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## Apocalypse Ahoy: How The Cruise Industry Boom Is Harming The World's Oceans And Problems With Enforcing Environmental Regulations

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# Apocalypse Ahoy

## HOW THE CRUISE INDUSTRY BOOM IS HARMING THE WORLD'S OCEANS AND PROBLEMS WITH ENFORCING ENVIRONMENTAL REGULATIONS

### INTRODUCTION

The cruise industry in recent years has grown increasingly popular among vacationers, with 26 million passengers choosing to set sail on cruise ships in 2018 alone.<sup>1</sup> Driven by this popularity in spite of the COVID-19 pandemic, cruise lines constructed eight new cruise ships, each of which is ready to set sail in 2021.<sup>2</sup> The COVID-19 pandemic burst the cruise bubble's growth—however, the cruise industry has done more than just stay afloat, as the industry remains optimistic it will resume the fast-paced growth that defined the industry in the coming years.<sup>3</sup> With ports-of-call around the globe, the cruise industry is truly international, with the industry being worth an estimated \$150 billion in 2018 alone.<sup>4</sup> However, as ships become larger and more opulent in order to keep up with demand, preexisting environmental problems caused directly by cruises, particularly waste dumping and carbon emissions, will become exacerbated by the growth of the industry.

Emissions and dumping caused by international shipping are regulated by a series of international conventions.<sup>5</sup> However,

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<sup>1</sup> NAME REDACTED, CONG. RES. SERV., RL32450, CRUISE SHIP POLLUTION: BACKGROUND, LAWS AND KEY ISSUES 1 (2010); James Ellsmoor, *Cruise Ship Pollution Is Causing Serious Health And Environmental Problems*, FORBES (Apr. 26, 2019), <https://www.forbes.com/sites/jamesellsmoor/2019/04/26/cruise-ship-pollution-is-causing-serious-health-and-environmental-problems/?sh=2354ffe037db> [<https://perma.cc/9268-4WTA>].

<sup>2</sup> *Growth of the Ocean Cruise Line Industry*, CRUISE MKT. WATCH, <https://cruisemarketwatch.com/growth/> [<https://perma.cc/F5XX-GPHU>].

<sup>3</sup> *Cruise Lines International Association (CLIA) Releases 2021 State of the Cruise Industry Outlook Report*, CRUISE LINES INT'L ASS'N (Dec. 22, 2020), [https://cruising.org/media/research-updates/research/2021-state-of-the-cruise-industry\\_optimized.ashx](https://cruising.org/media/research-updates/research/2021-state-of-the-cruise-industry_optimized.ashx) [<https://perma.cc/Z8BS-7JED>] [hereinafter *2021 Cruise Industry Outlook*].

<sup>4</sup> *COVID-19 Impacts on the Global Cruise Industry*, KMPG (July 23, 2020), <https://home.kpmg/xx/en/blogs/home/posts/2020/07/covid-19-impacts-on-global-cruise-industry.html> [<https://perma.cc/8A77-H9AN>].

<sup>5</sup> See INT'L MAR. ORG., INTERNATIONAL CONVENTION FOR THE PREVENTION OF POLLUTION FROM SHIPS ¶¶ 1–7 (Oct. 2, 1983) [hereinafter MARPOL]. See generally Michael W.

these conventions allow cruise lines to effectively choose which country's jurisdiction they will submit to for purposes of enforcement of international environmental standards. Predictably, cruise lines have taken advantage of these permissive international conventions in order to avoid compliance and liability.

This concept is dubbed the "law of the flag" doctrine in international maritime law.<sup>6</sup> Under this doctrine, the ship's nationality determines which laws should apply in cases concerning the ship.<sup>7</sup> In other words, the ship is considered to be within the territory of its flag state—where the company registers its ships—and subject to its laws when it is in international waters. States such as Panama operate "open registries" with relaxed labor standards and lower taxes for international shipping conglomerates in order to attract more registrations.<sup>8</sup> This has led to countries with economies many times smaller than the United States, like Panama and Liberia, to have thousands of more ships registered in their countries and subject to their laws and enforcement mechanisms.<sup>9</sup> As such, cruise ships have taken full advantage of these so-called "flags of convenience"<sup>10</sup> in order to escape both U.S. taxes and environmental regulations.<sup>11</sup>

While flags of convenience are an impediment to holding cruise companies accountable for their impact on the environment, the United States has been able to levy punishment on cruise lines that have violated international environmental regulations within the territorial waters of the United States through prosecution in various United States District Courts.<sup>12</sup> These cases show that

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Reed, *Port and Coastal State Control of Atmospheric Pollution*, 3 SAN DIEGO J. CLIMATE & ENERGY L. 205 (2011) (describing the legal issues surrounding maritime pollution control).

<sup>6</sup> See, e.g., *Trans-Tec Asia v. M/V Harmony Container*, 435 F. Supp. 2d 1015, 1039 (C.D. Cal. 2005).

<sup>7</sup> *Id.*

<sup>8</sup> *Why So Many Shipowners Find Panama's Flag Convenient*, BBC NEWS (Aug. 5, 2014), <https://www.bbc.com/news/world-latin-america-28558480> [<https://perma.cc/6UJE-F4K5>].

<sup>9</sup> *Id.*

<sup>10</sup> "Flags of convenience" is a term that describes the comparatively lax jurisdiction over ships that fly their flags. See, e.g., James Andrew Black, *A New Custom Thickens: Increased Coastal State Jurisdiction Within Sovereign Waters*, 37 B.U. INT'L. L. J. 355, 373 (2019) ("As a result, ship owners are able to register their ships with States that have a minimal connection to any of its personnel or activities; such States, particularly those with 'liberal domestic laws' are widely known as flags of convenience. These States attract many ship owners for economic benefits, political reasons, or to conceal illegal activities, especially where the flag State lacks both the means and the desire to enforce their own domestic laws outside of their territory.").

<sup>11</sup> See Carlos Felipe Llinás Negret, *Pretending to be Liberian and Panamanian; Flags of Convenience and the Weakening of the Nation State on the High Seas*, 47 J. MAR. L. & COM. 1, 5–6 (2016); *Why So Many Shipowners Find Panama's Flag Convenient*, *supra* note 8.

<sup>12</sup> See e.g., *United States v. Royal Caribbean Cruises, Ltd.*, 24 F. Supp. 2d 155, 159–60 (D. P.R., 1997); Katie Rogers, *Princess Cruise Lines to Pay \$40 Million Fine for Illegal Dumping*, N.Y. TIMES (Dec. 12, 2016), <https://www.nytimes.com/2016/12/02/business/princess-cruise-lines-fine.html> [<https://perma.cc/P5DY-3ZFU>].

while the international maritime legal regime may make it difficult for the United States to enforce international protocols, it is still possible to hold cruise companies accountable for actions committed in international waters.

Still, more solutions are needed to prevent further environmental damage caused by cruise ships. One solution is to revise the Clean Water Act (CWA). Currently, the Act relies upon a system of “cooperative federalism” to enforce pollution limits and protect the nation’s waters.<sup>13</sup> Under this system, any unpermitted discharge of a pollutant (i.e., any discharge of a pollutant that exceeds the standards set by the EPA or the states) is unlawful.<sup>14</sup> Revising the CWA to eliminate the use of a cost-benefit analysis when determining the effluent standards that measure whether ships are in compliance with environmental standards is one way to prevent pollution from cruise ships.<sup>15</sup> Another solution is for regulatory agencies of individual states to promulgate and enforce their own environmental standards—for instance, the California Air Resources Board (CARB) issued their own environmental standards to hold ships accountable for the emissions produced by marine fuel.<sup>16</sup> These solutions would apply both to ships flying American flags and to ships flying the flags of a foreign nation, meaning the problems presented by the existing international maritime laws would be in effect sidestepped.

These solutions are admittedly narrow in scope. However, they would address the problems of fuel emissions and dumping produced by cruises directly. These solutions would also avoid the necessity for new treaty or customary law, which has problems of its own.<sup>17</sup> While these solutions face implementation problems, they would represent a step in the right direction in curbing pollution produced by cruise ships.

This note argues that the current international maritime regime allows cruise lines to pollute with impunity. Part I examines both the cruise industry itself and the environmental impact caused by the industry in order to establish the scope of the pollution directly related to the operation of cruise lines. Part

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<sup>13</sup> *Am. Farm Bureau Fed’n v. U.S. EPA*, 729 F.3d 281, 288 (3d Cir. 2015).

<sup>14</sup> 33 U.S.C. § 1311(a) (“Except as in compliance with this section and sections 1312, 1316, 1317, 1328, 1342, and 1344 of this title, the discharge of any pollutant by any person shall be unlawful.”).

<sup>15</sup> *See Negret*, *supra* note 11, at 7.

<sup>16</sup> *Pac. Merch. Shipping Ass’n v. Goldstene*, 639 F.3d 1154, 1158 (9th Cir. 2011); Emily C. Hall & Bryan J. O’Neill, *Pollution on the High Seas: From Jurisdiction to Enforcement and All of the Moving Parts In Between*, 15 *LOY. MAR. L.J.* 375, 404 (2016).

<sup>17</sup> *See Joanna Mossop*, *Can We Make the Oceans Greener? The Successes and Failures of UNCLOS as an Environmental Treaty*, 49 *VICT. U. WELLINGTON L. REV.* 573, 590 (describing how customary international law is “not best suited for the development of a precise body of environmental rules”).

II focuses on existing international maritime law and illustrates exactly how the existing law allows cruise lines to escape legal consequences for polluting the global environment. Part III then proffers solutions to curb cruise ship emissions involving new federal and state legislation to combat both emissions from cruise ships and solid waste dumping.

## I. THE ENVIRONMENTAL IMPACT OF THE CRUISE INDUSTRY

In the years prior to the coronavirus pandemic, cruise lines enjoyed a surge in popularity, with the number of passengers worldwide reaching well into the millions.<sup>18</sup> While the coronavirus pandemic of 2020 definitely hindered the boom of the cruise industry, cruise lines are optimistic that the industry will recover and even outpace the growth the industry experienced before the pandemic.<sup>19</sup> This rise in popularity is driven by the new features and new ports that cruise ships now provide customers.<sup>20</sup> Cruise lines are building such large ships that some may not be able to dock in traditional cruise destinations.<sup>21</sup> While the cruise industry has suspended operations due to the pandemic, new ships that were set to launch in 2020 will still make their debuts in 2021, showing that despite a severe economic slowdown, cruise fleets are still expanding.<sup>22</sup> This newfound growth has dire implications for the environmental integrity of the world's oceans, as larger and more numerous cruise ships carry increased passengers and produce additional waste.<sup>23</sup>

### A. *A Multibillion Dollar Industry on Life Support*

Prior to the global coronavirus pandemic in 2020, the cruise ship industry was primed to continue the exponential growth it experienced and sustained in the decade or so before 2020. However, the industry was hit harder than almost every other industry—even the largest cruise lines nearly sank during the pandemic.<sup>24</sup> Cruise ships suffered on two fronts: First, from

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<sup>18</sup> See Ellsmoor, *supra* note 1.

<sup>19</sup> See *2021 Cruise Industry Outlook*, *supra* note 3.

<sup>20</sup> Joseph V. Micallef, *The Cruise Industry's Boom Is Primed To Continue*, FORBES (Sept. 1, 2018), <https://www.forbes.com/sites/joemicallef/2018/09/01/the-cruise-industrys-boom-is-primed-to-continue/?sh=3eaf13992d89> [<https://perma.cc/C3ZA-8L4P>].

<sup>21</sup> *Id.*

<sup>22</sup> See, e.g., *New Cruise Ships on Order*, CRUISE CRITIC (Jan. 2021), <https://www.cruise-critic.com/articles.cfm?ID=167> [<https://perma.cc/WQ8P-R3NN>].

<sup>23</sup> See Ellsmoor, *supra* note 1.

<sup>24</sup> David Yaffe-Bellany, *Cruise Industry, A Symbol of the Pandemic, Scrambles to Survive*, N.Y. TIMES (Apr. 7, 2020), <https://www.nytimes.com/2020/04/07/business/coronavirus-cruise-industry-carnival.html> [<https://perma.cc/2P65-DEN2>] (describing both the drop in stock

the restrictions placed on the industry by the world's governments and second, from the understandable reluctance of customers to travel on cruise ships, where the virus had spread with frightening ease in the early stages of the pandemic.<sup>25</sup> The sheer lack of revenue that nearly forced some of the industry's biggest companies into bankruptcy illustrates the impact the pandemic has had on the industry, as those companies cancelled planned voyages for a large portion of 2020.<sup>26</sup> The industry's slow growth is not limited to empirical demonstrations, as images of cruise passengers trapped on their balconies awaiting to return to land became iconic metaphors of the uncertainty that characterized the early stages of the pandemic.<sup>27</sup>

There is no question that the coronavirus pandemic pummeled the industry. Whether the industry will recover and attain the rate of growth it enjoyed prior to the pandemic, however, remains undecided. As will be discussed in further detail below, the pace of growth prior to the pandemic was remarkable, so much so that it will be difficult for the industry to attain the same pace of growth.<sup>28</sup> Cruise lines have had to implement safety measures aboard their ships in order to comply with protocols promulgated by the CDC in order to resume operations in the US.<sup>29</sup> Despite multiple coronavirus cases aboard cruise ships since U.S. operations began again,<sup>30</sup> most cruises were able to complete their scheduled voyages, and cruises from the U.S. remained booked throughout the summer of 2021.<sup>31</sup> Some cruise line executives even suggest that the industry is more capable of protecting travelers from COVID

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prices experienced by Carnival Corporation and how cruise lines were left out of bailout packages by Congress).

<sup>25</sup> Ceylan Yeginsu & Niraj Chokshi, *The Cruise Industry Stages a Comeback*, N.Y. TIMES (July 28, 2021), <https://www.nytimes.com/2021/07/28/travel/cruise-industry-comeback.html> [https://perma.cc/NKC5-98PY].

<sup>26</sup> See Sergei Klebnikov, *Norwegian Cruise Line Raises Over \$2 Billion After Warning Of Possible Bankruptcy*, FORBES (May 6, 2020), <https://www.forbes.com/sites/sergeiklebnikov/2020/05/06/norwegian-cruise-line-raises-over-2-billion-after-warning-of-possible-bankruptcy/?sh=2acb41cb2b87> [https://perma.cc/RS6T-Y8L7] (describing how Norwegian Cruise Lines, one of the industry's biggest companies, raised billions of dollars in capital after flirting with bankruptcy).

<sup>27</sup> Karen Gilchrist, *More Robots, Fewer Buffet Lines: You Will Cruise Again, but it Will Look Very Different*, CNBC TRAVEL (Apr. 21, 2020), <https://www.cnbc.com/2020/04/21/how-coronavirus-covid-19-will-change-cruise-ship-travel.html> [https://perma.cc/8ATP-CC59] ("Few images capture the coronavirus' crushing impact on the travel industry better than those of cruise ship passengers lining their balconies, awaiting return to a land quite changed from the one they left."); Cruise ships represented some of the pandemic's earliest clusters, with several ships belonging to different companies and operating in different parts of the world becoming "focal point[s]" for the pandemic. See Yaffe-Bellany, *supra* note 24.

<sup>28</sup> See, e.g., *infra* Section I.A.

<sup>29</sup> See Yeginsu & Chokshi, *supra* note 25.

<sup>30</sup> *Id.*

<sup>31</sup> *Id.*

than other industries within the travel sector, arguing that cruise ships are able to “control the environment” and reduce the spread of coronavirus.<sup>32</sup> The cruise industry’s “loyal” customer base also provides optimism for the industry, with many customers opting for credits for future travel aboard cruises instead of refunds during the pandemic.<sup>33</sup> Still, to ensure the industry’s survival, it will be crucial for cruise companies to persuade travelers to return to cruise ships without convincing them that it is totally safe to return to the ships.<sup>34</sup>

Regardless of the state of the industry today, examining the state of the cruise industry before the pandemic helps to put the impact the industry has on both the global economy and the environment into context. Cruise ships represent a small fraction of the international shipping industry, representing less than 1 percent of the global shipping industry.<sup>35</sup> However, cruise ships make more than enough profit for the industry to stay afloat, generating over \$40 billion in revenue while employing over 357,000 Americans in 2010 alone.<sup>36</sup> In 2017, the industry was valued at over \$117 billion.<sup>37</sup> Additionally, 26.8 million passengers chose to voyage with cruise lines in 2017, representing a 69 percent increase in the number of cruisers since 2007.<sup>38</sup> Overall, the cruise industry has experienced steady growth for over a decade, with a 7 percent increase in passengers annually from 1990 to 2010,<sup>39</sup> 30 million passengers were expected to cruise in 2019 alone, marking a 6 percent increase from 2018.<sup>40</sup> While the number of cruise passengers was predictably diminished by the pandemic, the industry confidently maintains a rosy outlook for the future. The Cruise Lines International Association (CLIA), a trade organization of the cruise line industry, reported that two out of three cruisers

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

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

<sup>34</sup> See Gilchrist, *supra* note 27 (describing in part the unique challenges the industry faces in regards to battling the coronavirus pandemic).

<sup>35</sup> *Environmental Stewardship*, CRUISE LINES INT’L ASS’N, <https://cruising.org/en/about-the-industry/policy-priorities/environmental-stewardship> [<https://perma.cc/KE75-KDFU>]; see also CONG. RES. SERV., *supra* note 1 (describing the proportion of the global shipping industry as 13 percent passenger vessels, which include cruise ships, as of October 2010).

<sup>36</sup> See CONG. RES. SERV., *supra* note 1.

<sup>37</sup> See Ellsmoor, *supra* note 1.

<sup>38</sup> BUS. RES. & ECON. ADVISORS, THE CONTRIBUTION OF THE INTERNATIONAL CRUISE INDUSTRY TO THE GLOBAL ECONOMY IN 2017 5 (2018), <https://cruising.org/-/media/CLIA/Research/Global%202018%20EIS> [<https://perma.cc/8CVJ-DE6Q>] [hereinafter CRUISE INDUSTRY CONTRIBUTION].

<sup>39</sup> See CONG. RES. SERV., *supra* note 1.

<sup>40</sup> CRUISE LINES INT’L ASS’N, 2019 CRUISE TRENDS AND INDUSTRY OUTLOOK 18 (2018), [https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-\(1\).ashx](https://cruising.org/-/media/research-updates/research/clia-2019-state-of-the-industry-presentation-(1).ashx) [<https://perma.cc/UH5P-RFJY>] [hereinafter CRUISE TRAVEL TRENDS 2019].

were likely to cruise again within a year, while 58 percent of international travelers who had never cruised before were “likely” to cruise within the next year.<sup>41</sup>

This strong, sustained growth has prompted the cruise industry to invest heavily in building both more<sup>42</sup> and bigger ships.<sup>43</sup> In 2010, the Office of Congressional Research estimated that the average cruise ship became 90 feet larger every five years.<sup>44</sup> 2019 was a record year for cruise lines, as eighteen new ships set sail.<sup>45</sup> Thirty-seven new cruise ships were set to make their maiden voyages in 2020.<sup>46</sup> With most major cruise lines suspending their operations until early 2021 at the earliest, most of these new ships did not complete their maiden voyages. However, some of those new ships are now scheduled to make their debut in 2021, including the biggest ship in Carnival’s fleet, the 180,00 ton, 6,630 passenger *Mardi Gras*, which will be 35 percent larger than Carnival’s current largest ship.<sup>47</sup> Some ships that were planned to debut in 2021 also saw their maiden voyages delayed, like the *Wonder of the Seas*, the largest ship yet in a series of six planned “Oasis-class” ships operated by Royal Caribbean.<sup>48</sup> Cruise lines have invested nearly \$65 billion in new ships for the next ten years and shipbuilders “cannot build ships fast enough” to keep up with demand.<sup>49</sup> While the coronavirus pandemic of 2020 may render that \$65 billion a partial sunk cost, cruise lines are still building and launching newer and bigger ships, as the launch of the *Mardi Gras* and the planned debut of Royal Caribbean’s *Wonder of the Seas* indicate.<sup>50</sup>

Cruise lines are not only increasing the number of ships in their fleets, but are also increasing the size of those ships.<sup>51</sup> At least thirty two cruise ships have been built since 2010 that weigh 100,000 tons, which is about the same as some U.S.

<sup>41</sup> See *2021 Cruise Industry Outlook*, *supra* note 3.

<sup>42</sup> Greg Thompson, *Growing Cruise Industry Tackles Same Trends as Land Travel*, WEX INC. (May 27, 2019), <https://www.wexinc.com/insights/blog/wex-travel/consumer/growing-cruise-industry-tackles-same-trends-as-land-travel/> [<https://perma.cc/EU4K-CL6Q>]; see Micallef, *supra* note 20.

<sup>43</sup> See Micallef, *supra* note 20.

<sup>44</sup> See CONG. RES. SERV., *supra* note 1.

<sup>45</sup> See CRUISE TRAVEL TRENDS 2019, *supra* note 40, at 20.

<sup>46</sup> See Thompson, *supra* note 42.

<sup>47</sup> Gene Sloan, *The 9 Most Anticipated Cruise Ships of 2021*, THE POINTS GUY (Jan. 15, 2021), <https://thepointsguy.com/guide/best-new-cruise-ships-2021/> [<https://perma.cc/B3VQ-F7BC>].

<sup>48</sup> See *New Cruise Ships on Order*, *supra* note 22; Richard Tribou, *Royal Caribbean’s Next World’s Largest Cruise Ship Gets a Name, But Won’t be Headed to Florida*, ORLANDO SENTINEL (Oct. 10, 2019), <https://www.orlandosentinel.com/travel/florida-cruise-guide/os-tr-cru-royal-caribbean-wonder-of-the-seas-oasis-ship-20191010-y4fr3obwfnfm3hw46unl6edzum-story.html> [<https://perma.cc/AX6V-LVBC>].

<sup>49</sup> See Micallef, *supra* note 20.

<sup>50</sup> See, e.g., *New Cruise Ships on Order*, *supra* note 22; Tribou, *supra* note 48.

<sup>51</sup> See Micallef, *supra* note 20.



aircraft carriers.<sup>52</sup> Over 6,000 passengers can travel upon one of the biggest ships in the global cruise fleet, the nearly 200,000 ton *Harmony of the Seas*.<sup>53</sup> Cruise ships are becoming so large that it is even becoming difficult for them to dock in smaller-sized ports in Europe and the Caribbean.<sup>54</sup>

Cruise ships are also providing service to nontraditional (i.e., nontropical) destinations.<sup>55</sup> Cruises now travel to places like western Australia, Antarctica, and even the Galapagos Islands.<sup>56</sup> For cruise line customers, “[a]ccess is the new luxury,” and cruise lines have been providing that luxury to millions upon millions of passengers each year.<sup>57</sup> Cruise ships are thus beginning service in new environments that have previously been untouched by the industry, thereby geographically broadening the environmental impact of the modern cruise industry.<sup>58</sup>

There is no denying that the cruise industry was dealt a massive blow by the coronavirus pandemic of 2020.<sup>59</sup> There is also no denying the scope of the cruise industry boom prior to that pandemic.<sup>60</sup> It would be undoubtedly difficult for the industry to immediately return to the pace of growth it enjoyed prior to the pandemic.<sup>61</sup> However, if the cruise industry survives this crisis—which is likely—it will hold dire implications for the global environment.

### B. *Adverse Effects on the Environment: Solid Waste and Emissions of Carbon-Dioxide*

An increase in the size, number, and carrying capacity<sup>62</sup> of cruise ships has an adverse effect on the world’s oceans, as

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<sup>52</sup> *Id.*

<sup>53</sup> *Id.*

<sup>54</sup> See Micallef, *supra* note 20.

<sup>55</sup> Kate Silver, *7 Trends That Will Keep On Cruising In 2019*, WASH. POST (Nov. 2, 2018), [https://www.washingtonpost.com/lifestyle/travel/7-trends-that-will-keep-on-cruising-in-2019/2018/11/01/1a52a794-d2ea-11e8-b2d2-f397227b43f0\\_story.html](https://www.washingtonpost.com/lifestyle/travel/7-trends-that-will-keep-on-cruising-in-2019/2018/11/01/1a52a794-d2ea-11e8-b2d2-f397227b43f0_story.html) [<https://perma.cc/XJ9G-49VU>]; see also CRUISE TRAVEL TRENDS 2019, *supra* note 40, at 21.

<sup>56</sup> See Silver, *supra* note 55; see also CRUISE TRAVEL TRENDS 2019, *supra* note 40, at 25.

<sup>57</sup> See Silver, *supra* note 55; CRUISE TRAVEL TRENDS 2019, *supra* note 40.

<sup>58</sup> See Silver, *supra* note 55.

<sup>59</sup> See, e.g., Yeginsu & Chokshi, *supra* note 25.

<sup>60</sup> See, e.g., sources cited *supra* note 48.

<sup>61</sup> See, e.g., Yeginsu & Chokshi, *supra* note 25.

<sup>62</sup> Carrying capacity can also be represented by the increase in the number of berths available onboard ships. Cruise ships will always try and book every single available berth in order to increase profitability. If you are a cruise line executive, the increase in ship size is good news, as it has brought about a corresponding explosion in the number of berths available. In 2019, new ships held a total of 42,488 new berths, breaking the record that was set in 2018 of 34,000 new berths. See Micallef, *supra* note 20; see also *Cruise Industry Trends For 2019*, CRUISE INDUSTRY NEWS (Jan. 2, 2019), <https://www.cruiseindustrynews.com/cruise-news/20124-cruise-industry-trends-for-2019.html> [<https://perma.cc/NXD5-NWRP>].

these “floating cities”<sup>63</sup> continue to voyage around the world and bring thousands upon thousands of passengers to countless international ports. The industry’s expansion, which is “integral to the growth in earnings and return on invested capital over time,”<sup>64</sup> is directly harming the integrity of the world’s oceans.

With capacities now firmly in the thousands of passengers, cruise ships have deservedly earned the moniker “floating cities.”<sup>65</sup> The comparison is apt not only for the number of passengers cruise ships hold, but for the amount of pollution they produce.<sup>66</sup> Cruise ships directly affect the environment in two ways—first, via fuel emissions into the air and second, through the dumping of waste into the ocean.<sup>67</sup> Simply put, the bigger the ship and the more passengers on board, the more fuel the ship uses and the more waste passengers produce.<sup>68</sup>

As for solid and liquid waste, there are different types of solid and liquid wastes that cruise ships produce, including “sewage, graywater [wastewater from sinks, showers, and galleys], hazardous wastes, oily bilge water, ballast water, and solid waste.”<sup>69</sup> These types of wastes produced by cruise ships were the subject of national attention as early as 2000.<sup>70</sup> Partly in response to pressure from environmental groups, Congress requested that the General Accounting Office (GAO) investigate cases of illegal discharges of pollutants by cruise ships.<sup>71</sup>

Between 1993 and 1998, there were eighty-seven incidents involving illegal discharges from cruise ships.<sup>72</sup> Of those eighty-seven, most were accidental and involved oil or chemicals being dumped into the water.<sup>73</sup> However, the reliance on self-reporting in order to catch wrong-doers led some companies to deliberately falsify records, which is grounds for liability, driving the actual number of illegal discharges into the

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<sup>63</sup> See CONG. RES. SERV., *supra* note 1.

<sup>64</sup> See *Cruise Lines 2019 Q2 Breakdown: By The Numbers*, CRUISE INDUSTRY NEWS (Aug. 12, 2019), <https://www.cruiseindustrynews.com/cruise-news/21360-cruise-lines-2019-q2-breakdown-by-the-numbers.html> [<https://perma.cc/7HQQ-HS8V>].

<sup>65</sup> See CONG. RES. SERV., *supra* note 1; Ellsmoor, *supra* note 1; Silver, *supra* note 55.

<sup>66</sup> See Ellsmoor, *supra* note 1.

<sup>67</sup> *Id.*; see also Kate Wheeling, *How Cruise Ships Are Polluting Our Oceans*, PAC. STANDARD (Nov. 15, 2018), <https://psmag.com/news/how-cruise-ships-are-polluting-our-oceans> [<https://perma.cc/MR4K-FXNR>].

<sup>68</sup> See Wheeling, *supra* note 67.

<sup>69</sup> See CONG. RES. SERV., *supra* note 1, at 3.

<sup>70</sup> See e.g., Douglas Frantz, *Pollution By Cruise Ships Is Still Problem, Study Says*, N.Y. TIMES (Mar. 7, 2000), <https://www.nytimes.com/2000/03/07/us/pollution-by-cruise-ships-is-still-problem-study-says.html> [<https://perma.cc/FJ2K-Z934>]; U.S. GEN. ACCT OFF., GAO/RCED-00-48, MARINE POLLUTION: PROGRESS MADE TO REDUCE MARINE POLLUTION BY CRUISE SHIPS, BUT IMPORTANT ISSUES REMAIN 3 (2000) [hereinafter GAO REPORT].

<sup>71</sup> See GAO REPORT, *supra* note 70, at 3.

<sup>72</sup> *Id.* at 9.

<sup>73</sup> *Id.* at 10.

hundreds.<sup>74</sup> This study also only examined the incidents that occurred within U.S. waters (i.e., within three miles of the coast) and only illegal discharges, which did not include a variety of other pollutants (graywater, for instance).<sup>75</sup>

The study did find that the number of illegal discharge incidents decreased during the time period of the study.<sup>76</sup> Yet, while most of the incidents were unintentional, the fact is that cruise ships, under normal operating procedure, will inevitably dump oil and various other chemicals into the water due to the number of passengers taking part in recreational activities, the number of crew members living on board the ship, and the sheer size of cruise ships.<sup>77</sup> Relying on a mixture of self-reporting and the Coast Guard to enforce environmental regulations was also insufficient in preventing cruise ships, just 1 percent of the global shipping fleet<sup>78</sup> from producing 4 percent of the discharge incidents the study recorded.<sup>79</sup>

These growing concerns and proliferation of studies prompted Congress to enact legislation that restricted cruise ship discharges in U.S. waters in Alaska.<sup>80</sup> While a handful of states passed similar legislation on the state-level,<sup>81</sup> these limited attempts at stopping harmful cruise ship discharges has created an atmosphere where cruise lines can avoid repercussions for the waste they produce.<sup>82</sup> Thus, cruise lines have been able to slip away from the consequences for dumping highly toxic chemicals into the ocean, killing off organisms vital to the marine ecosystem in delicate environments.<sup>83</sup>

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<sup>74</sup> *Id.*

<sup>75</sup> *Id.* at 3–4.

<sup>76</sup> *Id.* at 4.

<sup>77</sup> *See id.* at 4.

<sup>78</sup> *See Environmental Stewardship, supra* note 35.

<sup>79</sup> *See* GAO REPORT, *supra* note 70, at 3–4, 10 (Congress requested that the General Accounting Office investigate illegal pollution discharges by cruise ships in light of the increase in popularity of cruises. The Office was charged with discovering the nature and extent of illegal discharges, the efforts taken by federal agencies and cruise lines to curb illegal emissions, and whether those efforts were sufficient. The Office undertook the study by communicating with the Department of Justice, the United States Coast Guard, the Center for Marine Conservation, representatives from different cruise companies, and by analyzing data.).

<sup>80</sup> *See* CONG. RES. SERV., *supra* note 1, at 19.

<sup>81</sup> *Id.* at 21–22.

<sup>82</sup> *See, e.g.,* Negret, *supra* note 11, at 12 (describing how a major cruise line shirked authorities and implemented company-wide procedures meant to deceive regulatory agencies).

<sup>83</sup> Press Release, Transp. & Env't, Luxury Cruise Giant Emits 10 Times More Air Pollution (Sox) Than All of Europe's Cars—Study (June 4, 2019) (on file with publisher); *see* CONG. RES. SERV., *supra* note 1, at 4 (“Solid waste that enters the ocean may become marine debris, and it can then pose a threat to marine organisms . . .”).

Another way cruise ships harm the global environment is through air pollution produced by the fuel that ships burn while at sea and in port.<sup>84</sup> Marine fuel in general tends to be less regulated and less refined than other types of fuel, meaning that despite a fewer number of operational vessels worldwide, shipping still has a considerable negative affect on human and environmental health.<sup>85</sup>

It should be noted that there is no comprehensive or precise data about the emissions caused by the global cruise industry.<sup>86</sup> However, there have been case studies and news stories focusing on the effect cruise ships have on the air quality in port cities and specific regions of the world, like Europe.<sup>87</sup> These studies have produced some alarming findings about the amount of pollutants cruise ships emit.<sup>88</sup> For instance, cruise ships owned by Carnival Cruise Corporation produced ten times more disease-causing sulphur oxide than all of Europe's 260 million passenger cars combined in 2017 alone.<sup>89</sup> Larger cruise ships like the 6,000-passenger *Harmony of the Seas*, owned and operated by Royal Caribbean International, Inc., consume at least 150 tons of fuel daily, causing more sulphur emissions than several million cars combined.<sup>90</sup> Not only do cruise ships burn more fuel than cars, they also burn dirtier fuel.<sup>91</sup>

The cruise industry's intense dependence on fuel has not only damaged the environment, it has also caused significant

<sup>84</sup> RICARDO ENERGY & ENVIRONMENT, A REVIEW OF THE NAEI SHIPPING EMISSIONS METHODOLOGY 1 (2017), [https://uk-air.defra.gov.uk/assets/documents/reports/cat07/1712140936\\_ED61406\\_NAEI\\_shipping\\_report\\_12Dec2017.pdf](https://uk-air.defra.gov.uk/assets/documents/reports/cat07/1712140936_ED61406_NAEI_shipping_report_12Dec2017.pdf) [<https://perma.cc/TYV2-4DLF>] ("Emissions from fuel combusted in engines are the most important source of emissions from shipping.")

<sup>85</sup> See Transp. & Env't, *supra* note 83 ("Luxury cruise ships are floating cities powered by some of the dirtiest fuel possible. Cities are rightly banning dirty diesel cars but they're giving a free pass to cruise companies that spew out toxic fumes that do immeasurable harm both to those on board and on nearby shores. This is unacceptable.")

<sup>86</sup> NATURE AND BIODIVERSITY CONSERVATION UNION, THIS STINKS! NABU'S CAMPAIGN FOR A CLEANER CRUISE INDUSTRY 3 (2015), [https://en.nabu.de/imperia/md/content/nabude/verkehr/2015\\_backgroundpaper\\_cruise\\_ships.pdf](https://en.nabu.de/imperia/md/content/nabude/verkehr/2015_backgroundpaper_cruise_ships.pdf) [<https://perma.cc/6U4S-2J8R>].

<sup>87</sup> See e.g., Hrvoje Carić, *Cruising Tourism Environmental Impacts: Case Study Of Dubrovnik, Croatia*, 61 J. COASTAL RES., 104, 105 (2011) (analyzing both solid waste and air pollution levels in Dubrovnik, Croatia, to determine the environmental impact cruise ships have on the popular resort town); Ignacio Ruiz-Guerra et al., *Prediction of the Impact on Air Quality of the Cities Receiving Cruise Tourism: The Case of the Port off Barcelona*, 5 HELIYON e01280, 4 (2019) (analyzing the air quality in Barcelona, one of the busiest cruise ports in the Mediterranean, in an attempt to study the effects of cruise ships in busy cruise ports); see also Transp. & Env't, *supra* note 83.

<sup>88</sup> See Transp. & Env't, *supra* note 83; John Vidal, *The World's Largest Cruise Ship and Its Supersized Pollution Problem*, GUARDIAN (May 21, 2016), <https://www.theguardian.com/environment/2016/may/21/the-worlds-largest-cruise-ship-and-its-supersized-pollution-problem> [<https://perma.cc/WUG8-TTBW>].

<sup>89</sup> See Transp. & Env't, *supra* note 83.

<sup>90</sup> See Vidal, *supra* note 88.

<sup>91</sup> See NATURE AND BIODIVERSITY CONSERVATION UNION, *supra* note 86, at 3 (explaining that the legal limit for sulphur in marine fuel is almost 3,500 times that of diesel fuel used for land transport).

harm to humans.<sup>92</sup> The World Health Organization announced that diesel particles, including the same types that are present in marine diesel emissions, are a direct cause of some forms of cancer.<sup>93</sup> An estimated 50,000 people in Europe alone die prematurely from pollution from the shipping sector as a whole.<sup>94</sup> Cruise ship emissions may also harm vacationers on deck, according to a German lung doctors' association.<sup>95</sup>

There are indications that the cruise industry is investing heavily in “cleaner, more responsible tourism.”<sup>96</sup> The same CLIA press release that detailed the industry's optimistic outlook on tourists returning to cruises also outlined the industry's “commitment to a cleaner, more sustainable future.”<sup>97</sup> The press release boasts that 49 percent of new ships will use liquified natural gas (LNG), the current primary alternative to high sulphur fuels.<sup>98</sup> According to an environmental report sponsored by CLIA, “[b]urning LNG produces virtually zero sulfur emissions, 85 [percent] fewer nitrogen oxide emissions, 95-100 [percent] fewer particulate emissions, and the industry estimates up to 20 [percent] fewer greenhouse gas emissions.”<sup>99</sup> However, CLIA acknowledges that the ships using LNGs are mostly new orders—that is, these ships do not exist yet.<sup>100</sup> This means older ships will have to be retrofitted with technology

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<sup>92</sup> See Carić, *supra* note 87, at 113–14; Ruiz-Guerra, *supra* note 87, at 18–20 (a case study of the air quality in Barcelona, one of the busiest cruise ports in the Mediterranean, in an attempt to study the effects of cruise ships in busy cruise ports. Ultimately, the researchers did not arrive at any definitive conclusions on the impact cruise ships have on human health); Press Release, Int'l Agency for Res. On Cancer, Diesel Engine Exhaust Carcinogenic (June 12, 2012), [https://www.iarc.who.int/wp-content/uploads/2018/07/pr213\\_E.pdf](https://www.iarc.who.int/wp-content/uploads/2018/07/pr213_E.pdf) [<https://perma.cc/9U5L-XJNX>]; Transp. & Env't, *supra* note 83.

<sup>93</sup> See Int'l Agency for Res. on Cancer, *supra* note 92 (“After a week-long meeting of international experts, the International Agency for Research on Cancer (IARC), which is part of the World Health Organization (WHO), today classified diesel engine exhaust as carcinogenic to humans (Group 1), based on sufficient evidence that exposure is associated with an increased risk for lung cancer.”).

<sup>94</sup> Axel Friedrich, *Heading to Venice? Don't Forget Your Pollution Mask*, GUARDIAN (July 31, 2017), <https://www.theguardian.com/environment/2017/jul/31/heading-to-venice-don-t-forget-your-pollution-mask> [<https://perma.cc/J6A2-TJT7>].

<sup>95</sup> *Id.*

<sup>96</sup> See *2021 Cruise Industry Outlook*, *supra* note 3, at 12; Press Release, Cruise Lines Int'l Ass'n, Cruise Lines International Association (CLIA) Releases 2021 State of the Cruise Industry Outlook Report (Global) (Dec. 22, 2020), <https://cruising.org/en/news-and-research/press-room/21046ecembermber/clia-releases-2021-state-of-the-cruise-industry-outlook-report> [<https://perma.cc/8FJS-YADN>].

<sup>97</sup> See Press Release, *supra* note 96.

<sup>98</sup> OXFORD ECON., ENVIRONMENTAL COMMITMENT, INNOVATION, AND RESULTS OF THE CRUISE INDUSTRY: REPORT PRODUCED FOR: CRUISE LINES INTERNATIONAL ASSOCIATION 3 (2020) [hereinafter CRUISE INDUSTRY ENVIRONMENTAL REPORT 2020].

<sup>99</sup> *Id.*

<sup>100</sup> *Id.* (“With the introduction of a fourth LNG-operated ship to the global cruise fleet, there are currently 25 ships on order or under construction committed to relying on LNG for primary propulsion, representing 49 [percent] of *new* passenger capacity.”(emphasis added)).

that prevents carbon emissions, which is a different scenario altogether.<sup>101</sup> Further, even if all the ships that will supposedly use LNGs were built and set sail today, they would represent a minority of the worldwide cruise fleet.<sup>102</sup>

In any case, current international environmental regulations and the accompanying enforcement regime allow cruise lines to use high sulphur fuels.<sup>103</sup> This begs the question: “[i]f the cruise ships are complying with the law and there is still this level of pollutants . . . are these laws fit for purpose?”<sup>104</sup>

## II. INTERNATIONAL MARITIME LAW AND RESTRICTIONS ON THE ENFORCEMENT OF ENVIRONMENTAL STANDARDS

In 1948, the Inter-Governmental Maritime Consultant Agency was established, later becoming the International Maritime Organization (IMO).<sup>105</sup> In an attempt to regulate maritime pollution and protect the world’s oceans, the IMO promulgated the International Convention for the Prevention of Pollution from Ships in 1973 and amended the Protocol in 1978 (“MARPOL 73/78,” with “MARPOL” being a portmanteau of “marine” and “pollution”).<sup>106</sup> According to MARPOL, every nation that signs the convention is responsible for enacting its own domestic laws to implement and enforce the convention’s provisions.<sup>107</sup> For instance, the United States passed the Act to Prevent Pollution from Ships (APPS) in order to comply with MARPOL and implement the MARPOL annexes to which it is a party.<sup>108</sup> APPS applies to every U.S.-flagged ship no matter where it is in the world.<sup>109</sup> As a signatory to MARPOL, the United States imposes punishments on U.S.-flagged ships—which are within the jurisdiction of the United States—that do not adhere to APPS’ provisions.<sup>110</sup>

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<sup>101</sup> See *infra* Part III.

<sup>102</sup> See CRUISE INDUSTRY ENVIRONMENTAL REPORT 2020, *supra* note 98, at 4.

<sup>103</sup> See Transp. & Env’t, *supra* note 83; NATURE AND BIODIVERSITY CONSERVATION UNION, *supra* note 86, at 3.

<sup>104</sup> Will Coldwell, *Air on Board Cruise Ships ‘Is Twice as Bad as Piccadilly Circus,’* GUARDIAN (July 3, 2017), <https://www.theguardian.com/travel/2017/jul/03/air-on-board-cruise-ships-is-twice-as-bad-as-at-piccadilly-circus> [<https://perma.cc/4BHY-BUA8>].

<sup>105</sup> *Brief History of IMO*, INT’L MAR. ORG., <https://www.imo.org/en/About/HistoryOfIMO/Pages/Default.aspx> [<https://perma.cc/5QPT-QS4W>].

<sup>106</sup> *United States v. Pena*, 684 F.3d 1137, 1142 (11th Cir. 2012) (“MARPOL is the common name for the International Convention for the Prevention of Pollution from Ships, Nov. 2, 1973, as modified by the Protocol of 1978.”).

<sup>107</sup> CLAUDIA COPELAND, CONG. RES. SERV., CRUISE SHIP POLLUTION: BACKGROUND, LAWS AND REGULATIONS, AND KEY ISSUES 8 (2005).

<sup>108</sup> 33 U.S.C. §§ 1901–1914; see Copeland, *supra* note 107, at 8.

<sup>109</sup> See Copeland, *supra* note 107, at 8.

<sup>110</sup> 33 U.S.C. §§ 1905–1914.

While the United States and other countries have punished violators of MARPOL, universal implementation of the provisions of MARPOL is hampered by the very nature of the international maritime legal regime.<sup>111</sup> The United Nations Convention on the Laws of the Sea (UNCLOS) is considered to be the codification of customary international maritime law.<sup>112</sup> UNCLOS “balance[s]” the interests of maritime commerce and coastal states’ sovereignty by segregating the ocean into different “zones” depending on the distance to shore.<sup>113</sup> The “zone” that is relevant here is the “territorial seas” zone, which extends twelve nautical miles from the shore of a coastal state.<sup>114</sup> Territorial seas allow coastal states to exert their jurisdiction over ships within the twelve mile “belt” of sea and implement standards to “prevent, reduce, and control pollution of the marine environment from vessels.”<sup>115</sup> Outside of the territorial seas on the “high seas,”<sup>116</sup> however, ships are subject to the “exclusive jurisdiction” of the “flag state” (the state in which the ship is registered).<sup>117</sup> <sup>118</sup> Thus, regardless of where a cruise company is headquartered, the company can avoid enforcement of stricter environmental regulations for their ships in international water away from coastlines if they register their ships in a country without strong enforcement mechanisms.

This concept reflects the “law of the flag” doctrine in international maritime law.<sup>119</sup> Simply put, a cruise’s nationality, which is chosen by the cruise line, determines which laws apply in cases concerning the ship.<sup>120</sup> In other words, cruise lines choose which regulations govern the pollution from their ships by choosing the state of registry . States such as Panama operate “open

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<sup>111</sup> See Copeland, *supra* note 107, at 8.

<sup>112</sup> See *U.S. v. Jho*, 534 F.3d 398, 406 (5th Cir. 2008).

<sup>113</sup> United Nations Convention on the Law of the Sea, art. 216(1), Dec. 10, 1982, 1833 U.N.T.S. 397; *Jho* 534 F.3d at 406–07; see Black, *supra* note 10, at 367; Reed, *supra* note 5, at 224.

<sup>114</sup> United Nations Convention on the Law of the Sea art. 3 (“Every State has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical miles, measured from baselines determined in accordance with this Convention.”).

<sup>115</sup> See Reed, *supra* note 5, at 233 (quoting UNCLOS art. 211.(1)).

<sup>116</sup> United Nations Convention on the Law of the Sea art. 86 (“High seas” for purposes of UNCLOS include “all parts of the sea that are not included in the exclusive economic zone, in the territorial sea or in the internal waters of a State, or in the archipelagic waters of an archipelagic State”).

<sup>117</sup> United Nations Convention on the Law of the Sea art. 92(1) (“Ships shall sail under the flag of one State only and, save in exceptional cases expressly provided for in international treaties or in this Convention, shall be subject to its exclusive jurisdiction on the high seas.”).

<sup>118</sup> United Nations Convention on the Law of the Sea, art. 220(1), Dec. 10, 1982, 1833 U.N.T.S. 397.

<sup>119</sup> See, e.g., *Trans-Tec Asia v. M/V Harmony Container*, 518 F.3d 1120, 1124–25 (9th Cir. 2008).

<sup>120</sup> *Id.*

registr[ies]” with relaxed labor standards and lower taxes for international shipping conglomerates in order to attract more registrants.<sup>121</sup> This has led to countries with economies many times smaller than the United States, like Panama and Liberia, to have thousands of more ships registered in their countries and, thus, be subject to their laws and enforcement mechanisms.<sup>122</sup>

In turn, cruise lines register their ships in countries that do not enforce stringent environmental standards, either because the state has not codified MARPOL’s provisions into domestic law or the state does not enforce those provisions.<sup>123</sup> By relying on individual states’ domestic law to enforce its provisions, which only takes place within the statutorily defined territorial waters of signatory states, MARPOL’s effectiveness is determined by the ability and willingness of the individual states to hold their ships accountable.<sup>124</sup> As a feature of the international maritime legal system, the law of the flag doctrine enables shipping companies like cruise lines to escape harsh legal consequences for breaches of environmental obligations.

A. *MARPOL 73/78, APPS, and Enforcement of Environmental Standards*

As the primary instrument of international law that regulates the pollution caused by international shipping, MARPOL obliges the parties to the convention to enforce the environmental standards found in six Annexes.<sup>125</sup> As such, MARPOL is fairly comprehensive, with Annex I regulating oil discharges, Annex II regulating the discharge of dangerous liquid substances in bulk, Annex III regulating the discharge of harmful substances in package form, Article IV regulating sewage discharge, Article V regulating general garbage discharges, and Article VI regulating emissions that harm the air.<sup>126</sup>

For instance, as discussed above, the United States, as a signatory to MARPOL, implements MARPOL through the Act to Prevent Pollution from Ships (APPS).<sup>127</sup> APPS mandates that

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<sup>121</sup> See *Why So Many Shipowners Find Panama’s Flag Convenient*, *supra* note 8.

<sup>122</sup> *Id.*

<sup>123</sup> See Reed, *supra* note 5, at 211; William Tetley, Q.C., *The Law of the Flag, “Flag-Shopping,” and Choice of Law*, 17 TUL. MAR. L.J. 139, [173]; *Why So Many Shipowners Find Panama’s Flag Convenient*, *supra* note 8.

<sup>124</sup> See Negret, *supra* note 11, at 2–3, 13–14; Reed, *supra* note 5, at 224 (detailing how states seeking to enforce environmental standards on foreign-flagged vessels may only do so if those vessels seek a port in the state seeking to enforce).

<sup>125</sup> Marjorie A. Shields, Annotation, *Construction and Application of Act to Prevent Pollution from Ships (APPS)*, 33 U.S.C.A. §§ 1901 *et seq.*, 38 A.L.R. FED. 2d 565, § 2 (2009).

<sup>126</sup> *Id.*

<sup>127</sup> *Id.*; see also *supra* Section II.A.



the Administrator of the Environmental Protection Agency (EPA) create a certification program to ensure all U.S. vessels are in compliance with the air quality standards of MARPOL Annex VI.<sup>128</sup> “The Secretary of the department in which the Coast Guard is operating” then specifies which ships the EPA regulations apply to and prescribes regulations that require these ships to maintain “refuse record books” and ship management plans, which document how well the ship is conforming to pollution standards.<sup>129</sup>

On its face, the requirement for refuse record books may seem innocuous. After all, the Coast Guard relies on the representations made in the record books by the cruises themselves in order to determine compliance.<sup>130</sup> However, APPS provides for harsh criminal penalties for anyone who knowingly violates its provisions.<sup>131</sup> Parties can be held civilly liable as well if they violate APPS, regardless if they did so knowingly.<sup>132</sup> In essence, this lower standard for civil liability holds more violators liable, since a broader range of violations (i.e., both knowing and unknowing) violations are grounds for liability.<sup>133</sup>

The U.S. judiciary is no stranger to APPS cases.<sup>134</sup> For example, the Fifth Circuit upheld the validity of the punishment provisions found in APPS when it ruled that the international legal principles found in the United Nations Conventions on the Law of the Sea (UNCLOS) and the law of the flag doctrine did not prevent the federal government from exercising jurisdiction over criminal conduct committed in its sovereign ports or waters, even if those ships were flying the flag of a foreign nation.<sup>135</sup> Since enforcing the penalties found in APPS would not be contrary to international law, the federal government has the power to pursue criminal charges for operators who knowingly violate the record book requirements found in APPS.<sup>136</sup>

While this particular decision upheld the federal government’s power to regulate the shipping industry within its own navigable waters, it also illustrates the deficiencies inherent in the current regulatory regime. The Fifth Circuit held that the

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<sup>128</sup> 33 U.S.C. § 1903(b).

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

<sup>130</sup> *Jho*, 534 F.3d at 402 (“In conducting inspections to identify vessels that have polluted or are likely to pollute in violation of the APPS, Coast Guard personnel rely on statements of the vessel’s crew as well as the vessel’s registration and compliance documentation.”).

<sup>131</sup> *Id.* at 401.

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

<sup>133</sup> *See id.*

<sup>134</sup> *See, e.g., id.*; *United States v. Pena*, 684 F.3d 1137, 1142 (11th Cir. 2012); *United States v. Ionia Mgmt. S.A.*, 555 F.3d 303, 306 (2d Cir. 2009).

<sup>135</sup> *Jho*, 534 F.3d at 408–09.

<sup>136</sup> *Id.* at 409–10.

United States can exercise jurisdiction over foreign-flagged ships if they are committing a breach of APPS pollution standards within U.S. navigable waters or in a U.S. port.<sup>137</sup> This means that if a foreign-flagged ship is outside of the territorial waters of the United States, which is twelve miles from the nearest U.S.-owned land as defined by MARPOL,<sup>138</sup> any violations of APPS are outside the jurisdiction of the federal government since the flag state would have jurisdiction in that scenario.<sup>139</sup> Consequently, cruise lines, as per shipping industry custom, register their ships in foreign countries to avoid the jurisdiction of governments with stronger environmental shipping regulations.<sup>140</sup>

*B. Law of the Flag, Cruise Ships, and Jurisdictional Limits to the Enforcement of Environmental Regulations*

Simply put, the law of the flag doctrine is an established principle of international maritime law that binds ships to the laws of the nation in which the ship is registered.<sup>141</sup> To say the doctrine is followed closely is an understatement—the principle has been described as “[p]erhaps the most venerable and universal [sic] rule of maritime law . . . .”<sup>142</sup> As a traditional anchor of international maritime law, the law of the flag became codified in UNCLOS, the fountainhead of flag state obligations in international maritime law.<sup>143</sup>

UNCLOS requires that flag states develop their own criteria for a ship to be able to register in that state and fly its flag, as long as there is a “genuine link” between the flag state and the ship.<sup>144</sup> Once a ship is registered in a flag state, UNCLOS holds

<sup>137</sup> *Id.*

<sup>138</sup> See MARPOL, *supra* note 5, at ¶ 9 (describing how ships over 400 tons can legally discharge bilge water outside 12 miles from the closest land).

<sup>139</sup> See Black, *supra* note 10, at 372–73 (describing how the flag state’s jurisdiction is traditionally given deference when a ship is on the high seas and outside a coastal state’s territory).

<sup>140</sup> See *Why So Many Shipowners Find Panama’s Flag Convenient*, *supra* note 8.

<sup>141</sup> See Tetley, *supra* note 123, at 140 (“The law of the ship’s flag has been used by various authorities in the past as the sole and definitive indicator of the applicable maritime law.”); Black, *supra* note 10, at 372.

<sup>142</sup> *Lauritzen v. Larsen*, 345 U.S. 571, 584 (1953).

<sup>143</sup> See United Nations Convention on Law of the Sea art. 94.

<sup>144</sup> *Id.* at art. 91. The concept of “genuine link” has a somewhat vague and unclear definition in the international maritime context. This may partly be because the case, *Nottebohm*, which established the concept of “genuine link” in international law, concerned an individual, not a vessel, rendering the concept an imperfect analogy. O. Shane Balloun, *The True Obstacle to the Autonomy of Seasteads: American Law Enforcement Jurisdiction Over Homesteads on the High Seas*, 24 U.S.F. MAR. L.J. 409, 436 (2011). In *Nottebohm*, the International Court of Justice (ICJ) considered an individual’s “habitual residence, [the individual’s] centre of interest, [the individual’s] family[] or historical residence, and [the] patriotic attachment of that individual to a particular country” when determining an individual’s citizenship for jurisdictional purposes. *Id.* The awkwardness of applying these

that “[e]very State shall effectively exercise its jurisdiction and control in administrative, technical and social matters over ships flying its flag.”<sup>145</sup> The flag state must effectively exercise their jurisdiction over ships flying their flag to ensure the seaworthiness of the ship and safety for the crew, including verifying the integrity of the ship’s communications.<sup>146</sup> Other than these basic obligations, the flag state’s law is what rules the ship outside the twelve miles of territorial water subject to coastal state’s jurisdiction.<sup>147</sup>

The criteria used to require ships to register within a state is entirely within the flag state’s discretion, as per UNCLOS.<sup>148</sup> Some states, like Liberia and Panama, have sought to attract the business of international shipping corporations by providing extremely relaxed criteria for registration.<sup>149</sup> Cruise lines are no exception. For instance, Carnival Corporation, the parent corporation of Carnival Cruise Lines, is headquartered in Miami, Florida, but in 2016 all of their ships were registered in Panama, the Bahamas, or Malta.<sup>150</sup> Royal Caribbean was no different, with headquarters in Miami and its ships registered in the Bahamas and Malta.<sup>151</sup>

These tactical registration selections have triggered a sort of cat-and-mouse game between the American government trying to enforce environmental regulations and shipping corporations shirking the rules.<sup>152</sup> In 1993, the U.S. Coast Guard discovered the *Nordic Empress*, a ship owned by Royal Caribbean Cruise Lines and based out of Miami, was dumping oil near the Bahamian coast.<sup>153</sup> This prompted a four-year investigation led by the Department of Justice.<sup>154</sup> Meanwhile, the ship’s flag state, Liberia, found “reasonable doubt” that the ship had “contravened MARPOL” standards and thus declined to hold the cruise line accountable.<sup>155</sup>

Since the incident occurred in international waters and involved a foreign-flagged vessel, the United States could not

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factors meant for individuals to vessels is apparent—after all, what would a ship’s “cent[er] of . . . interests” even be? *Id.* What is more, a ship’s registration could be considered evidence of a genuine link under the *Nottebohm* standard, which is a “tautology” when trying to determine the enuity of the registration. *Id.* For these reasons, both American and international jurisprudence have opposed the strict application of the genuine link concept in the context of law of the flag cases. *Id.* at 436–37.

<sup>145</sup> See United Nations Convention on Law of the Sea art. 94.

<sup>146</sup> *Id.*

<sup>147</sup> See Black, *supra* note 10, at 375 (“UNCLOS authorizes States to establish a territorial sea up to 12NM from their coastlines.”).

<sup>148</sup> See United Nations Convention on Law of the Sea art. 91.

<sup>149</sup> See H. Edwin Anderson III, *The Nationality of Ships and Flags of Convenience: Economics, Politics, and Alternatives*, 21 TUL. MAR. L.J. 139, 140 (1996).

<sup>150</sup> See Negret, *supra* note 11, at 1–2.

<sup>151</sup> *Id.* at 2.

<sup>152</sup> U.S. v. Royal Caribbean Cruises, Ltd., 11 F. Supp. 2d 1358, 1361–62 (S.D. Fla. 1998).

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

<sup>154</sup> See Negret, *supra* note 11, at 13.

<sup>155</sup> *Id.*

directly exercise its jurisdiction to enforce MARPOL standards.<sup>156</sup> However, once the cruise ship arrived in port in Miami, the ship produced a falsified record of the ship's discharges to the Coast Guard that omitted the illegal discharge of oil near the Bahamas.<sup>157</sup> The court determined that because the record falsification was discovered in an American port, the federal government was able to prosecute Royal Caribbean on one count of making a false statement to the U.S. Coast Guard during an inspection in violation of the "False Statements Act" without contravening international law.<sup>158</sup> Despite the fact that Royal Caribbean was not directly held liable for the illicit dumping of oil, the company was indirectly held liable for lying about dumping, and was ordered to pay \$9 million in fines.<sup>159</sup>

*Royal Caribbean* is a perfect showcase of the ingenuity and determination of the federal government to hold shipping corporations, including cruise lines, accountable for their transgressions against the environment. While this dedication to upholding environmental regulations should be lauded and appreciated, the need for the government to resort to this type of legal craftsmanship illustrates how difficult it is to prevent cruise lines from polluting the world's oceans. The rule of international maritime law makes it extremely difficult to ensure the safety of the international maritime environment.<sup>160</sup> The increase in cruise passengers in recent years will exacerbate the jurisdictional problems caused by the law of the flag doctrine principle.<sup>161</sup> With the principle firmly embedded in the foundation of international maritime law, a solution that works within the international legal regime would be both widely-applicable and effective.

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

<sup>157</sup> *Id.* at 13–14.

<sup>158</sup> *U.S. v. Royal Caribbean Cruises, Ltd.*, 11 F. Supp. 2d 1358, 1362 (S.D. Fla. 1998) ("The government responds that there is an equally compelling, longstanding principle of international and domestic law that says a country has virtually absolute jurisdiction for crimes committed in its internal waters and ports."). *Id.* at 1374.

<sup>159</sup> *See Negret, supra* note 11, at 14–15.

<sup>160</sup> *See generally* Stephen Thomas, Jr., *State Regulation of Cruise Ship Pollution: Alaska's Commercial Passenger Vessel Compliance Program as a Model for Florida*, 13 J. TRANSNAT'L L. & POL'Y 533, 534 (2004) (describing the difficulties inherent in enforcing international environmental standards on cruise ships).

<sup>161</sup> Interestingly enough, another tourism sector that is facing rapid growth is facing its own flags of convenience problem—the space tourism industry. *See* Adrian Taghdiri, Note, *Flags of Convenience and The Commercial Space Flight Industry: The Inadequacy of Current International Law to Address the Opportune Registration of Space Vehicles in Flag States*, 19 B.U. J. SCI. & TECH. L. 405, 406 (2013). As at sea, the flags of convenience problem in the space tourism industry may lead to environmental damage and safety hazards to humans. *Id.* at 406–07.

### III. POSSIBLE FEDERAL AND STATE SOLUTIONS TO CURB ENVIRONMENTAL DAMAGE CAUSED BY THE CRUISE INDUSTRY

The realm of domestic environmental law may hold the answers needed to stop cruise ship pollution. Take, for instance, the CWA. The CWA is one of the most ambitious pieces of environmental legislation enacted by Congress.<sup>162</sup> The CWA's stated goal is "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters."<sup>163</sup> To achieve this goal, the CWA makes any discharge of a pollutant from a point source of pollution into the navigable waters of the United States unlawful unless the polluter is granted a permit by the EPA through the National Pollutant Discharge Elimination System (NPDES).<sup>164</sup> Vessels are included within the definition of "point sources," while "navigable waters" include American oceans up to three miles away from shore.<sup>165</sup>

Some classes of point sources of pollution are granted a general permit, which acts as a single NPDES permit for the entire class of point source polluters.<sup>166</sup> In 2008, the EPA issued a general permit for "discharges incidental to the normal operation of vessels operating in a capacity as a means of transportation," aptly named the Vessel General Permit (VGP).<sup>167</sup> In 2013, the EPA made clear that cruise ships were covered by the VGP.<sup>168</sup> While sewage discharges are not covered

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<sup>162</sup> *Sw. Elec. Power Co. v. U.S. Env'tl. Prot. Agency*, 920 F.3d 999, 1004 (5th Cir. 2019) ("Few laws have shouldered a weightier burden—namely, 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.'" (quoting 33 U.S.C. § 1251(a)).

<sup>163</sup> 33 U.S.C. § 1251(a).

<sup>164</sup> David Drelich, *Restoring the Cornerstone of the Clean Water Act*, 34 COLUM. J. ENV'TL. L. 267, 269 (2009); *see also* 33 U.S.C. § 1311(a).

<sup>165</sup> *See* CONG. RES. SERV., *supra* note 1, at 8.

<sup>166</sup> *Vessel Sewage Discharges: Statutes, Regulations, and Related Laws and Treaties*, U.S. ENVTL. PROTECTION AGENCY, <https://www.epa.gov/vessels-marinas-and-ports/vessel-sewage-discharges-statutes-regulations-and-related-laws-and> [<https://perma.cc/QEY9-WKP8>]; *see also infra* Section III.A (detailing how modifying the CWA standards would force ships seeking to dock in American ports to adopt the best available technologies that prevent pollution).

<sup>167</sup> *See* sources cited *supra* note 166.

<sup>168</sup> U.S. ENVTL. PROTECTION AGENCY, 2013 FINAL ISSUANCE OF NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) VESSEL GENERAL PERMIT (VGP) FOR DISCHARGES INCIDENTAL TO THE NORMAL OPERATION OF VESSELS FACT SHEET 16 (2013) ("The types of vessels covered under the VGP include commercial fishing vessels, cruise ships . . . and any other vessels operating in a capacity as a means of transportation.").

by the VGP,<sup>169</sup> “sewage discharge from vessels” is exempt from the CWA’s definition of sewage.<sup>170</sup>

The limit on point source discharges is represented through effluent standards that are determined by evaluating the technology employed by polluters to prevent pollution in relation to the technology that is available to the polluter.<sup>171</sup> These effluent standards act as levels of performance to which polluters are bound<sup>172</sup>—if they are not met, the polluter is open to civil liability.<sup>173</sup> In other words, these effluent standards use pollution-prevention technologies to act as the goal posts for determining whether a polluter has run afoul of the CWA.<sup>174</sup> Moving these goalposts would stop cruise lines from easily avoiding liability, as cruise ships would be held to a higher standard.

Another way of curbing cruise ship pollution would be for more coastal states to enact regulations similar to California’s Vessel Fuel Rules.<sup>175</sup> In April of 2009, CARB transmitted vessel fuel regulations known as the “Vessel Fuel Rules” to the California Secretary of State as required by state law.<sup>176</sup> With the goal of lowering “emissions of particulate matter (PM), diesel particulate matter, nitrogen oxides, and sulfur oxides from the use of auxiliary diesel and diesel-electric engines, main propulsion diesel engines, and auxiliary boilers on ocean-going vessels,” the Vessel Fuel Rules require the use of “low sulfur marine distillate fuels.”<sup>177</sup>

More specifically, the Vessel Fuel Rules require vessels in a geographic region named “Regulated California Waters” that call at California ports to use marine gas or diesel that has a sulfur content not exceeding .1 percent sulfur.<sup>178</sup> The Vessel Fuel Rules apply to all California internal waters, ports, and waters twenty-four miles from the California shoreline, from

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<sup>169</sup> See *Vessel Sewage Discharges: Statutes, Regulations, and Related Laws and Treaties*, *supra* note 166 (“While sewage is defined as a ‘pollutant’ under the CWA, sewage from vessels within the meaning of section 312, is exempt from this statutory definition [33 U.S.C. 1362(6)]; see also 33 U.S.C. 1322(a)(6) (definition of ‘sewage’).” (emphasis in original)).

<sup>170</sup> See sources cited *supra* note 169.

<sup>171</sup> See U.S. ENVTL. PROTECTION AGENCY, *supra* note 168, at 47 (“The Clean Water Act (CWA) requires that all point source discharges must meet technology-based effluent limitations representing the applicable levels of technology-based control.”).

<sup>172</sup> *Id.*

<sup>173</sup> 33 U.S.C. §§ 1319(a)–(b) (describing liability for breaching effluent standards); see Drelich, *supra* note 164, at 269.

<sup>174</sup> See *Sw. Elec. Power Co. v. U.S. EPA*, 920 F.3d 999, 1003 (5th Cir. 2019).

<sup>175</sup> See *Pac. Merch. Shipping Ass’n v. Goldstene*, 639 F.3d 1154, 1158 (9th Cir. 2011); see also Emily C. Hall & Bryan J. O’Neill, *Pollution on the High Seas: From Jurisdiction to Enforcement and All of the Moving Parts In Between*, 15 LOY. MAR. L.J. 375, 404 (2016).

<sup>176</sup> *Pac. Merch. Shipping Ass’n*, 639 F.3d at 1158.

<sup>177</sup> CAL. CODE REGS. tit.13, § 229.2(a); see *Pac. Merch. Shipping Ass’n*, 639 F.3d at 1158.

<sup>178</sup> *Pac. Merch. Shipping Ass’n*, 639 F.3d at 1158.

Oregon in the north to Mexico in the south<sup>179</sup> and govern the fuel emissions of “ocean-going vessels that are flagged in, registered in, entitled to fly the flag of, or otherwise operating under the authority of the United States (‘U.S.-flagged’) or any other country (‘foreign-flagged’)” that call in California ports.<sup>180</sup> Any person subject to the Vessel Fuel Rules who commits a violation and is not exempt from any of its provisions or requirements is subject to penalties, injunctive relief, and other remedies provided for in the California Health Code.<sup>181</sup> California did not preempt congressional statutes nor infringe upon the dormant commerce clause when it promulgated the Vessel Fuel Rules, potentially setting the stage for other states to promulgate stringent carbon emission standards of their own.<sup>182</sup>

The cruise industry itself has indicated that it will voluntarily undertake the adoption of advanced technologies in order to reduce emissions and wastewater discharges.<sup>183</sup> Exhaust gas cleaning systems (EGCS) can “reduce exhaust sulfur oxide levels by as much as 98 [percent], typical total particulate matter levels by 50 [percent] or more, and nitrogen oxide levels by up to 12 [percent].”<sup>184</sup> Cruise lines are also installing Advanced Water Treatment Systems (AWTS) on their current ships, while 99 percent of new ships will already have this technology, which uses “bacteriological methods” to break down wastewater.<sup>185</sup> Further, cruise lines are employing shore-side electricity (SSE), which allows cruise operators to use “more efficient municipal” electricity instead of burning fuel to produce power for the ship.<sup>186</sup> Overall, the industry states that it has committed to reducing the carbon

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

<sup>180</sup> CAL. CODE REGS. tit.13, § 2299.2 (“The requirements of this section do not apply to ocean-going vessel voyages that are comprised of continuous and expeditious navigation through any Regulated California Waters for the purpose of traversing such bodies of water without entering California internal or estuarine waters or calling at a port, roadstead, or terminal facility.”).

<sup>181</sup> CAL. CODE REGS. tit.13, § 229.2(f)(1).

<sup>182</sup> Congress is granted the power “[t]o regulate commerce . . . among the several States” by the “commerce clause.” U.S. Const. art. I, § 8, cl. 3. When Congress does not legislate on a matter concerning interstate commerce, courts recognize a “dormant” implication of the commerce clause that prevents states from unduly burdening or discriminating against interstate commerce. *See, e.g., Grand River Enters. Six Nations, Ltd. v. Beebe*, 574 F.3d 929, 941 (8th Cir. 2009) (quoting *R & M Oil & Supply, Inc. v. Saunders*, 307 F.3d 731, 734 (8th Cir. 2002)). On the other hand, the doctrine of preemption holds that federal law supersedes state law in three scenarios: when Congress passes legislation that expressly preempts state law, when compliance with both state and federal law is impossible, and when Congressional regulation of a specific field is so pervasive that one can conclude that Congress meant to exclude states from regulating in that field. *Deanco Healthcare, LLC v. Becerra*, 365 F. Supp. 3d 1029, 1036 (C.D. Cal. 2019) (quoting *Chae v. SLM Corp.*, 593 F.3d 936, 941 (9th Cir. 2010)).

<sup>183</sup> *See* CRUISE INDUSTRY ENVIRONMENTAL REPORT 2020, *supra* note 98, at 3.

<sup>184</sup> *Id.* at 4.

<sup>185</sup> *Id.* at 8.

<sup>186</sup> *Id.* at 17.

emissions to 40 percent of the 2008 level by 2030<sup>187</sup> and has already invested \$23.5 billion to reach this goal.<sup>188</sup> Statutorily eliminating any consideration of cost when implementing pollution prevention technology would undoubtedly dramatically affect cruising, an industry that generates billions of dollars for the world economy and employs hundreds of thousands of people.<sup>189</sup> By requiring the adoption of the best available technology, however, or by relying on state law to create stringent standards for carbon emissions, environmentally protective legislation can serve both the hundreds of thousands employed by the cruise industry and the billions who are not now, rather than waiting on new ships to sail.

This Part of the note offers two possible solutions involving two different levels of government in an attempt to curtail cruise ship pollution. Instead of relying on indirect methods to procure compliance, as demonstrated above in *Royal Caribbean*, these solutions apply directly to cruise ships.<sup>190</sup> These solutions also do not interfere with the jurisdictional limits placed on states by the international maritime regime, further adding to their viability. Third, these solutions are either alterations to or based off of preexisting regulatory schemes, providing a solid legislative foundation upon which states and the federal government can build. Finally, these solutions illustrate the complexity of the environmental damage caused by cruise ships in an attempt to inspire action.

A. *Holding Cruise Lines Accountable by Revising the “Best Available Technology” Prong of the CWA*

The CWA’s stated goal is “to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters.”<sup>191</sup> In achieving this goal, the CWA makes the “discharge of any pollutant” by any entity into the nation’s “navigable waters” “unlawful” unless that entity has received a permit.<sup>192</sup> In determining whether a discharge is unlawful, the CWA employs complex regulatory schemes that consist of various standards, guidelines, and limitations.<sup>193</sup> For instance, the CWA enables the

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<sup>187</sup> *Id.* at 15.

<sup>188</sup> *Id.* at 16.

<sup>189</sup> See CRUISE INDUSTRY CONTRIBUTION, *supra* note 38, at 4.

<sup>190</sup> See Daisy de Wolff, Note, *Hiding Behind the Flag: Jurisdictional Impediments Imposed by the Law of the Sea*, 42 FORDHAM INT’L L.J. 1475, 1496–97, 1518 (2019) (advocating for an amendment to the Sentencing Guidelines in order to impose harsher penalties for illicit oil dumping in an attempt to prevent pollution).

<sup>191</sup> 33 U.S.C. § 1251(a).

<sup>192</sup> *Sw. Elec. Power Co. v. U.S. Env’tl. Prot. Agency*, 920 F.3d 999, 1004 (5th Cir. 2019).

<sup>193</sup> *Id.*



Administrator of the EPA to promulgate “effluent limitation guidelines” (ELGs) that govern water pollution levels on a national scale.<sup>194</sup> ELGs focus on the technological capabilities available to prevent pollution in forming guidelines to bind producers of pollution rather than on the harm that pollution causes.<sup>195</sup> In other words, ELGs “reflect the capabilities of available pollution control technologies to prevent or limit different discharges rather than the impact that those discharges have on the waters.”<sup>196</sup>

ELGs are “technology-forcing,” meaning they aim to “force” applicants for pollutant permits under the CWA to adopt the best technologies possible in order to reduce pollution.<sup>197</sup> In setting these effluent limitations, various technological standards are employed to determine what level of pollutants an entity can discharge into the water before they are held accountable.<sup>198</sup> Two of these technological standards are the “best practicable control technology available” (BPT) and “best available technology” (BAT).<sup>199</sup>

BPT is the more forgiving standard of the two.<sup>200</sup> Rather than existing as a statutory definition, a BPT standard is formed after the Administrator weighs a list of different factors, including an “explicit cost/benefit analysis.”<sup>201</sup> After weighing these factors, the Administrator fashions a BPT that represents the “average” best level of performance for a member of a particular subcategory of polluters<sup>202</sup>—whether they are power plants,<sup>203</sup> coastal oil refineries,<sup>204</sup> and, potentially, cruise ships.<sup>205</sup> BPT thus acts as a benchmark that measures what technology an average polluter in a given subcategory uses to prevent pollution.<sup>206</sup>

In contrast, BAT does not take into account the economic feasibility of employing the technology in question.<sup>207</sup> Instead, BAT

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<sup>194</sup> *Id.*

<sup>195</sup> *Tex. Oil & Gas Ass’n v. U.S. Env’tl. Prot. Agency*, 161 F.3d 923, 927–28 (5th Cir. 1998).

<sup>196</sup> *Sw. Elec. Power Co.*, 920 F.3d at 1005 (quoting *Tex. Oil & Gas Ass’n*, 161 F.3d at 927).

<sup>197</sup> *Id.*

<sup>198</sup> *Id.* at 1004–05.

<sup>199</sup> *Id.* at 1005.

<sup>200</sup> *Id.* at 1006.

<sup>201</sup> *Id.* (citing 33 U.S.C. § 1314(b)(1)(B)).

<sup>202</sup> *Id.*

<sup>203</sup> *Id.* at 1003.

<sup>204</sup> *Tex. Oil & Gas Ass’n v. U.S. Env’tl. Prot. Agency*, 161 F.3d 923, 928–29 (5th Cir. 1998).

<sup>205</sup> 33 U.S.C. § 1322.

<sup>206</sup> *See Sw. Elec. Power Co. v. U.S. Env’tl. Prot. Agency*, 920 F.3d 999, 1004 (5th Cir. 2019).

<sup>207</sup> *Tex. Oil & Gas Ass’n*, 161 F.3d at 928; *Sw. Elec. Power Co.*, 920 F.3d at 1006–07.

involves a determination of “discharge limits that reflect the amount of pollutant that would be discharged by a point source employing the best available technology that the EPA determines to be economically feasible” for members of that specific subcategory of polluters.<sup>208</sup> In other words, BAT reflects the most progressive technological advances in a given subcategory rather than the “average” practice reflected in BPT.<sup>209</sup> As such, the EPA Administrator does not take into account the relative costs and benefits of implementing a technology, but rather considers “the cost of achieving such effluent reduction” in total.<sup>210</sup>

With the goal of eliminating pollution, the two standards act as goalposts against which the progress of a polluter is measured. Overall, the Administrator is given great discretion in formulating rules in order to regulate pollution in the nation’s waters, including determining how forgiving the penalties will be should a polluter fall short of these goals.<sup>211</sup> By imposing BAT standards for all point-source polluters in the same class as cruises and eliminating the cost-benefit analysis, the cruise industry, the cruise industry would be forced to implement the best pollution technology available, no matter the cost.

### *B. State Regulatory Solutions to Cruise Ship Pollution*

The second solution to help curtail cruise ship pollution is for individual coastal states, particularly those with heavy cruise traffic, to create and enforce their own environmental regulations. As outlined above, California enacted its own environmental standards that limits ships’ marine fuel emissions.<sup>212</sup> The Ninth Circuit has upheld these environmental standards, named the Vessel Fuel Rules, despite challenges in court.<sup>213</sup>

In *Pacific Merchants Shipping Association v. Goldstene*, the Pacific Merchants Shipping Association (PMSA) sought a permanent injunction to prevent the Vessel Fuel Rules from regulating conduct beyond three miles of California’s coastline.<sup>214</sup> PMSA also sought a declaration from the district court that the Vessel Fuel Rules were preempted by the

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<sup>208</sup> *Sw. Elec. Power Co.*, 920 F.3d at 1006 (citing *Tex. Oil & Gas Ass’n*, 161 F.3d at 928).

<sup>209</sup> *Id.*

<sup>210</sup> *Id.* at 1007 (citing *Tex. Oil & Gas Ass’n*, 161 F.3d at 928).

<sup>211</sup> *Id.* at 1006–07 (citing *Tex. Oil & Gas Ass’n*, 161 F.3d at 928).

<sup>212</sup> *See Pac. Merch. Shipping Ass’n v. Goldstene*, 639 F.3d 1154, 1158 (9th Cir. 2011).

<sup>213</sup> *Id.*

<sup>214</sup> *Id.* at 1161.

Constitution and federal law.<sup>215</sup> The district court denied PMSA's motion for summary judgment.<sup>216</sup>

On interlocutory appeal, PMSA reiterated its arguments that the Vessel Fuel Rules are impermissible state regulations of international and domestic interstate navigation and commerce.<sup>217</sup> In particular, PMSA argued that the Vessel Fuel Rules were preempted by federal statutes, the dormant commerce clause and "general maritime law."<sup>218</sup>

First, the Ninth Circuit ruled that the Vessel Fuel Rules were not statutorily preempted by the Submerged Lands Act (SLA).<sup>219</sup> The SLA is a federal law that essentially grants title to the individual states the land under the ocean extending "three geographical miles distant from its coastline."<sup>220</sup> PMSA argued that the twenty-four mile area of "Regulated California Waters" prescribed by the Vessel Fuel Rules essentially extended California's boundaries in the Pacific Ocean far past the three-mile boundary set out in the SLA.<sup>221</sup> PMSA contended that the three-mile boundary set forth in the SLA represented a part of a comprehensive federal scheme demarcating state boundaries and implicitly preempted the Vessel Fuel Rules' twenty-four mile boundary.<sup>222</sup>

The court found that the Vessel Fuel Rules were not statutorily preempted.<sup>223</sup> The court examined the legislative intent behind the SLA and the Vessel Fuel Rules to conclude that the two pieces of legislation do not intersect.<sup>224</sup> The court's conclusion was bolstered by federal case law that demonstrated the Supreme Court had not expressed an opinion on "the power of a State to extend, define, or establish its external territorial limits or on the consequences of any such extension."<sup>225</sup> The court also relied on case law from other jurisdictions that rejected challenges to state laws that regulate conduct on the high

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<sup>215</sup> *Id.*

<sup>216</sup> *Id.* at 1158.

<sup>217</sup> *Id.*

<sup>218</sup> *Id.* at 1162.

<sup>219</sup> *Id.*

<sup>220</sup> *Id.* at 1164.

<sup>221</sup> *Id.* at 1158, 1161.

<sup>222</sup> *Id.*

<sup>223</sup> *Id.* at 1167.

<sup>224</sup> *Id.* ("Simply put, PMSA reads too much into the SLA itself and what Congress itself intended to achieve in 1953. We instead conclude that, at the very least, a state law regulating extraterritorial conduct in the high seas immediately adjacent to the state's territorial waters satisfying the well-established effects test should generally be sustained.")

<sup>225</sup> *Id.* at 1170 (quoting *United States v. Louisiana*, 339 U.S. 699, 705 (1950)). In fact, PMSA's brief also conceded that "the Supreme Court itself 'has never been called upon to determine the effect of the 'LA's boundary provisions on a state's exercise of jurisdiction over maritime conduct beyond the three-mile limit.'" *Id.*

seas.<sup>226</sup> The courts in these cases similarly analyzed the effects of the regulated conduct in holding the various state regulations valid exercises of the state's police powers.<sup>227</sup> Thus, the Ninth Circuit found that the district court properly rejected PMSA's statutory preemption argument.<sup>228</sup>

The court similarly ruled that the Vessel Fuel Rules were not preempted by the dormant commerce clause or general maritime law.<sup>229</sup> The court applied the two-tiered approach used by the Supreme Court to determine whether a given state law violates the dormant commerce clause.<sup>230</sup> First, the court examined whether the Vessel Fuel Rules discriminated against interstate commerce or if the effects of the Vessel Fuel Rules simply had an incidental effect on interstate commerce.<sup>231</sup> The court found that the interests of the Vessel Fuel Rules were to "protect the health and well-being" of the citizens of California, meaning that the Vessel Fuel Rules were not "direct" state economic regulations.<sup>232</sup> The Vessel Fuel Rules were also "even-handed", as they applied to both Californian and foreign vessels.<sup>233</sup> Finally, the court found that the Vessel Fuel Rules did not apply to commercial activities "wholly outside" the boundaries of California, as they only apply to ships moving within California waters and docking at California ports.<sup>234</sup>

After applying the "effects" portion of the dormant commerce clause test, the Ninth Circuit next applied a balancing test to determine if the Vessel Fuel Rules impede upon an important federal interests in favor of a comparatively smaller state interest.<sup>235</sup> While the court recognized the strong federal interests in promulgating and enforcing uniform standards for maritime transportation, the court found that "the interests weighing in favor of striking down the Vessel Fuel Rules are

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<sup>226</sup> *Id.* at 1172. The court discussed cases from other states and circuits. *Id.* One such case, *State v. Stepansky*, concerned the conviction of an American citizen on sexual battery charges against an American minor on board a cruise ship 100 nautical miles from Florida's shores. *Id.* The Florida Supreme Court upheld a Floridian "special maritime . . . jurisdiction" statute, which granted the state jurisdiction on-board ships in specific circumstances, because Florida has a very strong interest in protecting its "crucial tourism industry" by prosecuting crimes on board cruise ships. *Id.*

<sup>227</sup> *See id.* at 1167.

<sup>228</sup> *Id.*

<sup>229</sup> *Id.* at 1181.

<sup>230</sup> *Id.* at 1177.

<sup>231</sup> *Id.* at 1178 ("Nevertheless, in applying these standards, a court must not overlook the fact that the 'critical consideration in determining whether the extraterritorial reach of a statute violates the Commerce Clause is the overall effect of the statute on both local and interstate commerce.'" (citing *Healy v. Beer Inst., Inc.*, 491 U.S. 324, 337 n.14 (1989)).

<sup>232</sup> *Id.* at 1179.

<sup>233</sup> *Id.*

<sup>234</sup> *Id.*

<sup>235</sup> *Id.*

rather attenuated in the present circumstances.”<sup>236</sup> The court also emphasized California’s extremely strong interests in protecting the health of Californians in light of “undisputed evidence regarding the highly damaging and even life-threatening effects of this air pollution on the people of California as well as the clear benefits resulting from the regulations adopted by CARB.”<sup>237</sup> Thus, even though the court recognized that the Vessel Fuel Rules represented an “expansive and even possibly unprecedented state regulatory scheme,”<sup>238</sup> the court found that the Vessel Fuel Rules were legitimate exercises of state power given the “severe environmental problems confronting California.”<sup>239</sup>

This decision represents a roadmap for other coastal states (with the same heavy volume of shipping traffic that California has) to implement similar environmental regulations in order to curb cruise ship pollution. First, the decision implies that as long as a state environmental regulation is tailored to protect the health and welfare of the citizens of the state and does not impede upon a federal objective, a court will find that the state regulation passes the effects test.<sup>240</sup> Second, the Ninth Circuit’s decision highlighted the concerns California has as a state subject to a high amount of shipping traffic.<sup>241</sup> This means that a state with a high level of

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<sup>236</sup> *Id.* at 1179–80. The court pointed to the fact that APPS contains an “express savings clause” as evidence that the federal government meant for states to have the ability to supplement MARPOL with their own environmental regulations. “Among other things, the District Court appropriately noted that the federal statute implementing Annex VI of MARPOL contains an express savings clause. *See* 33 U.S.C. § 1911 (“Authorities, requirements, and remedies of this chapter supplement and neither amend nor repeal any other authorities, requirements, or remedies conferred by any other provision of law. Nothing in this chapter shall limit, deny, amend, modify, or repeal any other authority, requirement, or remedy available to the United States, or any person, except as expressly provided in this chapter.”). *Id.*

<sup>237</sup> *Id.* at 1181.

<sup>238</sup> *Id.*

<sup>239</sup> *Id.* at 1181–82.

<sup>240</sup> *See id.* The Ninth Circuit found that despite the “rather expansive regulatory program” being applied to “one of the largest and most important trade routes in the world” would result in billions of dollars in compliance costs, the effects of the Vessel Fuel Rules in protecting the health of Californians (and reducing health care costs) justified this heavy burden on the shipping industry. *Id.* at 1176, 1181–82. *But see In re Oil Spill By The Oil Rig “Deepwater Horizon” in the Gulf of Mexico, on April 20, 2010, No. 2179, 2011 WL 5520295, at \*5 (E.D. La. Nov. 14, 2011),* where the district court denied state tort claims against the defendants because the CWA statutorily preempted state law in this area.

<sup>241</sup> *Pac. Merch. Shipping Ass’n*, 639 F.3d at 1159. The court highlighted the heavy shipping traffic California experiences:

Initially, the ports of Long Beach and Los Angeles collectively constitute the largest port in the United States, with some 40% of all national imports entering the country through these two huge facilities. In 2006 alone, there were approximately 11,000 vessel “calls” at California ports, and this number is expected to increase significantly in the future.

cruise traffic, like Florida, could potentially justify environmental regulations based on their high level of exposure to carbon-emitting cruise ships. Finally, the decision was based on a bedrock of case law from different circuits, state courts, and even the Supreme Court.<sup>242</sup> This means that an environmental regulation based on this Ninth Circuit decision would have the benefit of a strong jurisprudential pedigree. States could also steer clear of potential jurisdictional issues raised in *PMSA v. Goldstene* by closely tailoring their emissions regulations to the CARB's Vessel Fuel Rules. It's true that states could compete against one another in a race-to-the-bottom similar to the one created by the flags of convenience doctrine, creating lower emissions standards than their sister states in order to attract cruise line business. However, state legislatures could be more beholden to their constituents, as state legislators represent fewer people than congresspeople or senators. In any case, any audacious environmental legislation, like the CWA, requires legislatures to protect their constituents collectively—this case requires no different. Hopefully, state lawmakers realize that limiting the damage of climate change requires all hands on deck.

## CONCLUSION

Cruise ships offer an attractive vacation option for millions of tourists around the world, causing a boom in the cruise industry.<sup>243</sup> While the expansion of cruises and the industry at large has been an economic benefit,<sup>244</sup> it has also caused significant harm to the environment, particularly by emitting pollutants into the atmosphere and dumping waste into the ocean.<sup>245</sup>

One of the factors enabling cruise lines to evade regulation is the international maritime legal regime itself.<sup>246</sup> While there are international environmental regulations governing pollution by ships on the high seas, a central feature of international maritime law—the law of the flag—allows

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*Id.* The court linked this heavy traffic to Californians' exposure to harmful sulfur and nitrogen particles found in marine fuel emissions. "It is likewise undisputed that 27 million Californians (80% of the state's population) are exposed to emissions from ocean-going vessels and that these emissions have a number of harmful effects." *Id.* at 1160. The court then explains the Vessel Fuel Rules are an attempt to solve this problem. "In addition to anticipated health care savings and similar financial benefits, research indicated that the Vessel Fuel Rules should prevent, between 2009 and 2015, approximately 3,500 premature deaths and nearly 100,000 asthma attacks as well as reduce cancer risks." *Id.*

<sup>242</sup> *Id.* at 1167–76.

<sup>243</sup> See CONG. RES. SERV., *supra* note 1; Ellsmoor, *supra* note 1; Silver, *supra* note 55.

<sup>244</sup> See CRUISE INDUSTRY CONTRIBUTION, *supra* note 38, at 23

<sup>245</sup> See Transp. & Env't, *supra* note 83; Carić, *supra* note 87; Ruiz-Guerra, *supra* note 87.

<sup>246</sup> See Anderson III, *supra* note 149, at 140; Negret, *supra* note 11, at 2.

cruise lines to effectively choose which state's jurisdiction governs the environmental activity of their cruises.<sup>247</sup> The law of the flag has been exploited by cruise lines and countries with open registries alike, as cruise lines seek relaxed jurisdictions while countries aim to lure lucrative business to their shores.<sup>248</sup>

While the law of the flag is an integral part of international law,<sup>249</sup> certain domestic legislative changes, both on the state and federal level, can help prevent further environmental damage from cruise ships. One solution may be to rewrite the CWA to require cruise ships to implement the best available technology for preventing pollution regardless of the cost in an effort to ensure that all cruise ships are employing the best means possible to reduce the pollution they cause. Another solution calls for the establishment of carbon emission limits similar to California's Vessel Fuel Rules. These two potential solutions demonstrate the kind of direct and pervasive change needed to combat global climate change. The ship for passive action on climate change has sailed—direct solutions are needed in order to protect the world's oceans.

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<sup>247</sup> See Negret, *supra* note 11, at 2.

<sup>248</sup> See Tetley, *supra* note 123, at 140 (“The law of the ship’s flag has been used by various authorities in the past as the sole and definitive indicator of the applicable maritime law.”); *Why So Many Shipowners Find Panama’s Flag Convenient*, *supra* note 8.

<sup>249</sup> See Anderson III, *supra* note 149, at 140.

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