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Working Paper: Assessing Drifting Fish Aggregating Device (dFAD) Abandonment under International Marine Pollution Law

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Abstract

This article addresses the debated question whether the abandonment of drifting fish aggregating devices (dFADs) is illegal from the perspective of international marine pollution law. It first provides a brief overview of the general international legal framework for the protection of the marine environment contained in Part XII of the United Nations Convention on the Law of the Sea (UNCLOS). Next, this article examines the specific international legal regime concerning pollution by dumping, namely the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (LC) and its 1996 Protocol (LP). Thereafter, it analyzes the international legal regime concerning pollution from vessels under the International Convention for the Prevention of Pollution from Ships (MARPOL), Annex V of which contains provisions on the discharge of garbage, including fishing gear. The article concludes that while the delimitation of the two regimes is difficult, the abandonment of dFADs contravenes either the LC/LP or, if a different interpretation is adopted, MARPOL Annex V. The decision as to which of the two regimes is applicable depends on whether dFAD abandonment can be classified as “incidental to, or derived from the normal operations of vessels [...] and their equipment” or not. In any event, the negligent loss of dFADs violates MARPOL Annex V. The article also shows that there is some State practice and *opinio juris* that suggests a parallel applicability of the two regimes even with respect to deliberate dFAD abandonment.

Keywords: Abandoned, lost, and discarded fishing gear (ALDFG), Drifting fish aggregating devices (dFADs), Marine pollution, International Maritime Organization (IMO), MARPOL, London Dumping Convention and Protocol

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Conflict of Interest

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1. INTRODUCTION

Marine litter, in particular plastic pollution, is an important contemporary challenge for ocean governance.¹ The fishing industry is a significant contributor to marine litter, including plastics. Indeed, according to recent estimates, abandoned, lost, and discarded fishing gear (ALDFG)² is the source up to 61% of marine litter in the open ocean.³ ALDFG comprises various kinds of fishing gear, including so-called drifting fish aggregating devices (dFADs), which are a

¹ See, e.g., M. Haward, ‘Plastic Pollution of the World’s Seas and Oceans as a Contemporary Challenge in Ocean Governance’ (2018) 9(1) *Nature Communications*, at 667.

² On ALDFG, see generally G. Macfadyen, T. Huntington & R. Cappell, *Abandoned, Lost or Otherwise Discarded Fishing Gear* (Food and Agriculture Organization of the United Nations, 2009), pp. 1–28.

³ K. Richardson, B.D. Hardesty & C. Wilcox, ‘Estimates of Fishing Gear Loss Rates at a Global Scale: A Literature Review and Meta-analysis’ (2019) 20 *Fish and Fisheries*, pp. 1218–1231.

significant source of ALDFG given their common loss or abandonment.⁴ While both scientific and legal definitions of what constitutes a dFAD vary,⁵ they can be described as floating “permanent, semi-permanent or temporary structure, which is deployed and/or tracked, and used to aggregate fish for subsequent capture”.⁶ They usually consist of a floating structure (such as a raft), a submerged structure (made of, e.g., old netting, canvass or ropes) and an instrumented echosounder buoy equipped with a satellite tracking system to monitor their position. While there are developments towards biodegradable designs,⁷ most dFADs are at least partly made of plastic – in addition to the components of the buoy (batteries, solar panels, etc.).⁸ The available data suggests that industrial purse seine tuna fleets are, while not the only,⁹ by far the main users of dFADs as they often rely on dFADs to aggregate and subsequently catch tropical tuna species because tropical tunas such as skipjack tuna (*Katsuwonus pelamis*) are attracted by floating objects, thereby considerably increasing the efficiency of purse seine fisheries.¹⁰

⁴ T. Imzilen et al., ‘Recovery at Sea of Abandoned, Lost or Discarded Drifting Fish Aggregating Devices’ (2022) 5 *Nature Sustainability*, pp. 593–602, at 593; N.S. Vogt-Vincent et al., ‘Sources of marine debris for Seychelles and other remote islands in the western Indian Ocean’ (2023) 187 *Marine Pollution Bulletin* 114497.

⁵ R. Bealey & E. Dyer, ‘Standardizing FAD Definitions between RFMOs’ (2022), IOTC-2022-WGFAD03-16.

⁶ FAO, Voluntary Guidelines on the Marking of Fishing Gear (2019) available at <https://www.fao.org/responsible-fishing/resources/detail/en/c/1470106/>, Para. 16(c). See also P. He et al., ‘Classification and Illustrated Definition of Fishing Gears’ (2021) 672 *FAO Fisheries and Aquaculture Technical Paper*, p. 9.

⁷ L. Escalle et al., ‘Towards Non-entangling and Biodegradable Drifting Fish Aggregating Devices – Baselines and Transition in the World’s Largest Tuna Purse Seine Fishery’ (2023) 149 *Marine Policy* 105500.

⁸ M. Pons et al., ‘Benefits, Concerns, and Solutions of Fishing for Tunas with Drifting Fish Aggregation Devices’ (2023) *Fish and Fisheries* 12780, p. 8.

⁹ See, e.g., R.B. Cabral, P.M. Aliño & M.T. Lim, ‘Modelling the Impacts of Fish Aggregating Devices (FADs) and Fish Enhancing Devices (FEDs) and their Implications for Managing Small-scale Fishery’ (2014) 71 *ICES Journal of Marine Science*, pp. 1750–1759.

¹⁰ A. Maufroy et al., ‘Massive Increase in the Use of Drifting Fish Aggregating Devices (dFADs) by Tropical Tuna Purse Seine Fisheries in the Atlantic and Indian Oceans’ (2017) 74 *ICES Journal of Marine Science*, pp. 215–225; D. Gershman, A. Nickson & M. O’Toole, *Estimating the Use of FADs Around the World: An Updated Analysis of the Number of Fish Aggregating Devices Deployed in the Ocean* (The Pew Charitable Trusts, 2015).

It has been estimated that the total number of dFADs deployed annually by tuna fishing vessels could exceed 100.000.¹¹ Based on the available data, it has been estimated that more than 85% of all floating objects (natural and human-made) that are fished in the sea are dFADs.¹² Due to their relatively low cost, large numbers and drifting nature, up to 90% and more of dFADs are estimated to be lost, abandoned or discarded at sea.¹³ While unintentional loss of dFADs may occur when the satellite buoy malfunctions or when the dFAD sinks, deliberate abandonment “can be caused by dFADs drifting off fishing grounds or fishers moving to other fishing areas”, in which case “fishers deliberately abandon the dFAD because the travelling cost of retrieving it is too high.”¹⁴ In other words, deliberate dFAD abandonment is generally done for commercial reasons. Perhaps unsurprisingly then, dFADs have been assessed to have the third highest risk of contributing to ALDFG of all fishing gear.¹⁵ In the context of dFADs, harmful environmental impacts include entanglement (including ‘ghost-fishing’), habitat perturbation (including the so-called ecological trap), stranding, spread of invasive species and dispersal of microplastic.¹⁶ As such, minimizing ALDFG from dFADs will contribute to the fulfillment of the 2030 Agenda for Sustainable Development and in particular the Sustainable Development Goal (SDG) 14 (“life below water”).¹⁷

¹¹ Imzilen et al., n. 4 above, p. 593; L. Escalle et al., ‘Quantifying Drifting Fish Aggregating Device Use by the World’s Largest Tuna Fishery’ (2021) 78 *ICES Journal of Marine Science*, pp. 2432–2447, at 2442: 20.000 to 40.000 annual deployments in the Western Central Pacific Ocean alone.

¹² A. Dupaix et al., ‘Surface Habitat Modification Through Industrial Tuna Fishery Practices’ (2021) 78 *ICES Journal of Marine Science*, pp. 3075–3088, at 3082.

¹³ L. Escalle et al., *Report on Analyses of the 2016/2018 PNA FAD Tracking Programme* (2018) SCI14-MI-WP-09.

¹⁴ Pons et al., n. 8 above, p. 8.

¹⁵ E. Gilman et al., ‘Highest Risk Abandoned, Lost and Discarded Fishing Gear’ (2021) 11(7195) *Scientific Reports*, pp. 1–11, at 4.

¹⁶ See, e.g., Pons et al., n. 8 above, pp. 7–8; Imzilen et al., n. 4 above, p. 593; T. Davies et al., ‘Potential Environmental Impacts Caused by Beaching or Drifting Fish Aggregating Devices and Identification of Management Solutions and Uncertainties’ (2017) IOTC-2017-WGFAD01-08 Rev_1, pp. 6–7; M. Purves, M.S. Adam & R. Bealey, ‘A Polluter Pays Principle for Drifting FADs – How it Could be Applied?’ (2021), IOTC-2021-WGFAD02-08, pp. 5–8.

¹⁷ UN, ‘Transforming Our World: The 2030 Agenda for Sustainable Development’ (25 Sep. 2015), UN. Doc. A/RES/70/1, available at: <https://sdgs.un.org/sites/default/files/publications/21252030%20Agenda%20for%20Sustainable%20Development>

Against the background of the described scale of dFAD abandonment, its harmful environmental impacts and the evidence that large-scale loss and abandonment forms part of the business model of a number of industrial purse seine fisheries, this article will address the question whether the abandonment of dFADs is illegal from the perspective of international marine pollution law.¹⁸ A recent scientific article has described this frequently raised legal question as “still debated”.¹⁹ In the legal literature, the issue was first considered in-depth by *Churchill* in 2021, who argued that dFAD abandonment indeed violates international marine pollution law.²⁰ This view has since been challenged by an independent adjudicator in a Marine Stewardship Council (MSC) certification objection procedure in 2022 (hereinafter ‘MSC AGAC Adjudication’).²¹ Of course, the MSC’s independent adjudicators are neither members of true international courts or tribunals,²² nor – usually – experts in public international law.²³ That said, it cannot be excluded that the opinion will influence future legal assessments within and beyond the MSC.²⁴

[t%20web.pdf](#); K.N. Scott, ‘SDG 14: Conserve and Sustainably Use the Oceans, Seas and Marine Resources for Sustainable Development’, in J. Ebbesson & E. Hey (eds.), *The Cambridge Handbook of the Sustainable Development Goals and International Law* (Cambridge University Press, 2022), pp. 354–375, at 360–361.

¹⁸ For an overview of what international marine pollution law entails, see J. Harrison, *Saving the Oceans Through Law: The International Legal Framework for the Protection of the Marine Environment* (Oxford University Press, 2017), pp. 92–165.

¹⁹ Pons et al., n. 8 above, p. 8.

²⁰ R.R. Churchill, ‘Just a Harmless Fishing Fad – or Does the Use of FADs Contravene International Marine Pollution Law?’ (2021) 52 *Ocean Development & International Law*, pp. 169–192.

²¹ *Marine Stewardship Council Independent Adjudication in the Matter of an Objection to the Final Draft Report and Determination on the Proposed Certification of the AGAC Four Oceans Integral Purse Seine Tropical Tuna Fishery (Indian Ocean)*, Decision of the Independent Adjudicator, 21 Apr. 2022, *on file with the author*.

²² *Ibid.*, p. 41: “this decision has no value as precedent.”

²³ On the function of the independent adjudicator in MSC’s objection procedure, see Marine Stewardship Council, ‘The MSC Objections Procedure’ (2023), available at: <https://www.msc.org/en-au/what-you-can-do/engage-with-a-fishery-assessment/the-msc-objections-procedure>.

²⁴ More generally on the interaction of the MSC and international law, see M. Karavias, ‘Interactions between International Law and Private Fisheries Certification’ (2018) 7 *Transnational Environmental Law*, pp. 165–184.

Importantly, the issue of fishing gear abandonment is located at the intersection of international fisheries law²⁵ and marine pollution law, which means that this activity is subject to a fragmented legal regime that involves a variety of legal instruments and regulatory actors. While the International Maritime Organization (IMO) has a broad pollution related mandate that includes pollution from fishing vessels, the mandates of the Food and Agriculture Organization of the United Nations (FAO) and regional fisheries management organization (RFMO) include the development of global and regional standards for fisheries, respectively. Indeed, some RFMOs have adopted binding conservation and management measures (CMMs) containing prohibitions of deliberate fishing gear abandonment that also apply to dFADs.²⁶ Such regionally applicable CMMs may be argued to implement and complement the global marine pollution law prohibitions under investigation in this article. That said, the regulatory role of the FAO and RFMOs with respect to dFADs, including the aspect of marine pollution, is not the focus of this article.²⁷

To answer the question of the legality of dFAD abandonment under international marine pollution law, this article will provide an in-depth analysis of the applicable legal framework developed under the auspices of the IMO. Before doing so, it will first provide a brief overview of the general international legal framework for the protection of the marine environment contained in Part XII of the United Nations Convention on the Law of the Sea (UNCLOS).²⁸

²⁵ For an explanation of what the term “international fisheries law” entails, see V.J. Schatz & A. Honniball, ‘International Fisheries Law’, in A. Carty (ed.), *Oxford Bibliographies in International Law* (Oxford University Press, 2019), p. 1.

²⁶ See, e.g., Article 8(c) SEAFO, ‘SEAFO System’ (2022), available at: <http://www.seafo.org/Documents/SEAFO-System>: “no vessel shall deliberately abandon fishing gear, except for safety reasons, notably vessels in distress and/or life in danger”; Para. 1 ICCAT, ‘Recommendation 19-11 on Abandoned, Lost or Otherwise Discarded Fishing Gear’ (2019): “fishing vessels authorized to fish species managed by ICCAT in the Convention area are prohibited from abandoning and discarding fishing gear except for safety reasons”.

²⁷ See, e.g., Song & Shen, ‘An Integrated Scheme for the Management of Drifting Fish Aggregating Devices in Tuna Purse Seine Fisheries’ (2023) 30 *Fisheries Management and Ecology*, pp. 56–69, at 61–66.

²⁸ *United Nations Convention on the Law of the Sea*, 10 Dec. 1982, Montego Bay (Jamaica), in force 16 Nov. 1994, available at: https://www.un.org/depts/los/convention_agreements/texts/unclos/unclos_e.pdf.

Next, this article will examine the specific international legal regime concerning pollution by dumping, namely the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter (London Convention or LC)²⁹ and its 1996 Protocol (London Protocol or LP).³⁰ Thereafter, this article turns to an analysis of the international legal regime concerning pollution from vessels under the International Convention for the Prevention of Pollution from Ships (MARPOL),³¹ Annex V of which contains provisions on the discharge of garbage, including fishing gear. The final substantive section of this article is devoted to the relationship between the two regimes and a delimitation of their respective scopes. For reasons of space, the analysis is limited to the substantive regulatory framework and future regulatory options and does not include a discussion of the enforcement framework at the international, regional, or domestic level.³²

2. GENERAL FRAMEWORK FOR THE PROTECTION AND PRESERVATION OF THE MARINE ENVIRONMENT UNDER PART XII OF UNCLOS

The problem of ALDFG is addressed – albeit often not explicitly mentioned – in a variety of global instruments of marine environmental law. The provisions of Part XII of UNCLOS concerning the protection of the marine environment from pollution do not explicitly address ALDFG.³³ However, many categories of marine litter must be qualified as “marine pollution”

²⁹ *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, 29 Dec. 1972, London (United Kingdom), in force 30 Aug. 1975, available at: <https://www.imo.org/en/OurWork/Environment/Pages/London-Convention-Protocol.aspx>.

³⁰ *1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, 1972, 7 Nov. 1996, London (United Kingdom), in force 24 Mar. 2006, <https://www.imo.org/en/OurWork/Environment/Pages/London-Convention-Protocol.aspx>.

³¹ *International Convention for the Prevention of Pollution from Ships*, 2 Nov. 1973, London (United Kingdom), in force 2 Oct. 1983, available at: [https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-\(MARPOL\).aspx](https://www.imo.org/en/About/Conventions/Pages/International-Convention-for-the-Prevention-of-Pollution-from-Ships-(MARPOL).aspx).

³² For discussion of the enforcement of the relevant marine pollution law, see Churchill, n. 20 above, pp. 182-183 & 188-190.

³³ S. Hodgson, *Legal Aspects of Abandoned, Lost or Otherwise Discarded Fishing Gear* (FAO, 2022), p. 8.

within the meaning of Article 1(1)(4) UNCLOS.³⁴ This includes ALDFG from dFADs.³⁵ Therefore, States Parties must address this source of pollution in fulfilling their general “obligation to protect and preserve the marine environment” under Article 192 UNCLOS. This obligation is further concretized by the obligations in Article 194 UNCLOS to take measures to prevent, reduce and control pollution of the marine environment from any source, including fishing vessels.³⁶ In giving effect to these obligations, Article 197 UNCLOS requires States Parties – besides taking measures of their own – to cooperate “on a global basis and, as appropriate, on a regional basis, directly or through competent international organizations”.

These general provisions are further concretized and complemented by a set of obligations specifically concerning pollution by dumping (Articles 210 and 216 UNCLOS) and pollution from vessels (Articles 211, 217 to 218 and 220 UNCLOS).³⁷ In the context of pollution by dumping and from vessels, the most important (and in the case of vessel-source pollution: the only) international organization mandated to establish international rules and standards is the IMO.³⁸ With respect to pollution by dumping, the main treaties adopted under the auspices of the IMO are the LC and the LP. Pollution from vessels is primarily addressed through MARPOL, with provisions on the discharge of garbage, including fishing gear contained in MARPOL Annex V. As will be shown in the following sections, the LC/LP and MARPOL

³⁴ A. Stöfen-O’Brien, *The International and European Legal Regime Regulating Marine Litter in the EU* (Nomos, 2015), pp. 94–95.

³⁵ Churchill, n. 20 above, p. 172.

³⁶ While international law contains a variety of specific sets of norms for fishing vessels in certain subject-matter areas, this is not the case for the general rules concerning the protection of the marine environment. See further R.R. Churchill, ‘Fishing Boats’, in A. Peters (ed.), *Max Planck Encyclopedia of Public International Law* (Oxford University Press, 2018).

³⁷ Stöfen-O’Brien, n. 34 above, pp. 105–110.

³⁸ T. Stephens, ‘Article 197’, in A. Proelss (ed.), *United Nations Convention on the Law of the Sea (UNCLOS): A Commentary* (C.H. Beck/Hart/Nomos, 2017), para. 17; F. Wacht, ‘Article 210’, in *ibid.*, para. 12; K. Bartenstein, ‘Article 211’, in *ibid.*, para. 14; Stöfen-O’Brien, n. 34 above, p. 109; Churchill, n. 20 above, p. 189.

Annex V are relevant to the issue of ALDFG – including lost, abandoned, and discarded dFADs.³⁹

3. LONDON CONVENTION AND PROTOCOL (LC/LP)

The objective of the LC/LP regime is for the Contracting Parties to “protect and preserve the marine environment from all sources of pollution” and to “take effective measures to prevent, reduce and where practicable eliminate pollution caused by dumping [...] of wastes or other matter.”⁴⁰ Although the LC has more Contracting Parties (87) than the LP (53),⁴¹ the present analysis focuses on the latter,⁴² which has modernized and superseded the LC as between the LP’s Contracting Parties.⁴³ That said, the result of this analysis is generally transferable to the LC regime as the relevant provisions of the LP are similar to those of the LC.⁴⁴ This article will first examine whether dFADs may be classified as “wastes or other matter” under the LP. Thereafter, it will turn to the question whether the loss, discarding and abandonment of dFADs or other fishing gear constitutes “dumping” within the meaning of the LP as a matter of the material requirements of the LP. Even if this is the case, the question whether dFAD abandonment truly falls within the scope of the LP is an issue that can only be answered in connection with the analysis of the relationship of the LP with MARPOL Annex V (see section 5 below).

3.1. DFADs as “wastes or other matter”

Under the LP, the “dumping” of “any wastes or other matter” is prohibited, with certain exceptions listed in Annex 1 to the LP, which can be dumped subject to a permit requirement

³⁹ See also *ibid.*

⁴⁰ London Protocol, n. 30 above, Art. 2.

⁴¹ IMO, ‘Status of Conventions’ (2023), available at: <https://www.imo.org/en/About/Conventions/Pages/StatusOfConventions.aspx>.

⁴² For a detailed discussion of the functioning of the LC, see Harrison, n. 18 above, pp. 96–107.

⁴³ London Protocol, n. 30 above, Art. 23; Harrison, n. 18 above, p. 107.

⁴⁴ Cf. Churchill, n. 20 above, pp. 172–184.

to be imposed by the Contracting Party relying on the exception (so-called ‘reverse-list’).⁴⁵ The LP defines “wastes or other matter” as “material and substance of any kind, form or description”.⁴⁶ This broad definition covers fishing gear such as dFADs, in particular when containing plastics.⁴⁷ Moreover, fishing gear is not among the wastes and other matter listed in Annex 1 to the LP whose dumping is exceptionally permissible. Therefore, fishing gear such as dFADs must be classified as “wastes or other matter”.

3.2. Loss, Discarding and Abandonment of dFADs as “dumping”

The next question is whether the loss, discarding and abandonment of dFADs or other fishing gear constitutes “dumping” within the meaning of the LP. The LP’s definition of “dumping” is divided into four sub-categories, of which the first (“any deliberate disposal into the sea of wastes or other matter”) is most important in the present context.⁴⁸ The LP does not define the term “disposal”. However, it has been interpreted to mean “the act of getting rid of”.⁴⁹ This interpretation is in line with the jurisprudence of national courts of Contracting Parties concerning legislation implementing the LP, such as the German Federal Administrative Court.⁵⁰ Additionally, the disposal must be “deliberate” (i.e., intentional) to constitute dumping.⁵¹ Thus, neither the merely accidental loss of a dFAD,⁵² nor the initial deployment of

⁴⁵ London Protocol, n. 30 above, Art. 4(1); IMO, ‘The London Convention and Protocol’ (2023), available at: <https://www.imo.org/en/KnowledgeCentre/ConferencesMeetings/Pages/London-Convention-Protocol.aspx>; Stöfen-O’Brien, n. 34 above, pp. 143–144; Harrison, n. 18 above, pp. 108–109.

⁴⁶ London Protocol, n. 30 above, Art. 1(8).

⁴⁷ Churchill, n. 20 above, p. 174.

⁴⁸ London Protocol, n. 30 above, Art. 1(4)(1)(1).

⁴⁹ Churchill, n. 20 above, pp. 174–175.

⁵⁰ V. Schatz, *Kommentar: Gesetz über das Verbot der Einbringung von Abfällen und anderen Stoffen und Gegenständen in die Hohe See (Hohe-See-Einbringungsgesetz – HSEG)* (Nomos, 2021), p. 18, with reference to BVerwG, Judgment of 28 Jul. 2011 – 7 C 7/10, BeckRS 2011, 53366, para. 20: “wenn das Handeln des Besitzers des betreffenden Stoffes darauf gerichtet ist, sich dessen endgültig und auf Dauer zu entledigen, diesen also unter Aufgabe der Sachherrschaft „loszuwerden“.”

⁵¹ Churchill, n. 20 above, p. 175. Also compare Schatz, n. 50 above, p. 18, with reference to BVerwG, para. 23.

⁵² Churchill, n. 20 above, p. 175.

a dFAD with the intention of retrieval constitute dumping.⁵³ In terms of interpretation by States and international organizations, a binding CMM (hereinafter ‘IOTC Resolution 23/02’) adopted by the Indian Ocean Tuna Commission (IOTC), an RFMO, notes in its preamble “that releasing fishing devices into the water, such as FADs, does not contravene [...] the [LC] and [LP] as long as such device is deployed with the intention of later retrieval”.⁵⁴ Conversely, the intentional discarding of a dFAD into the sea when it is still on board the vessel constitutes a deliberate disposal that must be classified as dumping.⁵⁵

Difficulties exist primarily with respect to the abandonment of dFADs already present in the water. This is generally the case when their owner deliberately relinquishes control by letting them drift away and/or switching off the satellite buoy. It has been argued by the independent adjudicator in the MSC AGAC Adjudication that abandonment is exclusively covered by the fourth sub-category of dumping,⁵⁶ which only concerns the abandonment of platforms or other man-made structures at sea (i.e., not dFADs).⁵⁷ Additionally, the independent adjudicator argued that Article 1(4)(2)(3) LP excluded the abandonment of dFADs from the scope of “dumping” because dFADs are *initially* “placed for a purpose other than the mere disposal thereof”.⁵⁸ He considered that exclusively the intention at the time of the *initial deployment* was decisive: For the independent adjudicator, if a device was placed in the sea for a lawful purpose and with the intention of retrieval, the subsequent decision to abandon the device for purposes of disposal would not constitute a deliberate disposal.⁵⁹

⁵³ London Protocol, n. 30 above, Art. 1(4)(2)(2). See also *MSC AGAC Adjudication* (Decision of the Independent Adjudicator), n. 21 above, paras 137 & 143; Churchill, n. 20 above, p. 176.

⁵⁴ IOTC, ‘Resolution 23/02 on Management of Drifting Fish Aggregating Devices (DFADs) in the IOTC Area of Competence (not in force)’ (2023), Preamble.

⁵⁵ Cf. Churchill, n. 20 above, p. 175; Davies et al., n. 16 above, p. 8.

⁵⁶ London Protocol, n. 30 above, Art. 1(4)(1)(4).

⁵⁷ *MSC AGAC Adjudication* (Decision of the Independent Adjudicator), n. 21 above, para. 143.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*, paras. 139-140.

One could pose the question whether a business model based on the assumption that a number of deployed dFADs will be *deliberately* abandoned for *commercial* reasons⁶⁰ provides sufficient confidence to conclude that there is truly an intention of retrieval of *all* dFADs. Leaving this question aside, the adjudicator's view is erroneous for several reasons. It overlooks that the first category of dumping under Article 1(4)(1)(1) LP ("disposal" – defined as "the act of getting rid") is broad enough to cover a relinquishment of control of fishing gear that was *initially* deployed with the intention of retrieval.⁶¹ Indeed, it would be an artificially narrow interpretation of the term "disposal" to consider that it only refers to the initial placement of matter into the sea. This would result in a loophole in the LP that would allow the deliberate abandonment of *any* kind of matter not already covered by Article 1(4)(1)(4) LP if the initial deployment did not constitute dumping – regardless of how large and/or harmful it is to the marine environment. While the potential problem of the large-scale abandonment of dFADs might not have been known at the time of the drafting of the LC/LP, it is unconceivable that the drafters intended these instruments to allow for an interpretation that severely undermines their effectiveness.⁶² From the perspective of a systematic interpretation, a (too) narrow reading of the term "disposal" would also render the exception in Article 1(4)(2)(3) LP meaningless to the extent that it covers "matter" other than platforms or other man-made structures. Overall, it is difficult to reconcile such an interpretation with the object and purpose as well as the regulatory structure of the LP. For the same reason, the exception from "dumping" in Article 1(4)(2)(3) LP does not apply to the deliberate abandonment for the purpose of the disposal of devices initially placed in the water with an *intention of retrieval* – as indicated by the examples given ("cables, pipelines and marine research devices").

⁶⁰ Pons et al, n. 8 above, p. 8.

⁶¹ Schatz, n. 50 above, p. 18, with reference to BVerwG, n. 50 above, para. 23.

⁶² Cf. Churchill, n. 20 above, p. 176.

In terms of State practice, the view submitted here is supported by IOTC Resolution 23/02, which states in its preamble that “in accordance with [...] the London Convention and Protocol, FADs under the competence of the IOTC must be managed to ensure that they are exclusively deployed with the intention of later retrieval and that they are not abandoned at sea except in situations of force majeure”.⁶³ While not all members of IOTC voted in favour of this CMM, this particular statement in the preamble was not contested among the members (i.e., 29 States and the EU), and indeed contained in proposals of both the proponents and opponents of the cited CMM, and thus reflects significant *opinio juris* with respect to the interpretation of the LP.

4. MARPOL ANNEX V

The object and purpose of MARPOL Annex V is to prevent pollution by garbage from ships, including fishing vessels.⁶⁴ Therefore, it is of key importance in preventing marine litter from operational vessel discharges.⁶⁵ This section focuses on the question whether MARPOL Annex V prohibits discards or abandonment of dFADs as an example of fishing gear. In relevant part, MARPOL Annex V contains two prohibitions of discharges, one of which is *absolute* and the other *relative*. First, MARPOL Annex V prohibits the “discharge of all garbage into the sea” more generally.⁶⁶ Second, there is a prohibition of the discharge of “all plastics”, including “synthetic ropes” and “synthetic fishing nets”.⁶⁷

⁶³ IOTC, Resolution 23/02, n. 54 above, Preamble.

⁶⁴ MARPOL Annex V, n. 31 above, Regulation 2(4); IMO, *Report of the Correspondence Group for the Review of MARPOL Annex V, Submitted by Canada* (IMO, 2009), MEPC 59/6/3, available at: <https://www.imo.org/en/OurWork/Environment/Pages/Index-of-MEPC-Resolutions-and-Guidelines-related-to-MARPOL-Annex-VI.aspx>, p. 7; Churchill, n. 20 above, p. 185.

⁶⁵ Stöfen-O’Brien, n. 34, pp. 124–141.

⁶⁶ MARPOL Annex V, n. 31 above, Regulation 3(1).

⁶⁷ MARPOL Annex V, n. 31 above, Regulation 3(2).

4.1. DFADs and Other Fishing Gear as “Garbage”

In relevant part, “garbage” for the purposes of MARPOL Annex V includes “all kinds of [...] operational wastes, all plastics [and] *fishing gear* [...] generated during the normal operation of the ship and liable to be disposed of continuously or periodically” (emphasis added) that are not covered by one of the other Annexes to MARPOL (none of which are relevant in the present context).⁶⁸ The term “fishing gear” is defined as “any physical device or part thereof or combination of items that may be placed on or in the water or on the seabed with the intended purpose of capturing, or controlling for subsequent capture or harvesting, marine or freshwater organisms.”⁶⁹ DFADs are physical devices placed in the water with the intended purpose of controlling marine organisms for subsequent capture and, therefore, constitute fishing gear for the purposes of MARPOL Annex V. This interpretation is confirmed by the non-binding IMO Guidelines for the Implementation of MARPOL Annex V, which mention “[f]ishing gear [...] *such as fish aggregating devices (FADs), traps and static nets*” (emphasis added).⁷⁰ It is also consistent with the characterization of dFADs as fishing gear by the FAO⁷¹ and under many domestic law definitions.⁷² Accordingly, some IMO members have called for the inclusion of an explicit clarification to that extent in MARPOL Annex V.⁷³ To the extent that a dFAD is partly made of plastics,⁷⁴ including synthetic ropes or fishing nets, its discharge into the sea is also covered by the additional prohibition under Regulation 3(2) MARPOL Annex V.⁷⁵

⁶⁸ MARPOL Annex V, n. 31 above, Regulation 1(9).

⁶⁹ MARPOL Annex V, n. 31 above, Regulation 1(6).

⁷⁰ *Guidelines for the Implementation of MARPOL Annex V* (7 July 2017) MEPC 71/17/Add.1 Annex 21, Para. 1.7.8; Churchill, n. 20 above, p. 187.

⁷¹ FAO/IMO, *Report of the Third Session of the Joint FAO/IMO ad hoc Working Group on Illegal, Unreported and Unregulated (IUU) Fishing and Related Matters*, London, 16-18 November 2015 (FAO & IMO, 2016) FIAO/R1152 (En) JWG 3/15, p. 7.

⁷² Hodgson, n. 33 above, p. 4.

⁷³ IMO, *Report of the Correspondence Group on Marine Plastic Litter from Ships, Submitted by France* (IMO, 2020), PPR 8/8, p. 11.

⁷⁴ For a definition of “plastic”, see MARPOL Annex V, n. 31 above, Regulation 1(13).

⁷⁵ Churchill, n. 20 above, p. 186.

It follows that dFADs, like other fishing gear, can be classified as garbage if they are “generated during the normal operation of the ship and liable to be disposed of continuously or periodically”.⁷⁶ What this requirement refers to is that the waste in question is a by-product of the normal operation of the ship, and that it is either continuously or periodically liable to be “disposed” *as such*. In this context, the term “liable to be disposed” refers not to a discharge from a vessel into the sea, but to the need to get rid of the waste more generally (i.e., delivery to port reception facilities, incineration on board or disposal at sea). As described in the introduction to this article, dFADs are used (and thus “generated”) in the normal operation of many purse seine vessels fishing for tuna. Moreover, like other categories of fishing gear, dFADs have a limited lifespan and must eventually be disposed of. As such, they clearly constitute “garbage” within the meaning of MARPOL Annex V.⁷⁷ This interpretation is confirmed by the IMO’s ongoing work regarding ALDFG in the framework of MARPOL Annex V.⁷⁸ What this means for the delimitation of the scope of MARPOL Annex V and the LC/LP regime is discussed in section 5 below.

4.2. Loss, Discarding and Abandonment of dFADs as “Discharge”

If it is assumed, *arguendo*, that MARPOL Annex V is applicable, the decisive question is what constitutes a “discharge”. For the purposes of all MARPOL Annexes, the term “discharge” refers to “any release howsoever caused from a ship and includes any escape, disposal, spilling, leaking, pumping, emitting or emptying”.⁷⁹ The terms “disposal” and “escape” best describe the loss, discarding and abandonment of dFADs. At least three questions must be answered in this context: First, does a “discharge” require intentional conduct? Second, does the loss or

⁷⁶ MARPOL Annex V, n. 31 above, Regulation 1(9).

⁷⁷ So also, albeit with a different approach, Churchill, n. 20 above, p. 187.

⁷⁸ See, e.g., IMO, *Report of the Correspondence Group on Marine Plastic Litter from Ships, Submitted by Norway and Spain* (IMO, 2023), PPR 10/13.

⁷⁹ MARPOL, n. 31 above, Art. 2(3)(a).

abandonment of dFADs constitute a “discharge” if the dFAD was initially deployed with the intention of retrieval? Third, what is the relationship between MARPOL Annex V and the LC/LP in this respect?

Sufficiency of Negligence and Intent

Starting with the first question, it would appear from the wording of the very broad definition of “discharge” that it does *not* require an intentional act or omission but might equally arise from negligent conduct (e.g., “escape”).⁸⁰ This interpretation is supported by the preamble of MARPOL (“deliberate, negligent or accidental”) and Regulation 7(1)(3) MARPOL Annex V, which contains an exception from the prohibition of discharges of fishing gear in cases of “accidental loss” if “all reasonable precautions have been taken to prevent such loss”.⁸¹ Conversely, an accidental loss of fishing gear constitutes a prohibited discharge if all reasonable precautions have *not* been taken to prevent such a loss.⁸² Vessels must record any accidental loss, including “the location, circumstances of, and the reasons for the discharge or loss/ details of the items discharged or lost, and the reasonable precautions taken to prevent or minimize such discharge or accidental loss”, in the Garbage Record Book or, in case of vessels of less than 400 gross tonnage, in the ship’s official logbook.⁸³ The standard of “all reasonable precautions” is equivalent to the standard of due diligence applicable in a defence against a claim of negligence.⁸⁴ This interpretation is consistent with the practice of Contracting Parties

⁸⁰ Churchill, n. 20 above, p. 185. But see Davies et al., n. 16 above, p. 8.

⁸¹ Another exception concerns “the discharge of fishing gear from a ship for the protection of the marine environment or for the safety of that ship or its crew”. See MARPOL Annex V, n. 31 above, Regulation 7(1)(4). This exception is not, however, applicable to the conduct at issue here.

⁸² Churchill, n. 20, p. 186. Note, however, that the *initial* deployment does not normally constitute “accidental loss”: “[f]ishing gear that is released into the water with the intention of later retrieval, such as [FADs], should not be considered garbage or accidental loss in the context of MARPOL Annex V”. See Guidelines for the Implementation of MARPOL Annex V, n. 70 above, Para. 1.7.8.

⁸³ MARPOL Annex V, n. 31 above, Regulation 10(3)(4); Guidelines for the Implementation of MARPOL, Annex V, n. 70 above, Para. 2(2).

⁸⁴ Compare, e.g., M. Lee, ‘Waste and Liability in Environmental Law’ (2002) 14 *Journal of Environmental Law* pp. 75–84, at 82.

to MARPOL Annex V, whose national implementing legislation usually provides for sanctions in case of both intentional and negligent violations of the prohibition of discharges of garbage.⁸⁵ Exceptionally, an intentional discharge of fishing gear is not prohibited “for the protection of the marine environment or for the safety of that ship or its crew”.⁸⁶ This exception prevents a conflict between MARPOL Annex V and other rules concerning marine environmental protection and, more importantly, the safety of ship and crew – for example in situations of *force majeure*.⁸⁷

Relinquishment of Control over dFADs after Initially Lawful Deployment

Regarding the second question, the IMO’s Guidelines for the Implementation of MARPOL Annex V clarify with respect to the initial deployment that “[f]ishing gear that is released into the water with the intention of later retrieval, such as [FADs], *should not be considered garbage [...] in the context of MARPOL Annex V*” (emphasis added).⁸⁸ This applies both to “garbage” under Regulation 3(1) and “plastics” as a sub-category of garbage under Regulation 3(2) MARPOL Annex V.⁸⁹ While the non-binding Guidelines refer to the requirement of “garbage” rather than “discharge”, the issue that they address is arguably more appropriately placed in the context of the discharge requirement (in any event, the result would be the same).

⁸⁵ See, e.g., Sec. 21(1)(c) in conjunction with Sec. 22(1) *Merchant Shipping (Prevention of Pollution by Garbage from Ships) Regulations* (United Kingdom) (2020), available at: <https://www.legislation.gov.uk/ukxi/2020/621/made>: “it is a defence for the person charged to prove that they took all reasonable steps and exercised all due diligence to ensure that the regulation in question was complied with”; § 28(2) Nr. 19 *Verordnung über das umweltgerechte Verhalten in der Seeschifffahrt (See-Umweltverhaltensverordnung - SeeUmwVerhV)* (Germany) (13 Aug. 2014 (as of 13 Dec. 2019)), available at: <https://www.gesetze-im-internet.de/seeumwverhv/BJNR137110014.html>: “vorsätzlich oder fahrlässig”; Sec. 26F(1)(b) *Protection of the Sea (Prevention of Pollution from Ships) Act 1983* (Australia) (2020), available at: <https://www.legislation.gov.au/Details/C2020C00098>: “reckless or negligent”; Article L218-15(I) in conjunction with Article L218-19(I) *Code de l’environnement* (France) (1 Oct. 2022), <https://www.legifrance.gouv.fr/codes/id/LEGITEXT000006074220/>: “imprudence, négligence ou inobservation”.

⁸⁶ MARPOL Annex V, n. 31 above, Regulation 7(1)(4).

⁸⁷ On the concept of *force majeure* in international law, see generally S. Hentrei & X. Soley, ‘Force Majeure’ (2011), in Peters (ed.), n. 36 above.

⁸⁸ Guidelines for the Implementation of MARPOL Annex V, n. 70 above, Para. 1.7.8; Churchill, n. 20 above, p. 185.

⁸⁹ *MSC AGAC Adjudication* (Decision of the Independent Adjudicator), n. 21 above, para. 146.

Thus, the deployment of fishing gear with the intention of subsequent retrieval does not constitute a discharge of garbage. Conversely, fishing gear that is released into the water *without* the intention of later retrieval constitutes a discharge of garbage.⁹⁰ This is also recognized in IOTC Resolution 23/02, which states in its preamble that MARPOL Annex V (only) prohibits the deployment of FADs *without* the intention of later retrieval.⁹¹ Of course, as with the prohibition of dumping in the LP, proving a lack of intention of later retrieval requires evidence that might be difficult to obtain. That said, it has been suggested that “[t]he sheer numbers of drifting FADs that are not retrieved raises obvious questions regarding intent” and that “it is reasonable to question whether the deployment of drifting FADs breaches MARPOL”.⁹² Indeed, as already done in the context of the LP, the question may be asked whether the initial deployment of dFADs is truly conducted with the full and absolute intention of later retrieval of *all* dFADs if it is already clear, and factored into the business model of the fishery, that a considerable number of dFADs will later be *deliberately* abandoned for *commercial* reasons.⁹³ Finally, leaving aside the question of the initial deployment, nothing in the wording of the clarification in the IMO’s Guidelines for the Implementation of MARPOL Annex V suggests that the negligent loss or deliberate abandonment of fishing gear *after* its initial deployment does not constitute a discharge.⁹⁴ To the contrary, based on the wording of the applicable rules of MARPOL and the existing guidelines, the negligent loss and deliberate abandonment of dFADs constitute discharges of garbage and/or plastic.⁹⁵ Once again, this position is also taken

⁹⁰ FAO/IMO, *Report of the Third Session of the Joint FAO/IMO ad hoc Working Group*, n. 71 above, p. 7; Churchill, n. 20, p. 187. In this direction also Davies et al., n. 16 above, p. 8.

⁹¹ IOTC, Resolution 23/02, n. 54 above, Preamble.

⁹² Q. Hanich et al. ‘Drifting Fish Aggregating Devices (FADs): Deploying, Soaking and Setting – When Is a FAD ‘Fishing’?’ (2019) 34 *International Journal of Marine and Coastal Law*, pp. 731–754, at p. 753, who also highlight the difficulty in establishing “intention” or lack thereof in the absence of a clear mechanism.

⁹³ Compare the practices described by Pons et al, n. 8 above, p. 8.

⁹⁴ Contra: *MSC AGAC Adjudication* (Decision of the Independent Adjudicator), n. 21 above, para. 146, who appears to have overlooked this key issue in its entirety.

⁹⁵ But see Churchill, n. 20 above, p. 185 who uses the narrower term “nonaccidental loss” instead of “negligent loss”.

in the preamble of IOTC Resolution 23/02, which states that MARPOL Annex V obliges States “to ensure that [dFADs] are not abandoned at sea except in situations of force majeure”.⁹⁶

5. RELATIONSHIP OF THE LC/LP AND MARPOL ANNEX V

As already indicated, the perhaps most intricate issue of the present analysis concerns the relationship between the LC/LP and the MARPOL regime. The delimitation of these two regimes involves challenging questions of interpretation.

5.1. Mutual Exclusivity of Scope

As a starting point, the disposal into the sea of wastes or other matter does not constitute “dumping” under the LP if it is “incidental to, or derived from the normal operations of vessels [...] and their equipment”.⁹⁷ The purpose of this exception is to prevent overlap and even more so conflicts between the LC/LP and rules in MARPOL.⁹⁸ For example, MARPOL Annex V explicitly permits the discharge of, for example, certain categories of garbage (other than fishing gear) when the ship is *en route*.⁹⁹ It is clear that this permitted conduct should then not simultaneously be prohibited by the LP. Conversely, a “discharge” under MARPOL explicitly does not include “dumping” within the meaning of the LC/LP.¹⁰⁰ Accordingly, the two regimes were initially conceived as mutually exclusive in scope in so far as their respective *prohibitions* of dumping and discharges are concerned.¹⁰¹ However, the exception in the LP is generally difficult to interpret.¹⁰² As *Harrison* has suggested, “there may be potential ‘grey areas’

⁹⁶ IOTC, Resolution 23/02, n. 54 above, Preamble.

⁹⁷ London Protocol, n. 30 above, Art. 1(4)(2)(1).

⁹⁸ Stöfen-O’Brien, n. 34 above, p. 149; Harrison, n. 18 above, p. 94; Churchill, n. 20 above, pp. 175–176.

⁹⁹ See, e.g., MARPOL Annex V, n. 31 above, Regulation 6(1)(2) on permissible discharges of cargo residues.

¹⁰⁰ MARPOL, n. 31 above, Art. 2(3)(b).

¹⁰¹ Harrison, n. 18 above, p. 94.

¹⁰² Stöfen-O’Brien, n. 34 above, p. 149.

between these different regimes that arise because of the ambiguity” of the relevant provisions.¹⁰³

An a separate note, the exception in the LP concerning the *activity* of disposing “wastes or other matter” in the sea if it is “incidental to, or derived from the normal operations of vessels [...] and their equipment”¹⁰⁴ should not be equated with the requirement in MARPOL Annex V that an *operational waste* such as fishing gear can only be classified as garbage if is “generated during the normal operation of the ship and liable to be disposed of continuously or periodically”.¹⁰⁵ This is because, unlike the exception in the LP, the requirement in MARPOL Annex V concerns only the question whether waste is indeed *operational* as such, not necessarily the disposal of this waste at sea (see section 4.1. above). The position that the two requirements do not necessarily overlap appears to also have been taken, albeit implicitly, by *Churchill*.¹⁰⁶

Turning to the interpretation of the exception in the LP, it seems difficult to argue that the deliberate abandonment of dFADs in the ocean can be considered as “incidental to, or derived from the normal operations” of fishing vessels.¹⁰⁷ Therefore, given the exception’s origin and object and purpose, it arguably does not apply to the abandonment of fishing gear, including dFADs.¹⁰⁸ Consequently, the deliberate discarding and abandonment of dFADs can be classified as dumping within the meaning of the LC/LP.¹⁰⁹ Indeed, the IMO website suggests that dFAD abandonment falls within the scope of the LC/LP:

¹⁰³ Harrison, n. 18 above, p. 94.

¹⁰⁴ London Protocol, n. 30 above, Art. 1(4)(2)(1).

¹⁰⁵ MARPOL Annex V, n. 31 above, Regulation 1(9).

¹⁰⁶ Churchill, n. 20 above, pp. 175-176 & 187.

¹⁰⁷ *Ibid.*, pp. 175–176.

¹⁰⁸ *Ibid.*; See also L. Finska et al., ‘Waste Management on Fishing Vessels and in Fishing Harbors in the Barents Sea: Gaps in Law, Implementation and Practice’ (2022) 53 *Ocean Development & International Law*, pp. 289–317, at 296 (at note 39).

¹⁰⁹ Churchill, n. 20 above, p. 175.

“Under the London Convention and Protocol, the issue of abandoned or drifting fish aggregating devices (FADs) [...] as sources of marine litter, [has] also been discussed, noting that source control and best practices are important elements to reduce these problems. To that purpose, Parties to the treaties have been invited to provide information on their possible source control options to reduce discarded FADs.”¹¹⁰

However, proving the intention to dispose may be difficult in practice.¹¹¹ Indeed, a lack of evidence to this end was also observed by the independent adjudicator in the MSC AGAC Adjudication.¹¹²

Based on the above considerations, it is submitted that the relationship of the two regimes may be approached as follows: If deliberate discards (from the ship) and abandonment (in the water) of dFADs are considered “dumping” under the LC/LP in line with what has been argued in this article, these acts do not simultaneously constitute “discharges” under MARPOL Annex V.¹¹³ However, if the deliberate discarding and abandonment of dFADs is *not* considered dumping within the meaning of the LC/LP (contrary to what has been argued in this article), they constitute “discharges” under MARPOL Annex V. In *both* scenarios, the negligent loss of dFADs, which was held not to constitute “dumping” due to the requirement of intent in the LC/LP, would be classified as a prohibited “discharge” under MARPOL Annex V.

5.2. Towards Parallel Applicability of the LC/LP and MARPOL Annex V?

Despite the conclusions reached in the previous section as a matter of general principle, there may be a trend towards the position that there can be a parallel applicability of the LC/LP and

¹¹⁰ IMO, ‘IMO Legal Framework in the Fishing Sector’ (2023), available at: <https://www.imo.org/en/OurWork/IIS/Pages/IMO%20Legal%20Framework%20in%20the%20Fishing%20Sector.aspx>.

¹¹¹ Davies et al., n. 16 above, p. 8.

¹¹² *MSC AGAC Adjudication* (Decision of the Independent Adjudicator), n. 21 above, para. 133.

¹¹³ MARPOL, n. 31 above, Art. 2(3)(b).

MARPOL Annex V even for *deliberate* abandonment. Perhaps most importantly, the IMO's Marine Environment Protection Committee (MEPC) has noted that "the discarding of fishing gear at sea [is] in contravention of the relevant requirements of MARPOL Annex V and the London Convention and its Protocol".¹¹⁴ Moreover, this position is also taken in the preamble of IOTC Resolution 23/02, which states that "in accordance with MARPOL Annex V and the London Convention and Protocol, FADs under the competence of the IOTC must be managed to ensure that they are exclusively deployed with the intention of later retrieval and that they are not abandoned at sea except in situations of force majeure".¹¹⁵ While the reasons behind this preambular statement are not known, could be evidence of growing State practice and *opinio juris* suggesting an applicability of both regimes despite the original intention to develop two complementary but mutually exclusive legal frameworks.

6. CONCLUSION

This article has shown that the illegality of the deliberate abandonment of dFADs for commercial purposes (as practiced in various purse seine fisheries for tropical tuna¹¹⁶) under international marine pollution law is beyond reasonable doubt. However, it remains somewhat unclear whether dFAD abandonment contravenes the LC/LP, MARPOL Annex V or both regimes simultaneously. The reason for this uncertainty is that the dumping regime (LC/LP) and the regime concerning pollution from vessels (MARPOL) were originally designed as complementary but mutually exclusive legal frameworks. As a result, the delimitation of the two regimes hinges upon the interpretation of the ambiguous wording "incidental to, or derived from the normal operations of vessels [...] and their equipment" in the LC/LP (see section 5.1.).

¹¹⁴ IMO, Outcome of the detailed review of the recommendations of the third session of the Joint FAO/IMO Ad Hoc Working Group on Illegal, Unreported and Unregulated Fishing and Related Matters (JWG 3) by MEPC 72 and MSC 99, Note by the Secretariat (4 Jul. 2018), III 5/14, pp. 4–5.

¹¹⁵ IOTC, Resolution 23/02, n. 54 above, Preamble.

¹¹⁶ Pons et al., n. 8 above, p. 8.

If it is argued, as was done in this article, that this wording does *not* cover the deliberate abandonment of dFADs, such abandonment contravenes the LC/LP rather than MARPOL Annex V. Conversely, if dFAD abandonment is considered “incidental to, or derived from the normal operations of vessels [...] and their equipment”, the dumping regime of the LC/LP does not apply, and such abandonment does instead contravene MARPOL Annex V. Moreover, in both scenarios, the negligent loss of dFADs must be classified as illegal under MARPOL Annex V. Either way, there is no lacuna in international marine pollution law regarding the deliberate abandonment and negligent loss of dFADs.¹¹⁷ Given its ability to cover both intentional and negligent conduct in the same regulatory regime, MARPOL Annex V may be said to be “uniquely placed to help address the international problem of ALDFG”.¹¹⁸

Interestingly, this article could also show that an increasing number of relevant actors appear to take the view that the deliberate abandonment violates both the LC/LP *and* MARPOL Annex V. It remains to be seen whether this is evidence of a pragmatic approach to such ambiguity and/or emergent State practice and *opinio juris* contradicting the mutual exclusivity of the two regimes.¹¹⁹ Either way, more clarity could be achieved through an amendment of MARPOL Annex V and/or the LP or an interpretive declaration. However, no clear developments in this direction can so far be discerned despite a window of opportunity. The IMO’s Sub-Committee on Pollution Prevention and Response (PPR) has created a Correspondence Group that discusses ALDFG and considers draft amendments of MARPOL Annex V in this respect.¹²⁰ The only explicit mention of dFADs in the report of the

¹¹⁷ IMO, Outcome of the detailed review of the recommendations of the third session of the Joint FAO/IMO Ad Hoc Working Group, n. 114 above, pp. 4–5.

¹¹⁸ IMO, *Comments on the Report of the Correspondence Group for the Review of MARPOL Annex V, Submitted by Friends of the Earth International (FOEI)* (IMO, 2009), MEPC 59/6/14, p. 2.

¹¹⁹ Subsequent practice may also influence the content and interpretation of treaty norms. See Vienna Convention on the Law of Treaties, Vienna (Austria), 23 May 1969, in force 27 Jan. 1980, 1155 *UNTS* 331, available at: https://legal.un.org/ilc/texts/instruments/english/conventions/1_1_1969.pdf, Arts 31(1)(b) & 32.

¹²⁰ IMO, *Report of the Correspondence Group on Marine Plastic Litter from Ships*, n. 73 above.

Correspondence Group released in 2020 relates to the initiative of some participants to incorporate an explicit reference to dFADs into the amendment concerning the scope of MARPOL Annex V.¹²¹ So far, the proposed amendments do not include a clarification of the scope of application of MARPOL Annex V vis-à-vis the LC/LP with respect to the abandonment of dFADs.¹²² Given the described limitations of MARPOL and the LC/LP, the regulatory role of RFMOs in implementing the existing prohibition of dFAD abandonment and more generally minimizing marine pollution resulting from fisheries within the scope of their management mandate is increasingly gaining recognition.¹²³

¹²¹ Ibid., p. 67.

¹²² Also compare IMO, *Report of the Correspondence Group on Marine Plastic Litter from Ships*, n. 78 above.

¹²³ See, e.g., Song & Shen, n. 27 above, pp. 61–66.