

The Case for a Ban on Microplastics in Personal Care Products

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In 2000, he travelled to Midway Atoll, finding hundreds of Laysan Albatross with plastic pouring out of their stomachs. That experience narrowed his focus to plastics. He received his Ph.D. in science education from the University of Southern California in 2003, months before embarking on a 2000-mile, five-month journey down the Mississippi River on a homemade raft of plastic bottles to bring attention to the plastic pollution issue. In 2008, he rafted across the Pacific Ocean from California to Hawaii on JUNK, floating on 15,000 plastic bottles and a Cessna airplane fuselage as a cabin. The journey, 2600 miles in eighty-eight days, brought attention to the work of the 5 Gyres Institute, the organization he cofounded with his wife, Anna Cummins, which is committed to marine conservation through continued research, education, and adventure. Together, they study and lecture about the plague of plastic waste in our watersheds and global ocean.

His first book, *My River Home*, chronicled his Mississippi River experience paralleled with his tour as a Marine in the 1991 Gulf War. The experience of war, sailing across oceans with wonderful crewmates, and long rafting voyages have led to a strong conservation ethic he believes is worth fighting for. "We must understand and define conservation and social justice as our collective self-preservation—a rationale that crosses all boundaries between all people."

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I. INTRODUCTION

Microplastics (particles less than 1 millimeter (mm) in diameter) are intentionally added to numerous personal grooming products as a scrubbing agent (microbeads). Microbeads are almost always washed down consumers' drains as a normal and expected part of use. Manufacturers know and promote this wash-and-rinse practice. However, microbeads often are not removed by conventional sewage treatment. Once released to the environment, microbeads form nuclei of collected contaminants and may enter the food chain. It is not possible to collect microplastics in any meaningful amount once dispersed in water without damaging the aquatic ecosystem. Microbeads make up only a small percentage of plastic pollution. However, they are unique in that their release as water pollutants is an inevitable part of their lifecycle and is anticipated by their manufacturers. Furthermore, microbeads are nonessential—similar personal care products exist that contain biodegradable scouring alternatives.¹ Existing law does not provide a straightforward way to address microbead pollution, and so a manufacturing and retail ban is necessary to protect the aquatic environment.

Part II of this Article will survey the science demonstrating that microplastics are harmful to the environment and, once released thereto, are extremely difficult to remove. Part III will examine why existing legal tools are ill-adapted to address the environmental harms caused by microbeads in personal care products. Part IV will set forth the case for a ban of these products. Model legislation, which has been introduced in substantially similar form in at least two states by the date of publication of this Article, is included as an Appendix to this Article.

II. STATE OF THE SCIENCE

Microplastics are an emerging threat to wildlife and human health. The rapid accumulation of microplastics in the marine environment is a reflection of the production, consumption, degradation, and transporta-

1. Biodegradable scouring alternatives include pumice, oatmeal, apricot, and walnut husks.

tion of plastic released into the environment; in some cases these variables are exacerbated by design.

“Microplastics may form on land by UV degradation and fragmentation or road abrasion of larger plastic items through damage by vehicles and transport along concrete pathways [secondary microplastics], but may also enter the aquatic environment through direct release [primary microplastics].”² “Textile laundering facilities are also potential sources of microplastic fibers, and microplastic particles from sandblasting media have been suspected [of polluting] the marine environment since the early 1990s.”³

Microbeads, perfect spheres of polyethylene and polypropylene, are manufactured microplastics used in cosmetics with abrasive properties, such as facial cleansers and toothpastes. By design, plastic microbeads are meant to be discarded in household wastewater, and in many cases they escape capture by municipal wastewater treatment systems, to be found in our lakes, rivers, and marine environment.⁴ Microbeads had previously been identified as potential contributors to marine pollution.⁵

In 2012, pollution by microbeads was confirmed when microbeads were identified in the Laurentian Great Lakes of North America.⁶ Twenty-one samples of the lake surface were collected in lakes Huron, Superior, and Erie, with an average count density of over 43,000 plastic particles per square kilometer.⁷ Multicolored spherical particles less than 1 mm in diameter were compared to two brands of facial cleansers containing polyethylene microbeads and showed similarities in color, composition, size, shape, and texture.⁸ Sandblasting media were ruled out because they are typically heavier than water and therefore not found floating in the lakes.⁹ The “watersheds surrounding the Great Lakes are heavily urbanized (including the cities of Chicago, Milwaukee, Detroit, Cleveland and Buffalo in the United States, and Toronto in Canada),” so there are multiple pathways for microplastics and microbeads to flow into the lakes.¹⁰

2. Marcus Eriksen et al., *Microplastic Pollution in the Surface Waters of Laurentian Great Lakes*, 77 MARINE POLLUTION BULL. 177, 177-78 (2013) (citations omitted).

3. *Id.* at 178 (citations omitted).

4. Lisa S. Fendall & Mary A. Sewell, *Contributing to Marine Pollution by Washing Your Face: Microplastics in Facial Cleansers*, 58 MARINE POLLUTION BULL. 1225, 1225 (2009).

5. *Id.*; Murray R. Gregory, *Plastic ‘Scrubbers’ in Hand Cleansers: A Further (and Minor) Source for Marine Pollution Identified*, 32 MARINE POLLUTION BULL. 867, 867 (1996).

6. Eriksen et al., *supra* note 2, at 181.

7. *Id.* at 178-79.

8. *Id.* at 179.

9. *Id.* at 180.

10. *See id.* at 178.

Microplastics, including microbeads, may enter waterways through drainage systems or “combined sewage overflow (CSO) events allowing raw sewage to enter local waterways untreated.”¹¹ Not all wastewater treatment facilities are designed to capture floating, nonbiodegradable particulate 0.5 mm diameter in size or smaller.¹² “Sewage sludge, which may contain microbeads, is often used as fertilizer in agriculture and public lands,” where it can potentially be washed into water bodies.¹³ Hence, there are multiple sources where microbeads may enter the marine environment.

In the marine environment, it is extremely difficult and economically impractical to attempt to remove microbeads. Net capture can catch a larger volume of marine life than plastic,¹⁴ which is difficult to separate. This is problematic if the overall intent is to conserve and protect the marine life being captured. Microplastics are pervasive in aquatic systems, requiring cleanup efforts throughout the water column,¹⁵ which equates to time and expense. Some microplastics will sink when fouled by encrusting organisms or become deposited in shoreline sediments,¹⁶ each of these pathways requiring different methods of extraction, tools, and a larger area to cover besides surface towing. Removing microplastics and microbeads from the environment is clearly a case of an ounce of prevention being greater than a pound of cure.

Microplastics in the environment may have deleterious effects on wildlife. Many kinds of persistent organic pollutants sorb onto plastic, including polychlorinated biphenyls (PCBs), dichlorodiphenyltrichloroethane (DDT), and dichlorodiphenyldichloroethylene (DDE),¹⁷ which in some cases impact marine organisms’ ability to function and procreate.¹⁸

11. *Id.* at 180 (citing EPA, EPA-833-R-07-007, COMBINED SEWER OVERFLOWS TO THE LAKE MICHIGAN BASIN, at ES-1 (2007)); see Mark A. Browne et al., *Accumulation of Microplastics on Shorelines Worldwide: Sources and Sinks*, 45 ENVTL. SCI. & TECH. 9175, 9175-76 (2011).

12. Eriksen et al., *supra* note 2, at 180.

13. *Id.* (citing Veysel Saruhan et al., *The Effects of Sewage Sludge Used as Fertilizer on Argonomic and Chemical Features of Bird’s Foot Trefoil (Lotus corniculatus L.) and Soil Pollution*, 5 SCI. RES. ESSAYS 2567 (2010)).

14. See C.J. Moore et al., *A Comparison of Plastic and Plankton in the North Pacific Central Gyre*, 42 MARINE POLLUTION BULL. 1297, 1298-99 (2001).

15. Matthew Cole et al., *Microplastics as Contaminants in the Marine Environment: A Review*, 62 MARINE POLLUTION BULL. 2588, 2596 (2011).

16. *Id.* at 2592.

17. Yukie Mato et al., *Plastic Resin Pellets as a Transport Medium for Toxic Chemicals in the Marine Environment*, 35 ENVTL. SCI. & TECH. 320 (2001); Lorena M. Rios et al., *Quantitation of Persistent Organic Pollutants Adsorbed on Plastic Debris from the Northern Pacific Gyre’s “Eastern Garbage Patch,”* 12 J. ENVTL. MONITORING 2226, 2232, 2234 (2010).

18. Mark Anthony Browne et al., *Microplastic Moves Pollutants and Additives to Worms, Reducing Functions Linked to Health and Biodiversity*, 23 CURRENT BIOLOGY 2388, 2391

Microplastic particles have been found to translocate into the gut cavity and digestive tubules of mussels¹⁹ and migrate trophic levels, from prey to predator, through ingestion.²⁰ A study of the sorption of chemicals from plastic into fish tissues during digestion found that polycyclic aromatic hydrocarbons (PAHs), PCBs, and polybrominated diphenyl ethers (PBDEs) had bioaccumulated, resulting in liver damage.²¹

Microbeads found in consumer products are microplastic by design and have similar consequences in the marine environment. The average consumer may thus be directly releasing microplastics of a size suitable for ingestion by marine organisms.²²

There are alternatives to plastic microbeads currently utilized in the market, including hardened seed kernels or crushed cocoa beans. These alternative materials perform the same function as plastic microbeads and are natural organic compounds that biodegrade in the environment.

III. STATE OF THE LAW

Existing laws do not prevent release of microplastics to the environment, nor do laws provide a straightforward remedy for the harm they cause once there.²³ In the case of microbeads, a ban on microplastics in products designed to be washed into sewers is both an equitable and practical solution.

A. Clean Water Act

Because microplastics are pollutants that are washed down the drain, it might be assumed that this source of pollution is addressed by the Clean Water Act (CWA).²⁴ The CWA generally prohibits the discharge of any pollutant to waters of the United States from a point source, unless

(2013); Stephanie L. Wright et al., *Microplastic Ingestion Decreases Energy Reserves in Marine Worms*, 23 CURRENT BIOLOGY R1031, R1032 (2013).

19. Mark A. Browne et al., *Ingested Microscopic Plastic Translocates to the Circulatory System of the Mussel, Mytilus edulis (L.)*, 42 ENVTL. SCI. TECH. 5026, 5028 (2008).

20. See Paul Farrell & Kathryn Nelson, *Trophic Level Transfer of Microplastic: Mytilus edulis (L.) to Carcinus maenas (L.)*, 177 ENVTL. POLLUTION 1, 3 (2013).

21. Chelsea M. Rochman et al., *Ingested Plastic Transfers Hazardous Chemicals to Fish and Induces Hepatic Stress*, 3 SCI. REP., art. no. 3263, 2013, at 5, available at <http://www.nature.com/srep/2013/131121/srep03263/full/srep03263.html>.

22. Fendall & Sewell, *supra* note 4, at 1227.

23. This analysis relies heavily on California examples, in part because California tends to be an innovator and leader in environmental matters, but also because one of the authors is a California practitioner and therefore more familiar with California examples than those of other states.

24. 33 U.S.C. §§ 1251-1387 (2006).

that discharge is authorized by a permit.²⁵ Although individual households that discharge into sewers are excluded from the requirement to obtain a permit,²⁶ the publically owned treatment works (POTWs) to which they send their wastewater do have to obtain discharge permits.²⁷ “Pollutant” is defined by the CWA to include solid waste and garbage.²⁸ Nonetheless, the authors were unable to identify a single case of enforcement for release of microplastics by a POTW.²⁹

States must adopt water quality standards, around which the CWA’s permitting framework is built.³⁰ Water quality standards are comprised of designated uses, water quality criteria (which may be numeric or narrative) sufficient to protect the designated uses, and an antidegradation policy.³¹ Section 402 of the CWA requires polluters to obtain permits, called National Pollutant Discharge Elimination System (NPDES) permits, and adhere to effluent limitations and technology controls contained in the NPDES permit.³²

Water quality criteria that address turbidity and garbage are drafted in a way that does not clearly cover microplastics. For example, California’s water quality criteria are found in basin plans. The basin plan for the San Francisco Bay prohibits “floating material, including solids, . . . in concentrations that cause nuisance or adversely affect beneficial uses” and discharge of “[r]ubbish, refuse, . . . or other solid wastes into surface waters” and of “floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity or discoloration in surface waters.”³³ While Maryland’s criteria also includes a prohibition of any floating material “in amounts sufficient to . . . [c]reate a nuisance,”³⁴ neither state’s criteria has been interpreted to

25. *Id.* §§ 1311, 1342. A point source is “any discernible, confined, and discrete conveyance, including . . . any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, [and] vessel or other floating craft from which pollutants are or [could] be discharged.” 40 C.F.R. § 122.2 (2013).

26. 40 C.F.R. § 122.3(c).

27. *See* 33 U.S.C. § 1311(a); *see also* *N. Cal. River Watch v. City of Healdsburg*, 496 F.3d 993, 1001 (9th Cir. 2007) (noting the narrowness of exceptions to the Clean Water Act).

28. 33 U.S.C. § 1362(6).

29. The authors searched Lexis and Google and spoke to the operator of a sewage treatment plant.

30. *See* 33 U.S.C. § 1313.

31. *See* 40 C.F.R. § 131.6.

32. *See* 33 U.S.C. § 1342.

33. CAL. REG’L WATER QUALITY CONTROL BD., S.F. BAY BASIN (REGION 2) WATER QUALITY CONTROL PLAN, ch. 3, at 3-5, tbl.4-1 (2013).

34. Md. Dep’t of the Env’t & D.C. Dep’t of the Env’t Natural Res. Control Bd., *Total Maximum Daily Loads of Trash for the Anacostia River Watershed*, MD. DEP’T OF THE ENV’T 10 (Aug. 2010) [hereinafter *Anacostia Trash TMDL*], available at <http://www.mde.state.md.us/>

include microplastics. To guide states in their adoption and periodic review of water quality standards, the Environmental Protection Agency (EPA) establishes national water quality criteria.³⁵ As in California, the criteria that might address microplastics are narrative and ill-suited as drafted to address the problem. For example, the narrative criteria for suspended and settleable solids and turbidity is that such pollutants “should not reduce the depth of the compensation point for photosynthetic activity by more than 10 percent.”³⁶

Section 303 of the CWA requires states to identify “impaired waters”—those failing to meet water quality standards—and establish limits on pollutants causing the impairment.³⁷ Where water quality standards are not achieved with effluent limitations, the CWA requires preparation of pollutant-by-pollutant total maximum daily loads (TMDLs).³⁸ TMDLs must consider all sources of pollutants causing water quality violations—both point sources and nonpoint sources. Sixty-eight waters located in California, Hawaii, Connecticut, Alaska, and Maryland have been identified as impaired by trash pollution.³⁹ TMDLs for trash, although not specifically for plastic pollution, have been developed for a number of waters.⁴⁰ The most well-known are the trash TMDLs for the Los Angeles River in California and the Anacostia River in Maryland.⁴¹ These trash TMDLs do not address microplastics. The Los Angeles Trash TMDL excludes microplastics because it requires

programs/Water/TMDL/ApprovedFinalTMDLs/Documents/www.mde.state.md.us/assets/document/Anacostia_Trash_TMDL_081010_final.pdf.

35. See 33 U.S.C. § 1314(a)(1)-(2). The water quality criteria are available in various guidance documents that are linked from the EPA’s Web site. *National Recommended Water Quality Criteria*, EPA, <http://water.epa.gov/scitech/swguidance/standards/criteria/current/index.cfm> (last updated Feb. 7, 2014).

36. EPA, 440/5-86-001, QUALITY CRITERIA FOR WATER 1986, at 262 (1986).

37. See 33 U.S.C. § 1313(d).

38. See *id.*

39. *Impaired Waters, Cause of Impairment: Trash*, EPA, http://iaspub.epa.gov/tmdl_waters10/attains_nation_cy.cause_detail_303d?p_cause_group_id=1092 (last updated Mar. 20, 2014).

40. Mark Gold et al., *Stemming the Tide of Plastic Marine Litter: A Global Action Agenda*, 27 TUL. ENVTL. L.J. 165, 197 (2014) (“Cities in California and Maryland have led the way in developing TMDLs for California’s Los Angeles River, Ballona Creek, and Santa Monica Bay, and Maryland’s Anacostia River. The Los Angeles-area TMDLs have resulted in the installation of nearly 100,000 full capture devices, which filter litter 5 mm in diameter or greater out of stormwater runoff before it enters the waterbody.”).

41. For a detailed discussion, see generally Cal. Reg’l Water Quality Control Bd., L.A. Region, *Trash Total Maximum Daily Loads for the Los Angeles River Watershed*, EPA (July 27, 2007), <http://www.epa.gov/waters/tmdl/docs/34863-RevisedStaffReport2v2.pdf>; *Anacostia Trash TMDL*, *supra* note 34.

capture of plastics 5 mm or larger in size.⁴² Maryland's TMDL for trash in the Anacostia River requires removal of 100% of the baseline load, but is careful to note that this "is not the same as zero (0) trash in the waterway."⁴³ Because source allocations for the Anacostia River are measured in pounds, microplastics will likely be of low priority in achieving the load goal.⁴⁴ Therefore, it is safe to say that the existing trash TMDLs are not effective tools to address microplastics.

The Center for Biological Diversity petitioned EPA to issue a new rule containing national water quality criteria specifically for plastic pollution, including microplastics.⁴⁵ Unfortunately, the EPA declined to do so.⁴⁶ Had the agency adopted a water quality criteria for plastic pollution, as proposed by the Center for Biological Diversity, many more waters across the country would have been categorized as "impaired" by plastic pollution, and TMDLs would have had to address microplastics.

There is another problem with addressing microplastic pollution with the tools typically used to implement the CWA. California cities, towns, and taxpayers already spend \$428 million per year to address litter.⁴⁷ These costs go to things like beach cleanups, street sweeping, and storm drain cleaning and maintenance.⁴⁸ None of these reduce microplastic pollution from personal care products. Removal of microplastics from sewage, or from the environment if sewage treatment does not remove it, will be extremely expensive, if it is possible at all.

42. See CALIFORNIA REG'L WATER QUALITY CONTROL BD., *supra* note 41, at 3; Miriam Gordon & Ruth Zamist, *Municipal Best Management Practices for Controlling Trash and Debris in Stormwater and Urban Runoff*, PLASTIC DEBRIS, RIVERS TO SEA 4-5 (2006), http://www.plasticdebris.org/Trash_BMPs_for_Munis.pdf.

The California State Water Resources Control Board has identified producing a trash regulation as a "very high" priority, however, the estimated completion year of 2012 has passed with no publicly circulated draft. See CAL. ENVTL. PROT. AGENCY, CALIFORNIA OCEAN PLAN TRIENNIAL REVIEW WORKPLAN 2011—2013, at 14-15 (2011); see also Gold et al., *supra* note 40, at 197 ("The goal of the statewide policy is to target land uses that produce high volumes of trash with control requirements ranging from full capture systems to street-sweeping and educational campaigns. California will implement these requirements through the National Pollutant Discharge Elimination System (NPDES) permits it issues under the Clean Water Act.").

43. *Anacostia Trash TMDL*, *supra* note 34, at 11.

44. See *id.* tbl.22, at 39.

45. CTR. FOR BIOLOGICAL DIVERSITY, PETITION FOR WATER QUALITY CRITERIA FOR PLASTIC POLLUTION UNDER THE CLEAN WATER ACT, 33 U.S.C. § 1314, at 29 (2012).

46. *EPA Launches Initiative To Reduce Plastic Pollution in Oceans*, CTR. FOR BIOLOGICAL DIVERSITY (Nov. 6, 2013), http://www.biologicaldiversity.org/news/press_releases/2013/ocean-plastics-pollution-11-06-2013.html.

47. Leila Monroe, *Waste in Our Waterways: Unveiling the Hidden Costs to Californians of Litter Clean-Up*, NATURAL RES. DEF. COUNCIL 1 (Aug. 2013), <http://www.nrdc.org/oceans/files/ca-pollution-in-waterways-IB.pdf>.

48. *Id.* at 3.

Sewage treatment plants are not designed to capture microplastics,⁴⁹ and it is probably impossible to remove them from water without killing plankton and other essential parts of the food chain. The cost is a significant burden on society at large rather than the manufacturers, retailers, or consumers of these items that provide little social utility.

B. *Common Law/Nuisance*

Before there was a CWA, common law nuisance suits were used to force responsibility for externalized costs and impacts of industry.⁵⁰ In recent years, there has been a resurgence in the use of this tool. A public nuisance is “a substantial and unreasonable interference with a right held in common by the general public, in use of public facilities, in health, safety, and convenience.”⁵¹ A public nuisance impacts “an entire community or neighborhood, or any considerable number of persons.”⁵²

Not every interference with collective social interests or harm to the environment constitutes a public nuisance. For a successful case against manufacturers of personal care products containing microplastics, the first challenge would be to demonstrate, to the satisfaction of the court, sufficient harm to the public from the discharge of microbeads to the environment. To qualify as a nuisance, “the interference must be both *substantial* and *unreasonable*. It is substantial if it causes significant harm and unreasonable if its social utility is outweighed by the gravity of the harm inflicted.”⁵³ It is not the plaintiff’s determination that the invasion is unreasonable, but rather “whether reasonable persons generally, looking at the whole situation impartially and objectively,

49. John Schwartz, *From Large Plastic Threats to Waters, Scientists Turn Gazes to Tiny Ones*, N.Y. TIMES, Dec. 15, 2013, at A19.

50. See Richard O. Faulk & John S. Gray, *Public Nuisance at a Crossroads: Policing the Intersection Between Statutory Primacy and Common Law*, 15 CHAP. L. REV. 495, 504 (2012).

51. DAN B. DOBBS, THE LAW OF TORTS 1334 (2000); see also RESTATEMENT (SECOND) OF TORTS § 821B cmt. a (1979) (providing commentary on history of public nuisance). Many states have statutory definitions of nuisance. California, for instance, defines a nuisance, in relevant part, as “[a]nything which is injurious to health . . . or unlawfully obstructs the free passage or use, in the customary manner, of any navigable lake, or river, bay, stream, canal, or basin, or any public park, square, street, or highway.” CAL. CIV. CODE § 3479 (Deering 2005).

52. CAL. CIV. CODE § 3480.

53. *County of Santa Clara v. Atl. Richfield Co.*, 40 Cal. Rptr. 3d 313, 325 (Ct. App. 2006) (citation omitted) (internal quotation marks omitted); see also RESTATEMENT (SECOND) OF TORTS § 821B cmt. e (noting intentional interference is unreasonable). Also sometimes considered are “the practicality and burdens of abatement.” *Beck Dev. Co. v. S. Pac. Transp. Co.*, 52 Cal. Rptr. 2d 518, 554 (Ct. App. 1996).

would consider it unreasonable.”⁵⁴ There is an obvious subjective quality to this analysis that can produce an uncertain outcome of a public nuisance suit.

Public nuisance suits have been brought against manufacturers of consumer products, including guns, lead paint, and oil and gas.⁵⁵ These suits are challenging.⁵⁶ Many lead paint lawsuits have been rejected on their merits.⁵⁷ The Rhode Island Supreme Court overturned a verdict against three lead paint companies, concluding that the trial judge erred in failing to grant the defendants’ motion to dismiss because the manufacturers of lead paint were not in control of the lead pigment at the time that it caused the harm.⁵⁸

Defendant-manufacturers of microbead-containing products likely would argue they no longer control the instrument of the nuisance and the pollution is the immediate fault (and thus legal liability) of consumers who actually release microplastics into public water works or of the water works that fail to remove it from sewage.

The chances of success would be higher, but not certain, in California. California courts have found manufacturers liable when they *promote* a particular harmful use of a product by the purchaser of their products, provided the manufacturers had *knowledge* of the hazard the use would create.⁵⁹ A solid argument exists that manufacturers of facial cleansers are *promoting* the action by consumers of washing microbeads down the drain. Whether manufacturers have *knowledge* of the ensuing harms would require proof by the plaintiff. But at least one company, Unilever, recently expressed and acknowledged concerns over the environmental harms caused by microbeads.⁶⁰

54. Native Vill. of Kivalina v. ExxonMobil Corp., 663 F. Supp. 2d 863, 874 (N.D. Cal. 2009) (emphasis omitted) (quoting *People ex rel. Gallo v. Acuna*, 929 P.2d 596, 605 (Cal. 1997)), *aff’d*, 696 F.3d 849 (9th Cir. 2012).

55. See, e.g., *Kivalina*, 663 F. Supp. 2d 863 (oil and gas); *Atl. Richfield Co.*, 40 Cal. Rptr. 3d at 331 (lead); *In re Firearm Cases*, 24 Cal. Rptr. 3d 659 (Ct. App. 2005) (guns); *Ileto v. Glock Inc.*, 349 F.3d 1191 (9th Cir. 2003) (guns).

56. See generally Faulk & Gray, *supra* note 50.

57. See, e.g., *State v. Lead Indus. Ass’n*, 951 A.2d 428 (R.I. 2008); *In re Lead Paint Litig.*, 924 A.2d 484 (N.J. 2007); *City of St. Louis v. Benjamin Moore & Co.*, 226 S.W.3d 110 (Mo. 2007) (en banc); *City of Chicago v. Am. Cyanamid Co.*, 823 N.E.2d 126 (Ill. App. Ct. 2005).

58. *Lead Indus. Ass’n*, 951 A.2d at 435.

59. See *Atl. Richfield Co.*, 40 Cal. Rptr. 3d at 328 (finding manufacturers liable for promoting lead paint for interior use with knowledge of the hazard that such use would create). *But cf.* *Team Enters., LLC v. W. Inv. Real Estate Trust*, 647 F.3d 901, 912 (9th Cir. 2011) (finding manufacturer not liable for wastewater poured into drain by dry cleaners where there was no evidence the manufacturer instructed that behavior).

60. Unilever has indicated that it plans to phase out the use of microplastic by 2015 due to environmental concerns, although this commitment is not binding. See Peter O’Dowd, *Unilever*

There is yet another potential hurdle to a public nuisance suit. Many such suits fail as a result of a finding that they are nonjusticiable because of the political question doctrine, regardless of whether public harm may be demonstrated.⁶¹ The best recent example of this is the lawsuit brought by the Village of Kivalina in Alaska, which faces such severe impacts as a result of climate change that abandonment of the village and relocation of all of its inhabitants will be necessary.⁶² In that case, the court did not address whether the harm caused by large oil and gas companies was sufficient to constitute a public nuisance and instead dismissed the case, in part, on the basis that “global warming is a matter appropriately left for determination by the executive or legislative branch in the first instance.”⁶³

Public nuisance cases are very expensive to bring, take multiple years to prosecute, have a high level of uncertainty even if pollution is obvious, and are probably not warranted for a product that is admittedly only one of many sources of plastic pollution *if* another policy solution is available. Outside of California, public nuisance suits may not be viable.

C. *International Law*

There are numerous articles discussing the failure of international law to address marine plastic pollution effectively,⁶⁴ and so it will not be discussed here. For purposes of this Article, it is sufficient to note that there are no treaties that specifically address microplastics.

D. *Extended Producer Responsibility*

An evolving approach to waste management is extended producer responsibility (EPR). California’s Department of Resources Recycling and Recovery (CalRecycle) describes EPR as follows:

To Dump Microbeads from Soap, MARKETPLACE (Dec. 28, 2012, 12:35 PM), <http://www.marketplace.org/topics/sustainability/unilever-dump-microbeads-soap>.

61. See, e.g., *Kivalina*, 663 F. Supp. 2d at 882. See generally Jared S. Pettinato, *Executing the Political Question Doctrine*, 33 N. KY. L. REV. 61 (2006) (examining the political question doctrine).

62. *Kivalina*, 663 F. Supp. 2d at 868.

63. *Id.* at 877.

64. See, e.g., Gold et al., *supra* note 40; Grant A. Harse, *Plastic, the Great Pacific Garbage Patch, and International Misfires at a Cure*, 29 UCLA J. ENVTL. L. & POL’Y 331 (2011); Olga Goldberg, Comment, *Biodegradable Plastics: A Stopgap Solution for the Intractable Marine Debris Problem*, 42 TEX. ENVTL. L.J. 307 (2012); Matthew Schroeder, Comment, *Forgotten at Sea—An International Call To Combat Islands of Plastic Waste in the Pacific Ocean*, 16 SW. J. INT’L L. 265 (2010).

Extended Producer Responsibility (EPR), also known as Product Stewardship, is a strategy to place a shared responsibility for end-of-life product management on the producers, and all entities involved in the product chain, instead of the general public; while encouraging product design changes that minimize a negative impact on human health and the environment at every stage of the product's lifecycle. This allows the costs of treatment and disposal to be incorporated into the total cost of a product. It places primary responsibility on the producer, or brand owner, who makes design and marketing decisions. It also creates a setting for markets to emerge that truly reflect the environmental impacts of a product, and to which producers and consumers respond.⁶⁵

The laudatory goal of implementing EPR mostly exists only in theory to date in the United States.⁶⁶ However, local governments may be pushing for manufacturers to accept more financial responsibility for recycling or disposal.⁶⁷

A few initiatives can be characterized as EPR. In California, a 2013 Senate Bill, the Plastic and Marine Pollution Reduction, Recycling, and Composting Act (S.B. 529) would have prohibited fast-food restaurant chains, after July 1, 2014, from giving out disposable food-service packaging or single-use carryout bags that are not recyclable or compostable.⁶⁸ "Recyclability" was defined in the initiative as a demonstration to CalRecycle that the *type of* disposable food service packaging or single-use carryout bag is recovered for recycling at a rate of 25% or more on and after July 1, 2016; at a rate of 50% on and after

65. *Product Stewardship and Extended Producer Responsibility (EPR)*, CALRECYCLE, <http://www.calrecycle.ca.gov/epr/> (last updated Feb. 3, 2014).

66. DUNCAN BURY CONSULTING, MARINE LITTER WORKSHOP FOR NORTH AMERICA: LEGAL, POLICY AND MARKET-BASED APPROACHES TO PREVENTING MARINE LITTER AT THE SOURCE 13 (2012), available at http://www.rona.unep.org/about_unep_rona/marine_litter/index.html ("To date, EPR for packaging has not yet been successfully implemented in the U.S. although the approach has been proposed in some states, such as Rhode Island and California, and is being promoted by organizations, such as NRDC, Recycling Reinvented, the Product Policy Institute and others."). Europe is doing somewhat better. See generally Megan Short, Comment, *Taking Back the Trash: Comparing European Extended Producer Responsibility and Take-Back Liability to U.S. Environmental Policy and Attitudes*, 37 VAND. J. TRANSNAT'L L. 1217 (2004).

67. See *Western Plastics Association Calls for United Front on Extended Producer Responsibility*, PLASTIC NEWS (July 9, 2013, 4:02 PM), <http://www.plasticsnews.com/article/20130709/NEWS/130709919>.

68. S.B. 529, 2013 Leg. Sess. (Cal. 2013).

July 1, 2018; and at a rate of 75% or more on or after July 1, 2020.⁶⁹ This bill is now inactive.⁷⁰

Concurrent under consideration in California's Assembly was a bill that would require state agencies to adopt a list of items, or categories of items, that are the major sources of marine plastic pollution.⁷¹ Producers of the identified major pollutants would be required to design and submit a plan to reduce the producer's proportion of marine plastic pollution or pay into an account annually, the funds from which would be used to address marine plastic pollution solutions.⁷² This bill is also inactive.⁷³

Personal care products with microbeads are atypical of products usually targeted for EPR solutions. EPR efforts in the United States to date have been largely focused on take-back programs, especially of electronics.⁷⁴ Personal care products designed to be disposed of by flushing to sewers do not fit within this model, because producer physical responsibility for the waste product is impossible. However, the concept of discouraging environmental externalities in product life cycle design should certainly inform the solution to the environmental threat posed by these products.

E. Bans

Increasingly, upon consideration of their lifecycle costs, outright bans of particular plastic consumer products or packaging for consumer products are being used to curb plastic litter and waste problems. For example, quite a few local governments, including New York City, but mostly in California, have banned polystyrene, at least in the form of

69. *See id.* S.B. 529 was amended so that it is not specified who must make this demonstration. Before the amendment, the burden was placed with each fast-food facility.

70. Information regarding S.B. 529 and other California legislative activity is available at California's legislative information Web site. *See* CAL. LEGIS. INFO., <http://leginfo.legislature.ca.gov> (last visited Apr. 2, 2014).

71. A.B. 521, 2013 Leg. Sess. (Cal. 2013).

72. *See id.*

73. Leila Monroe, *A Sad Day for the Oceans & Marine Life as California's Marine Plastic Pollution Bill Held in Appropriations Committee*, SWITCHBOARD: NATURAL RES. DEF. COUNCIL STAFF BLOG (May 24, 2013), http://switchboard.nrdc.org/blogs/lmonroe/a_sad_day_for_the_oceans_marin.html; *SB 529 (Leno) Fast Food Packaging*, CALIFORNIANS AGAINST WASTE, http://www.cawrecycles.org/issues/current_legislation/sb529_13 (last visited Feb. 25, 2014).

74. *See* Anthony A. Austin, *Where Will All the Waste Go?: Utilizing Extended Producer Responsibility To Achieve Zero Waste*, 6 GOLDEN GATE U. ENVTL. L.J. 221, 237 (2013). EPR laws in the United States have addressed nine product categories: "mercury-filled automobile switches, batteries, carpet, cell phones, electronics, fluorescent lighting, mercury thermostats, paint, and pesticide containers." *Id.* at 237.

foam foodware or packaging.⁷⁵ Local governments that have passed these bans cite the lack of meaningful recycling opportunities for the material, the damage to the ozone layer caused by the use of chlorofluorocarbons in the production of polystyrene, the folly of the reliance on a petroleum product when less environmentally harmful materials are available, and the potential health risks to consumers of food packaged in this material.⁷⁶

Bans on plastic bags are also becoming more common.⁷⁷ In March 2007, the San Francisco Board of Supervisors passed an ordinance banning local retailers from providing noncompostable, single-use plastic bags to customers—the first of its kind in the United States, with other cities soon following.⁷⁸ California appears poised to become the first state to institute a bag ban.⁷⁹ Bangladesh, India, Taiwan, Rwanda, Tanzania, and Australia (among others) have banned all or some plastic bags.⁸⁰

Concord, Massachusetts, banned the sale of single-serving (1 liter or less) water bottled in polyethylene terephthalate after January 1, 2013.⁸¹ In early 2014, San Francisco's Board of Supervisors "ban[ned] the sale of single-use bottles of water in city buildings and parks and at city-permitted events."⁸²

75. For a list of polystyrene ordinances, see *Polystyrene Ordinances*, SURFRIDER FOUND., <http://www.surfrider.org/pages/polystyrene-ordinances> (last updated Nov. 25, 2013).

76. See, e.g., *Styrofoam Ban*, CITY OF ALBANY, CAL., <http://www.albanyca.org/index.aspx?page=688> (last updated Dec. 20, 2010); CARMEL-BY-THE-SEA, CAL. MUN. CODE § 8.68 (2013).

77. See *Plastic Bag Bans and Fees*, SURFRIDER FOUND., <http://www.surfrider.org/pages/plastic-bag-bans-fees> (last visited Feb. 25, 2014) (listing plastic bag restrictions and bans in seventeen states); see also Rachel Cemansky, *How Many Cities Have a Ban on Plastic Bags?*, HOWSTUFFWORKS, <http://www.howstuffworks.com/how-many-cities-have-a-ban-on-plastic-bags.htm> (last visited Feb. 25, 2014); Jenn Sevedge, *Interactive Map Shows Plastic Bag Bans Around the World*, MOTHER NATURE NETWORK BLOG (Nov. 8, 2012, 4:00 PM), <http://www.mnn.com/lifestyle/responsible-living/blogs/interactive-map-shows-plastic-bag-bans-around-the-world>.

78. See Jennifer Clapp & Linda Swanston, *Doing Away with Plastic Shopping Bags: International Patterns of Norm Emergence and Policy Implementation*, 18 ENVTL. POLITICS 315, 326 (2009); Charlie Goodyear, *S.F. First City To Ban Plastic Shopping Bags: Supermarkets and Chain Pharmacies Will Have To Use Recyclable or Compostable Sacks*, SAN FRANCISCO CHRON. (Mar. 28, 2007, 4:00 AM), <http://www.sfgate.com/green/article/S-F-FIRST-CITY-TO-BAN-PLASTIC-SHOPPING-BAGS-2606833.php>.

79. Ian Lovett, *California Endangered Species: Plastic Bags*, N.Y. TIMES (Feb. 25, 2014), http://www.nytimes.com/2014/02/26/us/plastic-bags-come-under-siege-in-california.html?_r=0.

80. See Clapp & Swanston, *supra* note 78, at 319-24.

81. Melissa Locker, *Massachusetts Town Bans Plastic Water Bottles*, TIME (Jan. 4, 2013), <http://newsfeed.time.com/2013/01/04/massachusetts-town-bans-plastic-water-bottles/>.

82. Times Editorial Staff, Editorial, *In S.F., It's BYOB: 'Bring Your Own (Water) Bottles'*, L.A. TIMES (Mar. 6, 2014), <http://www.latimes.com/opinion/editorials/la-ed-bottled-water-ban-san-francisco-20140306,0,5625658.story#ixzz2vV6E4eD6>.

F. California's Nurdles Law

California passed a law in 2007 to address the problem of *preproduction* plastic pollution (the Nurdles Law).⁸³ About 100 billion pounds of preproduction plastic pellets, sometimes called “nurdles,” are produced every year, and they are a common component of plastic pollution around the world.⁸⁴ Because of their size, once they are released to the environment, preproduction plastics present the same environmental challenges as the microplastics in personal care products; for example, they are difficult to remove from wastewater and they can be mistaken as food by marine life.⁸⁵

Unlike the microplastics in personal care products, the release of preproduction plastic to the environment is unintentional—it is a result of accidents or careless transport or manufacturing processes. Potential sources of preproduction plastic pollution range from manufacturers, transporters, warehouse, processors, and recyclers located throughout California, but not dispersed consumers. Pursuant to the Nurdles Law, California’s water boards are directed to regulate these facilities through stormwater NPDES permits, for which the statute sets the minimum requirements.⁸⁶

As a result of the Nurdles Law, in California it is currently illegal to release preproduction microplastics to the environment where it may reach waters of the state, but it remains perfectly legal to sell a consumer product where the directed use will almost certainly result in the release of microbeads to waters of the state.

IV. THE CASE FOR A BAN ON MICROPLASTICS IN PERSONAL CARE PRODUCTS AND MODEL LEGISLATION

Personal care products containing microplastics present a unique situation. They are nonessential because there are commercially viable substitutes with the same or similar properties. The social utility of personal care products containing microplastics is therefore minimal. The harm these products containing microbeads cause to the environment is substantial, as is the cost to prevent their entry to the environment, which is already recognized by at least one state (California) in passage of its Nurdles Law addressing substantially the

83. See CAL. WATER CODE § 13367(a) (2008). Preproduction plastic is defined in the statute to include “plastic resin pellets and powdered coloring for plastics.”

84. See Kenneth R. Weiss, *Altered Oceans: Plague of Plastic Chokes the Seas*, L.A. TIMES, Aug. 2, 2006, at A1.

85. See A.B. 258, 2007 Leg., Reg. Sess. (Cal. 2007).

86. See CAL. WATER CODE § 13367(e).

same problems presented by microbeads. Manufacturers and retailers know and intend that these products will go down the drain, and neither the manufacturers nor the users of these products take responsibility for these costs, which is instead borne by the public at large. Because these products are washed down the drain during their proper and anticipated use, a public education campaign about responsible use is not possible, and EPR (in its present incarnation) is not an obvious fit. The EPA has declined to draft a nationwide water quality standard that would clearly include microplastics, and present interpretation of the CWA is not reaching the problem. Public nuisance suits are risky and would probably fail in most states, but in any event would take considerable time and resources to prosecute. They are vulnerable to dismissal on the grounds of the political question doctrine.

The solution that is most fair to the public and that stands the greatest chance of actual implementation on an efficient time scale is an outright ban, simply and clearly stated, with an efficient enforcement mechanism.⁸⁷ Attached to this Article as an Appendix is model legislation banning personal care products containing microbeads that follows this formula. Substantially similar versions of this ban have been introduced in early 2014 in New York and California.⁸⁸

The model legislation includes first and foremost a simple and clear ban: after some specified date, it is simply illegal to sell or offer for promotional purposes any cleaning or personal care products containing microplastics. This language is intended to avoid the inefficiencies of public nuisance litigation. The plaintiff's only burden would be to show that a particular product contains microplastics—not that a particular product causes harm to the environment or that the harm caused is of sufficient concern to outweigh any social utility the product may have.

87. Bans on plastic bags (and taxes on plastic bags) have faced steep opposition from the plastics industry. That experience is instructive of the likely reception of bans on other plastic products. See generally Jennie R. Romer & Shanna Foley, *A Wolf in Sheep's Clothing: The Plastics Industry's "Public Interest" Role in Legislation and Litigation of Plastic Bag Laws in California*, 5 GOLDEN GATE U. ENVTL. L.J. 377 (2012); see also Rebecca Fromer, Comment, *Concessions of a Shopaholic: An Analysis of the Movement To Minimize Single-Use Shopping Bags from the Waste Stream and a Proposal for State Implementation in Louisiana*, 23 TUL. ENVTL. L.J. 493, 504 (2010).

88. New York's bill was introduced on February 11, 2014, by Assemblyman Robert K. Sweeney with the endorsement of Attorney General E.T. Schneiderman. John Schwartz, *Bans Sought on Microbeads in Beauty Items*, N.Y. TIMES (Feb. 10, 2014), http://www.nytimes.com/2014/02/11/nyregion/ban-sought-on-microbeads-in-beauty-items.html?_r=0. California's bill was introduced on February 14, 2014, by Assemblyman Richard Bloom. A.B. 1699, 2013-14 Leg., Reg. Sess. (Cal. 2014).

The decision regarding the plaintiff's burden is made at the time the legislative ban is adopted.

Likewise, available defenses are few, simplifying enforcement as much as possible, and recognizing, again, that the determination of harm is made at the time of adoption of legislation. There is a de minimis exception for products containing less than 1 parts per million (ppm) microplastics by weight, because at this level, microplastic content is almost certainly inadvertent and poses little threat to the environment. Defendants may also avoid liability by demonstrating that products are designed for uses where it is unlikely that they will eventually pass to surface waters.

Civil penalties should be set sufficiently high that they can be expected to be a deterrent to the largest and most intractable manufacturers and retailers of these products.⁸⁹ Guidelines are included to guide court discretion in determining where on the \$0 to \$2500 per-violation spectrum penalties should be assessed, taking into consideration such things as the number of violations, the economic effect of the penalty on the violator, and whether and when the violator made good faith efforts to comply with the ban.

Modeled upon the CWA's enormously successful provision, the model legislation includes a citizen suit cause of action.⁹⁰ The citizen suit provision, together with its attorney's fees and costs provision, will ensure enforcement even if the adopting state has recalcitrant or overburdened enforcement agencies.⁹¹ Like the CWA, there is a notice requirement so that government enforcers may take over the case at their discretion.

Similar to California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65),⁹² the model legislation would permit a lawsuit to be brought "in the public interest," a relaxed standing requirement that further simplifies litigation and allows for enforcement by a willing party who need not and may not be able to demonstrate personal harm as a result of a defendant's violation of the model

89. The \$2500 used in the model legislation was taken from California's Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65). See CAL. HEALTH & SAFETY CODE § 25249.7(b)(1) (2003). Different numbers may be appropriate in the regulatory context of different states.

90. See 33 U.S.C. § 1365 (2006).

91. See Edward Lloyd, *Citizen Suits and Defenses Against Them* (ALI-ABA Continuing Legal Education, June 12-14, 2013), WL 54044 ALI-ABA 903.

92. CAL. HEALTH & SAFETY CODE § 25249.5 (prohibiting businesses from knowingly exposing individuals to substances listed by California as causing cancer or birth defects or other reproductive harm).

legislation. Available in California, this relaxed standard may not be available in other states.⁹³

The model legislation also provides for 50% of civil penalties collected to be directed and paid into a “Plastic Pollution Fund” from which the collected penalties may be dispersed to implement and administer the model legislation, including by payment to other public or private entities. The remaining 50% of the civil penalties are paid to the private enforcer or agency, whomever brought the action, as an incentive to encourage sufficient enforcement.

V. APPENDIX—MODEL LEGISLATION

Chapter []: Microplastic Nuisance Prevention Law

Section 1. Purpose and Need

- (a) *Whereas*, plastic does not biodegrade like other organic materials but, upon exposure to the elements, photodegrades into smaller pieces causing land and water pollution that is virtually impossible to remediate.
- (b) *Whereas*, plastic pollution is the dominant type of anthropogenic debris found throughout the marine environment.
- (c) *Whereas*, plastic pollution is an environmental and human health hazard and a public nuisance.
- (d) *Whereas*, consumer personal care products such as facial scrubs, soaps, and toothpaste increasingly contain thousands of microplastic particles that are flushed down drains as part of their intended use.
- (e) *Whereas*, microplastics in personal care products are not recoverable through ordinary wastewater treatment and so are released into the environment.

93. Private citizens bringing Proposition 65 suits “need not plead a private injury and instead are deemed to sue ‘in the public interest’”; a private enforcer need not allege an actual injury to any individuals under Proposition 65. *Nat’l Paint & Coatings Ass’n v. California*, 68 Cal. Rptr. 2d 360, 362 (Ct. App. 1997) (quoting CAL. HEALTH & SAFETY CODE § 25249.7(d)). As the California Court of Appeal explained in *National Paint & Coatings Ass’n*, private citizens who have sustained no injury may sue under Proposition 65 in the public interest because, unlike the federal constitution, the California constitution contains no “case or controversy” requirement. *Id.* at 365. *National Paint & Coatings Ass’n* recognized that “California authority supports the conclusion that a suit by a citizen in the undifferentiated public interest is ‘justiciable,’ or appropriate for decision in a California court,” and that “[t]he interests of individual citizens in assuring that carcinogenic chemicals are not placed in their drinking water and that appropriate warnings are given of exposure to such chemicals, appear to us to be . . . appropriate for vindication by a ‘general citizen’ right to sue.” *Id.* (emphasis omitted).

- (f) *Whereas*, microplastics of the size found in cleaning and personal care products are ingested by marine organisms.
- (g) *Whereas*, microplastics are persistent organic compounds that attract other pollutants commonly present in the environment, many of which are recognized to have serious deleterious impacts on human health or the environment, including DDT, DDE, PCBs, and flame-retardants.
- (h) *Whereas*, microplastics have been found in surface waters within the United States, as well as in fish, marine mammals, and reptiles, and in the digestive and circulatory systems of mussels and worms.
- (i) *Whereas*, PAHs, PCBs, and PBDEs from plastic transfer to fish tissue during digestion and bioaccumulate, resulting in liver damage.
- (j) *Whereas*, fish that humans consume have been found to ingest microplastics.
- (k) *Whereas*, there are many biodegradable, natural alternatives to microplastics that are economically feasible, as evidenced by their current use in some consumer personal care products.
- (l) [State specific additional points, such as existing law regarding plastic pollution]

Section 2. Definitions

As used in this chapter, the following terms have the following meanings:

- (a) “Person” means an individual, trust, firm, joint stock company, corporation, company, partnership, limited liability company, or association.
- (b) “Person in the Course of Doing Business” does not include any person employing fewer than 10 employees, including both full time and part time employees [may reference state labor law here], in his or her business; any city, county, or district or any department or agency thereof or the state or any department or agency thereof or the federal government or any department or agency thereof; or any entity in its operation of a public water system.
- (c) “Personal Care Product” means a mixture or solution used for bathing and cleaning, including hand and body soap, exfoliates, shampoos, toothpastes, and scrubs.
- (d) “Microplastic” means any plastic measuring 5 millimeters or smaller in diameter.
- (e) “Plastic” means a synthetic material made from a polymer chain that can be molded, catalyzed, or extruded into various forms (e.g.,

thermoplastics, thermoset plastics, and bioplastics including those from polylactic acid and polyhydroxyalkanoates). Plastics are typically made from petroleum, natural gas, or other organic substances.

Section 3. Restrictions

On or after [date] no Person in the Course of Doing Business shall sell or offer for promotional purposes in this state any Personal Care Product containing Microplastic.

Section 4. Exemptions from Restrictions

- (a) Section 3 shall not apply to any Personal Care Product containing Microplastic in less than 1 part per million by weight.
- (b) Section 3 shall not apply if it is shown that an otherwise prohibited Personal Care Product is designed and marketed solely for uses where it will not pass into any wastewater treatment system or water of the state.
- (c) The burden of showing that an exemption under this section applies shall be on the defendant.

Section 5. Enforcement

- (a) A Person who violates or threatens to violate Section 3 may be enjoined in any court of competent jurisdiction.
- (b) A Person who has violated Section 3 is liable for a civil penalty not to exceed \$2500 for each unit of Personal Care Product sold in [state] in addition to any other penalty established by law. That civil penalty may be assessed and recovered in a civil action brought in any court of competent jurisdiction. In assessing the amount of a civil penalty for a violation of this chapter, the court shall consider all of the following:
 - 1. The number of violations.
 - 2. The economic effect of the penalty on the violator.
 - 3. Whether the violator took good faith measures upon notification of its violation of this chapter to come into compliance.
 - 4. The deterrent effect that the imposition of the penalty would have on the regulated community as a whole.
 - 5. Any other factors that justice may require.

- (c) Actions pursuant to this section may be brought by the Attorney General in the name of the people of the state or by a district attorney.
- (d) Actions pursuant to this section may be brought by a Person in the public interest if both of the following requirements are met:⁹⁴
 - 1. The private action is commenced more than sixty (60) days from the date that the Person has given notice of an alleged violation of Section 3 that is the subject of the private action to the Attorney General and to the alleged violator.
 - 2. Neither the Attorney General nor a district attorney has commenced and is diligently prosecuting an action against the violation.
- (e) The court, in issuing any final order in any action brought pursuant to this section, shall award costs of litigation (including reasonable litigation fees and costs, investigation costs, and expert witness fees) to any prevailing party.

Section 6. Implementation; Plastic Pollution Fund

- (a) The [appropriate agency] shall administer and implement this chapter. [Appropriate agency] may adopt and modify regulations and standards as necessary to conform with and implement this chapter and to further its purposes.
- (b) The Plastic Pollution Fund is hereby established in the state treasury. The [appropriate agency] may expend the funds in the Plastic Pollution Fund to implement and administer this chapter.
- (c) In addition to any other money that may be deposited in the Plastic Pollution Fund, all of the following amounts shall be deposited in the fund:
 - 1. Fifty percent of all civil penalties collected pursuant to this chapter.
 - 2. Any interest earned upon the money deposited into the Plastic Pollution Fund.
- (d) Fifty percent of all civil penalties collected pursuant to this chapter shall be paid to the office of the district attorney or Attorney General, whichever office brought the action, or in the case of an

94. In some states with more restrictive standing requirements, this may have to be reworded as a citizen suit rather than a suit in the public interest.

action brought by a Person under subdivision (d) of Section 5, to that person.

- (e) [Appropriate agency] may expend the funds in the Plastic Pollution Fund by directly expending those funds, by transferring those funds to other state agencies, or by providing grants to local governments or other entities deemed eligible by the [appropriate agency], including, but not limited to, nongovernmental organizations and conservation corps.

Section 7. Preservation of Existing Rights, Obligations, and Penalties

Nothing in this chapter shall alter or diminish any legal obligation otherwise required in common law or by statute or regulation, and nothing in this chapter shall create or enlarge any defense in any action to enforce such legal obligation. Penalties and sanctions imposed under this chapter shall be in addition to any penalties or sanctions otherwise prescribed by law.