1 July 2010 Norway's Ballast Water Management Regulation<sup>1</sup> entered into force. The Regulation, which is enacted in accordance with the Ship Safety and Security Act<sup>2</sup> and the Nature Diversity Act<sup>3</sup>, is the result of Norway acting upon its international obligations, namely the International Convention for the Control and Management of Ships' Ballast Water and Sediments<sup>4</sup> to which Norway is as a signatory power. Norway was an active participant in the process of making the Convention with an objective to establish an international legally binding set of rules on the subject and with a view to achieving an efficient and controllable regime containing strict standards.<sup>5</sup>

The main focus of the dissertation will be the BWC's rules on ballast water exchange. These rules are necessarily aimed at the vessels carrying the ballast water, which is under the jurisdiction of its flag State. An interesting problem that arises is therefore what measures Norway, as a port and coastal State, has according to international law to regulate and ensure that the BWC's rules on ballast water exchange are abided by.

In addition to rules as provided for in the BWC, Norway is a party to other international

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<sup>1</sup> FOR 2009-07-07 nr 992: Forskrift om hindring av spredning av fremmede organismer via ballastvann og sedimenter fra skip (ballastvannsforskriften) (hereinafter the Regulation).

<sup>2</sup> LOV 2007-02-16 nr 09: Lov om skipssikkerhet (skipssikkerhetsloven) (hereinafter Ship Safety and Security Act)

<sup>3</sup> LOV 2009-06-19 nr 100: Lov om forvaltning av naturens mangfold (naturmangfoldloven) (hereinafter Nature Diversity Act)

<sup>4</sup> The International Convention for the Control and Management of Ships' Ballast Water and Sediments, concluded 13 February 2004, not in force, IMO Doc. BWM/CONF/36, 16 February 2004 (hereinafter BWC)

<sup>5</sup> St.prp.nr.5(2006-2007) Om samtykke til tiltredelse av Internasjonal konvensjon om kontroll og behandling av ballastvann og sedimenter fra skip av 13. februar 2004, at p.1-2

conventions such as and the United Nations Convention on the Law of the Sea <sup>6</sup> and the Convention on Biodiversity.<sup>7</sup> An interesting problem is therefore to assess what, if any, obligations these undertakings place on Norway to regulate in relation to the ballast water problem. Moreover, aside from any minimum requirements established by international law, it will also be assessed what *opportunities* international law to regulate the problem more thoroughly. Afterwards a comparative assessment will be made of the obligations and options under international law to regulate the ballast water problem on the one hand against the rules enacted by Norway through its Ballast Water Management Regulation on the other hand. Under the evaluation of whether the Norwegian Regulation is in accordance with its international undertakings, recourse will also be had to any constraints the Ship Safety and Security Act and Nature Diversity Act place on the content of the Regulation.

## **1.2 The road ahead**

In section 2 an assessment of the international rules regulating prevention of the introduction of alien species will be provided for. The assessment will be divided into general rules provided for in different international instruments on the one hand, and the more special rules as stated in the BWC on the other hand. This will establish the background for the subsequent comparative analysis on how Norway has acted upon and implemented these international obligations in section 4.

Section 3, which constitutes the main part of the dissertation, assesses the port and coastal State's jurisdiction to prescribe and enforce rules in its coastal areas for the regulation of ballast water exchange by foreign vessels. The analysis will be divided into the coastal State's different maritime zones, starting with the outermost zone: the EEZ, continuing to the territorial sea, and finally ports and internal waters. For each zone prescriptive jurisdiction and enforcement jurisdiction will be assessed separately. The intention of this

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<sup>6</sup> United Nations Convention on the Law of the Sea, concluded 10 December 1982, entry into force 16 November 1994 (hereinafter LOSC)

<sup>7</sup> Convention on Biological Diversity, concluded at Rio de Janeiro 5 June 1992 (hereinafter CBD), available at <http://www.cbd.int/doc/legal/cbd-un-en.pdf>

section is to make clear the extension of port and coastal States powers to deal with the problem of marine alien invasive species, which is created by foreign vessels conducting ballast water exchange.

The focus in section 4 is the Norwegian Ballast Water Regulation. Section 4 will elaborate on the findings of section 2 and 3. In regards to section 2 it will be discussed whether the rules prescribed by Norway implements its obligations under international law. In regards to section 3 it will be discussed whether Norway has taken advantage of the possibilities international law provides for the regulation of the ballast water problem.

### **1.3 Background: Alien Invasive Species**

To better comprehend the importance of regulating the exchange of ballast water it is necessary to view the problem in its context. The release of ballast water in foreign waters constitutes a threat to biological diversity. Biological diversity means the variability among living organisms from all sources including marine ecosystems.<sup>8</sup> It is the variety of life on earth and the basis for all ecosystems and the services they provide.<sup>9</sup> It includes diversity at the genetic level, such as the diversity of species, and the diversity of ecosystems and habitats.<sup>10</sup> Biological diversity is important because it comprises much of the renewable natural capital on which livelihoods and development are grounded. Accordingly it plays a fundamental role in maintaining and enhancing the well being of the world's population.<sup>11</sup> However, due to external factors, biological diversity across the globe is being degraded. Five major drivers have been identified as having negative impacts on biodiversity. These are alteration or destruction of marine habitat, overexploitation of living marine resources, climate change, land-based sources of marine pollution and invasive alien species.<sup>12</sup> It is

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<sup>8</sup> *Id.* art. 2

<sup>9</sup> UNEP, GEO4, Biodiversity, ch. 5, at 158 and 160

<sup>10</sup> *Id.* at 160

<sup>11</sup> *Id.*

<sup>12</sup> *Id.* at 169; also Global Ballast Water Management Programme (GloBallast), hereinafter The Problem, identifying the introduction of invasive marine species into new environments by ships' ballast water, as one of the four greatest threats to the world's oceans, available at <http://globallast.imo.org/index.asp?page=problem.htm&menu=true>

the issue of how to manage the latter form of impact on biological diversity, which is the problem of the dissertation.

There are different pathways for invasive species invasions. However, there is little doubt that shipping is the most important vector in the movement of marine organisms from sea to sea.<sup>13</sup> Shipping is transporting over 90% of the world trade<sup>14</sup> and is crucial to meet the needs of the modern world.

In order to travel safe, ships use a method called ballasting, which means taking on board weight to control trim, list, draught, stability or stresses of the ship.<sup>15</sup> It prevents the ship from losing its stability when it is less than full and capsizing. The process of transferring ballast water starts when the ship is at its destination port. It unloads its cargo and as the hold gets empty it loads its void space with ballast water. When the tanker arrives its new destination port, the ballast water is discharged and new cargo loaded.<sup>16</sup> It is estimated that ten billion tons of ballast water is transported globally every year, transferring approximately 3000 species to new environments every day.<sup>17</sup>

However, the method of ballasting brought along a problem. The ship will take on ballast water while still in port and these shallow waters contain abundant marine life. Larger species often are too big to follow on board with the intake, but the likelihood of plankton and microorganisms being collected is much greater.<sup>18</sup> However, due to harsh conditions inside the tanks, such as darkness and little oxygen, the vast majority of the organisms do not survive the journey. On the other hand, the most resilient species do. And it is that fact that makes them potentially invasive when they are released into a new ecosystem.

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<sup>13</sup> The Secretariat of the Convention on Biological Diversity, *Invasive alien species a threat to biodiversity*, Article adopted at the International Day for Biological Diversity, from [www.cbd.int](http://www.cbd.int), p. 15

<sup>14</sup> <http://www.marisec.org/shippingfacts/worldtrade/index.php>

<sup>15</sup> BWC, supra note 4, at art. 1(2).

<sup>16</sup> *Id.* supra note 12, The Problem

<sup>17</sup> Brioney MacPhee, *Hitchhikers' Guide to the Ballast Water Management Convention: An Analysis of Legal Mechanisms to Address the Issue of Alien Invasive Species*, at 34

<sup>18</sup> *Id.* at 33



In order for the alien species to become invasive and thereby a threat to biodiversity, it must successfully out-compete native organisms for food and habitat, spread through its new environment, increase its population and harm ecosystems in its introduced range.<sup>19</sup> In other words, it must arrive, survive and thrive.<sup>20</sup> A contributing factor for this to occur is if the species is introduced into an ecosystem with the absence of natural predators. This will more easily allow for an uncontrolled growth in population and for it to thrive on its new environment.<sup>21</sup>

An illustrating example is the journey of the robust little jellyfish called the comb jellyfish, *Mnemiopsis leidyi*. Its natural habitat is in the northwestern part of the Atlantic where its natural numbers are controlled by other jellyfish. When introduced to the Black Sea in 1982 it found it self in surroundings with no natural predators. Consequently the population of this alien invader exploded. It reached a density of 7,600 jellyfish per square meter.<sup>22</sup> As the comb jellyfish feeds on zooplankton, fish egg and fish larvae and feeds more than it can digest and up to ten times its weight per day, the fisheries in fish stocks that also live of zooplankton collapsed in 1989. Amongst these was the ecological and economic important stock of anchovy.<sup>23</sup> The financial losses in the Black Sea were in the beginning of the 1990s estimated to over 300 million USD.<sup>24</sup>

Another dramatic example is the introduction of the zebra mussel, *Dreissena polymorpha*, into the North American Great Lakes.<sup>25</sup> The zebra mussel has spread into most of the aquatic ecosystems in the eastern United States and is expected to invade most freshwater habitats throughout the nation.<sup>26</sup> Due to its character as a notorious biofouler,<sup>27</sup> meaning it

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<sup>19</sup> Article of the Secretariat of the CBD. *supra* note 13, at 8

<sup>20</sup> *Id.*

<sup>21</sup> MacPhee, *supra* note 17, at 29

<sup>22</sup> Norwegian Institute for Water Research (NIVA), *Nonindigenous marine species in the Oslofjord*, p.17

<sup>23</sup> *Id.*

<sup>24</sup> *Id.* at 18.

<sup>25</sup> Chris Hopkins, *A review of introductions and transfers of alien marine species in the North Sea area*, at 4.

<sup>26</sup> David Pimentel et al. *Update on the environmental and economic costs associated with alien-invasive species in the United States*, at p. 279

<sup>27</sup> Edward L. Mills et al. *Exotic Species in the Great Lakes: A History of Biotic Crises and Anthropogenic Introductions*, at 2

gradually accumulates on underwater equipment corroding and impairing structures and systems,<sup>28</sup> it constitutes a serious threat to industries and the operation of sluices and fish farms.<sup>29</sup> Ecologically the zebra mussel has altered the ecosystem of the Great Lakes and negatively affects the native mussels and snails as the zebra mussel completely covers them and prevents them from reproducing.<sup>30</sup> Large densities of the mussel, which has been recorded to be up to 700,000 per m<sup>2</sup>, will also reduce the oxygen level and the food for the native fauna.<sup>31</sup> It is estimated that expenses paid in damages and control of the zebra mussel amounts to 1 billion USD/year.<sup>32</sup>

It is difficult, if not impossible, to remove invasive alien species once they have been established.<sup>33</sup> Accordingly, prevention is the most cost-effective and feasible method to fight the problem.<sup>34</sup> Because shipping is an international industry, the problem is accordingly global in nature. Therefore, collaboration among governments, economic sectors and non-governmental and international organizations are required.<sup>35</sup>

## **1.4 Definitions and delimitations**

### **1.4.1 Definitions**

Different terms are often being used in reference to the problem at hand. Also the content of the terms varies. Without the intention of seeking to validate the use of certain terms or attempting to introduce new, a clarification of the terms used in this dissertation and the contents within them will be provided.

#### *1.4.1.1 Alien Species*

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<sup>28</sup> Definition from [www.dictionary.com](http://www.dictionary.com)

<sup>29</sup> *Id. supra* note 22, at 35

<sup>30</sup> *Id. supra* note 17, at 35

<sup>31</sup> *Id. supra* note 27

<sup>32</sup> *Id.*

<sup>33</sup> Michael Tsimplis, *Alien Species Stay Home: The International Convention for the Control and Management of Ships' Ballast Water and Sediments 2004*, at 412

<sup>34</sup> Article of the Secretariat of the CBD, *supra* note 13, at 5

<sup>35</sup> *Id.*

Throughout the text “alien species” are used consistently. It refers to species, which are not found naturally in the biodiversity of a particular ecosystem. International agreements and different scholars use other terms such as “non-indigenous”, “foreign” or “new” all implying the that the species are strangers in it new environment. The BWC uses the term “harmful aquatic Organisms and Pathogens”.<sup>36</sup> This dissertation will use the collective term “species”, which include both organisms and pathogens because there will not be made any distinction between them. The problem of the dissertation is alien *invasive* species. The word “invasive” will nevertheless not be used when discussing the introduction of alien species. This is due to the fact that even though alien species have the potential of becoming invasive, not all species to. As mentioned above, this requires for the species to arrive, survive and thrive.

#### *1.4.1.2 Exchange of ballast water*

In the dissertation both release of ballast water and introduction of alien species are used in addition to exchange of ballast water. However, they all refer to the fact of alien species being introduced into a new environment via the ballast water of ships. The “exchange” of ballast water refers to the whole process of ballast water exchange where as a part of the process ballast water containing alien species is being “released” into the ocean constituting an “introduction” of alien species.

#### *1.4.1.3 Flag State, Port State and Coastal State*

Flag State is used within the meaning as provided for in LOSC article 92, namely the State whose flag a ship sails under. In other words, the ships’ State of registry. It is the flag State that has the exclusive jurisdiction over the vessel on the high seas.

The LOSC does not define “port” or “coastal” State. The distinction will be made where “coastal” State refers to ships that use the State’s marine areas solely for the purpose of navigating through. The “port” State will be used referring to situations where a ship is

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<sup>36</sup> BWC, *supra* note 4, at art. 1(8)

trying to enter or have called in one of its ports or internal waters.<sup>37</sup> This is a rather rough distinction not fully sufficiently reflecting the different aspects of jurisdiction.<sup>38</sup> However, it will suffice for the purpose of this dissertation and the sections on jurisdiction will to some degree more explain the difference in jurisdiction. Important to notice, however, is that port and coastal State jurisdiction always mean jurisdiction over foreign vessels, hence not jurisdiction over own vessels, which will be the State acting in the capacity as flag State.<sup>39</sup>

#### **1.4.2 Delimitations**

The term “flag State” was defined above because the term will appear and to some degree be used in the dissertation. However, as the issue of the dissertation is what measures the port and coastal State has to regulate the exchange of ballast water by foreign vessels, it will fall outside the scope of the dissertation to discuss what measures the flag State has. Therefore, the rules in international law regarding flag State jurisdiction will not be discussed.

Further, the concept of Particularly Sensitive Sea Areas (PSSAs) will not be made account for. IMO has prescribed the “Guidelines for the Designation of Special Areas and the identification of Particularly Sensitive Sea Areas”<sup>40</sup> but it will carry too far to address this subject in full in the dissertation. However, LOSC opens up for the adoption of special areas in article 211(6). Without further discussion on whether this is to be regarded as a PSSA, this particular rule will be assessed in the dissertation.

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<sup>37</sup> Erik Jaap Molenaar, *Coastal State Jurisdiction over Vessel-Source Pollution*, at 92. Internal waters are waters on the landward side of the baseline of the territorial sea, LOSC, *supra* note 6, at art. 8(1)

<sup>38</sup> *Id.*

<sup>39</sup> *Id.*

<sup>40</sup> *Guidelines for the designation of special areas and the identification of particularly sensitive areas*, IMO Res. A.720(17)

## **2. OBLIGATIONS UNDER INTERNATIONAL LAW TO PROTECT THE MARINE ENVIRONMENT FROM THE INTRODUCTION OF ALIEN SPECIES**

Because Norway is party to different international conventions, an interesting problem that arises is what obligations they place on Norway to regulate the ballast water problem. For purpose of later evaluating whether the Norwegian Regulation<sup>41</sup> is in accordance with international law, an assessment of the obligations that follow from international undertakings will be provided in this section.

As stated in the introduction, the obligations that are the main focus of the dissertation are the ones stemming from the BWC. They will be presented in subsection 2.2. First will follow an assessment of obligations to protect the marine environment stemming from other international instruments to which Norway is a party.

### **2.1. General obligations under international law to prevent the introduction of alien species**

Well over fifty years have passed since the international community's first serious attempt to deal with the increase of marine pollution was initiated through the International Convention for the Prevention of Pollution of the Sea by Oil.<sup>42</sup> Since then, marine pollution by a variety of different substances has only increased, impairing the marine environment and shores of coastal States.<sup>43</sup> With the developing recognition of the importance of biodiversity since the report of the WCED,<sup>44</sup> the prevention, reduction and control of marine pollution grew to become one of the major concerns in the law of the sea. Several

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<sup>41</sup> The Regulation, *supra* note 1

<sup>42</sup> done at London, may 12 1954. Alan E. Boyle, *Marine Pollution Under the Law of the Sea Convention*, at 347.

<sup>43</sup> *Id.*

<sup>44</sup> Report of the World Commission on Environment and Development: Our Common Future (1987)

agreements address the problem of marine alien species with the most important being the LOSC<sup>45</sup>, the CBD<sup>46</sup> and the Rio Declaration.<sup>47</sup> They will be addressed accordingly.

From LOSC article 192 follows the general obligation “to protect and preserve the marine environment”. In relation to the ballast water problem article 196(1) elaborates further on article 192. It obliges States to “take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto.” This entails a general obligation for flag, coastal and port States to engage in the protection of the marine environment specifically in relation to the introduction of alien species. The obligation to take “all measures necessary” can function as an argument that States should also become party to the BWC. The reasoning is because the ballast water problem is one of global character and cannot be satisfactorily dealt with by a State singlehandedly, hence global engagement can be seen as a necessary measure.

The overall objective of the CBD is the conservation of biological diversity and sustainable use of its components.<sup>48</sup> It is recognized that alien species constitute a threat to the conservation and sustainable use of biodiversity. Article 8(h) requires every party to “prevent the introduction of, control or eradicate those alien species which threaten ecosystems, habitats or species”. What appears to be a firm obligation is, nevertheless, modified by the inclusion of “as far as possible and appropriate”. Flag, port and coastal States are thereby granted certain discretion as whether to act, and if so, to what extent. Thus, contracting parties may be enforcing this provision ineffectively, or not at all, and still be within the realm of “as far as possible and appropriate”.<sup>49</sup> While this can be seen as a consideration of the fact that States are in the possession of different resources and not all

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<sup>45</sup> LOSC, *supra* note 6

<sup>46</sup> CBD, *supra* note 7

<sup>47</sup> Rio Declaration on Environment and Development, adopted at the United Nations Conference on Environment and Development, Rio de Janeiro 3 to 14 June 1992

<sup>48</sup> CBD, *supra* note 7, at art. 1

<sup>49</sup> MacPhee, *supra* note 17, at 36

states could reasonably be required to contribute on the same scale<sup>50</sup>, it can have the potential of undermining the obligation in respect of those who have the capacity and incentives to act.

Another international instrument is the Rio Declaration.<sup>51</sup> Even though it is not legally binding it is a political document sending important signals and can assist in the interpretation of legally binding agreements. The precautionary approach as defined in Principle 15 states that “where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.” It further notes that in order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Concerning the introduction of alien species, it will not be possible to provide full scientific certainty that ballast water containing alien species will result in damage to the marine environment when released. This is due to the uncertainty as to whether the species will be able to arrive, survive and thrive in its new environment. With the precautionary approach giving the benefit of the doubt to the environment, action shall be taken despite lack of certainty.

The preamble of BWC reiterates the duty stemming from these international agreements.

## **2.2 Special obligations under the BWC to prevent the introduction of alien species**

### **2.2.1 General information about the BWC**

The BWC was adopted by consensus at a diplomatic conference at IMO in London. The Convention consists of a main part comprised by 22 articles, 1 annex containing “Regulations” and 2 appendices. Article 2.2 states that the annex forms an integral part of the Convention. While the articles comprise the frame of the Convention, the annex

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<sup>50</sup> Especially with regards to the developed/developing countries situation where not all states possess the same degree of wealth and advances in technology. *Id.*

<sup>51</sup> Rio Declaration, *supra* note 47

includes technical standards and requirements for the control of ballast water and ship' sediments.<sup>52</sup> The Convention is also accompanied by Guidelines, which will function as a supplement to the Convention. These are not the IMO Resolution A.868(20) guidelines but new technical guidelines developed by IMO's Marine Environment Protection Committee to support the uniform implementation of the BWC. The Convention will enter into force 12 months after 30 states representing at least 35 percent of the gross tonnage of the world's merchant shipping have ratified it.<sup>53</sup> As of 30 June 2010 there are 26 contracting States representing 24.44% of the world's shipping tonnage.<sup>54</sup> Regulation B-3 sets the time for when ships have to conform to the Conventions requirements on ballast water performance standard as provided in reg. D-2. It will be made applicable once the Convention enters into force. Accordingly, the shipping industry has started preparing their ships to meet the required standards in order to be in compliance with the Convention once it enters into force.

### **2.2.2 The BWC's rules on ballast water management**

According to BWC article 4(2) each party shall develop national policies, strategies or programs for the management of ballast water in its ports and waters under its jurisdiction that accord with, and promote the attainment of the objectives of the Convention.

In order to understand what obligations this brings Norway under, a review of BWC's rules and regulations will be provided for in the following section. Reminding that the objective of the dissertation does not include giving a full review of all rules and regulations contained within the BWC, the presentation will confine to mention the most important relevant to the problem at hand.

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<sup>52</sup> [http://www.imo.org/conventions/mainframe.asp?topic\\_id=867](http://www.imo.org/conventions/mainframe.asp?topic_id=867)

<sup>53</sup> BWC, *supra* note 4, at art. 18.1

<sup>54</sup> IMO, Summary of Status of Conventions, *available at* [http://www.imo.org/Conventions/mainframe.asp?topic\\_id=247](http://www.imo.org/Conventions/mainframe.asp?topic_id=247). They are: Albania, Antigua & Barbuda, Barbados, Brazil, Canada, Cook Islands, Croatia, Egypt, France, Kenya, Kiribati, Liberia, Maldives, Marshall Islands, Micronesia (Fed. States of), Netherlands, Nigeria, Norway, Republic of Korea, Saint Kitts and Nevis, Sierra Leone, South Africa, Spain, Sweden, Syrian Arab Republic and Tuvalu. IMO, Status of Conventions by Country, *available at* <http://www.imo.org/> (last visited 31 August 2010)



The BWC provides for two alternative methods for ballast water management. One option is to *exchange* it in accordance with minimum standards for the removal of the alien species contained in it. This option is supplemented by rules restricting in which maritime areas such exchange can be carried out. The method of exchanging ballast water is provided as an interim measure until the second option is available, namely *treating* the ballast water, which provides a stricter standard of ballast water purity. This method is based upon treating the water with systems installed on board the ships developed to eradicate alien species contained within the water. The plan is for the latter option to gradually phase out the former option.<sup>55</sup> They will be further assessed below in section 2.2.3 and 2.2.4.

The BWC's rules on ballast water management are obligations aimed at the vessels carrying ballast water, which are subject to the jurisdiction of their flag State. Accordingly, the flag State has the main responsibility in ensuring that the obligations under BWC are abided by and is obliged by the Convention to enforce them. However, port and coastal States have been recognized certain responsibilities as well and according to article 4(2) they shall legislate for the enforcement of these regulations in their ports and waters under their jurisdiction. As stated in the introduction, this is the issue of the dissertation.

### **2.2.3 Ballast Water Exchange**

Regulation D-1(1) and (2) offer two ways of conducting ballast water exchange (hereinafter BWE) and are explained more in detail in the Guidelines for Ballast Water Exchange.<sup>56</sup> These are either to exchange the water with an efficiency of at least 95 percent volumetric exchange, or to pump through the tanks three times.

However, it is not self regulative that a 95% volumetric exchange coincide with the same percentage harmful organisms being discharged. Instances have occurred where there has been a higher concentration of organisms in the ballast water *after* an exchange has been

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<sup>55</sup> *Id.*, *supra* note 33, at 428

<sup>56</sup> Annex 2, Resolution MEPC.124(53), *Guidelines for ballast water exchange (G6)*, at page 3.

conducted.<sup>57</sup> This is especially the case when exchanges are undertaken during high organism concentrations, such as algal blooms, on high seas.<sup>58</sup> This varying effectiveness of BWE emphasizes the need for phase-in of treatment systems as provided for in regulation D-2. Nevertheless, until treatment systems become available, exchange of ballast water should be undertaken whenever possible.<sup>59</sup>

#### 2.2.3.1 *Where may BWE be conducted?*

The idea behind BWE on the high seas is that organisms taken on board in port or coastal areas are unlikely to survive when discharged at sea.<sup>60</sup> Similarly will high seas organisms pumped on board during the exchange not be likely to survive when released in ports and coastal areas. Furthermore the density in organisms on the high seas is much lower thereby reducing the risk of introductions.<sup>61</sup>

BWC's point of departure stated in regulation B-4(1)(1) is that BWE shall whenever possible be conducted at least 200 nautical miles (nm) from nearest land and in water at least 200 meters deep. Is the ship "unable" to do so, subparagraph (2) provides that BWE may be conducted within 200 nm, however not closer than 50 nm from land, and in all cases in waters at least 200 meters deep.

Regulation B-4(2) however, provides that in cases where the distance and depth does not meet these parameters, the State may designate areas for exchange to be conducted, taking into account the guidelines G14<sup>62</sup>. A problem in this regard is whether vessels shall be required to deviate from their planned voyage in order to exchange ballast water in these designated areas. When identifying potential sea area(s) for receiving ballast water G14 provides for different considerations to be taken into account. *Inter alia*, navigation impacts, including the desirability of minimizing delays, as appropriate, taking into consideration that the area should be on existing routes if possible or if the area cannot be

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<sup>57</sup> Stephan Gollasch et al, *Critical review of the IMO international convention on the management of ships' ballast water and sediments*, at 588

<sup>58</sup> *Id.*

<sup>59</sup> *Id.*

<sup>60</sup> *Id.*

<sup>61</sup> *Id.*

<sup>62</sup> Annex 3, Resolution MEPC.151(55), *Guidelines on designation of areas for ballast water exchange (G14)*

on existing routes, it should be as close as possible to them.<sup>63</sup> From these considerations it is evident that no rule shelters the freedom of navigation when areas have been designated for the exchange of ballast water in accordance with regulation B-4(2). The coastal State is thereby given a means for regulating the vessels discretion in where to conduct BWE by designating the area(s) most suitable to receive ballast water. In any event, even though a slight re-routing may be acceptable in order to exchange ballast water in areas designated for that purpose, ships cannot be required unreasonable deviation in order to get to these areas. It has to be a responsibility for the State prescribing them as well to make sure that the considerations provided in G14 are followed.

#### *2.2.3.2 Can the coastal State require a foreign ship to delay or deviate from its planned route in order to meet the requirements in regulation B-4(1)?*

An interesting issue is how the Convention has handled the case of ships engaged in coastal shipping, which accordingly does not meet the distance/depth requirements in regulation B-4(1). This is regulated in paragraph (3), which states that a ship “shall not be required to deviate from its intended voyage, or delay the voyage” in order to comply with any requirement of paragraph (1). Thus a vessel should comply with the depth/distance requirements only in cases where the ship happens to pass at the specified distance/depths as a part of its voyage.<sup>64</sup> If the ship does not find itself to meet these requirements because it is sailing within the 50-mile limit throughout its voyage, it is arguably free to exchange its ballast water closer than 50 nm to land and even in ports<sup>65</sup>. Recognizing, the BWC does not place a prohibition on ballast water exchange in ports.

An interesting question, however, is what constitutes “deviate” or “delay”. In other words, can a ship navigating *close* to the 200nm boundary or to the 50nm boundary be required to make a small departure from its scheduled route in order to comply with the requirements in regulation B-4(1)? The wording of the text does not require the deviation or delay to be for example “significant” before rendering it unnecessary to undertake. The text simply

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<sup>63</sup> *Id.* at section 7.2.4

<sup>64</sup> Tsimplis, *supra* note 33, at 435

<sup>65</sup> *Id.* at 436

settles for “deviate“ or “delay”, which should encompass any deviation or delay whatsoever. The exception is obviously a result of consideration being paid to the freedom of navigation. Hence it cannot be interpreted into the text that ships can be required to deviate from or delay their route even if they are close to the prescribed areas.

Consequently regulation B-4(1) is left with a relatively narrow scope of application and will in large parts only be applicable to ships conducting trans-oceanic journeys.

#### **2.2.4 Ballast Water Management Systems**

With the objective of the BWC being to ultimately eliminate the risks arising from the transfer of alien species, the only standard of ballast water pureness that will suffice is the one implemented in regulation D-2. Treating ballast water in order to achieve the standards projected therein necessitates the development of systems that can perform this procedure. At time of making the Convention this technology was not yet invented. However, during the past 6 years the business of making ballast water treatment systems has continued to grow and has developed into a million dollar industry and is now becoming available.

Regulation B-3 sets the time for when ships have to conform to the ballast water performance standard in reg. D-2. The point of time is set no sooner than year 2014 and no later than year 2016. Accordingly, by the year of 2016 all ships subject to regulation D-2 shall be constructed, designed or equipped with systems to treat ballast water in order to meet its requirements.

### **3. THE PORT AND COASTAL STATE'S JURISDICTION TO PREVENT INTRODUCTION OF ALIEN INVASIVE SPECIES**

#### **3.1 Introduction**

This section will discuss the port and coastal State's possibilities to enforce the obligations it is under as reviewed in section 2. The main focus will be on the BWC's rules directed at the flag State on ballast water exchange as set out in reg. B-4. The relevant enforcement regulations in the BWC are stated in article 8-12. However as BWC article 2(3) provides that its rules are not exhaustive its enforcement regulations may be supplemented by the legal basis for jurisdiction as provided for in the LOSC.

Furthermore, article 2(3) explicitly states that it does not prevent a party from taking more stringent measures in accordance with international law. Therefore, which additional measures that may be prescribed will be addressed. While article 2(3) provides the general rule on the subject, regulation C-1 elaborates further on the details.

This section will be divided into the coastal State's different maritime zones because the coastal State's jurisdiction gradually weakens the further away from its baselines<sup>66</sup> it seeks to regulate. Division of the coastal area into different zones is a result of diverging interest representing the shipping industry's interests in freedom of navigation on the one hand and the coastal State's need for protecting the marine areas on the other hand. Roughly put, this division manifests itself through two different types of jurisdiction. One being flag State jurisdiction where the rules and regulations of the State of registry to all times apply to the ship. The second, and the subject of the dissertation, is the coastal State jurisdiction compelling foreign ships to sometimes adhere to its rules and regulations, first and foremost when sailing within their territory.

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<sup>66</sup> The baseline is the low-water line along the coast as marked on large-scale charts officially recognized by the coastal State, LOSC art. 5

### **3.2 The coastal State's jurisdiction in the Exclusive Economic Zone**

The exclusive economic zone (hereinafter EEZ) is an area beyond and adjacent to the territorial sea<sup>67</sup> and shall not extend beyond 200 nautical miles (nm) from the baselines.<sup>68</sup>

The coastal State's opportunities to regulate behavior in its EEZ are contained within LOSC article 56(1)(b)(iii), which provides for jurisdiction with regard to "the protection and preservation of the marine environment". The wording of the text is widely formulated and jurisdiction exercised to prevent the introduction of alien species is accordingly covered by it.

Litra (b) refers to the jurisdiction "in the relevant provisions" of the LOSC. Concerning matters of protection and preservation of the marine environment, these provisions are contained within Part XII.<sup>69</sup>

LOSC Part XII provides the most comprehensive rules on the protection and preservation of the environment. For the purpose of enforcement in the EEZ Part XII enables the coastal State to adopt rules in its EEZ. Article 211(5):

Coastal States, for the purpose of enforcement as provided for in section 6, may in respect of their exclusive economic zones adopt laws and regulations for the prevention, reduction and control of pollution from vessels conforming to and giving effect to generally accepted international rules and standards established through the competent international organization or general diplomatic conference.

Part XII regards protection from *pollution*, which is also a condition in article 211(5). Hence the ability of the international community to control alien species introduction largely hinges on whether the problem is considered a manifestation of marine pollution.<sup>70</sup>

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<sup>67</sup> LOSC, *supra* note 6, art. 55

<sup>68</sup> *Id.* at art. 57

<sup>69</sup> R.R. Churchill and A.V. Lowe, *The Law of the Sea*, at 169

<sup>70</sup> David J. Bederman, *International Control of Marine "Pollution" by Exotic Species*, at 687

Furthermore, the rules that the coastal State seeks to adopt have to be recognized as “generally accepted international rules and standards”. These two issues are of critical importance when evaluating which rules within the LOSC are applicable for the purpose of enforcing regulation B-4 and will be treated accordingly in the sections below.

### **3.2.1 Are alien species to be regarded as “pollution” within the meaning of LOSC?**

#### *3.2.1.1 LOSC’s statutory definition*

The rules on treaty interpretation are rules of customary international law codified in the Vienna Convention of the Law of Treaties.<sup>71</sup> From article 31(1) follows that a treaty shall be interpreted in “good faith in accordance with the *ordinary meaning* to be given to the terms of the treaty in their *context* and in the light of its *object and purpose*.” (*Emphasis added*). Further, account shall be taken to *any relevant rules of international law*.<sup>72</sup> The legal sources will be addressed accordingly in separate subsections.

The LOSC defines “pollution” in article 1(1)(4) as:

“... [i]ntroduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea and reduction of amenities”

It is undisputed that the alien species are “directly” “introduced by man” into the “marine environment”. The controversial conditions are whether the pollutant is a “substance” and whether it “results or is likely to result” in harm to the marine life.

The first issue to be addressed is whether alien species introduced via ballast water are to be regarded as “substances”. The ordinary meaning of the term indicates some non-living

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<sup>71</sup> The Vienna Convention of the Law of Treaties, 23 May 1969

<sup>72</sup> *Id.* at art. 31(3)(c).

material of which a thing is or can be made. Accordingly, the living species as such would not be the substance, however, the components of which it is made would be. On the other hand, scholars have also argued the opposite. Firestone and Corbett claim that “substance” comfortably can include ballast water and its constituents.<sup>73</sup> They base their conclusion on the word “substance” being defined in the Oxford English Dictionary as to include “a being that subsists by itself; a separate or distinct thing; hence *gen.*, a thing, being.” However, this definition is from the 2<sup>nd</sup> edition in 1989 and is not the one provided in the Dictionary today. Today’s definition is more in conformity with the stated ordinary meaning. Firestone and Corbett furthermore refer to American Heritage College Dictionary, which defines “substance” as “that which has mass and occupies space”. Accordingly, an interpretation of the ordinary meaning of the term leaves the meaning rather ambiguous.

The definition of pollution in LOSC is based on the most widely used definition of marine pollution, namely the one introduced by the Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP) in 1969.<sup>74</sup> However, there have been attempts at defining pollution before this. The 1958 Convention on the Continental Shelf<sup>75</sup> calls upon coastal States to “undertake ... all appropriate measures for the protection of the living resources of the sea from harmful agents.”<sup>76</sup> While the treaty text provides nothing further on what “agents” are meant to comprise, the ordinary meaning of the term signifies that things, species and humans can all be covered. As defined by the Oxford Dictionary<sup>77</sup> an “agent” is “a person or thing that takes an active role or produces a specified effect”, i.e., agents of environmental change. Arguably, alien species would fall under this definition.

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<sup>73</sup> J. Firestone and J. J. Corbett, *Coastal and Port Environments: International Legal and Policy Responses to Reduce Ballast Water Introductions of Potentially Invasive Species*, footnote 134 at 313

<sup>74</sup> Molenaar, *supra* note 37, at 16. GESAMP, *Report of the First Session*, (UN Doc. GESAMPI/11 (1969), p. 5, para. 12). When GESAMP’s definition was incorporated into the LOSC the proviso of “results or is likely to result” was added to it.

<sup>75</sup> Done at Geneva, on 29 April 1958

<sup>76</sup> *Id.* at art. 5(7).

<sup>77</sup> Available at [http://oxforddictionaries.com/view/entry/m\\_en\\_gb0013280#m\\_en\\_gb0013280](http://oxforddictionaries.com/view/entry/m_en_gb0013280#m_en_gb0013280)



A second definition of pollution was provided for in the International Convention for the prevention of Pollution from Ships of 1973 (MARPOL).<sup>78</sup> It defines “harmful substance” as “any substance which, if introduced into the sea, is liable to create hazards to human health, to harm living resources and marine life, to damage amenities or to interfere with other legitimate uses of the sea, and includes any substance subject to control by this Convention.”<sup>79</sup> Similar to the Continental Shelf Convention, the focus in MARPOL is not on the source of pollution but rather on the pollutants generic effect on the environment.<sup>80</sup> The requirement of “any substance” should therefore, arguably, be able to comprise alien species provided it has the ability of degrading the marine environment into which it was introduced.

The BWC repeats in its preamble LOSC article 196, which will be discussed below. However, as the BWC does not interpret it nor provides any other discussion on whether alien species are to be regarded as pollution, it is difficult to draw any meaning out this reference. It is noteworthy that the BWC does not use the term pollution in its dealing with the problem. One argument that could be advanced is that alien species are not to be regarded as pollution due to IMO’s solution of creating an independent convention for dealing with the problem as opposed to including it as an Annex to MARPOL. This has been done with sources of pollution like, *inter alia*, oil, noxious liquid substances and sewage.<sup>81</sup> Conversely it has been argued that because the IMO delegates did in fact consider appending the ballast water regime as an Annex to MARPOL they viewed ballast water as a form of pollution.<sup>82</sup>

Arguably, based on other convention’s former attempts of defining “pollution”, an argument could be advanced that “substances” should be given a wide interpretation also able to include alien species. Nevertheless, it does not provide sufficient fundament to make a conclusion.

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<sup>78</sup> Done at London, 2 November 1973 and 17 February 1978.

<sup>79</sup> MARPOL, *Id.* at art. 2(2)

<sup>80</sup> Bederman, *supra* note 70, at 688

<sup>81</sup> Included accordingly in Annex I, II and IV to the MARPOL Convention

<sup>82</sup> Firestone/Corbett, *supra* note 73

### 3.2.1.2 Context

Further one can look to how the issue of alien species is treated in the rest of the LOSC. LOSC contains one specific provision dealing with the problem of alien species. It reads:

States shall take all measures necessary to prevent, reduce and control pollution of the marine environment resulting from the use of technologies under their jurisdiction, or control, or the intentional or accidental introduction of species, alien or new, to a particular part of the marine environment, which may cause significant and harmful changes thereto.”

The formulation of the wording is ambiguous leaving the question of whether “pollution” is referring to two sources, namely technologies and alien species, or only to the former. In other words the text can be read in two ways. Either, it can be read as to support the argument that it is pollution: “pollution of the marine environment resulting from the use of technologies or the introduction of species.” Or, it may be read to support the argument that it is not pollution: “take all measures necessary to prevent, reduce and control the introduction of species”.

An argument has been advanced that an interpretation of the provision’s last part, “significant and harmful changes” of the marine environment, supports the view of pollution *not* referring to alien species. If it was, the damage potential would have been incorporated in the definition of “pollution” in art. 1(1)(4), making the last sentence superfluous.<sup>83</sup>

On the other hand, if pollution was not to refer to species introduction, this would entail an alternative of preventing *either* pollution resulting from the use of technologies *or* preventing the introduction of species. Taking into account the article’s rather firm introduction, requiring that States “shall take all measures necessary”, an option as to

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<sup>83</sup> Hege Modell, *Internasjonal regulering og kontroll av utslipp av ballastvann fra skip*, at 42

which problem to prevent does not seem logical and may have the potential of undermining the obligation and purpose of the article.

For the further interpretation of article 196, article 32(a) of the Vienna Convention states that recourse may be had to the supplementary means of interpretation, including the preparatory work of the treaty and the circumstances of its conclusion.

The *travaux préparatoires* for article 196 began with a Norwegian proposal focusing solely on species introduction and made no reference to pollution.<sup>84</sup> Furthermore, when Norway introduced the draft article Norway's delegate to the Conference said that the purpose of his delegation's proposal was to:

“draw attention to the problem which arose when human activities disturbed the ecological balance of marine environments, not through pollution but by the introduction of living organisms not previously existing in the seas or by the transfer of a form of marine life to an area where the implications of its existence were unknown.”<sup>85</sup>

However, even though the intention behind the draft article appears to be clear, seeking to separate the problem of alien species from other sources of pollution, there are some problems with using the preparatory work as an argument. First, the language of the Norwegian proposal was considered too far-reaching by the Conference and was not adopted. Nevertheless, the idea of a provision dealing with alien species wasn't discharged and with amendments to the proposal article 196 was included in the final Convention.<sup>86</sup> Accordingly, given the substantial amendments to the proposal, it is unclear whether the distinction expressed by Norway's delegate still remains.<sup>87</sup>

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<sup>84</sup> Bederman, *supra* note 70, at 700; Firestone/Corbett, *supra* note 73, at 303; Norwegian proposal U.N. Doc. A/CONF.62/C.3/L.18 (1974).

<sup>85</sup> 17<sup>th</sup> meeting of the Third United Nations Conference on the Law of the Sea, doc.: A/CONF.62/C.3/SR.17, available at [http://untreaty.un.org/cod/diplomaticconferences/lawofthesea-1982/docs/vol\\_II/a\\_conf-62\\_c-3\\_sr-17.pdf](http://untreaty.un.org/cod/diplomaticconferences/lawofthesea-1982/docs/vol_II/a_conf-62_c-3_sr-17.pdf)

<sup>86</sup> Bederman, *supra* note 70, at 701

<sup>87</sup> Firestone/Corbett, *supra* note 73, at 303

A second objection with resorting to the *travaux préparatoires* relates to the fact that no formal records were kept to prove whether there was a common understanding of the language in the Convention. And the records that do exist are random and contain individual statements by delegates, which support both sides of an interpretation argument.<sup>88</sup>

Accordingly, even though the Vienna Convention allows for the *travaux préparatoires* to aid an interpretation, the circumstances around the Convention's conclusion are too dispersing, thus rendering the statement of the Norwegian delegate not relevant.

### 3.2.1.3 Object and purpose

It follows from the preamble of LOSC that its object and purpose is to establish a legal order for the seas, which will promote the conservation of the living resources and the protection and preservation of the marine environment. In order for the Convention to function as a legal order, an interpretation of its wording cannot solely be based on whatever the intention of the parties might have been at the time of its conclusion in 1982.

The *Shrimp-Turtle Case*<sup>89</sup> concerned, *inter alia*, the issue of whether a US ban on imported shrimp from countries that do not require their fishermen to harvest shrimps with methods that do not pose a threat to sea turtles, concerned the conservation of "exhaustible natural resources".<sup>90</sup> The Appellate Body recognized that the words of Article XX(g), "exhaustible natural resources", were crafted more than 50 years ago and were not "static" in its content but is rather "by definition, evolutionary".<sup>91</sup> Therefore it must be interpreted in the light of contemporary concerns of the community of nations about the protection and conservation

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<sup>88</sup> Lindy S. Johnson, *Coastal State Regulation of International Shipping*, at 28

<sup>89</sup> *United States – Import prohibition of certain shrimp and shrimp products*, Report of the Appellate Body, WT/DS58/AB/R (12 October 1998). (Hereinafter *Shrimp-Turtle Case*).

<sup>90</sup> The General Agreement of Tariffs and Trade (GATT) 1947, Art. XX(g)

<sup>91</sup> *Shrimp-Turtle Case*, *supra* note 89 at footnote 109. Citing the I.C.J. *Namibia (Legal Consequences) Advisory Opinion* (1971). The International Court of Justice stated that where concepts embodied in a treaty are "by definition, evolutionary", their "interpretation cannot remain unaffected by the subsequent development of law ... . Moreover, an international instrument has to be interpreted and applied within the framework of the entire legal system prevailing at the time of the interpretation."

of the environment.<sup>92</sup> Accordingly, the Appellate Body concluded that the term does not only refer to exhaustible mineral or other non-living natural resources, and held that “in line with the principle of effectiveness in treaty interpretation”, measures to conserve exhaustible natural resources, whether *living* or *non-living*, may fall within Article XX(g).<sup>93</sup>

Likewise, the word “substances” of article 1(4), in the LOSC was adopted nearly 30 years ago. At that time no reference to biological diversity was included in the LOSC. However, increasing concerns regarding it has entered the international scene after its conclusion resulting in modern agreements emphasizing the need to preserve and protect biological diversity. The CBD’s prime objective is the conservation of biological diversity and sustainable use of its components while specifically addressing the importance of preventing the introduction of alien species.<sup>94</sup> Furthermore in Agenda 21<sup>95</sup> the focus is no longer principally on the control of *sources* of marine pollution but more broadly on the prevention of environmental “degradation” and the protection of ecosystems.<sup>96</sup> It also refers to LOSC as the international basis upon which to pursue the protection of marine and coastal environment and its resources”.<sup>97</sup>

Thus, if LOSC is to achieve the very purpose for which it was created it must be able to adapt to such new developments and respond to new demands.<sup>98</sup> Hence these recent developments in international environmental law cannot be disregarded. With recent international environmental law illustrating how “a more conceptually sophisticated” focus on protection of the marine environment has evolved out of Part XII of LOSC,<sup>99</sup> alien species, which is identified as constituting one of the 5 greatest threats to biological

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<sup>92</sup> Shrimp-Turtle Case, *supra* note 89, at para. 129

<sup>93</sup> *Id.*, at para. 131

<sup>94</sup> CBD, *supra* note 7, at art. 8(h)

<sup>95</sup> Agenda 21, Ch. 17, adopted at United Nations Conference on Environment and Development, Rio de Janeiro, Brazil, 3 to 14 June 1992

<sup>96</sup> Patricia Birnie et al., *International Law & the environment*, at 384

<sup>97</sup> Agenda 21, *supra* note 95, at ch. 17.1

<sup>98</sup> Johnson, *supra* note 88, at 29

<sup>99</sup> Birnie et al., *supra* note 96

diversity,<sup>100</sup> needs to be regarded as “pollution.” Thus the LOSC’s ability to serve as a legal order of the seas will not be excluded and advantage can be taken of the existing international pollution regime, sidestepping the burden of creating a new.<sup>101</sup>

#### *3.2.1.4 The threshold in the pollution definition*

The second controversial condition from the pollution definition is whether the alien species “results or is likely to result” in harm to the marine life.

Accordingly, a simple introduction of alien species into the marine environment is not “pollution” within the meaning of LOSC. The aim is not to prevent all substances from being added to the sea. Within the text lies a certain threshold that must be met, namely the pollutants ability of having “deleterious effects”.

Whether an introduction of alien species is likely to have deleterious effects all depends on whether the species is able to arrive, survive and thrive in its new environment. Likewise, the release of the substance oil into the marine environment doesn’t necessarily always cause harm. It all depends on whether oil comes in contact with marine life before it is naturally broken down by wind and waves. However, there is no doubt that oil is regarded as “pollution”. This fact indicates a rather low threshold to be interpreted into the requirement of “likely” to result.

On the other hand, oil is a different type of substance than alien species and cannot justifiably be fully equated with it. While a release of oil will materialize in immediate identifiable possible deleterious effects, it is not possible to conclude on the possible deleterious effects of an introduction of alien species until long after their introduction. The alien species may not have survived the journey; they may not be able to survive in their new environment and they may be stopped from thriving. Accordingly, there rests a larger uncertainty associated with possible deleterious effects an introduction of the substance alien species may have.

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<sup>100</sup> See above, section 1.3, footnote 12

<sup>101</sup> Johnson, *supra* note 88

Still, the phrase “likely to result” clearly indicates that the deleterious effects doesn’t have to have materialized and reminds of the precautionary principle.

The LOSC does not contain any provision on the precautionary principle. However, as concluded previously, in order for the LOSC to fulfill its object as a legal order of the sea, a dynamic and living interpretation of its provision is necessary. Such interpretative techniques help to avoid conflicts between subsequent agreements and save the LOSC from premature obsolescence or from the need for constant amendment.<sup>102</sup>

Article 31(3)(c) of the Vienna Convention provides as a general rule of treaty interpretation that account shall be taken of “any relevant rules of international law applicable in the relations between the parties.” In this regard, the International Court of Justice (ICJ) has acknowledged that treaties are to be “interpreted and applied within the framework of the entire legal system prevailing at the time of interpretation.”<sup>103</sup>

The precautionary principle was adopted by consensus at the United Nations Conference on Environment and Development in Principle 15 of the Rio Declaration.<sup>104</sup> Reminding, according to the Vienna Convention art. 31(3)(c) the precautionary principle needs to have attained a certain legal status in order to be relevant as an argument in interpretation. The legal implications of the precautionary principle have been debated. However, without entering into any further discussion on the subject, it is presumed that it has attained the required legal status in international law to be relevant as an argument in interpretation. It states:

In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious

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<sup>102</sup> A. Boyle, *Relationship between International Environmental Law and Other Branches of International Law*, p.127

<sup>103</sup> ICJ, *Legal Consequence for States of the Continued Presence of South Africa in Namibia (South-West Africa) Notwithstanding Security Council Resolution 276 (1970)*, Advisory Opinion of 21 June 1971.

<sup>104</sup> Rio Declaration, *supra* note 47

or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation.

The precautionary principle hereby assists in identifying if there exists a legally significant risk by addressing the role of uncertainty. Consequently the pollution definition in LOSC article 1 is affected by the more liberal approach to proof of environmental risk.

Despite alien species bringing more uncertainty as to whether its introduction into the marine environment is likely to result in “deleterious effects”, an interpretation of the requirement in light of the precautionary principle entails that lack of such certainty shall not be decisive and that alien species should be considered meeting the threshold within the provision. Consequently, the introduction of alien species into the marine environment is considered “likely to result in ... deleterious effects”. Concluding that the introduction of alien species via ballast water into the marine environment is to be considered as “pollution” within the meaning of LOSC.

### **3.2.2 GAIRS: Rules of reference**

#### *3.2.2.1 Introduction*

The next requirement of article 211(5) is that regulation B-4 can be recognized as “generally accepted international rules and standards” (hereinafter GAIRS).

By incorporating a rather extensive use of so-called “rules of reference”<sup>105</sup> LOSC enables pollution regulations embodied in other regulatory conventions, such as regulation B-4 of the BWC, to be made applicable to all parties of LOSC regardless of their membership to the particular convention. This would vastly expand the scope of the BWC, furthermore accelerate its entry into force. In this way the use of GAIRS opens for the framework convention LOSC to be completed by other more detailed regulatory conventions.

#### *3.2.2.2 Which norms may qualify as GAIRS?*

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<sup>105</sup> Molenaar, *supra* note 37, at 140



LOSC offers no guidance on the issue and a variety of interpretations has been put forth. Should the concept only include rules and standards that have attained the status of customary law? Or should it also refer to IMO Conventions that has entered in force for the States concerned? Or does it involve a less strict standard of acceptance including also instruments not having entered into force, as is the situation for the BWC?

It is clear that the former, most strict point of view is not correct. GAIRS cannot be equated with customary law.<sup>106</sup> If this was the intention it would render a rule of reference meaningless as States are bound by customary international law in any event.<sup>107</sup> The second, middle road position is discarded much on the same ground. A reference to apply certain rules to which States are bound would add nothing extra.<sup>108</sup> It seems the better view, from an environmental perspective, is the latter interpretation; all relevant IMO instruments are included as long as their support is sufficiently widespread. This conclusion is supported by the ILA London Conference, which states that the concept is to “make compulsory for all states certain rules which had not taken the form of an international convention in force for the states concerned, but which were nevertheless respected by most states”.<sup>109</sup> This conclusion emphasizes State practice as the primary factor of determination, while the nature and status of the instrument is only of secondary importance.<sup>110</sup> Accordingly, even though the BWC has yet to enter into force, regulation B-4 can attain the status of GAIRS provided it is sufficiently followed by States.

### 3.2.2.3 *What level of threshold is contained within “generally accepted”?*

As it has been decided what instruments GAIRS actually comprise, with the conclusion being that so is actually of secondary importance, the next question is the degree of acceptance necessary in State practice in order to meet the threshold of the determining factor, namely “generally accepted”.<sup>111</sup>

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<sup>106</sup> ILA Helsinki Conference, at 27; Molenaar, *supra* note 37, at 152; Ringbom, *Competing Norms in the Law of Marine Environmental Protection*, at 68

<sup>107</sup> *Id.*

<sup>108</sup> Helsinki Conference, *supra* note 106, at 28

<sup>109</sup> London Conference, at 107

<sup>110</sup> *Id.*

<sup>111</sup> Ringbom, *supra* note 106, at 70; Helsinki Conference, *supra* note 106, at 30

The ordinary meaning of the wording indicates a rather high threshold, requiring broad recognition of the rules in question. However, with the ordinary meaning not providing much more than a circle definition, one has to look to the object and purpose of the terms.<sup>112</sup> Drafting history of GAIRS<sup>113</sup> goes back to the High Seas Convention<sup>114</sup> and the preparatory work of the International Law Commission. A thorough study of this drafting history by B. Oxman indicates that its purpose at the time was to make compulsory all so-called “maritime rules of the road”, which had not taken form of international conventions but which were respected by most seafaring states.<sup>115</sup> Consequently, the question is whether regulation B-4 is representing such “maritime rules of the road”.

Regulation B-4 sets out with a simple requirement for all vessels to conduct BWE at a certain distance/depth from nearest land, a practice one rather easily could determine whether most vessels were following. However, regulation B-4 is subject to several exceptions. It exempts vessels that are “unable” to meet the requirements, that have to “deviate” or have to “delay” to meet them, and those vessels where such BWE would constitute a threat.<sup>116</sup> First and foremost, the fact that these exemptions are given in the first place clearly indicates that many vessels are not following this practice and should neither be required to so in order to maintain the efficiency of shipping. Secondly, all these exceptions provide the captain of the vessel with discretion to decide on whether to undertake BWE in accordance with the regulations set out. This contributes to a large inconsistency among the seafarers, making it nearly impossible to ever categorize regulation B-4 as representative of “maritime rules of the road”. This might change, however, as the ballast water exchange rules in regulation B-4 are phased out by the rules on ballast water *treatment systems* when they sometime in the future will enter into force. Nevertheless, for now regulation B-4 cannot be said to meet the threshold that lies within “generally accepted”. Accordingly regulation B-4 is not to be considered as GAIRS.

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<sup>112</sup> Vienna Convention, *supra* note 71, at art. 31(1)

<sup>113</sup> Helsinki Conference, *supra* note 106, at note 194 states that the Vienna Convention is taken a step further, namely the consultation of the *travaux préparatoires* in order to better understand the rule of reference.

<sup>114</sup> Convention on the High Seas, *done* at Geneva, 29 April 1958, art. 10(2)

<sup>115</sup> Helsinki Conference, *supra* note 106, at 28

<sup>116</sup> BWC reg. B-4(1)(2), (3) and (4)

### **3.2.3 To what extent may the coastal State prescribe additional measures in the EEZ?**

For the purpose of summary of the foregoing discussions, it has been concluded that alien species are considered as “pollution” within the meaning of LOSC. However, Norway cannot at the moment prescribe rules for the purpose of enforcing regulation B-4 in its EEZ according to article 211(5) as the requirement of GAIRS is not met.

Nevertheless, BWC Regulation C-1 opens for additional measures and states:

“If a Party, individually or jointly with other Parties, determines that measures in addition to those in Section B are necessary to prevent, reduce, or eliminate the transfer of Harmful Aquatic Organisms and Pathogens through ships’ Ballast Water and Sediments, such Party or Parties may, consistent with international law, require ships to meet a specified standards or requirement.”

In considering additional measures, parties should furthermore consult with adjacent or other States that may be affected by such requirements before additional measures are decided upon.<sup>117</sup> This implies that not only neighboring States need to be consulted, but also all States which have ships trading in the region.<sup>118</sup> For a busy shipping nation, this may mean that a general consultation with all maritime nations is needed.<sup>119</sup> Furthermore, additional measures must take into account the Guidelines for Additional Measures Including Emergency Situations,<sup>120</sup> be communicated to the IMO before their implementation,<sup>121</sup> not comprise the safety and security of the ship and not conflict with

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<sup>117</sup> BWC, *supra* note 4, at reg. C-1(2)

<sup>118</sup> Tsimplis, *supra* note 33, at 437

<sup>119</sup> *Id.*

<sup>120</sup> BWC, *supra* note 4, at reg. C-1(3)(1). Annex 1, Resolution MEPC.161(56), *Guidelines for additional measures regarding ballast water management including emergency situations (G13)*

<sup>121</sup> *Id.* at reg. C-1(3)(2)

any other convention to which the ship must comply.<sup>122</sup> The measures may also require the approval by the IMO if so is required by the LOSC or customary law.<sup>123</sup>

### *3.2.3.1 What kind of additional measures may be imposed?*

Neither reg. C-1 nor its Guidelines specify what kind of additional measures may be imposed. However, the headline of Section C states “special requirements in certain areas” implying that the jurisdiction attributed States is geographically related hence excluding measures directly related to the ship, which is under the jurisdiction of the flag State. This reasoning is supported by G13 requiring for the measures introduced to be clearly identified in respect of “the area(s) where the additional measure(s) is/are applicable and defined by precise coordinates.”<sup>124</sup> Because the jurisdictional areas where additional measures may be imposed are not stated in the Convention, they must be consistent with the zones where the coastal State imposing the measures has jurisdiction according to LOSC.<sup>125</sup>

The next issue is whether the additional measures are “necessary” in addition to those in Section B. This implies that the measures already provided for in regulation B-4 are rendered insufficient to prevent harm in the specific geographic area. Because regulation B-4 could not be enforced through LOSC article 211(5) additional measures are accordingly necessary. Furthermore the additional measures have to be “consistent with international law”. This signifies that a coastal State cannot restrict the rights accorded foreign ships by the LOSC, such as the freedom of navigation in the EEZ.

LOSC article 211(6)(a) provides one option of additional measures. It allows for the coastal State to adopt additional regulations of its own, provided that these do not impose construction, design, equipment or manning (hereinafter CDEM) standards on foreign vessels other than those that are considered GAIRS.<sup>126</sup> The conditions are that applicable rules are considered inadequate in dealing with the ballast water problem and that the

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<sup>122</sup> *Id.*, at reg. C-1(5)

<sup>123</sup> *Id.*, at reg. C-1(3)(3)

<sup>124</sup> G13, *supra* note 120, at section 2.2.3.1

<sup>125</sup> Tsimplis, *supra* note 33, at 438

<sup>126</sup> Churchill/Lowe, *supra* note 69 at 348, LOSC, *supra* note 6, at art. 211(6)(c)

coastal State have reasonable grounds for believing that a “particular, clearly defined area of their respective [EEZ] is an area where the adoption of special mandatory measures for the prevention of pollution from vessels is required”. With respect to the former condition, since no rules are applicable they are clearly inadequate. In respect of the latter condition the coastal State have to provide evidence to the IMO that recognized technical reasons in relation to its oceanographic and ecological conditions, as well as utilization or the protection of its resources and the particular character of its traffic require for the requested rules.<sup>127</sup>

Accordingly, the coastal State can seek the IMO’s permission to create special areas where BWE can be forbidden. Passing ships, whether destined to the port of the coastal or passing, will have to conform to those rules. This will be an efficient substitute while waiting for the BWC to enter into force making it applicable to its parties.

### *3.2.3.2 Are there other legal basis for prescribing additional measures?*

A question worth noting is whether article 56(1)(a), providing coastal States with “sovereign rights for the purpose of ... conserving and managing the natural resources” in the EEZ, may serve as a legal ground for prohibiting BWE in the EEZ. The rights accorded are primarily economic rights.<sup>128</sup> Nevertheless, as knowledge regarding the importance of habitats and ecosystems continues to grow, coastal States may – pursuant to the authority granted them under Part V – take measures to protect these EEZ natural resources and thus their sovereign rights.<sup>129</sup> Questions have been raised, however, with regard to a U.S regulation in its EEZ, which would have parallels to a prohibition on BWE in the EEZ, namely their prohibition of anchoring by foreign flag ships on coral.<sup>130</sup> The issue is whether such a measure could be regarded under the Convention as an exercise of sovereign rights authority or whether it is simply for environmental protection. If it was

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<sup>127</sup> *Id.* at art. 211(6)

<sup>128</sup> Johnson, *supra* note 88, at 103, also citing B. Oxman in note 354: “in reality, the EEZ is a zone of ecological protection for economic purposes”.

<sup>129</sup> *Id.* at 105

<sup>130</sup> *Id.* at footnote 358

adopted only for environment protection purposes and not directly tied to economic interests, it has been argued that it may not be authorized under Part V.<sup>131</sup>

Finally, if the coastal State wishes to regulate the ballast water problem in its EEZ but is unable due to the lack of sufficient legal grounds, it could rely on its port State authority to prescribe and enforce rules and regulations.<sup>132</sup> If the ship is in transit, the port State could pursue enforcement the next time the offending ship enters its ports or by attempting to provide for enforcement by destination port States.<sup>133</sup> This will be treated in section 3.4.1 below.

### **3.2.4 Enforcement jurisdiction**

The coastal State cannot prescribe rules regulating BWE according to its regular prescriptive jurisdiction stated in LOSC article 211(5). However, it may adopt additional measures, *inter alia*, to prescribe special areas where a prohibition on BWE may be placed. This will constitute rules that the coastal State needs to enforce.

According to BWC article 8(2) any violation “within the jurisdiction” of any party shall be prohibited and sanctions shall be established. As the coastal State has jurisdiction in the EEZ the question is whether it is obliged to establish sanctions there according to the BWC. Enforcement measures provided for in the BWC continuously refer to ships in the “port or offshore terminal” or another party.<sup>134</sup> Thus it seems the enforcement measures in the BWC are primarily aimed at *port State* enforcement. Enforcement measures under the BWC will therefore be treated in section 3.4.2 on port State enforcement below. Enforcement in the EEZ will be based on the measures provided for by LOSC.

A vessel may be subject to enforcement measures while navigating in the EEZ for violations committed there. The coastal State’s enforcement powers in this zone are limited

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<sup>131</sup> *Id.*

<sup>132</sup> *Id.* at 114

<sup>133</sup> LOSC, *supra* note 6, at art. 218

<sup>134</sup> See *inter alia* art. 9(1), 10(2), (3) and (4) and art. 11(3) referring to “the port State authority”.

and graduated according to the seriousness of harm threatened.<sup>135</sup> They are set out in article 220(3), (5) and (6) and constitute *lex specialis* to article 73.<sup>136</sup> Article 220(8) states that where the coastal State has established a special area in accordance with article 211(6), paragraphs 3, 5 and 6 also apply for these areas.

Article 220(3) requires “clear grounds” for believing that a vessel has violated any of the State’s pollution regulations. If clear grounds are established the State may require the vessel to give information needed to establish whether a violation has occurred. As clear grounds cannot be derived from a physical inspection, which is regulated in article 220(5), “clear grounds” can most likely be based on notifications or aerial surveillance.<sup>137</sup>

Therefore, if the coastal State is notified that a ship has conducted BWE in an area where such is prohibited, the coastal State may contact the ship in order to receive information.

In order for the coastal State to advance to physical inspections, article 220(5) requires clear grounds for believing that the violation has resulted in a “substantial discharge causing or threatening significant pollution of the marine environment”. Based on the ecological and economic effects, illustrated in section 1.3, alien invasive species can have on the marine environment such effects should be considered as “significant”. Enhancing this argument is when ballast water is being released in an area where BWE is prohibited precisely for the reason of that area being particularly sensitive to the introduction of alien species. Arguably, if the coastal State has clear grounds, based on for example notification of BWE being conducted in a prohibited area, the coastal State may board and inspect the vessel.

In order to make use of the most extensive enforcement measure, namely institute proceedings, hereunder detention, article 220(6) requires “clear and objective evidence” that a vessel has violated a pollution regulation resulting in a “discharge causing ... threat of major damage”. It is argued that “clear and objective evidence” most likely seem to be

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<sup>135</sup> Birnie et al., *supra* note 96, at 421

<sup>136</sup> ILA London Conference, *supra* note 109, at 94

<sup>137</sup> Molenaar, *supra* note 37, at 385

obtained through the physical inspection in paragraph (5).<sup>138</sup> Paragraph (6) contains a higher threshold than paragraph (5) requiring threat “major damage”. On the one hand, one has seen the damage alien invasive species are capable of causing, like in the Black Sea, thus it arguably has the potential of fulfilling the threshold in paragraph (6). This on the other hand, would entail for every BWE conducted in special areas to entitle the coastal State to make use of the most extensive enforcement measures. The enforcement measures in article 220 were graded for the purpose of being proportionate with the severity of the pollution violation. To include all ballast water discharge violations under paragraph (6) would therefore not seem to be in accordance with the intention behind the enforcement rules. Therefore I am reluctant of concluding that a violation of a BWE prohibition in a zone designated in accordance with article 211(6) in any occasion shall constitute a threat of causing “major damage”.

Nevertheless, according to article 220(1) the coastal State may act in its capacity as a *port State* and enforce violations committed in its EEZ when the violating vessel is voluntarily within its ports. Under this provision the requirements for instituting proceedings are more lenient and allow for the coastal State to institute proceedings in respect of any violation of its pollution regulations that has occurred within the EEZ (or territorial sea). These proceedings are subject to the safeguards in LOSC section 7. As enforcement of violations in the territorial sea also are subject to the same safeguards they will not be addressed more in detail here but under section 3.3.2 of enforcement measures in the territorial sea.

### **3.3 The coastal State’s jurisdiction in the territorial sea**

#### **3.3.1 Prescriptive jurisdiction**

As illustrated above, the exemptions provided for in regulation B-4 allows for ballast water to be exchanged in the territorial sea in many instances. Due to the timetable implemented in BWC regulation B-3 several ships will operate for six more years without having to install treatment systems onboard their ships. Consequently, ballast water will be released

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<sup>138</sup> *Id.*



in territorial seas for still some time to come. This is problematic if the problem of alien invasive species is to be combated.

Reminding that Regulation C-1 allows the coastal State to adopt additional measures consistent with international law for the regulation of the ballast water problem, this section will focus more broadly on all measures available for the coastal State to prescribe in its territorial sea for the purpose of enforcing regulation B-4 and ensuring that BWE is not conducted within the territorial sea.

Customary international law, as codified in LOSC article 2(1), grants the coastal State full sovereignty beyond its land territory and internal waters out to the territorial sea.<sup>139</sup>

Accordingly, the coastal State should be entitled to prescribe whatever rules it deems necessary in its territorial sea in order to enforce regulation B-4. However, as a result of a compromise between the diverging interests of the coastal States and the shipping industry, restraints are imposed on the coastal State's prescriptive jurisdiction in the territorial sea and must necessarily be taken into account.<sup>140</sup> Noticing however, these restraints do not apply in general. They apply to vessels exercising their right of innocent passage through the territorial sea.<sup>141</sup> Vessels in non-innocent passage are subject to the ordinary rules of the coastal State.<sup>142</sup> It is the coastal State's jurisdiction in relation to vessels in innocent passage that will be subject to assessment.

### *3.3.1.1 What restraints apply and how do they affect coastal State prescriptive jurisdiction in the territorial sea?*

The two main restraints imposed are first article 21(2), which provides that laws and regulations prescribed cannot apply to CDEM standards, unless giving effect to GAIRS. Second, the coastal State cannot prescribe laws that *de facto* or *de jure* hampers the right of

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<sup>139</sup> The breadth of the territorial sea is 12 nm, measured from baselines, LOSC, *supra* note 6, at art. 3

<sup>140</sup> The provisions dealing with prescriptive jurisdiction in the territorial sea are incorporated in both Part II and Part XII. While article 211(4) mainly reiterates the existence of coastal State jurisdiction, the main provision dealing with such jurisdiction is art. 21 in Part II. Molenaar, *supra* note 37, at 199

<sup>141</sup> LOSC, *supra* note 6, at art. 17

<sup>142</sup> *Id.* at art. 25(1)

innocent passage of foreign vessels.<sup>143</sup> The former restriction has the effect of preventing the coastal State from enacting legislation, which requires ships navigating in its territorial sea to carry ballast water treatment systems. This restraint removes the risk of divergent CDEM standards to which ships cannot adjust during a voyage.<sup>144</sup> The question becomes however if treatment systems fall within the exception of GAIRS. As treatment systems are technology of new origin and consequently not a standard implemented by most seafaring States, such regulation cannot be regarded as GAIRS. Accordingly the coastal State cannot prescribe regulations concerning equipment for ballast water treatment systems in its territorial sea. Article 19(1) on the other hand states that innocent passage shall take place in conformity with “other rules of international law”. Hence when the BWC enters into force its rules can be enforced against states parties to it.

To cope with the ballast water problem, the coastal State has another option that does not affect CDEM standards, namely to prescribe a blanket prohibition on BWE in the territorial sea. It is when considering this option the latter restriction comes in to play, namely the question of whether such a prohibition constitutes a hampering of innocent passage. The ordinary meaning of hamper is to hinder or impede the movement or progress of vessels. At the offset a prohibition shouldn't be problematic: a ship, whether in transit or headed for a port of the coastal State, doesn't have to exchange its ballast water while in the territorial sea. With the coastal State having given due publicity to the rules governing its territorial sea<sup>145</sup> ships can plan and make sure that ballast water is being exchanged before or after entering the zone. If a prohibition was placed however, vessels that has a legitimate reason for conducting BWE, for example that so is indispensable, would have to be exempt from the prohibition. If not, their journey would be hampered. A blanket prohibition in the territorial sea would constitute a more stringent measure than what follows from BWC regulation B-4. Regulation B-4 allows for vessels, which do not find themselves at the distance/depth requirements during their voyage to be exempt precisely in order not to make the BWE rules too intervening and thereby difficult to abide by. A

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<sup>143</sup> *Id.* at art. 24(1)(a) and 211(4).

<sup>144</sup> Churchill/Lowe, *supra* note 69, at 94

<sup>145</sup> LOSC, *supra* note 6 at art. 21(3)

blanket prohibition in the territorial sea would be difficult, in particular for vessels engaged in coastal shipping, to abide by. It could lead to an inconsistent rule granting several exemptions, arguably subject to frequent violations and in the end rendering it illusory.

Another option is for the coastal State to identify only particular areas of its territorial sea in which BWE is prohibited. The question rises again if this would constitute a hampering of innocent passage. Presuming that these areas are geographically defined areas constituting only smaller parts of the territorial sea it shouldn't be problematic for vessels not to conduct BWE in these particular areas. A prohibition in smaller defined areas would furthermore be easier for vessels to relate to and abided by and a more feasible regulation to prescribe for the coastal State in its territorial sea.

### **3.3.2 Enforcement jurisdiction**

For violations committed by a vessel in the territorial sea during its passage therein, the coastal State's enforcement jurisdiction is in principle complete. According to article 220(2) it has powers to inspect, detain and institute proceedings of violations of pollution regulations.<sup>146</sup> However, aside from the "normal" range of enforcement measures, it cannot expel the ship from its territorial sea.<sup>147</sup> In order to take enforcement measures, article 220(2) requires "clear grounds" for believing that a violation has occurred. As previously stated, evidence from notifications or surveillance will most likely suffice as "clear grounds" to justify physical inspection.<sup>148</sup> If the violating vessel, however, voluntarily enters the *port* of the coastal State, the coastal State does not need to provide clear grounds in order to institute proceedings and may do so in respect of any violation of its pollution regulations occurring in its territorial sea.<sup>149</sup> Both of these provisions are subject to the safeguards in section 7 where article 226 places restraints on the investigation of foreign vessels.

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<sup>146</sup> Art. 27 deals more generally with enforcement powers over criminal matters and article 220(2) will commonly be applicable as a *lex specialis*, and therefore the relevant article in this section. ILA London Conference, *supra* note 109 at 87.

<sup>147</sup> *Id.*

<sup>148</sup> Molenaar, *supra* note 37, at 385

<sup>149</sup> LOSC, *supra* note 6 at art. 220(1)

It provides that States shall not unnecessarily delay a ship and therefore limits the initial physical inspections to an examination of documents.<sup>150</sup> If the coastal State wishes to undertake further physical inspections, for example a test of the ships' ballast water, it has to have "clear grounds" for believing that the quality of the water does not correspond to the documents, that the content of the documents were not sufficient to confirm or verify a suspected violation, or that the vessel is not carrying valid documents.<sup>151</sup> What is evident from the rules governing coastal State enforcement in the territorial sea is consequently that even though the violating vessel has voluntarily entered port according to article 220(1) or the coastal State has "clear grounds" for believing that a vessel in its territorial sea has violated its pollution regulations during its passage therein, the coastal State is according to the LOSC not free to undertake whatever investigations it would like but have to follow the restraints imposed by section 7.

### **3.4 The port State's jurisdiction in ports and internal waters**

#### **3.4.1 Prescriptive jurisdiction**

Whereas the perspective thus far has been on coastal State jurisdiction, it now changes to port State jurisdiction. The prescriptive jurisdiction of the coastal State has related to matters taking place within or affecting its maritime zones and its enforcement jurisdiction can be exercised either at sea or in port. Therefore, for vessels committing violations while navigating therein fall under the jurisdiction of the coastal State.<sup>152</sup> Port State jurisdiction, on the other hand, is in principle exercised over violations committed beyond the maritime zones of the coastal State to which it belongs.<sup>153</sup> This also covers jurisdiction with respect to conditions for the entry into port.<sup>154</sup> Accordingly, port State prescriptive jurisdiction is limited discharge standards that apply beyond the maritime zones of the port's coastal State and to prescribe conditions for port entry in the form of CDEM standards.<sup>155</sup>

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<sup>150</sup> *Id.* at art. 226(1)(a); Johnson, *supra* note 88 at 47

<sup>151</sup> *Id.* at art. 226(1)(a)(i),(ii), and (iii).

<sup>152</sup> Molenaar, *supra* note 37 at 92

<sup>153</sup> *Id.* at 93

<sup>154</sup> *Id.*

<sup>155</sup> *Id.* at 103 and 130

Concerning discharge standards, the LOSC does not explicitly provide a basis for the port State's prescriptive jurisdiction in waters beyond its maritime zones. However, it is argued that because article 218(1) explicitly provides a basis for *enforcement* jurisdiction in such cases, it implies a basis for *prescriptive* jurisdiction as well.<sup>156</sup> Nevertheless, if a regulation shall concern a vessel's behavior beyond the coastal State's maritime zones there have to exist a sufficiently close or substantial connection with the port State, in example the effects or impact principle.<sup>157</sup> This illustrates the opportunity for the port State to sanction violations in other zones, without upon request of another State as provided for in paragraph (2), as long as the violation affects its environment. The question of whether the port State can prohibit BWE outside its coastal State's maritime zones, nevertheless falls short. The aim of regulation B-4 is to compel as many vessels as possible to exchange their ballast water precisely outside the maritime zones of coastal States. Therefore the port State cannot prohibit discharge of ballast water in these areas. Furthermore, the effective principle would in any event not be met due to the fact that alien species released on the high seas are most likely not to survive.

The question thus becomes whether the port State can make use of its second option, namely to prescribe CDEM standards as conditions for port entry, relevant in the present case: ballast water treatment systems. The BWC assumes a right for foreign vessels to enter the ports of another State. However, article 2(3) states that the Convention shall not restrain the coastal State's competence in taking more stringent measures. Moreover as ports usually lie within the territory of a State it falls under the State's territorial sovereignty where customary international law grants full jurisdiction.<sup>158</sup> There is no general right of innocent passage or entry to another State's port or internal waters in customary international law.<sup>159</sup> Consequently the port State is entitled, not only to deny foreign vessels access to its ports, unless they are in distress<sup>160</sup> but also to prescribe laws

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<sup>156</sup> *Id.* at 103

<sup>157</sup> *Id.* at 102. The effects or impacts principle is explained further at 81-2

<sup>158</sup> Molenaar, *supra* note 37 at 101. Also reflected in LOSC art. 2(1).

<sup>159</sup> Churchill/Lowe, *supra* note 69, at 61

<sup>160</sup> *Id.* at 63; Molenaar, *supra* note 37 at 101

and regulations that determine conditions for entry into its ports.<sup>161</sup> The right to prescribe conditions for port access is presupposed in LOSC art. 25(2) and reflected in article 211(3). Whereas the *coastal* State's jurisdiction over CDEM standards is limited to GAIRS the *port* State's jurisdiction is in principle unlimited.<sup>162</sup> This provides the port State with a powerful means in order to make foreign ships comply with its environmental laws, hereunder ballast water management regulations.<sup>163</sup> Accordingly, the port State is entitled to require ships entering its ports to have installed ballast water treatment systems as a condition upon entry. A question could be raised however as to whether the phase in – rules on treatment systems as set forth in BWC regulation B-3 restrains the port State from prescribing such conditions before the Convention enters into force. However, as article 2(3) explicitly allows for parties of the Convention to take more stringent measures consistent with international law, such restraint cannot be interpreted to the port State's prescriptive jurisdiction.

An important question that has not been addressed is whether the port State may legislate *within* its port for the purpose of enforcing regulation B-4. Based on the same legal grounds as its right to prescribe conditions for entry, namely its territorial sovereignty where customary international law grants full jurisdiction, the port State may also regulate within its ports. Consequently entitling it to place a prohibition on BWE in ports.

### **3.4.2 Enforcement jurisdiction**

Port State enforcement is not directly addressed by the LOSC and has its legal basis in customary international law. While it probably accords more or less the same measures, the enforcement measures prescribed by BWC are the ones that will be addressed. While port State enforcement is optional under customary international law, also reflected in LOSC<sup>164</sup> it has been made mandatory under the BWC, which requires violation of its rules to be prohibited and sanctions to be established.<sup>165</sup> By exempting port State jurisdiction

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<sup>161</sup> Molenaar, *supra* note 37 at 101

<sup>162</sup> *Id.* at 103-4; Johnson, *supra* note 88 at 40

<sup>163</sup> *Id.* Johnson, at 88 and 39

<sup>164</sup> see in particular art. 25(2) and 218(1) with some limited exceptions, for example art. 219

<sup>165</sup> BWC, *supra* note 4 at art. 8(2)

from being optional, port States will not be able to benefit as free riders by operating “ports of convenience”.<sup>166</sup> Important to remember, however, is that this obligation only applies to the minimum requirements as set forth by the BWC and not to any additional measure.

#### *3.4.2.1 Inspection of ships*

In order to determine whether a ship in the port of a State party, to which the BWC applies, is in compliance with the Convention article 9(1) authorizes the port State to undertake inspection of the ship. The inspection is limited to verifying that there is onboard a valid certificate, inspection of the ballast water record book and/or a sampling of the ship’s ballast water.<sup>167</sup> The latter type of inspection, namely gathering a sample from the ship’s ballast water, represents a substantial improvement compared to the coastal State in port enforcement regime under LOSC article 220(1). According to BWC article 9(1)(c) the port State can conduct sampling in the absence of “clear grounds” as required in order for the same inspection to take place under the LOSC.<sup>168</sup> This provides for a more efficient control system than merely checking documents. Sampling shall be carried out in accordance with the Guidelines for Ballast Water Sampling.<sup>169</sup>

Furthermore, article 9(2) allows for the port State to carry out a more detailed inspection if the ships does not carry a valid certificate or there are “clear grounds” for believing that: a) the condition of the ship or its equipment does not conform substantially to the certificate; or b) the master or the crew are not familiar with essential shipboard procedures or have not implemented them.

A situation not addressed by the BWC is the enforcement of the port State’s jurisdiction in regulating discharge violations outside its EEZ when the vessel is voluntarily within port, as regulated by LOSC article 218(1). However, as concluded in section 3.4.1, discharge of ballast water cannot be prohibited by the port State outside its EEZ. Therefore there will

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<sup>166</sup> Erik Jaap Molenaar, *Port State Jurisdiction: Toward Comprehensive, Mandatory and Global Coverage*, at 226. Port States may operate ports of convenience for different reasons, for example to sustain the economy of the port or dependence on import of certain products.

<sup>167</sup> BWC, *supra* note 4 at art. 9(1)(a), (b) and (c)

<sup>168</sup> Art. 220(1) subject to art. 226(1)(a)(i)

<sup>169</sup> Annex 3, Resolution MEPC.173(58), Guidelines for ballast water sampling (G2)

not be any discharge rule in relation to the ballast water problem to enforce. Furthermore, as article 218(1) requires a violation of “applicable international rules and standards” a prohibition of BWE would arguably not constitute such since there exists no prohibition on the discharge of ballast water in the EEZ in international law. LOSC Article 218(2) regulates the situation where a discharge violation has occurred in the maritime zones of another State. This situation is addressed correspondingly in BWC article 10(4). For a port State to investigate such an incident a request to do so is needed from the party whose discharge rules are violated.

#### *3.4.2.2 Violations*

Because article 8(2) obligates the port State to prohibit any violation of the Convention and to establish sanctions under their national law<sup>170</sup> it shall enact legislation making it a national offence to *inter alia* conduct BWE outside designated areas, which the port State may enforce when the offending vessel enters its ports. Litra (a) and (b) further provides the port State with two options whenever a violation of the Convention occurs. It shall either take proceedings in accordance with its own laws, or hand over the evidence that a violation has occurred to the flag State. The flag State is, according to paragraph (1), similarly obligated to prohibit violations of the Convention, establish sanctions and take proceedings where sufficient evidence of a violation is available. The Convention does not provide any guidance as to when the port State is to choose to handle the violation itself and when it should hand it over to the flag State. However, paragraph (3) requires the sanctions established to be adequate in severity to discourage violations of the Convention. If the ship in violation is a flag of convenience the State under whose jurisdiction the violation occurred should not take for granted that the flag State would use too many resources in investigating and instituting proceedings of the alleged violations. If the “insulted” State wishes to ensure that proper sanctions are provided in order to prevent a violation from happening again, it might want to handle the violation itself.

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<sup>170</sup> The text reads “any Party”. However, as paragraph (1) concerns flag State enforcement it logically follows that this paragraph regulates the port States.



## 4. THE NORWEGIAN IMPLEMENTATION OF THE INTERNATIONAL RULES ON BALLAST WATER MANAGEMENT

### 4.1. Introduction

International obligations and possibilities for the coastal and port State to regulate the ballast water problem in its coastal areas have in the foregoing sections been established. As a signatory power to these international instruments Norway is obliged to enact rules and regulations in accordance with it.

The focus of this section will be on the Norwegian Ballast Water Management Regulation<sup>171</sup> in force from 01 July 2010. A comparative analysis will be made of the Norwegian Regulation and the international obligations Norway is under. First it will start out with a comparison of the rules in the Regulation and the rules in BWC in order to establish if there are any differences in the two texts. Second, it will be looked into what practical effects any possible differences may have. Thirdly, it will be evaluated whether the Norwegian regime is in accordance with national and international rules.

While, in relation to the latter evaluation, the main focus is on the Regulation in force today, reference will also be made to the Regulation as it was suggested and drafted at the outset. Its drafters, the Norwegian Maritime Directorate,<sup>172</sup> made some significant amendments to the initial Regulation that never entered into force. They were, *inter alia*, to prescribe the Regulation in accordance with, not only the Norwegian Ship Safety and Security Act, but also the Act on Diversity of Nature.<sup>173</sup> This was done to make applicable its rules on the precautionary approach and the ecosystem approach.<sup>174</sup> A second

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<sup>171</sup> The Regulation, *supra* note 1.

<sup>172</sup> Sjøfartsdirektoratet, the Norwegian Maritime Directorate, hereinafter the Directorate

<sup>173</sup> Act on Diversity of Nature, *supra* note 3, at § 28(4) regarding dispersion and/or the accidental release of alien organisms

<sup>174</sup> *Id.* at §9 and 10

amendment was the removal of an initial prohibition on ballast water exchange to be conducted within ports.<sup>175</sup>

Finally, in section 5 constituting the conclusion of the dissertation, will be a summary of what measures Norway has prescribed and to what degree this has been to take advantage of the possibilities provided for in international law.

## **4.2 A comparison of the Norwegian ballast water management rules and the BWC rules**

BWC regulations D-1 and D-2 are identically reproduced in the Regulation's § 6(1) and § 7. Furthermore § 6(2) repeats the contents of regulation B-4(1).

Not fully identical is § 6(4) compared to exception in regulation B-4(3). While the BWC states that no ship shall be required to deviate from nor delay its intended voyage in order to meet the requirements in paragraph (1), the Regulation is stricter adding that exchange *nevertheless shall be conducted as far from shore as possible*. This was added as a "replacement" of the initial prohibition on BWE in ports, which was removed. The Directorate removed it because of the great inconvenience a prohibition would bring upon the shipping industry to abide by. As a supporting argument they emphasized the great uncertainty attached as to how large risk reducing effect the prohibition actually had. Also reminding that BWE is an interim solution until the BWC enters into force and ballast water treatment will be required. Almost all bodies entitled to comment<sup>176</sup> argued against the proposal of removing the prohibition. However, the arguments were not sustained.

Neither fully identical is § 6(3) compared to regulation B-4(2). The right to designate areas for BWE in the Regulation adds that if exchange in such areas neither is possible, the ship *shall exchange its ballast water before arriving Norwegian territorial sea*. The Regulation's Annex 1 regulation 1.2 illustrates the areas designated by Norway. They are

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<sup>175</sup> The comments to the suggested changes of the first Regulation are available at <http://www.sjofartsdir.no/upload/48884/page.html>

<sup>176</sup> Except from DirNat and Norges Rederiforbund

allocated alongside the whole coastline of Norway except furthest north outside the county of Finnmark and furthest south outside the counties from Vest Agder and eastwards. This means that vessels entering Norwegian territorial sea through one of these two exempted zones are *not* free to exchange their ballast waters there just because they cannot do it in the designated areas. According to the Regulation they are obliged to do it before entering.

#### **4.2.1 Enforcement**

The Regulation concerning investigation, stopping and boarding of foreign ships in the event of suspicion of an environmental violation<sup>177</sup> is the appropriate legal ground concerning the supervisory authorities' right to investigate, stop and board foreign ships in the event of suspicion of a violation of international provisions on pollution of the marine environment Norway has acceded to, and in the event of suspicion of a violation of provisions laid down pursuant to chapter 5 of the Ship Safety and Security Act, hereunder the Ballast Water Management Regulation.

The Regulation on control in case of environmental suspicion is an implementation of the enforcement jurisdiction that follows from the Law of the Sea Convention. Accordingly, only when the BWC enters into force internationally will implementing control in the port State regime, which includes random testing of ballast water by sampling, be applicable. Until BWC enters into force the access to control is limited to what follows from the Regulation on control in case of environmental suspicion, which implements the LOSC. As the rules on enforcement provided by Norway is not deviating from the competence provided in international law no further assessment of its rules will not be made.

### **4.3 Practical effects of the Norwegian additions to the BWC rules**

In section 4.2 the differences between the rules in the BWC and the Regulation have been documented. An interesting issue is thus to see what practical effects they have on the

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<sup>177</sup> FOR-2007-07-02 nr 850: Forskrift om undersøkelse, stansing og bording av utenlandsk skip ved mistanke om miljøovertredelse. Hereinafter the Regulation on control in case of environmental suspicion.

problem in question. By stating that ballast water shall be exchanged as far from shore as possible Norway tries to place some directions on where BWE should be conducted for those ships that do not have to abide by the distance/depth requirements in § 6(2). But is this a rule Norway can enforce? From the legal implications of this phrase, this is only a request, not a legal obligation; hence a violation is not enforceable. Even though the inclusion of this phrase at the outset appear to be a more stringent measure than provided for in the BWC, the reality of the regulation remains the same: It is not stopping foreign vessels *i.e.* from releasing their ballast water in Norwegian ports.

The next question is whether the second Norwegian addition has some practical effects, namely the obligation to exchange ballast water before arriving territorial sea. According to the BWC ships are free to proceed to port without having exchanged ballast water if they navigate inside 50nm and the coastal State has not designated any areas where the ship navigates. Norway requires in such events that ballast water shall be exchanged *before* entering the territorial sea. While the obligation is not a prohibition on BWE to be conducted inside this area, the ballast water will at least already have been changed either in designated areas or outside Norwegian territory. Thereby the risk of releasing contaminated water is reduced, however still present.

#### **4.4 Is the legal regime prescribed by Norway in accordance with national and international obligations?**

##### **4.4.1 National obligations**

The most evident deficiency with the Norwegian regime is that it doesn't fully block the opportunity for ballast water exchange in ports, which the problem that exists today has arisen from. The Norwegian Act on Diversity of Nature makes directly applicable the precautionary approach to decisions made by Norwegian policy makers on the issue. It states in § 9:

...when a decision is being made without the presence of sufficient knowledge about the effects it may have on the environment, one should aim to avoid possible significant harm to the biodiversity of nature. Where there is a risk of serious or irreversible damage on the diversity of nature, lack of knowledge shall not be used as a reason to postpone or neglect to decide on policy measures.

The rule is giving the benefit of the doubt to the environment over interests of industry or economy.<sup>178</sup> The problem with alien invasive species will fall under the category of “serious or irreversible damage” to biodiversity accordingly rendering the excuse of lack of knowledge irrelevant. One of the Norwegian Maritime Directorate’s reasons for lifting the prohibition initially prescribed was the uncertainty of the risk reducing effect the prohibition actually had, rendering the environmental gains of keeping the prohibition uncertain. Clearly, in a situation where there are risks of serious or irreversible damage, the Directorate has used lack of knowledge as a reason not to place a prohibition on BWE in its ports, which could have eliminated the risk. This would constitute a violation of Act.

On the other hand, there are several problems with the precautionary principle. Its main deficiency is that it’s vague and open to broad interpretation.<sup>179</sup> In this regard the problem is how trade-offs between potential costs and benefits are to be managed.<sup>180</sup> In the case at hand one have to weigh the inconvenience of a prohibition resulting in a more inefficient shipping industry together with the economic losses incurred on several parts and possible frequent violations of the prohibition by vessels, against the benefits of not causing (more) detriment to the marine environment, which one is uncertain whether would have occurred in any event. In the present situation the Directorate found the costs to be more important than the potential benefits of a prohibition, also supported by the argument that ballast water exchanging is only an interim measure.

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<sup>178</sup> M. Heazle, *Lessons in precaution: The International Whaling Commission experience with precautionary management*, p. 498

<sup>179</sup> *Id.* at 497

<sup>180</sup> *Id.* at 499

Accordingly, it is difficult to render the removal of the prohibition as contradictory to national law due to the vague character of the precautionary principle and recognizing that precautionary measures cannot be taken at all costs.

The absence of a prohibition on BWE in ports is therefore arguably not in violation with the Norwegian Act on Diversity.

#### **4.4.2 International obligations**

With regards to Norway's international obligations the CBD requires its parties to "prevent the introduction of ... alien species which threaten ecosystems, habitats or species".<sup>181</sup> The Convention is a binding instrument and therefore parties must adhere to its requirements but because it does not offer any mechanism for compliance with or enforcement of article 8(h), only requiring parties to act "as far as possible and appropriate", States are left with the option to very little to address the issue.<sup>182</sup> Because Norway has passed the Regulation implementing the rules of the BWC it is difficult to argue that the Regulation is not in accordance with international law simply because it does not eradicate the problem of alien invasive species completely.

Article 196 of the LOSC requires States to take "all measures necessary" to prevent the introduction of alien species. Nevertheless, this article neither includes a description of what this entails, how the objective should be achieved, or how adherence to these principles might be affected.<sup>183</sup> Thus it is here too difficult to claim that the measure taken by Norway in passing the Regulation is not in conformity with its obligations under article 196.

Accordingly, Norway has acted in conformity with its international obligations through the legislation of the Regulation.

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<sup>181</sup> CBD, *supra* note 7 at art. 8(h)

<sup>182</sup> MacPhee, *supra* note 17, at 36

<sup>183</sup> *Id.* at 38

## 5 CONCLUSION

Concerning ballast water treatment systems there are no measures for Norway as a coastal State to make use of at the current stadium. As concluded, Norway cannot require treatment systems on board foreign vessels until such systems are phased in according to the BWC and hence can be enforced against state parties, or until they could be considered as GAIRS.

With regards to ballast water exchange regulations, Norway has implemented the minimum requirements as stated in the BWC. It has not made use of its opportunity to place a prohibition on the release of ballast water in its ports, in geographically defined areas of its territorial sea or in special areas of its EEZ. The Directorate states that the issue of whether to prescribe more stringent measures than what follows from the BWC has been considered but no reason to do so was found due to the interest of efficient shipping being considered more important.<sup>184</sup> Remembering in this regard, it is also in the interest of the port State to be an attractive port. By establishing requirements that deviate from the practice of other port States it will make entry for ships difficult, especially if requirements apply to such as the static nature of CDEM standards. Hence, requiring ships to have integrated treatment systems might have unwanted effects as it complicates the important business of transporting good by sea.

Despite not having made use of any of these measures, the obligation set forth to exchange ballast water before entering Norwegian territorial sea, appears to be a clever solution. It has the practical effect of prohibiting the exchange of ballast water within the whole area of territorial seas and ports without having to pay regards to the prohibition on hampering of innocent passage in the territorial sea. Hence, if BWE is conducted after entering Norwegian territorial sea a violation of Norwegian legislation has been committed, which

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<sup>184</sup> The hearing statements, *available* at <http://www.sjofartsdir.no/no/Regelverk2/Horinger2/Horingsuttalelser/Horingsuttalelser-forskrift-7-juli-nr-992-om-hindring-av-spredning-av-fremmede-organismer-via-ballastvann-og-sedimenter-fra-skip-ballastvannforskriften/>

the coastal or port State Norway may sanction. This is, presumably, similar to how a violation of any prohibition on BWE in ports or special areas of the territorial sea would have been enforced.

One thing, that has not been mentioned, regards the BWC's rules on treatment systems. Aside from the Regulation's § 7 stating that *if* treatment is to be used, it is to be done with technology approved by IMO, further stating the standards of purity as provided for in the BWC. The Norwegian Regulation does not establish any obligations for treatment systems to be installed, nor any phase-in rules, or any mention of it at all. Therefore, it remains to be seen whether Norway will continue to follow up on its international obligations, demanding treatment systems when the BWC enters into force, so that the final objective of the BWC can be achieved: to eliminate the risk to the environment arising from alien invasive species.



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