

# ARTICLES

## PLASTIC ACTIVISM AND THE CLEAN WATER ACT

BY  
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*Scientists have been sounding the alarm about the health and environmental dangers of plastics. We have been slow to pay attention. Plastic production causes a range of environmental harms. Furthermore, larger plastic items break down over time into smaller and smaller pieces—microplastics. Much of the plastic waste in our environment originates as single-use items which degrade into microplastics that pollute rivers, wildlife, and humans ourselves. Today, we sit on the verge of a new tidal wave of petrochemical build-out to produce plastic in the United States in areas already overburdened with air and water pollution. Can the Clean Water Act address this challenge?*

*The Clean Water Act can indeed make an important difference. Why has it failed to do so thus far? Environmental activists have highlighted the Clean Water Act's potential to stem the tide of plastic toxification of our waters, citizens, and wildlife. This has included important regulatory efforts through citizen petitions, engagement in voluntary EPA programs, and citizen-suit litigation. Although federal law encourages citizen engagement, it should not replace effective regulatory programs to address known threats to water resources. This paper will look at these combined citizen efforts, the pressure these efforts have directed at responsible government officials, and what those efforts reveal about the durability of the Clean Water Act at fifty years old to address evolving threats to the chemical, physical, and biological integrity of our precious water resources.*

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## I. INTRODUCTION

Plastic is produced by mixing fossil fuels with other chemicals.<sup>1</sup> Single-use plastic is a major revenue generator since the items are literally designed to be infinitely replaced.<sup>2</sup> The plastic industry deliberately pursued this revenue generation model.<sup>3</sup> Because the concerns with plastic pollution are now widespread, the plastic industry is aggressively steering legal regulation to consumer usage architecture and away from limits on production or use.<sup>4</sup> In practice, this means promoting recycling efforts and improvements in publicly-owned treatment works, instead of reformulating or reducing the production of plastic and its toxic footprint.<sup>5</sup> Continuing down this path will deepen the

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<sup>1</sup> Renee Cho, *More Plastic Is on the Way: What It Means for Climate Change*, COLUM. CLIMATE SCH. 2 (Feb. 20, 2020), <https://perma.cc/X5U8-NBVM>.

<sup>2</sup> See A.T. Williams & Nelson Rangel-Buitrago, *Marine Litter: Solutions for a Major Environmental Problem*, 35 J. COASTAL RES. 648, 649 (2019) (explaining how plastic waste generation has increased and the large role plastic packaging and single-use items play because these items “enter the waste stream immediately after use”).

<sup>3</sup> MAX LIBOIRON, POLLUTION IS COLONIALISM 1 (2021) (describing strategy to maximize profits by creating constant demand for new plastic).

<sup>4</sup> Jehan El-Jourbagy et al., *Creating an Industrial Regulatory Framework to Reduce Plastics*, BERKELEY BUS. L.J., 2021, at 94, 95–96, 104. In contrast, many scholars are emphasizing the need to incentivize the reduction of unnecessary plastic, specifically single-use plastic. See, e.g., *id.* at 97 (promoting extended producer liability).

<sup>5</sup> TALLASH KANTAI, CONFRONTING THE PLASTIC POLLUTION PANDEMIC 6 (Dec. 2020), <https://perma.cc/5NFP-JQQS> (explaining how the plastic industry shifted responsibility to end-users and the fallacy of recycling as a solution). A linear economy would keep society locked into continued overconsumption of resources, which is why those promoting sustainable development advocate for a circular economy. ELLEN MACARTHUR FOUND., THE

need for robust pollution abatement efforts that have thus far eluded regulators. Existing legal regimes have been unable to handle the vast quantity of plastic and plastic-related wastes entering the environment, and for a variety of reasons, industry is about to turn the volume way up.<sup>6</sup>

In a carbon-constrained world, the fossil fuel industry is likely to increase plastic production. Given the international commitment to decarbonize economies and dramatically reduce the use of fossil fuels to minimize the harm from climate change,<sup>7</sup> the main area for predicted growth in fossil fuels use is in the production of plastic.<sup>8</sup> Plastic production is predicted to be a leading greenhouse gas contributor, as energy systems move away from fossil fuels to sources such as solar, wind, nuclear, or other non-carbon forms of energy production.<sup>9</sup> Natural gas production has unlocked the raw materials for plastic production, and those producers are looking to monetize their product.<sup>10</sup> Moreover, recycling of plastic is expensive and inefficient since traditional plastic degrades with each recycling attempt.<sup>11</sup> Thus, a continued demand for virgin plastic remains the optimal revenue generator for the plastics industry.

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NEW PLASTICS ECONOMY: RETHINKING THE FUTURE OF PLASTICS 18, 37 (2016), <https://perma.cc/2397-TZYF>.

<sup>6</sup> See Kantai, *supra* note 5, at 3–5 (explaining various legal initiatives and their shortcomings).

<sup>7</sup> See United Nations Framework Convention on Climate Change art. 4, May 9, 1992, S. TREATY DOC No. 102-38, 1771 U.N.T.S. 107 (stating overarching goal of reducing carbon dioxide emissions); Paris Agreement to the United Nations Framework Convention on Climate Change arts. 2–4, 7, Dec. 12, 2015, T.I.A.S. No. 16-1104 (adopting strengthened standards for achieving greenhouse gas emissions reductions and adapting to climate change).

<sup>8</sup> See *What is the Future for Plastics?*, S&P GLOBAL (Feb. 24, 2020), <https://perma.cc/2KYJ-ZTZR> (predicting use of recycled plastics will grow); INT'L ENERGY AGENCY, THE FUTURE OF PETROCHEMICALS: TOWARDS MORE SUSTAINABLE PLASTICS AND FERTILISERS 3 (2018) (stating that petrochemicals, which include plastics and fertilizers, are absorbing an increasing amount of the world's oil and gas supply, but predicting that a more sustainable option is feasible).

<sup>9</sup> THE FUTURE OF PETROCHEMICALS, *supra* note 8, at 11. The production of plastic products with the use of coal-based energy will also be a significant driver of greenhouse gas emissions. See Livia Cabernard et al., *Growing Environmental Footprint of Plastics Driven by Coal Combustion*, 5 NATURE SUSTAINABILITY 139, 139 (2022), <https://perma.cc/7U8A-MGLR> (emphasizing that coal-based emissions for plastic production have quadrupled since 1995 and constitute the majority of the carbon footprint for plastics).

<sup>10</sup> Beth Gardiner, *The Plastics Pipeline: A Surge of New Production Is on the Way*, YALE ENV'T 360 (Dec. 19, 2019), <https://perma.cc/6YPF-KG82>. Natural gas production in the United States is predicted to increase, and producers see an opportunity to co-locate plastic production facilities in close proximity to gas-production locations. See *U.S. Marketed Natural Gas Production Forecast to Rise in 2022 and 2023*, U.S. ENERGY INFO. ADMIN. (Feb. 17, 2022), <https://perma.cc/EYG6-E6NB> (predicting rise to record highs in 2023); CHRISTINE RISCH ET AL., VALUE ADDED OPPORTUNITIES FROM NATURAL GAS 12 (2013) (noting co-location of intermediate petrochemical products near an ethane cracker would bring about economic opportunity in West Virginia).

<sup>11</sup> Alexander H. Tullo, *Companies are Placing Big Bets on Plastics Recycling. Are the Odds in their Favor?*, CHEM. & ENG'G NEWS (Oct. 11, 2020), <https://perma.cc/QFS7-DKRK>.

Moreover, society has come to see many plastic items as indispensable, and certainly people weave plastic usage throughout modern everyday life. Many people in developing nations are also adopting the convenience and disposable-based attitudes that lead to plastic consumption.<sup>12</sup> Population growth, as well as the expansion of buying power among growing middle classes, increases demand for a growing list of plastic consumer products.<sup>13</sup> Experts have noted that the quantity of plastic produced in the first decade of the century rivals the quantity produced in the entire time since its inception in the 1950s,<sup>14</sup> and this growing appetite will not likely abate unless governments intervene.<sup>15</sup>

Thus, a convergence has occurred: at the very time we are racing to find a legal architecture to prevent future plastic pollution and technological tools to clean up pollution which has already occurred, the plastic industry is on a major expansion campaign in places like Asia and the United States to increase production of plastic—single-use plastic in particular.<sup>16</sup> Focusing specifically on water quality, the traditional tools contemplated by the Clean Water Act (CWA)<sup>17</sup> readily address the dangers of unabated plastic pollution.

## II. PLASTIC WASTE AND WATER QUALITY

Although some have noted that the CWA does not specifically address plastic,<sup>18</sup> water quality is the exact focus of the statute and has also been the main driver of plastic pollution concerns since they first captured modern attention. Ocean pollution was one of the canaries in the coalmine for the growing dangers from unchecked plastic production and use.<sup>19</sup> Thus for a time, the fixation on the ocean gyres aggregating plastic pollution sparked research interest into the potential harm plastic

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<sup>12</sup> Dave Hall, *Throwaway Culture Has Spread Packaging Waste Worldwide: Here's What to Do About It*, THE GUARDIAN (Mar. 13, 2017), <https://perma.cc/5CLT-AWK5>.

<sup>13</sup> Michael Taylor, *Can the Tide of Plastic Pollution Be Turned by a New Global Pact?* THOMSON REUTERS FOUND. (Mar. 2, 2022), <https://perma.cc/3CD8-LG2A>.

<sup>14</sup> Richard C. Thompson et al., *Plastics, the Environment and Human Health: Current Consensus and Future Trends*, 364 PHIL. TRANSACTIONS ROYAL SOC'Y 2153, 2164 (2009).

<sup>15</sup> THE FUTURE OF PETROCHEMICALS, *supra* note 8, at 88, 119.

<sup>16</sup> Katie Brigham, *How the Fossil Fuel Industry Is Pushing Plastics on the World*, CNBC (Jan. 29, 2022), <https://perma.cc/MH6H-TXXZ>; Gardiner, *supra* note 10 (noting that “[s]ince 2010, companies have invested more than \$200 billion in 333 plastic and other chemical projects in the U.S.” alone).

<sup>17</sup> Federal Water Pollution Control Act, 33 U.S.C. §§ 1251–1388 (2018).

<sup>18</sup> El-Jourbagy, *supra* note 4, at 106 (noting that the CWA regulates water pollution but does not specifically address plastic waste).

<sup>19</sup> See André M. Santamaria, Esq., *The Pacific Garbage Patch, Everyone's Responsibility but Nobody's Problem: A Critical Analysis of Public International Law Regimes as They Relate to the Growing Toxicity of the Environment*, 32 J. ENV'T L. & LITIG. 189, 192–93 (2017) (discussing how all water systems are connected and thus how the toxicity of the ocean will lead to the toxicity of all waters).

posed and the possible legal solutions.<sup>20</sup> What is often lost on the public is that land-based pollution is the main source of ocean plastic pollution.<sup>21</sup> It is not possible to address plastic pollution without focusing on the rivers polluted with plastic that carry pollution out to sea.

The rivers that contribute the most to ocean plastic waste are all in Asia.<sup>22</sup> Moreover, plastic bottles top the list as one of the most frequently occurring waste items.<sup>23</sup> But international considerations aside, it is important to emphasize that the United States is a major source of plastic waste. The per capita waste generation rates in the United States put Americans in the running for generating the most plastic litter.<sup>24</sup> This is also despite the fact that many U.S. waste-management systems are well-developed, whereas systems in other countries are less robust.<sup>25</sup> While the international community must work toward a global agreement to tackle the problem,<sup>26</sup> it is imperative that the United States address local sources of pollution as one part of the effort and as a critical component of preventing harm in the United States.

Like other industrial production processes, plastic manufacturing has the potential to pollute air and water with chemical byproducts. When plastic is produced, common chemical additives such as lead, cadmium, zinc, and copper can reach the environment.<sup>27</sup> After a boom in shale gas, the plastic industry is now focusing more attention on expanding plastic production in the United States, particularly in the traditional petrochemical strongholds of Louisiana and in areas along the Mississippi River.<sup>28</sup>

The building blocks of many virgin single-use plastic items are called “nurdles.” Nurdles are a source of local pollution even before they begin

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<sup>20</sup> See *id.* at 191–92, 197, 201–202 (assessing UNCLOS and London Dumping Convention applicability to address ocean plastic pollution); see also, Jessica R. Coulter, Note, *A Sea Change to Change the Sea: Stopping the Spread of the Pacific Garbage Patch with Small-Scale Environmental Legislation*, 51 WM. & MARY L. REV. 1959, 1973, 1978, 1991 (2010) (examining bans, taxes, and other potential regulation to prevent continued plastic pollution).

<sup>21</sup> *80% of Ocean Plastic Comes From Land-Based Sources, News Report Finds*, ECOWATCH (June 15, 2016), <https://perma.cc/ZWX5-XK73>.

<sup>22</sup> Russell McLendon, *10 Rivers May Deliver Bulk of Ocean Plastic*, TREEHUGGER, <https://perma.cc/VTV2-CXAC> (last updated May 30, 2020).

<sup>23</sup> Carmen Morales-Caselles et al., *An Inshore-offshore Sorting System Revealed from Global Classification of Ocean Litter*, 4 NATURE SUSTAINABILITY 484, 485 (2021).

<sup>24</sup> Kara Lavender Law et al., *The United States' Contribution of Plastic Waste to Land and Ocean*, SCI. ADVANCES, Oct. 30, 2020, at 1, 1.

<sup>25</sup> *Id.* at 2–4.

<sup>26</sup> Stephanie B. Borrelle et al., *Why We Need an International Agreement on Marine Plastic Pollution*, 114 PROC. NAT'L ACAD. SCI. U.S. 9994, 9995–96 (2017) (noting the positive progress local and national actions make and explaining why cross-border solutions are required to address scale of problem).

<sup>27</sup> Hannah M. Diaz, *Plastic: Breaking Down the Unbreakable*, 19 FLA. COASTAL L. REV. 85, 88 (2018) (discussing the toxicity of plastics).

<sup>28</sup> Steven Mufson, *Huge Plastics Plant Faces Calls for Environmental Justice, Stiff Economic Headwinds*, WASH. POST (Apr. 19, 2021), <https://perma.cc/8N5K-MNLT>.

their useful timeframe within a plastic product.<sup>29</sup> Nurdles are particularly challenging because of their small size and density.<sup>30</sup> Thus, once nurdles escape into the environment, water and wind easily disperse them.<sup>31</sup>

There is also good reason to focus regulatory attention on the release of used plastic products into the environment. Plastic items are notoriously difficult to capture in waste systems.<sup>32</sup> Plastic that is waste but that does not end up in waste receptacles is known in the business as plastic “leakage.”<sup>33</sup> That “leakage” is, in simple terms, garbage pollution, with single-use products filling creeks and overwhelming sewer systems.<sup>34</sup> Once in our environment, plastic persists for hundreds of years and is often degraded over time into smaller and smaller pieces that are consumable by fish, wildlife, and humans, and float through our rivers and streams into the oceans.<sup>35</sup>

The assault of plastic debris on wildlife has been well-documented with marine wildlife starved by bellies full of plastic waste.<sup>36</sup> Plastic waste causes physical damage to wildlife that may be trapped (entanglement), consume larger plastic products or microplastics, and suffer the ill-effects of the chemical by-products of plastic manufacturing.<sup>37</sup> When plastic enters waterways, it can absorb toxic chemicals from the water and thereafter transfers the toxic chemicals

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<sup>29</sup> Julissa Treviño & Undark, *The Lost Nurdles Polluting Texas Beaches*, ATLANTIC (July 5, 2019), <https://perma.cc/H38J-YN63> (explaining that nurdles are:

“the preproduction building blocks for nearly all plastic goods,” including single-use consumer product plastics like soft drink bottles, and that when they are “lost during transit or manufacturing . . . they absorb toxic chemicals and are often mistaken for food by animals . . . [and] . . . wash up by the millions on beaches, leaving coastal communities to deal with the ramifications.

<sup>30</sup> Therese M. Karlsson et al., *The Unaccountability Case of Plastic Pellet Pollution*, 129 MARINE POLLUTION BULL. 52, 55–57 (2018) (discussing research on dispersion of pellets from industrial sites).

<sup>31</sup> *Id.* at 56–57.

<sup>32</sup> See Kevin Loria, *The Big Problem with Plastic*, CONSUMER REPS. (Sept. 8, 2021), <https://perma.cc/D9YS-2J7F> (describing how most plastic that Americans place in recycling bins ends up in landfills).

<sup>33</sup> Julien Boucher & Guillaume Billard, *The Challenges of Measuring Plastic Pollution*, FIELD ACTIONS SCI. REPS., March 2019, at 68, 69.

<sup>34</sup> *Marine Plastic Pollution*, INT’L UNION FOR CONSERVATION NATURE (2021), <https://perma.cc/M9AX-BBHK>.

<sup>35</sup> *What are Microplastics?*, NAT’L OCEANIC AND ATMOSPHERIC ADMIN. (2021), <https://perma.cc/9TVQ-RE86>.

<sup>36</sup> See, e.g., Alejandra Borunda, *This Young Whale Died with 88 Pounds of Plastic in its Stomach*, NAT’L GEOGRAPHIC (Mar. 18, 2019), <https://perma.cc/HSN5-S395> (documenting the death of a whale who starved due to being unable to break down the plastic in its stomach).

<sup>37</sup> *Ocean Plastics Pollution: A Global Tragedy for our Oceans and Sea Life*, CTR. FOR BIOLOGICAL DIVERSITY, <https://perma.cc/2XZJ-ZKKS> (last visited Apr. 18, 2022); Frederic Gallo et al., *Marine Litter Plastics and Microplastics and their Toxic Chemicals Components: The Need for Urgent Preventive Measures*, ENV’T SCIS. EUR., Apr. 2018, at 2–3.

when animals ingest them.<sup>38</sup> These chemicals include polychlorinated biphenyls (PCBs), polycyclic aromatic hydrocarbons (PAHs), heavy metals, and dioxins.<sup>39</sup> Records show that all seven species of sea turtle have ingested microplastics, which has affected their reproductive health and survival.<sup>40</sup> Indeed, scientists have documented over 2,200 species impacted by marine debris.<sup>41</sup> Microplastics persist in the environment and are thus available for ingestion for hundreds of years.<sup>42</sup>

Although much has been written about the impacts on wildlife, only more recently have the human health impacts of plastic been part of the growing call for action.<sup>43</sup> Water quality is inherently connected to human health. Studies have shown that plastic, plastic chemical by-products, and forever chemicals like PFAS are indeed harming human health.<sup>44</sup> As previously emphasized, ingested plastic particles can transfer chemicals and many of those chemicals are linked to human health impacts.<sup>45</sup> A study conducted by the University of New Castle for the World Wide Fund for Nature (formerly World Wildlife Fund) concluded that people eat an average of five grams—about a credit card—worth of plastic every week.<sup>46</sup> One of the most recent, alarming discoveries concerns reproductive health impacts. Plastic exposure has been linked to reduced sperm counts.<sup>47</sup> Overall, the evidence has become overwhelming that addressing the water-quality impacts of plastic are critical to societal well-being.

### III. PLASTIC ACTIVISM WITHIN THE CLEAN WATER ACT

The CWA is the primary federal statute designed to address water quality.<sup>48</sup> When the CWA was adopted, it was well-recognized that water

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<sup>38</sup> Letter from Emily Jeffers & Maxx Phillips, Ctr. for Biological Diversity, to Andrew Wheeler, Administrator, U.S. Env't Prot. Agency 2 (Oct. 31, 2019) (on file with author), <https://perma.cc/J9L7-VRUZ>.

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

<sup>40</sup> *Id.*

<sup>41</sup> *Id.*

<sup>42</sup> *Microplastics*, NAT'L GEOGRAPHIC SOC'Y, <https://perma.cc/G6AJ-R2U2> (last updated July 1, 2019).

<sup>43</sup> *See, e.g.*, WIJNAND DE WIT & NATHAN BIGAUD, DALBERG ADVISORS, NO PLASTIC IN NATURE: ASSESSING PLASTIC INGESTION FROM NATURE TO PEOPLE 12 (World Wide Fund for Nature, June 2019), <https://perma.cc/A72H-B86J> (listing potential ways for Governments to address plastic pollution and its effect on humans).

<sup>44</sup> *What are the Health Effects of PFAS?*, AGENCY FOR TOXIC SUBSTANCES & DISEASE REGISTRY, <https://perma.cc/WG6Q-V5YM> (last updated June 24, 2020); WIT & BIGAUD, *supra* note 43, at 11.

<sup>45</sup> WIT & BIGAUD, *supra* note 43, at 7, 11.

<sup>46</sup> *Id.* at 7.

<sup>47</sup> Hagai Levine et al., *Temporal Trends in Sperm Count: A Systematic Review and Meta-Regression Analysis*, 23 HUMAN REPRODUCTION UPDATE 646, 654 (July 25, 2017); Stephania D'Angelo & Rosaria Meccariello, *Microplastics: A Threat for Male Fertility*, INT'L J. ENV'T RSCH. & PUB. HEALTH Mar. 2021, No. 2392 at 1, 2, 8.

<sup>48</sup> CWA, 33 U.S.C. § 1251(a) (2018).

pollution was harming the environment.<sup>49</sup> Fires burning on industrialized rivers provided a stark visual of the impact of pollution.<sup>50</sup> Today, plastic pollution is also visible, yet as a society, we have been slow to respond.<sup>51</sup> Congress did not design the CWA to address only solid waste or other traditional forms of pollution; the CWA has clearly been effective at cleaning up water pollution since its inception,<sup>52</sup> and in part it has met this challenge because Congress broadly defined its regulatory scope.

Congress designed the CWA to engage both the federal government and states in a cooperative federalism legal architecture to protect the nation's waters.<sup>53</sup> The main components of the CWA include provisions that require a permit before a discharge of pollutants into waters of the United States.<sup>54</sup> The CWA defines "pollutant" broadly to include garbage, as well as industrial, municipal, and agricultural waste discharged into water.<sup>55</sup> Thus, plastic and its subcomponents are clearly readily captured in the definition of "pollutant"—but the structure of the act and its programs make a difference in how regulators address pollutants.<sup>56</sup>

One of the major challenges for addressing water pollution from plastic is that it falls into the categories of both of point- and nonpoint-source pollution, with federal authorities dominating the former and states dominating the latter.<sup>57</sup> The CWA has robustly addressed identifiable "point-source" pollution, while non-point sources remain a continued challenge with programs largely spearheaded by the states. Point-source regulation is addressed through the National Pollutant Discharge Elimination System (NPDES) permitting program, which applies technology requirements at factories and other industrial sites that might discharge pollution from a pipe or ditch to receiving waters,<sup>58</sup> as well as regulation on the fill of wetlands for development.<sup>59</sup> Further,

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<sup>49</sup> ROBIN CRAIG, ENVIRONMENTAL LAW IN CONTEXT: CASES AND MATERIALS 676 (4th ed. 2016).

<sup>50</sup> *Id.*

<sup>51</sup> See Karlsson et al., *supra* note 30, at 59 (noting that visible plastic pollution could be addressed by existing laws in Europe but have not been enforced).

<sup>52</sup> See William L. Andreen, *Water Quality Today—Has the Clean Water Act Been a Success?*, 55 ALA. L. REV. 537, 542 (2004) (noting the CWA's success in reducing industrial pollution and reversing wetland losses).

<sup>53</sup> 33 U.S.C. § 1251(b), (g).

<sup>54</sup> *Id.* § 1342(a).

<sup>55</sup> See *id.* § 1362(6) ("The term 'pollutant' means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.").

<sup>56</sup> Stephanie F. Wood, *Move Over Diamonds—Plastics are Forever: How the Rise of Plastic Pollution in Water Can Be Regulated*, 29 VILL. ENV'T L.J. 155, 158 (2018) (noting EPA regulates plastic as a pollutant).

<sup>57</sup> See 33 U.S.C. § 1329 (describing state-led management of non-point source pollution); see also *id.* § 1344 (describing one type of federally led management of point-source pollution, i.e., regulating permits for discharge of dredge or fill materials into navigable waters at specified disposal sites).

<sup>58</sup> *Id.* § 1342(a).

<sup>59</sup> *Id.* § 1344(a), (e).



the CWA might additionally constrain point-sources if regulators have inadequately addressed pollution in a particular location. Pursuant to the CWA, regulators consider the total maximum daily loads (TMDL) of a pollutant on a water system when waterbodies are not otherwise meeting water quality standards through the application of permits on regulated facilities.<sup>60</sup> But of course, not all pollution comes out of a pipe—stormwater runoff is a clear example of nonpoint-source pollution that can significantly degrade water quality.<sup>61</sup> Nonpoint-source programs, addressed primarily by the states, are not as well-developed.<sup>62</sup> And finally, at the administrative level, we have recognized for two decades that inadequate enforcement prevents the CWA from meeting its full potential.<sup>63</sup>

The Office of Inspector General (OIG)<sup>64</sup> for the U.S. Environmental Protection Agency (EPA) undertook an audit in October 2019 to evaluate EPA's programs as they related to addressing plastic pollution.<sup>65</sup> The OIG identified the main tools of the CWA that could bear on the issue in their May 11, 2021 report.<sup>66</sup> Accordingly, the OIG made clear that EPA could find the path to address plastic pollution by employing specific water quality standards adapted to plastic pollution, increasing control of point sources, better managing non-point sources, identifying impaired waters, and establishing TMDLs for those waters.<sup>67</sup>

EPA has been slow to use its tools under the CWA to tackle the plastic crisis. The problem of plastic has only recently received attention

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<sup>60</sup> *Id.* § 1313(d).

<sup>61</sup> U.S. ENV'T PROT. AGENCY, EPA 841-F-03-003, PROTECTING WATER QUALITY FROM URBAN RUNOFF (Feb. 2003), <https://perma.cc/J6E2-8BTN>.

<sup>62</sup> Robert W. Adler, *Resilience, Restoration and Sustainability: Revisiting the Fundamental Principles of the Clean Water Act*, WASH. U. J.L. & POL'Y 139, 159–61 (2010) (describing the CWA's ineffective regulation of nonpoint sources of pollution).

<sup>63</sup> Andreen, *supra* note 52, at 544.

<sup>64</sup> The OIG is an oversight division within the federal government intended to address illegal, ineffective, or inefficient administrative practices. *About EPA's Office of Inspector General*, U.S. ENV'T PROT. AGENCY, <https://perma.cc/EG3Q-QP98> (last visited Mar. 22, 2022). The EPA OIG is an independent office within EPA and explains its mission as to assist EPA to protect the environment in a more efficient, cost-effective way. *Id.* OIG was created pursuant to the Office of Inspector General Act of 1978 and receives its funding from Congress. *Id.*

<sup>65</sup> Memorandum from Kathlene Butler, Dir., Water Directorate, Off. of Audit and Evaluation, on the Effectiveness of Clean Water Act to Protect from Plastic Pollution to David P. Ross, Assistant Adm'r, Off. of Water, and Jennifer Orme-Zavaleta, Principal Deputy Assistant Adm'r for Sci., Off. of Rsch. and Dev. (Oct. 30, 2019). The project yielded two reports. See Memorandum from Sean W. O'Donnell on the Office of Research and Development Initiatives to Address Threats and Risks to Public Health and the Environment from Plastic Pollution Within the Waters of the United States to Jennifer Orme-Zavaleta, Principal Deputy Assistant Adm'r for Sci. and EPA Sci. Advisor, Off. of Rsch. and Dev. (Jan. 6, 2021); Memorandum from Sean W. O'Donnell on EPA Helps States Reduce Trash, Including Plastic, in U.S. Waterways but Needs to Identify Obstacles and Develop Strategies for Further Progress to Radhika Fox, Acting Assistant Adm'r, Off. of Water (May 11, 2021) [hereinafter, EPA Helps States].

<sup>66</sup> EPA Helps States, *supra* note 65, at 1–3.

<sup>67</sup> *Id.*

despite EPA recognizing its potential to impair water quality. In 2012, the Center for Biological Diversity (CBD) petitioned EPA to specifically address water quality criteria for plastic pollution under the CWA.<sup>68</sup> EPA declined to do so.<sup>69</sup> The following year, EPA launched the Trash Free Waters (TFW) program as a voluntary partnership to address plastic pollution.<sup>70</sup> The articulated purpose was to prevent trash from entering waterways and to identify new ways to address trash pollution.<sup>71</sup> The EPA OIG specifically reviewed EPA's strategic planning to implement the TFW program, given it was the main program EPA was pursuing to address plastic pollution.<sup>72</sup> Through the TFW program, EPA provides a range of funding and technical assistance to projects across the country under the main categories of source reduction, trash capture, research on aquatic trash, and community engagement.<sup>73</sup> Potentially more relevant, EPA has developed tools and resources to illustrate best management practices, including a recently published Trash Stormwater compendium, which provides useful information to municipal separate storm sewer system permit writers, for developing trash-related provisions.<sup>74</sup> Industry representatives, such as the American Chemistry Council, have participated in these voluntary efforts.<sup>75</sup>

Given the anemic response to the growing plastic crisis, environmental organizations began to mobilize against plastic pollution in recent years.<sup>76</sup> Those organizations include ones specifically focused on ocean health, like the Surfrider Foundation, as well as organizations focused on wildlife more generally, such as CBD.<sup>77</sup> Many environmental groups have sought to promote more sound environmental practices related to plastic, including lobbying for bans, restricting specific plastic products, or extending producer liability for plastic sold as consumer

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<sup>68</sup> Ctr. For Biological Diversity, Petition for Water Quality Criteria for Plastic Pollution Under the Clean Water Act, 33 U.S.C. § 1314, at 1 (Aug. 22, 2012) [hereinafter 2012 NGO PETITION].

<sup>69</sup> A discussion of the failure to address plastics through the Clean Water Act and specifically in response to a petition for water quality criteria can be found in Rachel Doughty & Marcus Eriksen, *The Case for a Ban on Microplastics in Personal Care Products*, 27 TUL. ENV'T L.J. 277, 284–85 (2014).

<sup>70</sup> U.S. ENV'T PROT. AGENCY, EPA'S TRASH FREE WATERS PROGRAM: SUPPORTING HEALTHY COMMUNITIES AND VIBRANT ECOSYSTEMS, <https://perma.cc/9M2A-6DXK> (last visited Apr. 19, 2022) [hereinafter TFW PROGRAM].

<sup>71</sup> *Id.*

<sup>72</sup> EPA Helps States, *supra* note 65, at 7–8.

<sup>73</sup> TFW PROGRAM, *supra* note 70.

<sup>74</sup> U.S. ENV'T PROT. AGENCY, EPA-841-R-21-001, TRASH STORMWATER PERMIT COMPENDIUM 1 (2021), <https://perma.cc/95A5-V2RB>.

<sup>75</sup> Steve Russell, *Plastics in a Circular Economy: A Look Back Helps Industry Push Forward*, AM. CHEMISTRY COUNCIL 2 (Feb. 6, 2020), <https://perma.cc/BMT4-E7UB>.

<sup>76</sup> See *Citizen Suit Alert: Environmental NGOs Set Their Sights on Plastics*, CROWELL & MORING LLP (Feb. 11, 2020), <https://perma.cc/MM4R-4Z8M>; see also Sarah J. Morath et al., *Plastic Pollution Litigation*, NAT. RES. & ENV'T, Summer 2021, at 41, 41–44 (explaining multiple lawsuits involving citizen plaintiffs and plastic pollution).

<sup>77</sup> Press Release, Ctr. for Biological Diversity, EPA: Waters Around Two Hawaii Beaches Impaired by Plastic Pollution (July 16, 2020), <https://perma.cc/93VC-U7NR>.

products.<sup>78</sup> Other recent efforts by citizens demand the government address plastic pollution pursuant to authorities under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA),<sup>79</sup> state laws, and the focus of this paper, the CWA.<sup>80</sup>

Citizen suits have long been an important component of CWA enforcement efforts. Citizens may bring a lawsuit pursuant to the CWA to enforce provisions of the statute.<sup>81</sup> Some of the most prominent actions against plastic pollution have occurred in response to citizen suits demanding industry be held accountable for plastic pollution.

#### A. *Nurdles Pollution in South Carolina (CWA § 402)*

The Charleston Waterkeeper and South Carolina Coastal Conservation League sued Frontier Logistics in March 2020.<sup>82</sup> Frontier Logistics is a plastic resin packaging company.<sup>83</sup> Plaintiffs alleged that Frontier released nurdles into the environment.<sup>84</sup> Among their alleged violations, Plaintiffs argued that Frontier was discharging pollutants into waters of the United States without an NPDES permit.<sup>85</sup> The Waterkeeper had collected over 14,000 plastic pellets from the Cooper River, Charleston Harbor, and other nearby water areas.<sup>86</sup> Plaintiffs had recovered many of the samples from locations immediately adjacent to Frontier's facility and the facility's fence line.<sup>87</sup> At the facility, Frontier received plastic pellets by rail and then packaged them in bulk for overseas shipment where they would be used to manufacture plastic goods.<sup>88</sup> The case survived a motion for judgment on the pleadings in September 2020,<sup>89</sup> and the parties engaged in settlement negotiations. According to a press release by the Southern Environmental Law Center, Frontier agreed to pay \$1.2 million to settle the lawsuit.<sup>90</sup>

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<sup>78</sup> For example, Congress adopted the Microbead-Free Waters Act in 2015, amending the Federal Food, Drug, and Cosmetic Act and limiting the addition of plastic microbeads into cosmetic products. Pub. L. No. 114-114, 129 Stat. 3129 (amending 21 U.S.C. § 331). Although promoted by environmental groups, the Act was also supported by industry because of, among other reasons, the easy replacement by other materials. Jessica Lyons Hardcastle, *Plastic Microbead Ban Signed into Law, Wins Industry Support*, ENV'T + ENERGY LEADER (Jan. 4, 2016), <https://perma.cc/7F6W-WEX7>.

<sup>79</sup> 42 U.S.C. §§ 9601–9675 (2018).

<sup>80</sup> See Morath et al., *supra* note 76, at 41–44 (discussing lawsuits under various environmental laws).

<sup>81</sup> CWA, 33 U.S.C. § 1365 (2018).

<sup>82</sup> Complaint for Declaratory and Injunctive Relief at 1, *Charleston Waterkeeper v. Frontier Logistics, L.P.*, 488 F. Supp. 3d 240 (D.S.C. 2020) (No. 2:20-cv-01089-DCN).

<sup>83</sup> *Id.* at 8.

<sup>84</sup> *Id.* at 1.

<sup>85</sup> *Id.* at 2.

<sup>86</sup> *Id.* at 1–2.

<sup>87</sup> *Id.*

<sup>88</sup> *Id.* at 5.

<sup>89</sup> *Charleston Waterkeeper*, 488 F. Supp. 3d 240, 245 (D.S.C. 2020).

<sup>90</sup> Press Release, S. Env't L. Ctr., *Frontier Logistics Agrees to \$1.2 Million Settlement in Pellet-Pollution Lawsuit* (Mar. 3, 2021), <https://perma.cc/4QPT-LUG9>.

*B. Hawai‘i Water Quality Litigation (CWA § 303(d))*

CBD and others brought a lawsuit involving microplastic concentrations in Hawai‘ian offshore waters.<sup>91</sup> Pursuant to the cooperative federalism structure of § 303(d) of the CWA, states must identify waters that are failing to meet the State’s water quality standards.<sup>92</sup> The state must submit to EPA a list of “impaired” waters, and EPA must either approve or disapprove of the list.<sup>93</sup> When EPA identifies waters as “impaired,” the state must identify the pollutant causing impairment and develop a plan to improve water quality.<sup>94</sup>

CBD sued EPA for violating § 303(d) when it approved Hawai‘i’s allegedly deficient list of impaired waters.<sup>95</sup> CBD alleged there was ample evidence of plastic pollution and that failure (both by Hawai‘i and EPA) to identify these waters as “impaired” prevented the state from developing a TMDL plan to ensure that those waters would attain applicable water quality standards.<sup>96</sup>

In response to the lawsuit, EPA withdrew its approval and ordered a reevaluation of data on plastic pollution in Hawai‘ian waters.<sup>97</sup> Following a new submission of listed waters by Hawai‘i, EPA concluded in July 2020 that two of the listed waters were impaired due to plastic pollution, and thus added those waters to the “impaired waters” list and required the state to incorporate them into the state’s TMDL water quality management plan.<sup>98</sup>

Although the plaintiffs had focused on seventeen potential waters, EPA ultimately listed only two as impaired.<sup>99</sup> While this case represents progress—and states must re-visit these listings every two years<sup>100</sup>—it also illustrates how the government has been lukewarm to use this tool to target plastic pollution.

*C. Siting Plastic Production in Louisiana (CWA § 404)*

As previously discussed, the plastics industry is ramping up its production in North America and looking at sites in proximity to fracking operations such as in Ohio and Louisiana. The potential increase in

<sup>91</sup> Complaint for Declaratory and Injunctive Relief at 1–2, *Ctr. for Biological Diversity, v. U.S. Env’t Prot. Agency (CBD v. EPA)*, No. 20-cv-00056 (D. Haw. Feb. 5, 2020). The case was voluntarily dismissed on September 2, 2020, without going to trial. See Notice of Voluntary Dismissal Pursuant to FRCP 41(a)(1)(A)(i) Order, *CBD v. EPA*, No. 20-cv-00056.

<sup>92</sup> 33 U.S.C. § 1313(d)(1)(A) (2018).

<sup>93</sup> *Id.* § 1313(d)(2); *Overview of Listing Impaired Waters under CWA Section 303(d)*, U.S. ENV’T PROT. AGENCY, <https://perma.cc/S4Y7-LJFC> (last updated Sept. 20, 2021).

<sup>94</sup> 33 U.S.C. §§ 1313(d)(2), 1314(a)(2).

<sup>95</sup> Complaint for Declaratory and Injunctive Relief at 4, *CBD v. EPA*, No. 20-cv-00056.

<sup>96</sup> *Id.* at 19–21.

<sup>97</sup> Notice Regarding Timing of Forthcoming EPA Action at 2, *CBD v. EPA*, No. 20-cv-00056.

<sup>98</sup> Joint Status Report at 2, *CBD v. EPA*, No. 20-cv-00056.

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

<sup>100</sup> 40 C.F.R. § 130.7(d)(1) (2021).

production of plastics has led to local resistance. Formosa Plastics Group proposed to build a plastics facility in Louisiana along the Mississippi River, in St. James Parish.<sup>101</sup> To build its plastics facility, Formosa needed a wetlands permit from the U.S. Army Corps of Engineers (ACOE) to comply with § 404 of the CWA.<sup>102</sup> The proposed pollution burden of the project was high: the facility would double the amount of air pollution in St. James.<sup>103</sup> In fact, numerous other potential sites had been eliminated from consideration due to the limitations of the Clean Air Act.<sup>104</sup>

Environmental groups (including the CBD, Louisiana Bucket Brigade, Rise St. James, and Healthy Gulf) sued in federal court claiming ACOE failed to adequately analyze potential pollution impacts on poor and minority communities.<sup>105</sup> Formosa touted the benefits of its new facility, with a proposed 1,200 new permanent jobs, which would be specifically to produce the components for new, single-use plastic products.<sup>106</sup> Plaintiffs in the litigation to stop the siting of the facility emphasized that more plastic being produced contributes to the overall pollution of our oceans.<sup>107</sup> Furthermore, the affiliated groups began a public campaign to demand ACOE revoke the plant's permit, which yielded over 5,500 letters in opposition to the facility.<sup>108</sup>

The lawsuit, however, proved unsuccessful. The judge hearing the case rejected the environmental and grassroots organizations' lawsuit and dismissed the case.<sup>109</sup> ACOE is still considering the permit, and plaintiffs have pledged to sue again once ACOE issues another final agency decision on the wetlands permit.<sup>110</sup>

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<sup>101</sup> Complaint for Declaratory and Injunctive Relief at 2, *Ctr. for Biological Diversity v. U.S. Army Corps of Eng'rs (CBD v. ACOE)*, No. 20-CV-103, 2020 WL 5642287 (D.D.C. Sept. 22, 2020).

<sup>102</sup> 33 U.S.C. § 1344(a) (2018). The CWA regulates discharges into waters of the United States. *Id.* § 1251. Some wetlands are considered waters of the United States and thus ACOE regulates when developers may fill in wetlands to construct buildings or other improvements through the § 404 permitting program. *Id.* § 1344(a).

<sup>103</sup> Press Release, CTR. FOR BIOLOGICAL DIVERSITY, *Army Corps Receives More Than 5,500 Letters Demanding It Revoke Formosa Plastics' Permit* (Feb. 10, 2021), <https://perma.cc/FFV6-E9GS> [hereinafter CTR. FOR BIOLOGICAL DIVERSITY PRESS RELEASE].

<sup>104</sup> Rick Mullin, *Army Corps Pulls Permit on Formosa Project*, CHEM. & ENG'G NEWS (Nov. 21, 2020), <https://perma.cc/T7TK-QVG5>. See U.S. ARMY CORPS OF ENG'RS, FINDING OF NO SIGNIFICANT IMPACT: PROGRAMMATIC ENVIRONMENTAL ASSESSMENT #556, at 24 (2017), <https://perma.cc/V6AE-KR37> (listing nearby areas designated as nonattainment). The Clean Air Act regulates the introduction of additional facilities in areas that do not meet air quality standards. Clean Air Act, 42 U.S.C. §§ 7501–7509 (2018). For areas that are already not in attainment of standards, it is very difficult to introduce new facilities without offsetting pollution in the area and implementing expensive technology requirements. See *id.* (outlining multiple stringent regulations for facilities emitting in nonattainment areas).

<sup>105</sup> Complaint for Declaratory and Injunctive Relief, *supra* note 101, at 31–32.

<sup>106</sup> *The Sunshine Project*, FG LA LLC, <https://perma.cc/AM5N-SFGX> (last updated 2022).

<sup>107</sup> Complaint for Declaratory and Injunctive Relief, *supra* note 101, at 17.

<sup>108</sup> CTR. FOR BIOLOGICAL DIVERSITY PRESS RELEASE, *supra* note 103.

<sup>109</sup> *CBD v. ACOE*, No. 20-CV-103, 2020 WL 5642287, at \*16 (D.D.C. Jan. 1, 2021).

<sup>110</sup> See Defendant's Motion to Stay at 5, *CBD v. ACOE*, 2020 WL 5642287 (arguing for a stay on summary judgment to avoid further suit by CBD); David J. Mitchell, *Judge Tosses*

This grassroots opposition has also included political lobbying. Some notable Democrats are urging the Biden Administration to stop the project, emphasizing environmental injustice.<sup>111</sup> On the other hand, Senator Bill Cassidy of Louisiana objected to the resistance because the plant would bring jobs and industry to Louisiana.<sup>112</sup> Senator Cassidy noted that if the United States does not site this plant here, then another country with more lax environmental standards would establish it.<sup>113</sup> A concern for international pollution equity is worthy of consideration, but it should not drive the decision to overburden St. James Parish with yet another petrochemical facility that would contribute to the existing pollution burden and exacerbate the plastic pollution problem.<sup>114</sup>

Within the local press, newspaper articles discussing the lawsuit against Formosa in St. James Parish emphasized its bad international reputation. For example, a Bloomberg Businessweek article entitled “A Plastics Giant that Pollutes Too Much for Taiwan Is Turning to America” alleged that Formosa is trying to increase its operations in the U.S. Gulf Coast due to the crackdown it faced in Taiwan.<sup>115</sup> Now, the plan is to create more plants like the Sunshine plant in Louisiana and in places where close proximity to fracked gas will allow a surge in new single-use plastic, despite the rising number of bans around the world on this product.<sup>116</sup> Plastic activism, as demonstrated in this case, can bring significant visibility to the rising problem of plastic pollution.

#### D. Nurdles Pollution at Formosa in Texas (CWA § 402)

Formosa Plastics previously settled an environmental contamination case in Texas where it polluted local water with nurdles.<sup>117</sup> The San Antonio Bay Estuarine Waterkeeper and Sylvia Diane Wilson sued

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*Lawsuit Over Permit for \$9.4 Billion Formosa Plastic Complex; Here's What's Next*, THE ADVOCATE (Jan. 5, 2021), <https://perma.cc/9UHG-ASFE>.

<sup>111</sup> Letter from Raul M. Grijalva, Chairman, House Comm. on Nat. Res. and A. Donald McEachin, Member, House Comm. on Nat. Res., to Joseph Biden, President of the United States (Mar. 17, 2021), <https://perma.cc/6FUR-G3CE>; see also Mufson, *supra* note 28 (discussing political opposition to the project).

<sup>112</sup> David J. Mitchell, *Democrats Urge Biden to Revoke Permits for Big Louisiana Plastics Plant; Cassidy Says Butt Out*, THE ADVOCATE (Mar. 17, 2021), <https://perma.cc/6D5G-JUNH>.

<sup>113</sup> *Id.*

<sup>114</sup> *Environmental Racism in Louisiana's 'Cancer Alley', Must End, Say UN Human Rights Experts*, U.N. NEWS (Mar. 2, 2021), <https://perma.cc/7XEP-VNJS> (highlighting the disproportionate impact of plants on the African American community in St. James Parish).

<sup>115</sup> Bruce Einhorn and Joe Carroll, *A Plastics Giant That Pollutes Too Much for Taiwan Is Turning to America*, BLOOMBERG BUS. (Dec. 12, 2019), <https://perma.cc/XHR6-9HTC>.

<sup>116</sup> Polly Mosendz, *This Plastic Mega-Factory Is a \$10 Billion Bet on a Single-Use Future*, BLOOMBERG GREEN (June 22, 2020), <https://perma.cc/9MPZ-XRQK>.

<sup>117</sup> Stacy Fernández, *Plastic Company Set to Pay \$50 Million Settlement in Water Pollution Suit Brought on by Texas Residents*, TEX. TRIBUNE (Oct. 15, 2019), <https://perma.cc/JC6F-K8T6>.

Formosa Plastics for discharging plastic pellets.<sup>118</sup> The litigation established liability for Formosa violating its permit because it discharged “floating solids or visible foam other than trace amounts.”<sup>119</sup> Thus, more than trace amounts of plastic triggered a violation of their Texas Pollutant Discharge Elimination System permit, the NPDES permitting program implemented by Texas.<sup>120</sup>

After the parties settled the lawsuit, another dispute arose from the terms of the consent decree. The parties disputed whether plastic found outside Formosa’s outfall lease would be considered a new discharge.<sup>121</sup> Formosa contended that obligations were only triggered on a “new discharge” of plastics, whereas San Antonio Bay contended they were triggered on a “visual detection” of plastics, regardless of when the plastics had been discharged from Formosa property.<sup>122</sup> In an unpublished decision, the district court put the burden on Formosa to prove it was not a new discharge, but the Fifth Circuit Court reversed and remanded.<sup>123</sup> The Fifth Circuit construed the consent decree to resolve all liability for past nurdle pollution.<sup>124</sup>

While this successful litigation illustrates how companies can be held accountable for plastic pollution under the CWA, the ongoing dispute highlights the inevitable challenge with plastic nurdle pollution. Once in the environment, these tiny items are incredibly difficult to track and eliminate; it was factually difficult to prove which nurdles simply persisted in the environment and which nurdles were newly introduced after the consent decree. Although future settlements can be drafted to avoid these interpretative disputes, the reality is that we must anticipate persistent cleanup challenges with nurdles.

#### *E. Petro-Plastics Petitions (Administrative Procedure Act and CWA)*

As previously noted, CBD petitioned EPA in 2012 specifically to address Water Quality Criteria for Plastic Pollution under the CWA.<sup>125</sup> Yet at that time EPA declined to do so.<sup>126</sup>

Perhaps the most impressively inclusive citizen effort to address the lack of effective regulation of plastics came in the form of a petition to EPA by 280 environmental, public health, Indigenous, and community

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<sup>118</sup> *San Antonio Bay Estuarine Waterkeeper v. Formosa Plastics Corp. Tex.*, 852 F. App’x 816, 817–18 (5th Cir. 2021).

<sup>119</sup> *Id.* at 818.

<sup>120</sup> *Id.*; *What Is the “Texas Pollutant Discharge Elimination System (TPDES)”?*, TEX. COMM’N ON ENV’T QUALITY, <https://perma.cc/DN52-W4CC> (last visited Mar. 22, 2022).

<sup>121</sup> *San Antonio Bay Estuarine Waterkeeper*, 852 F. App’x at 818–19.

<sup>122</sup> *Id.* at 819.

<sup>123</sup> *Id.* at 819, 823.

<sup>124</sup> *Id.* at 822.

<sup>125</sup> 2012 NGO PETITION, *supra* note 68.

<sup>126</sup> *See* Doughty & Eriksen, *supra* note 69, at 284.

non-governmental organizations in July 2019.<sup>127</sup> CBD again spearheaded this effort.<sup>128</sup> The petition demanded that EPA review and revise effluent limitations guidelines and standards applicable to the petroleum refining industrial category (Part 419) and organic chemicals, plastics, and synthetic fibers industrial categories (Part 414).<sup>129</sup> The petitioners relied upon the Administrative Procedure Act<sup>130</sup> and the CWA as the gravamen of their petition and right to demand that EPA engage in required regulation.<sup>131</sup>

The petition aptly described the extent of pollution experienced due to plastic production and emphasized the build-out planned for the immediate future in the United States.<sup>132</sup> Specifically, the petitioners demanded four actions:

1. **Prohibit the discharge of plastic pellets** and other plastic materials in industrial stormwater and wastewater;
2. Update Effluent Limitations Guidelines and Standards for new facilities to **eliminate the discharge of toxic priority pollutants** from wastewater and stormwater streams;
3. For existing facilities, put into effect Effluent Limitations Guidelines and Standards for **pollutants of concern not currently regulated**; and
4. Update current Effluent Limitations Guidelines and Standards for existing facilities to **reflect advances in detection and treatment technologies** since the last revisions decades ago.<sup>133</sup>

The petition highlighted how the failure to update existing regulations has exacerbated the problem with plastic pollution. Before looking to triggering new ways of regulating plastic pollution, it is important to recognize that the petro-plastic facilities in the United States are already under-regulated, due to overdue revisions that would

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<sup>127</sup> Ctr. For Biological Diversity, Petition to Revise the Clean Water Act Effluent Limitations Guidelines and Standards for the Petro-Plastics Industry Under the 40 C.F.R. Part 419 Petroleum Refining Industrial Category (Cracking and Petrochemicals Subparts) and Part 414 Organic Chemicals, Plastics, and Synthetic Fibers Industrial Category, 280 Environmental, Public Health, Indigenous, and Community Non-Governmental Organizations v. Andrew Wheeler, Administrator, U.S. Env. Prot. Agency (July 23, 2019), <https://perma.cc/TE8F-KMNG> [hereinafter 2019 NGO Petition].

<sup>128</sup> *Id.* at 53.

<sup>129</sup> *Id.* at 2.

<sup>130</sup> Pub. L. No. 79-404, 60 Stat. 237 (1946) (codified as amended in scattered sections of 5 U.S.C.).

<sup>131</sup> 2019 NGO Petition, *supra* note 127, at 2.

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

<sup>133</sup> *Id.*



incorporate the state of knowledge and urgency to address the pollution burden of plastics.<sup>134</sup>

The petition articulated an ambitious agenda to capture plastic pollution before it enters the environment.

The Petitioners seek the following:

A zero plastic (in pellet, flake, powder, granule, or other form) discharge standard for all wastewater and stormwater streams;

A zero detectable discharge requirement for new sources of all pollutants in the wastewater and stormwater streams of new sources;

For existing sources, the promulgation of Effluent Limitations Guidelines and Standards for wastewater and stormwater pollutants of concern not currently regulated; and

For existing sources, an update of decades-old Effluent Limitations Guidelines and Standards to ensure they reflect the best available technology.<sup>135</sup>

With emphasis on zero release, the petition highlighted a painful reality: closing the tap is one of the only effective solutions to address the particularly pernicious nature of plastic pollution. Unless we take ambitious action now, the legacy of plastic pollution will continue to defile our waterways and cause harm to fish, wildlife, and the humans dependent upon them.

#### IV. CONFRONTING THE LEADERSHIP DEFICIT AND ERODING RULE OF LAW

Plastic activism is gaining the attention of industry analysts and those providing legal services. A client alert from one law firm in 2020 advised that environmental NGOs had “set their sights on plastics,” and could be expected in the next few years to use litigation and other legal arguments to pressure policymakers to address plastics.<sup>136</sup> Congress has in fact discussed various bills to address plastic pollution.<sup>137</sup> Minor legislation like the elimination of plastic microbeads from cosmetics has passed at the federal level, and many states and localities are adopting bans on specific plastic products.<sup>138</sup> However, to date no comprehensive reform has emerged. Thus, what is the importance of plastic activism within the CWA?

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<sup>134</sup> *Id.* at 1–2.

<sup>135</sup> *Id.* at 5.

<sup>136</sup> CROWELL & MORING LLP, *supra* note 76.

<sup>137</sup> *See, e.g.*, Break Free from Plastic Pollution Act of 2021, S. 984, 117th Cong. (2021).

<sup>138</sup> Microbead-Free Waters Act of 2015, Pub. L. No. 114-114, 129 Stat. 3129; *see* Dr. Kishor Dere, *Mobilizing World Public Opinion Against Use of Plastic Products*, 57 CAL. W. L. REV. 81, 98 (2020) (discussing Maine and New York’s bans on single-use plastic).

The importance of this plastic activism is elevated by the heartbreaking lack of federal leadership either in Congress or EPA. Citizen activism is taking up space in a growing leadership void. Thus, plastic activism through the CWA has: (1) brought necessary attention to the growing plastic crisis, and (2) illustrated structural governance challenges for plastic regulation yet to be tackled. These specific challenges concern the shortcoming of cooperative federalism (particularly so in economically depressed states), the plastics industry's outsized influence in government decision-making, and a retreat of the same tactics used to evade effective climate regulation. Finally, people in the United States are experiencing eroded faith that the government can fix complex problems under a continued assault on the rule of law. The erosion of trust exacerbates the power disparity which the largest industries wield and it re-asserts business solutions to safeguard public goods like water quality. The CWA affords an opportunity for citizens to drive more ambitious environmental protection.

#### A. Attention to the Plastic Problem

Plastic pollution is not just a marine litter or a trash problem. Industry has promoted this framing in part to avoid application of laws that would constrain production and perpetrate the recycling solution myth.<sup>139</sup> Plastic activism using the CWA has illustrated how plastic is harmful, well beyond the floating trash piles defiling our ocean gyres. Plastic pollution is a problem in the heart of Los Angeles, where California has adopted TMDLs to address trash in the Los Angeles River.<sup>140</sup> Plastic pollution is also a problem on Maryland's Anacostia River.<sup>141</sup> Our rivers and watersheds feed plastic to the oceans, but environmental harms are not all just washed out to sea (as some would have us believe). The activists in St. James Parish live with the burden every day. With their tenacious efforts to block expanded petrochemical facilities from locating in the already-overburdened cancer alley, these activists contrast environmental justice claims against the promises of economic benefit.

Congress has also failed to deliver meaningful legislation, potentially perpetuating the notion that plastic is largely a marine debris problem. The Save Our Seas 2.0 Act,<sup>142</sup> adopted in December 2020, takes only modest actions.<sup>143</sup> The statute seeks to enhance domestic marine debris

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<sup>139</sup> See Greta Moran, *The House Just Passed another 'Save our Seas' Act. Here's Why it Won't.*, INTERCEPT (Oct. 7, 2020), <https://perma.cc/M3N9-UJZG> (discussing the Act's focus on plastic pollution as a marine-specific issue and its failure to regulate plastic production generally).

<sup>140</sup> NGO PETITION, *supra* note 68, at 8.

<sup>141</sup> Matthew Powell, *The Anacostia River: Urbanization, Pollution, EPA Failures, and the Collapse of the Public Trust Doctrine*, 41 U. BALT. L.F. 68, 84 (2010).

<sup>142</sup> Pub. L. No. 116-224 (2020) (codified in scattered sections of 33 U.S.C.).

<sup>143</sup> See Moran, *supra* note 139 (explaining that the Save Our Seas Act fails to address the plastics crisis effectively).

response capacity, enhance international cooperation on the issue, spur innovation, and improve domestic infrastructure to prevent marine debris by providing grant monies for waste management and mitigation studies.<sup>144</sup> But by focusing on plastic pollution as a marine litter problem, the statute minimizes the urgency of addressing all impacts from plastic waste.<sup>145</sup> The plastics industry supported this bi-partisan bill, while many environmental groups did not.<sup>146</sup> As one critique explained, there is a reason the industry liked it—it requires nothing of them and diverts public attention.<sup>147</sup>

As part of a multi-pronged effort to address plastic pollution, we need to employ the tools at our disposal. The actions taken by plastic activists highlight proven tools in the toolbox to address water quality through the CWA.

*B. Structural Governance Problems for Combatting Plastic Pollution of Waterways*

It is well-understood that in a capitalist system, business interests have a special place, providing jobs and economic development which benefit society.<sup>148</sup> The administrative state has evolved over time, while grappling with competing views on the operation and interplay of market forces, regulation, business interests, and broader civic engagement which might lead to optimal policy and law-making for societal benefit. This evolution increased voice and participation in rulemaking for citizen engagement. Yet some then criticized that policymakers listened too much to the beneficiaries of regulation, and now business interests themselves have financial resources greater than many sovereign states.<sup>149</sup> This is particularly relevant for the framing of a social or environmental problem since problem-framing is critical for yielding a

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<sup>144</sup> Press Release, Senator Sheldon Whitehouse, Save Our Seas 2.0 Act Passes Senate Unanimously (Jan. 10, 2020), <https://perma.cc/X3V7-QJEY>.

<sup>145</sup> See Moran, *supra* note 139 (identifying the Act as an extension of failed policies).

<sup>146</sup> *Opposition Letter to Save our Seas Legislation November 19, #BREAKFREEFROMPLASTIC* (Nov. 8, 2019), <https://perma.cc/YKV2-EPVB>.

<sup>147</sup> See Moran, *supra* note 139 (quoting Brett Hartl, government affairs director at the Ctr. For Biological Diversity).

<sup>148</sup> See Sidney A. Shapiro, *Administrative Law After the Counter-Reformation: Restoring Faith in Pragmatic Government*, 48 U. KAN. L. REV. 689, 693 (2000) (discussing the weak role the government has played in policing certain industries).

<sup>149</sup> Reformation in the 1970s (when the CWA was adopted) sought to address a concern that business interests had captured agencies, and reformers were concerned that what gains are made through lawmaking could be lost by agencies who used their discretion to regulate business interests in a lax manner. *Id.* at 693–94. This ushered in the era of more citizen engagement in rulemaking and access to courts to enforce the laws. *Id.* at 694–96. In response, the counter-reformation pushed against this narrative, instead suggesting the government listened too much to the beneficiaries of regulation. *Id.* at 697. They emphasized the need for rationality in government—efforts like cost-benefit analysis—and sought to emphasize how government failure hurt both intended beneficiaries and business. *Id.* at 698–707.

workable, effective solution. Powerful interests, such as the plastic industry, can use resources to frame social problems and then promote policy solutions that abdicate responsibility. For plastic pollution, this has meant the false insistence that recycling efforts would be successful if: (a) individual consumers participated; and (b) governments improved waste collection.<sup>150</sup> In the statutory policy arena at the federal level, this has yielded minor statutory reforms, such as eliminating microbeads from cosmetics and increasing focus on cleanup of ocean litter, for example, with the Save our Seas Act.<sup>151</sup>

How agencies prioritize meeting their statutory missions is also a contested area. Scholars have debated the appropriate level of “slack” agencies are afforded to fulfill their mission.<sup>152</sup> EPA has been under-resourced and must simultaneously meet its mission while rationing resources.<sup>153</sup> Thus, it is necessary for EPA to prioritize the problems it will address. Plastic activism is striking up against agency autonomy at a time where the rule of law is being actively eroded to undermine the protection of public goods. If EPA and the states are not held accountable for using their authorities under the CWA, then the plastics industry would be allowed to produce illegal levels of pollution.

Finally, cooperative federalism frameworks are particularly ill-suited to address certain environmental problems.<sup>154</sup> The CWA federalism structure falls apart with the issue of plastics. Aptly described as a problem of “coordination, disruption, and lack of resiliency” by Douglas Williams,<sup>155</sup> the challenges are both structural to the CWA and yet also of this particular moment, where the rule of law has been considerably eroded.

First, if a program depends on EPA to take the first step in a chain of ultimate regulation, and EPA delays, then the issue takes longer to get resolved. This problem is emphasized when EPA declines to adopt water quality standards for plastic pollution or to revise its petro-chemical

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<sup>150</sup> Factually, recycling methods have never been able to manage the quantity of plastic produced. Only a small percentage of plastic has ever been recycled, and nearly all plastic ever produced still exists. Roland Geyer et al., *Production, Use, and Fate of all Plastics Ever Made*, SCI. ADVANCES, July 2017, at 2–3.

<sup>151</sup> Microbead-Free Waters Act of 2015, Pub. L. No. 114-114, 129 Stat. 3129 (2015).

<sup>152</sup> Slack is the administrative power agencies have to implement programs and missions without being checked by other aspects of the federal government. David Markell, *‘Slack’ in the Administrative State and its Implications for Governance: The Issue of Accountability*, 84 OR. L. REV. 2 (2005). Markell argues that while the federal government system is becoming more transparent as a whole, some aspects have the potential of shifting the overall system towards less openness and accountability to the general public. *See id.* at 4–5.

<sup>153</sup> *See* OFF. OF INSPECTOR GEN., U.S. ENV’T PROT. AGENCY, REP. NO. 21-P-0132, RESOURCE CONSTRAINTS, LEADERSHIP DECISIONS, AND WORKFORCE CULTURE LED TO A DECLINE IN FEDERAL ENFORCEMENT 19–20 (May 13, 2021) (reporting that a decline in funding contributed to reduced enforcement activity).

<sup>154</sup> Douglas R. Williams, *Toward Regional Governance in Environmental Law*, 46 AKRON L. REV. 1047, 1050–52 (2013).

<sup>155</sup> *Id.* at 1070.

standards which states would later implement. Second, if states require more information from EPA due to the relative disparity of capacity, including expertise, then EPA needs to provide this resource or else it fails to coordinate effectively with states. Although EPA launched the Trash Free Waters program to address some of the challenges with coordination and information sharing, these challenges remains structurally woven into the CWA federalism.

Plastic activists are demanding that EPA use its expertise to implement the CWA toward cleaning up plastic pollution. While EPA's Trash Free Waters programs have promoted progress, EPA has served as only a reluctant expert.<sup>156</sup> EPA's focus on the problem could serve as a legitimating force, catalyzing more powerful efforts by policy and lawmakers to address the rising burden of plastic pollution. By more robust actions, EPA could meaningfully address the leadership deficit of the government's response to the plastic crisis—regardless of whether the actions come as part of an infrastructure, environmental justice, or climate focus.

Failure to enforce laws creates a feedback loop that continues to undermine and erode the rule of law. Plastic activism has demanded EPA sufficiently enforce the CWA point-source provisions while drawing attention to the need for enhancing nonpoint-source pollution programs. Scholars emphasize the growing sense of a need to advance an environmental rule of law within the sustainable development agenda.<sup>157</sup> Strategically undermining the leadership of key institutions such as EPA has accomplished the aggressive roll-back of fundamental environmental safeguards. It is false hope that industry will meaningfully address the global plastic crisis, and such faith is self-defeating. In assessing progress on plastic pollution to date, the PEW Trust report states that “[i]ndustry has also made high-profile commitments, but these are primarily focused on post-consumer downstream solutions and often in low-leakage countries.”<sup>158</sup> It is in this very space that we need foundational environmental laws—and the decades of agency expertise in implementing them—focused on addressing a new problem impacting the health of our waters.

The plastic and fossil fuel industries are evading new plastic regulation much the same as they have climate change regulation: with a combination of denial, distraction, deflection, and ultimately,

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<sup>156</sup> See Sidney A. Shapiro, *Law, Expertise and Rulemaking Legitimacy: Revisiting the Reformation*, 49 ENV'T L. 661, 672–78 (2019) (explaining how EPA develops and wields expertise pursuant to the CWA related to jurisdiction). Professor Shapiro examined the role of expertise in legitimating agency decisions and emphasized the relevance for such agencies to identify policy options to implement statutory responsibilities. *Id.* at 678–80.

<sup>157</sup> Alexandra Dapolito Dunn & Sarah Stillman, *Advancing the Environmental Rule of Law: A Call for Measurement*, 21 SW. J. INT'L L. 283, 284–89 (2015).

<sup>158</sup> THE PEW CHARITABLE TRUSTS & SYSTEMIQ, *BREAKING THE PLASTIC WAVE: A COMPREHENSIVE ASSESSMENT OF PATHWAYS TOWARDS STOPPING OCEAN PLASTIC POLLUTION* 9 (2000), <https://perma.cc/ER6T-6Y9N>.

resistance.<sup>159</sup> Plastics are a billion-dollar industry and have a unique and out-sized influence over government actions.<sup>160</sup> As one scholar explained, plastics is the eighth-largest industry domestically; thus “[b]ecause of its sheer size, the plastics industry is able to influence governmental decision-making at various levels.”<sup>161</sup>

Beyond influencing government decisions, industry also seeks to influence public opinion. By focusing on recycling efforts, the plastic industry intended to distract the public from being concerned that our use of plastic was harmful to the environment.<sup>162</sup> The plastic industry has long known it needs to address this public image problem to successfully sell more consumer products.<sup>163</sup> Particularly for a product that is so woven into our society, the reign of plastic will not continue unless its innocuous image persists. Plastic activism is an important counter-narrative.

As previously discussed, the EPA OIG evaluated whether the agency was adequately utilizing the CWA to address plastic pollution. The OIG highlighted multiple areas where improved CWA programs would address plastic pollution. For one, too few states are identifying their waters as impaired and thus triggering TMDL coverage for plastic pollution.<sup>164</sup> Also, insufficient municipal waste systems lead to more plastic pollution and need to be more effective.<sup>165</sup> Finally, the OIG noted that there is insufficient data collection to support states in their efforts to tackle the problem.<sup>166</sup> The main takeaway of these recommendations is that the CWA can and should be used to address this growing threat to water quality.<sup>167</sup>

Critical to understanding the purpose of OIG efforts is its acknowledgement that the audit was addressing a key goal of the CWA, that is, “[e]nsuring clean and safe water” and a key EPA management challenge, “[o]verseeing states implementing EPA programs.”<sup>168</sup> Unfortunately, there are a number of reasons we could point to for the failure of EPA to address plastic adequately through their existing authorities.<sup>169</sup> Plastic activism was—and remains—a necessary shot in the arm.

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<sup>159</sup> CHANGING MKTS. FOUND., TALKING TRASH: THE CORPORATE PLAYBOOK OF FALSE SOLUTIONS TO THE PLASTIC CRISIS 8 (2020), <https://perma.cc/MQS8-WYYK>.

<sup>160</sup> Dere, *supra* note 138, at 85–86.

<sup>161</sup> *Id.* at 86.

<sup>162</sup> *Planet Money: Waste Land*, NPR, at 09:49 (Sept. 11, 2020) <https://perma.cc/YM75-KV6S> (discussing how the plastic industry sought to advertise its way out of the problem by providing significant funding for recycling efforts they knew were doomed to fail).

<sup>163</sup> *Id.*

<sup>164</sup> EPA Helps States, *supra* note 65, at 6. States such as California, Maryland, Hawai‘i, and Alaska have taken this step. *Id.*

<sup>165</sup> *Id.* at 7.

<sup>166</sup> *Id.* at 9.

<sup>167</sup> *Id.*

<sup>168</sup> *Id.* at At a Glance.

<sup>169</sup> Decline in resources is one potential reason, as is the theory that the Trump Administration EPA explicitly sought to orient EPA toward industrial and industry-friendly

## V. CONCLUSION

Plastic pollution is not an intractable problem. A piecemeal solution which addresses the full life cycle of plastics will significantly address the plastic burden and can curtail its expansion. The CWA's provisions are directly applicable to addressing the production of plastic and discharge of plastic production byproducts and waste into U.S. waterways. Citizen activism has demonstrated the expectation that the government should use these existing legal tools to address known threats.

As the CWA reaches the milestone of fifty years, the importance of protecting the rights of citizen activists cannot be overstated. Plastic activism under the CWA demonstrates the wisdom of citizen participation, echoed through these five decades of its adoption. Like plastic itself, we may yet see that the CWA is both flexible and durable enough to tackle a novel pollution problem.

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interests. Lindsey Dillon et al., *The Environmental Protection Agency in the Early Trump Administration: Prelude to Regulatory Capture*, 108 AJPH PERSPECTIVES, Editorial S89, S93 (2018) (exploring the theory of regulatory capture throughout EPA's history from 1990 to the present, supported by interviews of EPA employees).

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