Microplastics and the Entry into Force of the Ballast Water Convention: An Arctic Perspective

Stefan Kirchner[*]

On 8 September 2017, the International Convention for the Control and Management of Ships' Ballast Water and Sediments [1] (BWM Convention), which was adopted in 2004, entered into force. The idea behind this international treaty is to reduce the transfer of invasive species by regulating the removal of ballast water by ships. Ships require ballast water in order to balance the vessel. Based on the amount of cargo carried at any given time the amount of ballast water varies. This means that ballast water might be taken in at one port and might be released in halfway around the world. In this way, invasive species, including pathogens, have been introduced in many places. This in turn can have serious consequences for the local environment as well as for the local economy and for public health. In addition to the transfer of biota, recent research shows that the release of ballast water is also to blame for the transfer of microplastics.[2]

The BWM Convention was created in 2004 in order to protect the marine environment and coastal states. As is common when regulating shipping, including international marine environmental law, the obligations established in this international treaty are linked to the flag state. The obligation to comply with the standards set in the BWM Convention arises when a ship flies the flag of a state which has ratified the treaty. As of 9 October 2017,[3] the BWM Convention has been ratified by Norway, Finland, Denmark, Russia and Canada but not yet by the United States, nor by Iceland. The requirements for the entry into force of many shipping related international treaties include not only a minimum number of ratifications

[*] Dr. Stefan Kirchner, MJI, RA, Dos., Associate Professor of Arctic Law, Arctic Centre, University of Lapland.

[1] The full text of the convention is available online at <http://www.bsh.de/de/Meeresdaten/Umweltschutz/Ballastwasser/Konvention_en.pdf>.

[2] M. Matiddi, A. Tornambè, C. Silvestri, A.M. Cicero, E. Magaletti, "First Evidence of Microplastics in the Ballast Water of Commercial Ships", in: Juan Baztan, Bethany Jorgensen, Sabine Pahl, Richard C. Thompson and Jean-Paul Vanderlinden (eds.), *MICRO 2016. Fate and Impact of Microplastics in Marine Ecosystems - From the Coastline to the Open Sea*, 1st ed., Elsevier, Amsterdam (2017), pp. 136-137, https://doi.org/10.1016/B978-0-12-812271-6.00133-2.

[3] For a the regularly updated summary of the ratifications of different international treaties under the auspices of the International Maritime Organization (IMO) see <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/status-x.xls>.

(here: 30) but also that the ratifying states, as flag states, cover a significant (in the case of the BWM Convention: 35 %) part of the global tonnage. In this way it is ensured that international treaties which are created under the auspices of the International Maritime Organization (IMO) actually have a practical impact on the practice of international shipping. Since the entry into force of the BWM Convention, ballast water exchanges may only take place offshore and no longer in ports. Under Regulation D-2 of the Annex to the BWM Convention, newly built vessels require ballast water treatment technologies which confirm to specific rules as to which biological components, including harmful microbes. Immediate compliance with Regulation D-2 might not be the law yet for old vessels, but it is definitively a good idea: not only would doing so contribute to meeting the goals of the convention more quickly, states parties to the BWM Convention might find themselves bound to an accelerated schedule as soon as October 2019: The IMO's Marine Environment Protection Committee (MEPC) will meet in April 2018 to discuss the adoption of changes to the BWM Convention, drafts of which are currently circulated among member states. [4] Currently, the MEPC is scheduled to revise the experience with implementing the convention in 2022.[5]

Ever vessel flying the flag of a state which has ratified the BWM Convention has to have a ballast water record book, detailing all intakes, treatments and discharges of ballast water, a ballast water management plan as well as (for vessels with a gross tonnage of 400 or more, which covers the vast majority of commercial vessels, just for a sense of reference: large cruise or cargo vessels have a gross tonnage in excess of 200,000) an International Ballast Water Management Certificate issued by the flag state.

The Ballast Water Management Certificate provides coastal states with written documentation concerning the ballast water management standards used by the vessel. Like other certificates issued by flag state authorities, the certificate has to be renewed on a regular basis and the presence of this certificate can be checked by the port state authorities. In so far the BWM Convention is similar to the Bunker Oil Convention or the Civil Liability Convention, which require vessels to have on board documents issued by the flag state which certify that insurance has been taken out to provide third parties against damages from oil spills. In the case of the BWM Convention, the competence of the port state authorities goes farer than that because the port

[4] IMO, Implementing the Ballast Water Management Convention, <http://www.imo.org/en/MediaCentre/HotTopics/Pages/Implementing-the-BWM-Convention.aspx>.
[5] Ibid.

state authorities may also check the ballast water record book and may even take samples from the vessel's ballast water.

For the European Arctic, the entry into force of the BWM Convention means more protection for the near coastal environments. Given the rising importance of ports like Helsinki for cruise shipping, this is no small issue. When it comes to the regulation of international shipping, at least without the contribution of the United States, the Arctic region will usually be too small, both in the number of states and in the total gross tonnage of vessels flying the flags of Arctic states, in order to drive similar endeavors in the future. It is therefore imperative for Arctic states which are interested in preserving the natural environment to make use of existing legal mechanisms. This includes the IMO. Within existing frameworks, concerted efforts by Arctic states can be heard. This is even more the case when taking into account existing political differences in other fields. The long-standing history of cooperation in the Arctic can be used as a driving force for future legislative developments.

This can include the expansion of the material scope of the BWM Convention to include effective measures against the transfer of microplastics through ballast water. In this context more urgent action might be necessary, first from a practical perspective but possibly also in regulatory terms. More research is necessary in order to find out which technical and / or legal measures would be necessary to prevent or at least limit the spread of microplastics through Ballast Water.

Plastic waste is already a major problem in the Arctic Ocean, [6] indeed, microplastics are already found in the Antarctic Ocean as well). [7] The man-made pollution of the ocean with microplastics has reached dangerous levels. Microplastics are entering the food chain through sea food. [8] Today, humans eat plastic which has been eaten by fish after having been thrown away by humans. Clean oceans are not only a sustainable development goal (Sustainable Development Goal 14: Life

[6] A. Cózar, E. Martí, C. M. Duarte, J. García-de-Lomas, E. van Sebille, T. J. Ballatore, V. M. Eguíluz, J. Ignacio González-Gordillo, M. L. Pedrotti, F. Echevarría, R. Troublè, X. Irigoien, "The Arctic Ocean as a dead end for floating plastics in the North Atlantic branch of the Thermohaline Circulation", in: 3:4 *Science Advances* (2017), <http://advances.sciencemag.org/content/3/4/e1600582>.

[7] Catherine L.Waller; Huw J.Griffiths, Claire M.Waluda, Sally E.Thorpe, IvánLoaiza, Bernabé Moreno, Cesar O.Pacherres, Kevin A.Hughes, "Microplastics in the Antarctic marine system: An emerging area of research", in: 598 *Science of the Total Environment* (2017), pp. 220-227.

[8] See Nate Seltenrich, "New Link in the Food Chain? Marine Plastic Pollution and Seafood Safety", in: 123:2 Environmental Health Perspectives, pp. A34-A41, <https://ehp.niehs.nih.gov/wp-content/uploads/123/2/ehp.123-A34.alt.pdf>.

under Water), they are essential for human life. While several attempts are already underway to deal with the issue, no comprehensive solution has been found. Amending the BWM Convention will not solve the problem completely because the largest part of microplastic pollution is land-based rather than ship-based but it could make a contribute and lead to more technical research which could be used in other contexts as well. Across political divides, the Arctic states have an opportunity to become trailblazers in efforts to rid the oceans of microplastics.