
Standing and Statistical Persons: A Risk-Based Approach to Standing

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*This Article proposes that any individual should have standing to challenge government action that exposes her to an increased lifetime risk of death or serious injury that is one in one million or greater. Because most regulation involves statistical probabilities of harm, a plaintiff challenging a government regulatory action or inaction as insufficiently protective cannot demonstrate that he or she likely would be harmed by the allegedly inadequate regulation, but merely that a different regulation might reduce the probability of risk. The beneficiaries of a suit seeking better government regulation are, therefore, statistical persons rather than identifiable persons. By contrast, current standing law is largely based on the assumption that only identifiable persons with specific injuries can sue in Article III federal courts, although some decisions have explicitly or implicitly allowed “statistical standing” based on a probability of future injury. In *Natural Resources Defense Council v. EPA*, the District of Columbia Circuit recognized standing in a case involving probabilistic future risk where there was evidence demonstrating that two to four members of the Natural Resources Defense Council’s nearly half a million members would develop skin cancer during their lifetimes as a result of an Environmental Protection Agency rule. Professor Heather Elliott has recently argued that the *Natural Resources Defense Council v. EPA* decision has the troubling implication that large public interest organizations have greater standing rights than small organizations or individuals because it is statistically more likely that one of their members would be harmed by a government regulation that allegedly is insufficiently protective of public safety. Under this Article’s proposed one in one million standard, an individual or a member of a small association would have the same rights as a large*

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organization. The proposed test would reduce the inconsistencies in how different judges or judicial circuits apply today's vague standing test. Additionally, Congress could overrule this presumptive standard and impose a different standard in a statute whenever it chose to do so.

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INTRODUCTION

A legal gulf has arisen because the legislative and executive branches recognize a broader range of injuries and harms to the public than the judiciary does. While the laws passed by Congress and the administrative regulatory state exert greater power to protect the public from statistical harm, the courts have been slow to allow members of the public into the courthouse to address those same risks.

Many modern health and safety regulations are designed to protect the public from the statistical possibility of future harm from pollution or dangerous products, rather than compensating them for existing injuries after they occur.¹ For instance, the government limits public exposure to some chemicals that have a one in one million risk of causing death to exposed

1. Robin Kundis Craig, *Removing "The Cloak of a Standing Inquiry": Pollution Regulation, Public Health, and Private Risk in the Injury-in-Fact Analysis*, 29 *CARDOZO L. REV.* 149, 157, 169 (2007).

populations.² However, because most regulation involves statistical probabilities of harm, a plaintiff challenging a government regulatory action or inaction as insufficiently protective cannot demonstrate that he or she likely would be harmed by the allegedly inadequate regulation. Instead, at most the plaintiff would be able to show that a different regulation might reduce the risk that he or she would be the particular person harmed.³ The beneficiaries of a suit seeking more protective government regulation are, therefore, statistical persons rather than identifiable persons.⁴

By contrast, standing law is largely based on the assumption that only identifiable persons with specific injuries can sue in Article III federal courts, although some decisions have explicitly or implicitly allowed “statistical standing” based on a probability of future injury.⁵ The Supreme Court has interpreted Article III of the Constitution to impose a standing test requiring plaintiffs to demonstrate that they have personally suffered an injury that is “actual or imminent,” and not merely “conjectural or hypothetical.”⁶ The “actual or imminent” requirement raises serious difficulties for plaintiffs alleging probabilistic injuries that threaten the public at large.⁷ As a result, in a wide class of government actions involving the regulation of risks of harms to statistical persons, the persons affected by the government regulation will often be barred from challenging it.

These general trends notwithstanding, some lower court decisions have adopted a more lenient interpretation of these terms and allowed probabilistic standing.⁸ On the other hand, the Court of Appeals for the District of Columbia Circuit has required plaintiffs to demonstrate only that there is a “substantial probability” that a challenged government action will harm them.⁹ The D.C.

2. See *infra* Part VI.C.

3. Shi-Ling Hsu, *The Identifiability Bias in Environmental Law*, 35 FLA. ST. L. REV. 433, 436–37, 440–51, 466–69 (2008).

4. See Craig, *supra* note 1, at 157, 169; Hsu, *supra* note 3, at 436–37, 440–51, 466–69.

5. Hsu, *supra* note 3, at 466–69.

6. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560, 563–64 (1992) (citing *Los Angeles v. Lyons*, 461 U.S. 95, 102 (1983)). See generally Cass R. Sunstein, *What’s Standing After Lujan? Of Citizen Suits, “Injuries,” and Article III*, 91 MICH L. REV. 163 (1992) (criticizing standing requirement that plaintiff must prove an injury is “imminent”).

7. Hsu, *supra* note 3, at 466–69.

8. See *infra* Parts II.B–E, III.B and III.C.2.

9. *Fla. Audubon Soc’y v. Bentsen*, 94 F.3d 658, 665–72 (D.C. Cir. 1996) (applying strict four-part test for standing in procedural rights case, including requiring a procedural rights plaintiff to demonstrate a particularized injury—that “a particularized environmental interest of theirs that will suffer demonstrably increased risk” and that it is “substantially probable” that the agency action will cause the demonstrable injury alleged by the plaintiff); see Amanda Leiter, *Substance or Illusion? The Dangers of Imposing a Standing Threshold*, 97 GEO. L.J. 391, 393–95, 403–15 (2009) (arguing D.C. Circuit’s threshold test of substantial harm in standing cases is inappropriate); Bradford C. Mank, *Global Warming: Is Injury to All Injury to None?*, 35 ENVTL. L. 1, 51–56 (2005) (discussing *Florida Audubon’s* substantial probability standing test); Cassandra Sturkie & Suzanne Logan, *Further*

Circuit's approach is important because it has exclusive jurisdiction over several regulatory statutes¹⁰ and concurrent jurisdiction over many others.¹¹ In at least three cases the D.C. Circuit has recognized probabilistic standing claims, albeit reluctantly.¹² Most recently, a panel of the D.C. Circuit has suggested that the circuit grant en banc review to examine whether probabilistic standing is ever appropriate.¹³

Other circuits have also applied a more lenient test in cases involving probabilistic standing, although there remains considerable uncertainty about precisely when these courts will recognize standing.¹⁴ Several decisions have

Developments in the D.C. Circuit's Article III Standing Analysis: Are Environmental Cases Safe From the Court's Deepening Skepticism of Increased-Risk-of-Harm Claims?, 38 *Envtl. L. Rep. (Envtl. Law Inst.)* 10460, 10461 (2008) (discussing D.C. Circuit's substantial probability standing test); Cassandra Sturkie & Nathan Seltzer, *Developments in the D.C. Circuit's Article III Standing Analysis: When Is an Increased Risk of Future Harm Sufficient to Constitute Injury-in-Fact in Environmental Cases?*, 37 *Envtl. L. Rep. (Envtl. Law Inst.)* 10287, 10289–91 (2007) (same).

10. The D.C. Circuit has exclusive jurisdiction to review regulations issued pursuant to the Resource Conservation and Recovery Act, 42 U.S.C. § 6976(a)(1) (2006), the Comprehensive Environmental Resource, Compensation, and Liability Act, 42 U.S.C. § 9613(a) (2006), the Oil Pollution Act, 33 U.S.C. § 2717(a) (2006), and the Toxic Substances Control Act, 15 U.S.C. § 2618(a)(1) (2006); national pollution standards issued under the Clean Air Act, 42 U.S.C. § 7607(b)(1) (2006); "actions pertaining to the establishment of national primary drinking water regulations" under the Safe Drinking Water Act, 42 U.S.C. § 300j-7(a)(1) (2006); decisions of the "God Squad" under the Endangered Species Act, 16 U.S.C. § 1536(n) (2006); and national rules promulgated under the Surface Mining Control and Reclamation Act, 30 U.S.C. §§ 1276(a) (2006). See Leiter, *supra* note 9, at 404 n.76; Sturkie & Seltzer, *supra* note 9, at 10287.

11. The D.C. Circuit has concurrent jurisdiction to review orders under the National Labor Relations Act, 29 U.S.C. §160(f) ("[A]ny person aggrieved by a final order of the [National Labor Relations Board] may obtain review in the court of appeals for any circuit wherein the unfair labor practice was alleged to have been engaged, wherein such person resides or transacts business, or in the D.C. Circuit."); or any proceeding under the Nuclear Waste Policy Act, 42 U.S.C. § 10139.42 (2006) (stating venue for review of any proceeding "shall be in the circuit in which the petitioner involved resides or has its principal office, or in the D.C. Circuit"). See Leiter, *supra* note 9, at 404 n.76; see also John G. Roberts, *What Makes the D.C. Circuit Different? A Historical View*, 92 *VA. L. REV.* 375, 389 (2006) ("Whatever combination of letters you can put together, it is likely that jurisdiction to review that agency's decision is vested in the D.C. Circuit.").

12. *Natural Res. Def. Council v. EPA (NRDC II)*, 464 F.3d 1, 4–5 (D.C. Cir. 2006) (recognizing standing where members of organization had increased risk of one in 129,000 and one in 200,000 of developing skin cancer because of government exemptions for methyl bromide); *La. Env'tl. Action Network v. EPA*, 172 F.3d 65, 67–68 (D.C. Cir. 1999) (recognizing standing where members of organization had increased risk of harm from hazardous waste sites because of variances granted by EPA); *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996) (recognizing that an incremental increase in the risk of forest fires caused by the Forest Service's action satisfied Article III standing requirements).

13. *Pub. Citizen v. Nat'l Highway Traffic Safety Admin. (Public Citizen II)*, 513 F.3d 234, 241 (D.C. Cir. 2008) (per curiam); Sturkie & Logan, *supra* note 9, at 10466.

14. *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting D.C. Circuit's substantial probability and stating that such plaintiffs "need only establish 'the reasonable probability of the challenged action's threat to [their] concrete interest'"); *Comm. to Save the Rio Hondo v. Lucero*, 102 F.3d 445, 447–52 (10th Cir. 1996) (disagreeing with D.C. Circuit's "substantial probability" test for procedural rights plaintiffs and instead adopting a test that plaintiff must establish

recognized standing for threatened or probabilistic injuries, but it is uncertain whether an individual plaintiff has standing where the individual probability of harm is low.¹⁵ For instance, the Eighth Circuit has rejected standing where the alleged risks were likely far less than a 50 percent probability during the plaintiffs' lifetime.¹⁶

One interesting implication of the conflict between statistical safety regulations and standing law is whether large public interest organizations with many members have greater standing rights than individual plaintiffs.¹⁷ In *Natural Resources Defense Council v. EPA (NRDC II)*, the D.C. Circuit recognized standing in a case involving probabilistic future risk where there was evidence demonstrating that two to four members of NRDC's nearly half a million members would develop skin cancer during their lifetimes as a result of an EPA rule.¹⁸ Professor Heather Elliott has recently argued that the *NRDC II* decision raises the troubling implication that large public interest organizations have greater standing rights than small organizations or individuals because it is statistically more likely that one of their members would be harmed by a government regulation that allegedly is insufficiently protective of public safety.¹⁹ Raising separation-of-powers principles, she has questioned whether public interest organizations should have greater standing rights the larger their

an "increased risk of adverse environmental consequences" from the alleged failure to follow the National Environmental Policy Act (NEPA)); Mank, *supra* note 9, at 56–63 (discussing Ninth and Tenth Circuit decisions rejecting D.C. Circuit's substantial probability test and applying more lenient standing test); Blake R. Bertagna, Comment, "Standing" Up for the Environment: The Ability of Plaintiffs To Establish Legal Standing to Redress Injuries Caused by Global Warming, 2006 BYU L. REV. 415, 461–64 (2006) (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test).

15. See *Baur v. Veneman*, 352 F.3d 625, 633 (2d Cir. 2003) ("[T]he courts of appeals have generally recognized that threatened harm in the form of an increased risk of future injury may serve as injury-in-fact for Article III standing purposes."); *Cent. Delta Water Agency v. United States*, 306 F.3d 938, 947–48 (9th Cir. 2002) (holding that "the possibility of future injury may be sufficient to confer standing on plaintiffs" and concluding that plaintiffs could proceed with their suit where they "raised a material question of fact . . . [as to] whether they will suffer a substantial risk of harm as a result of [the government's] policies"); *Johnson v. Allsteel, Inc.*, 259 F.3d 885, 888 (7th Cir. 2001) (holding that the "increased risk that a plan participant faces" as a result of an Employee Retirement Income Security Act (ERISA) plan administrator's increase in discretionary authority satisfies Article III injury-in-fact requirements); *Friends of the Earth, Inc. v. Gaston Copper Recycling, Corp.*, 204 F.3d 149, 160 (4th Cir. 2000) (en banc) (concluding that "threats or increased risk constitutes cognizable harm" sufficient to meet the injury-in-fact requirement); *Walters v. Edgar*, 163 F.3d 430, 434 (7th Cir. 1998) (reasoning that "[a] probabilistic harm, if nontrivial, can support standing"); Craig, *supra* note 1, at 190–94 (discussing cases); Leiter, *supra* note 9, at 392 n.6, 404; Sturkie & Seltzer, *supra* note 9, at 10293 (observing that Second, Fourth, and Ninth Circuits apply a more lenient standing test than the D.C. Circuit).

16. *Shain v. Veneman*, 376 F.3d 815 (8th Cir. 2004); see *infra* Part II.F.

17. See Heather Elliott, *The Functions of Standing*, 61 STAN. L. REV. 459, at 504–05 (2008).

18. *NRDC II*, 464 F.3d 1, 6–7 (D.C. Cir. 2006); Craig, *supra* note 1, at 200–01; Elliott, *supra* note 17, at 504; Sturkie & Seltzer, *supra* note 9, at 10294.

19. Elliott, *supra* note 17, at 504–06.

membership, especially when there is only a statistical probability that their members will be harmed in the future.²⁰

While Professor Elliott raises interesting questions about whether larger organizations should have greater standing rights than small ones, this Article argues that associations should be able to represent their members no matter how large the organization, even under current standing doctrine. The Supreme Court has stated that mass suits are appropriate if each plaintiff has a concrete and individualized injury.²¹ Additionally, in *Hunt v. Washington State Apple Advertising Commission*, the Supreme Court set forth a three-part test for associational standing that placed no limits on the size of the organization.²² A better response to Professor Elliott's question is to recognize standing rights for any individual who has a non-trivial statistical probability of harm from the government's failure to enforce a statute or regulation, rather than relying on some aggregation of risk across many individuals as the D.C. Circuit implicitly did in *NRDC II*.

Recognizing an individual standing right grounded in a statistical harm may not be too far removed from current doctrine. Pursuant to Article III of the Constitution, the Supreme Court has stated that a small concrete injury is enough for individual standing.²³ Any measureable amount of concrete harm is arguably enough for constitutional standing, although the Supreme Court has never precisely defined the outer limits of the standing doctrine.²⁴ Courts, however, may impose prudential limitations on standing to avoid relatively trivial suits that might overwhelm the court system if large numbers of such suits were filed.²⁵ This Article proposes that on balance any individual should have standing to challenge a government action that exposes her to an increased lifetime risk of one in one million or greater of death or serious injury. The one in one million risk standard is comparable with the one in 200,000 or one in 129,000 risk of serious harm threshold used in the D.C. Circuit's *NRDC II*

20. Elliott, *supra* note 17, at 505 n.222.

21. See *infra* Parts IV and VI.

22. *Hunt v. Wash. State Apple Adver. Comm'n*, 432 U.S. 333, 343 (1977).

23. *Fed. Election Comm'n v. Akins*, 524 U.S. 11, 23–24 (1998); *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669, 689 n.14 (1973); see *infra* Part IV.

24. *SCRAP*, 412 U.S. at 689 n.14 (stating small injury is enough for standing). *But see* Korsinsky v. EPA, No. 05 Civ. 1528, 2005 WL 1423345, 2005 U.S. Dist. LEXIS 21778, at *6–8 (S.D.N.Y. Sept. 29, 2005) (denying standing where plaintiff alleged climate change could worsen his sinus condition because “[s]uch allegations fall more within the realm of the hypothetical and conjectural than the actual or imminent and therefore are insufficient for purposes of standing”), *aff'd*, 192 Fed. App'x. 71 (2d Cir. 2006).

25. See *Covington v. Jefferson County*, 358 F.3d 626, 654–55 n.12 (9th Cir. 2004) (Gould, J., concurring) (discussing the authority of federal courts to limit suits that are excessively burdensome if political branches or suit by the United States could address issue); Mank, *supra* note 9, at 28, 44–45 (agreeing with Judge Gould that courts may invoke prudential standing barrier to that are excessively burdensome).

decision involving the regulation of methyl bromide.²⁶ Under this standard, a member of a small association or even a single individual would have the same rights as a large organization. The proposed test would reduce the inconsistencies in how different judges or circuits apply today's vague standing test. To clarify this test, Congress could enact a statutory standing test that applies to some or all regulatory statutes, or the courts could adopt a prudential judge-made standard that would be subject to congressional revision.²⁷

Some commentators likely would object to a purely quantitative standing test. Some risks are not easily quantified, including diminished recreational uses or aesthetic injuries. As such, under the proposed standard, a plaintiff would still have standing if their "reasonable concerns" about pollution or other harmful activities caused them to avoid or diminish their recreational activities or aesthetic enjoyment of nature.²⁸ The proposed one in one million risk standard would supplement, but not replace, existing standing requirements. The quantitative approach to standing would only be used where probabilistic evidence is readily available, as it often is in regulatory rulemaking.

Part I discusses the basics of constitutional standing, associational standing, and the relationship between separation-of-powers principles and standing. Part II examines when courts have recognized or denied standing in probabilistic standing cases. Part III discusses the D.C. Circuit's "substantial probability test" and the Circuit's conflicting decisions regarding probabilistic standing. Part IV examines whether probabilistic risks are generalized grievances for the political branches or suitable concrete injuries for the courts. Part V examines Professor Elliott's argument that the *NRDC II* decision gave greater standing rights to large organizations. Part VI argues that organizations should have standing even if we cannot identify which members will be injured in the future by an unlawful government action. Part VII proposes that Congress or courts adopt a one in one million risk threshold for when individuals may sue. The proposed risk-based standing test would both provide more protection to individuals threatened by environmental or health-based threats that pose long-term harms and simplify today's overly complex standing jurisprudence.

I. STANDING AND PROBABILISTIC INJURIES

A major obstacle for plaintiffs who allege that government regulations are insufficiently protective of public safety is the standing doctrine arising out of Article III of the U.S. Constitution, which requires that a plaintiff have suffered

26. *NRDC II*, 464 F.3d 1, 7 (D.C. Cir. 2006); see *infra* Part V.D.1.

27. See *infra* Part VII.C.

28. See *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181–83 (2000); see *infra* Parts II.A. and VII.D.2.

or will suffer concrete and imminent injuries from the defendant's actions.²⁹ There are serious questions about whether a plaintiff can sue to address generalized or probabilistic injuries resulting from insufficiently protective government regulations.³⁰ Yet some members of the Supreme Court have also recognized the authority of Congress to address new types of injuries that would have been unimaginable when the Constitution was adopted in 1789.³¹

A. Constitutional Standing

Even though the Constitution does not explicitly mention the standing doctrine, the Supreme Court since at least 1944 has interpreted Article III's limitation of judicial decisions to cases and controversies as requiring plaintiffs to establish standing.³² The federal courts have jurisdiction over a case only if at least one plaintiff can prove that she has standing for each form of relief sought.³³ A federal court must dismiss a case without deciding the merits if the plaintiff fails to meet standing requirements.³⁴ For standing in an Article III court, the Supreme Court usually requires a plaintiff to show

“[(1)] [she] ha[s] suffered an “injury in fact” [that] is (a) concrete and particularized . . . and (b) “actual or imminent, not ‘conjectural’ or ‘hypothetical’[;] . . . [(2)] the injury [is] “fairly . . . trace[able] to the challenged action of the defendant . . . [; and (3)] it [is] “likely,” as opposed

29. See *infra* Parts I.A and I.C.

30. See *infra* Parts IV and V.

31. See *infra* Parts II.G and VII.C–D.

32. *Stark v. Wickard*, 321 U.S. 288, 310 (1944) (first Supreme Court case explicitly stating Article III standing requirements); U.S. Const. art. III, § 2, cl. 1 (limiting federal judiciary to “case” or “controversy”); *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 340–42 (2006) (explaining why Supreme Court infers that Article III’s case and controversy requirement necessitates standing limitations); Bradford C. Mank, *Should States Have Greater Standing Rights Than Ordinary Citizens?: Massachusetts v. EPA’s New Standing Test for States*, 49 WM. & MARY L. REV. 1701, 1709–10 (2008); Mank, *supra* note 9, at 22 (stating Supreme Court first explicitly referred to standing in 1944 *Stark* decision); Michael E. Solimine, *Recalibrating Justiciability in Ohio Courts*, 51 CLEV. ST. L. REV. 531, 533 (2004); Ryan Guilds, Comment, *A Jurisprudence of Doubt: Generalized Grievances as a Limitation to Federal Court Access*, 74 N.C. L. REV. 1863, 1868 (1996). *But see* Sunstein, *supra* note 6, at 168–79, 208 (1992) (arguing that framers of Constitution did not intend that Article III would require standing). Some pre-1944 cases used standing-like concepts to deny review, but did not use the term “standing.” See *Ex parte Levitt*, 302 U.S. 633, 634 (1937) (denying challenge to appointment of Supreme Court Justice because petitioner had no interest in suit “other than that of a citizen and a member of the bar of this Court”); *Fairchild v. Hughes*, 258 U.S. 126, 129–30 (1922) (dismissing suit challenging procedures by which nineteenth amendment was ratified because the suit was “not a case within the meaning of . . . Article III” because plaintiff asserted “only the right, possessed by every citizen, to require that the Government be administered according to law and that the public moneys be not wasted”).

33. *DaimlerChrysler*, 547 U.S. at 352–53; *Laidlaw*, 528 U.S. at 185 (“a plaintiff must demonstrate standing for each form of relief sought”); Mank, *supra* note 32, at 1710.

34. See *DaimlerChrysler*, 547 U.S. at 341; *Laidlaw*, 528 U.S. at 180 (“We have an obligation to assure ourselves that [petitioner] had Article III standing at the outset of the litigation.”); Mank, *supra* note 32, at 1710; Mank, *supra* note 9, at 23.

to merely “speculative,” that the injury will be “redressed by a favorable decision.”³⁵

A plaintiff has the burden of establishing all three prongs of the standing test.³⁶

Small injuries and incremental risk already play a role in the standing analysis in cases involving remedies for procedural errors. For such cases, including the failure of the government to prepare an environmental impact statement (EIS) pursuant to the National Environmental Policy Act (NEPA),³⁷ courts relax the imminence and redressability portions of the standing test.³⁸ While a plaintiff usually must demonstrate that it is likely that an injury will be redressed by a favorable decision,³⁹ plaintiffs alleging that the government has violated a procedural requirement may have standing if the proposed remedy would merely reduce the risk of future harm.⁴⁰ In *Massachusetts v. EPA*,⁴¹ the Court observed that *Lujan v. Defenders of Wildlife* had applied a different standard to procedural violations, stating: “When a litigant is vested with a procedural right, that litigant has standing if there is *some possibility* that the requested relief will prompt the injury-causing party to reconsider the decision that allegedly harmed the litigant.”⁴² In *Massachusetts*, the EPA argued that the petitioners’ request that the agency regulate emissions from new motor vehicles

35. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992); accord Mank, *supra* note 32, at 1710.

36. *DaimlerChrysler*, 547 U.S. at 342 (stating that parties asserting federal jurisdiction must “carry the burden of establishing their standing under Article III”); *Lujan*, 504 U.S. at 561 (same); Mank, *supra* note 32, at 1710.

37. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370f (2006).

38. There is this much truth to the assertion that “procedural rights” are special: The person who has been accorded a procedural right to protect his concrete interests can assert that right without meeting all the normal standards for redressability and immediacy. Thus, under our case law, one living adjacent to the site for proposed construction of a federally licensed dam has standing to challenge the licensing agency’s failure to prepare an environmental impact statement, even though he cannot establish with any certainty that the statement will cause the license to be withheld or altered, and even though the dam will not be completed for many years.

Lujan, 504 U.S. at 572 n.7. A plaintiff must still have alleged that the proposed government action would have some possibility of causing him a concrete harm. Justice Scalia explained that a person who lives next to a proposed dam site can sue regarding the government’s alleged failure to prepare an environmental impact statement, but not someone who lives in a distant state. *Id.*; Mank, *supra* note 32, at 1717. The Supreme Court has never clearly explained to what extent the immediacy or redressability portions of the standing test are relaxed in procedural rights cases. Mank, *supra* note 32, at 1718–20.

39. *Lujan*, 504 U.S. at 560–61.

40. Kimberly N. Brown, *Justiciable Generalized Grievances*, 68 MD. L. REV. 221, 250, 252, 254 (2008).

41. *Massachusetts v. EPA*, 549 U.S. 497 (2007).

42. *Id.* at 518 (emphasis added). In *Massachusetts* the Supreme Court relaxed the redressability standard both because Massachusetts deserved “special solicitude” as a state and because it alleged that the EPA had committed a procedural violation in failing to address whether greenhouse gases endangered the public and welfare. *Massachusetts*, 549 U.S. at 517–20, 525–26; Mank, *supra* note 32, at 1727–29, 1746–52.

would not remedy the problem of global climate change because the U.S. vehicle emissions at issue only constituted 4 percent of global greenhouse gases and growing emissions from China and India alone would dwarf any reductions a court might order.⁴³ The Court rejected the EPA's argument because it "rest[ed] on the erroneous assumption that a small incremental step, because it is incremental, can never be attacked in a federal judicial forum. . . . [A]ccepting that premise would doom most challenges to regulatory action."⁴⁴ The Court concluded that Massachusetts had met the redressability portion of the standing test because a court order requiring the EPA to regulate emissions from new vehicles would "slow or reduce" global climate change.⁴⁵ *Massachusetts's* recognition of incremental remedies is consistent with probabilistic standing suits that seek to reduce plaintiffs' future risk of harm. Most of the controversy about statistical standing, however, has focused on the injury prong of the test and, therefore, the remainder of this Article will focus on the injury prong rather than the redressability part of the test.

Even for substantive claims, a plaintiff can sue even if her injury is relatively small, so long as it is concrete. In *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*,⁴⁶ the Court rejected the government's argument that a plaintiff must demonstrate a significant injury:

The Government urges us to limit standing to those who have been "significantly" affected by agency action. But . . . we think [such a test] fundamentally misconceived. "Injury in fact" . . . serves to distinguish a person with a direct stake in the outcome of a litigation—even though small—from a person with a mere interest in the problem. We have allowed important interests to be vindicated by plaintiffs with no more at stake in the outcome of an action than a fraction of a vote . . . ; a \$5 fine and costs . . . ; and a \$1.50 poll tax As Professor Davis has put it: "The basic idea that comes out in numerous cases is that an identifiable trifle is enough for standing to fight out a question of principle"⁴⁷

SCRAP, however, did not address whether a small probabilistic risk of injury is enough for standing.

In *Lujan v. Defenders of Wildlife*, the Court created an unfortunate and unnecessary distinction between regulated entities challenging government over-enforcement of the law and citizens challenging the government's misinterpretation or underenforcement of the law. The Court stated:

43. *Massachusetts*, 549 U.S. at 523–25; see also *id.* at 543–45 (Roberts, C.J., dissenting).

44. *Id.* at 524 (majority opinion).

45. *Id.* at 525 (emphasis in original).

46. *SCRAP*, 412 U.S. 669 (1973).

47. *Id.* at 689 n.14 (quoting *Baker v. Carr*, 369 U.S. 186 (1962)); accord *Harper v. Va. Bd. of Elections*, 383 U.S. 663 (1966); *McGowan v. Maryland*, 366 U.S. 420 (1961); K. Davis, *Standing: Taxpayers and Others*, 35 U. CHI. L. REV. 601, 613 (1993).

When, however, as in this case, a plaintiff's asserted injury arises from the government's allegedly unlawful regulation (or lack of regulation) of *someone else*, much more is needed. In that circumstance, causation and redressability ordinarily hinge on the response of the regulated (or regulable) third party to the government action or inaction—and perhaps on the response of others as well.⁴⁸

Numerous commentators have challenged *Lujan's* distinction between regulated and non-regulated plaintiffs as biased in favor of business interests and biased against beneficiaries of regulation.⁴⁹ In his dissenting opinion in *Lujan*, Justice Blackmun argued that the “principal effect” of the majority's restrictive approach to standing was “to transfer power into the hands of the Executive at the expense—not of the Courts—but of Congress, from which that power originates and emanates.”⁵⁰ Part VI.D demonstrates that separation-of-powers principles do not prohibit Congress from redressing this imbalance by enacting a statute that confers standing on any person who has suffered or is statistically likely to suffer an injury from the government's underenforcement of the law.

Finally, in addition to constitutional standing limitations, the courts may impose prudential standing limitations as a matter of judicial policy.⁵¹ For example, courts have imposed the prudential requirement that a suit must be within a statute's “zone of interests.”⁵² Unlike constitutional limits on standing, Congress may impose its own prudential standing limitations or expressly override judicially imposed prudential limitations.⁵³ Either Congress or the

48. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 562 (1992) (emphasis in original).

49. See, e.g., William W. Buzbee, *Expanding the Zone, Tilting the Field: Zone of Interests and Article III Standing Analysis After Bennett v. Spear*, 49 ADMIN. L. REV. 763, 766 (1997) (arguing that the “standing inquiry playing field . . . is tilted to the advantage of regulatory targets”); Leiter, *supra* note 9, at 393–94 n.15 (arguing that “one effect of the drive [to restrict standing] is to make judicial review less available to beneficiaries of regulation (usually individuals or communities) than to its objects (usually business interests)”).

50. *Lujan*, 504 U.S. at 602 (Blackmun, J., dissenting); accord Elliott, *supra* note 17, at 496 (arguing courts should not use standing doctrine “as a backdoor way to limit Congress's legislative power”); Gene R. Nichol, *Forward: The Impossibility of Lujan's Project*, 11 DUKE ENVTL. L. & POL'Y F. 193, 199 (2001) (“*Lujan*, in full flower, would strike at congressionally authorized standing and the claimed ‘overjudicialization’ of the operation of American government.”); Richard J. Pierce, Jr., *Lujan v. Defenders of Wildlife: Standing as a Judicially Imposed Limit on Legislative Power*, 42 DUKE L.J. 1170, 1170–71 (1993) (criticizing *Lujan* as “an insupportable judicial contraction of the legislative power to make judicially enforceable policy decisions”).

51. *Duke Power Co. v. Carolina Env'tl. Study Group, Inc.*, 438 U.S. 59, 80 (1978); Warth v. Seldin, 422 U.S. 490, 499 (1975); Bradford C. Mank, *Standing and Future Generations: Does Massachusetts v. EPA Open Standing for the Unborn?*, 34 COLUM. J. ENVTL. L. 1, 27–28 (2009).

52. *Bennett v. Spear*, 520 U.S. 154, 162–63 (1997) (explaining the “zone of interest” standing test as a prudential limitation and not a constitutional requirement); Mank, *supra* note 9, at 28.

53. *Bennett*, 520 U.S. at 162–66 (holding that “unlike their constitutional counterparts, [prudential limits on standing] can be modified or abrogated by Congress,” and concluding that a citizen suit provision abrogated the zone of interest limitation); Warth, 422 U.S. at 501; Mank, *supra* note 32, at

courts may adopt this Article's proposed one in one million standing threshold proposal as a prudential standard to clarify what constitutes a sufficient injury for standing and to provide greater judicial access to plaintiffs threatened by long-term environmental or health injuries.

B. Associational Standing

Associations of individuals may play a particularly relevant role in understanding the rights of statistical persons because of the way they seemingly manifest a level of risk as a predicted injury to particular individuals. Over the last several decades, the Court has come to recognize standing for associations of individuals. In *Sierra Club v. Morton*,⁵⁴ the Supreme Court held that the Sierra Club did not have standing to challenge the granting of building permits for Mineral King Valley, a national game refuge adjacent to Sequoia National Park, because Sierra Club had not alleged that any of its members used the park or would be injured by the proposed development.⁵⁵ The Court rejected the Sierra Club's argument that it was entitled to standing as the representative of the public, the environment, or future generations without proof that its members would be injured by the government's proposed actions.⁵⁶ The Court did not explicitly address whether the Sierra Club would have organizational standing if at least one of its members used the park and had individual standing, but the Court observed that "[i]t is clear that an organization whose members are injured may represent those members in a proceeding for judicial review."⁵⁷ In a footnote, the Court stated that the Sierra Club could request permission from the district court to amend its complaint to allege additional facts that might allow it to gain standing.⁵⁸

In its 1975 decision in *Warth v. Seldin*,⁵⁹ the Court first explicitly recognized that "an association may have standing solely as the representative

1712 n.50; Zachary D. Sakas, *Footnotes, Forests, and Fallacy: An Examination of the Circuit Split Regarding Standing in Procedural Injury-based Programmatic Challenges*, 13 U. BALT. J. ENVTL. L. 175, 179 (2006).

54. *Sierra Club v. Morton*, 405 U.S. 727 (1972).

55. *Id.* at 731, 734–35; Mank, *supra* note 51, at 5.

56. *Sierra Club*, 405 U.S. at 734–40 (noting that "the complaint alleged that the development 'would destroy or otherwise adversely affect the scenery, natural and historic objects and wildlife of the park and would impair the enjoyment of the park for future generations'" and that Sierra Club sought standing as a representative of the public without proof that any member of the Club was injured); Karl S. Coplan, *Is Voting Necessary? Organization Standing and Non-voting Members of Environmental Advocacy Organizations*, 14 S.E. ENVTL. L.J. 47, 51 (2005); Mank, *supra* note 51, at 5. In his dissenting opinion, Justice Blackmun argued that "bona fida" environmental public interest organizations should be able to file suit on behalf of the public at large. *Sierra Club*, 405 U.S. at 757–60 (Blackmun, J., dissenting); Mank, *supra* note 51, at 5 n.14.

57. *Sierra Club*, 405 U.S. at 739; *accord* Coplan, *supra* note 56, at 51–52.

58. *Sierra Club*, 405 U.S. at 735 n.8.

59. *Warth v. Seldin*, 422 U.S. 490 (1975).

of its members,” despite “the absence of injury to itself.”⁶⁰ The Court warned, however, that “the possibility of such representational standing . . . does not eliminate or attenuate the constitutional requirement of a case or controversy.”⁶¹ The court stated that the association must allege that at least one of its members is “suffering immediate or threatened injury as a result of the challenged action of the sort that would make out a justiciable case had the members themselves brought suit.”⁶²

In *Hunt v. Washington State Apple Advertising Commission*,⁶³ North Carolina argued that the Washington State Apple Advertising Commission did not have standing to represent several Washington apple growers and dealers who were allegedly harmed by North Carolina’s regulation of the sale of apples. As the Commission was a state agency in which membership was compelled, North Carolina argued it was not analogous to the voluntary membership organization for which the Court had in earlier cases recognized associational standing.⁶⁴ To decide whether a state agency was entitled to associational standing, the Court set forth a three-part test for when associations may have standing:

An association has standing to bring suit on behalf of its members when: (a) its members would otherwise have standing to sue in their own right; (b) the interests it seeks to protect are germane to the organization’s purpose; and (c) neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.⁶⁵

Applying the three-part test, the *Hunt* Court concluded that the Commission could serve as representative for the growers and dealers because “they possess all of the indicia of membership in an organization” by electing the members of the Commission and “financ[ing] its activities, including the costs of this lawsuit, through assessments levied upon them.”⁶⁶ The Court observed that many unions and bar associations require that their members pay dues, but that courts had treated them as organizations able to represent their members.⁶⁷ Following *Hunt*’s broad “indicia of membership” test for associational standing, several courts have recognized “de facto” membership

60. *Id.* at 511; accord Christopher J. Roche, Note, *A Litigation Association Model to Aggregate Mass Tort Claims for Adjudication*, 91 VA. L. REV. 1463, 1493 (2005).

61. *Warth*, 422 U.S. at 511; accord Roche, *supra* note 60, at 1493.

62. *Warth*, 422 U.S. at 511; accord Roche, *supra* note 60, at 1493.

63. *Hunt v. Wash. State Apple Adver. Comm’n*, 432 U.S. 333 (1977).

64. *Id.* at 336–43; Coplan, *supra* note 56, at 52–53; Roche, *supra* note 60, at 1493.

65. *Hunt*, 432 U.S. at 343; accord Roche, *supra* note 60, at 1493–94.

66. *Hunt*, 432 U.S. at 344–45; accord Coplan, *supra* note 56, at 53; Roche, *supra* note 60, at 1494.

67. *Hunt*, 432 U.S. at 345; Coplan, *supra* note 56, at 53.

organizations for groups that lacked formal membership rules, but treated allegedly injured persons like members.⁶⁸

C. Separation of Powers and Standing

Finally, the role of the judiciary envisioned in the Federal Constitution may in part explain the gap between legislative and regulatory responses to risks to statistical persons, and the judiciary's refusal to address statistical risks as a foundation for jurisdiction. Standing requirements promote broader separation-of-powers principles among the three branches of government, especially by ensuring that the "Federal Judiciary respects 'the proper—and properly limited—role of the courts in a democratic society.'"⁶⁹ Professor Elliott explains:

the Supreme Court has used standing doctrine to promote at least three separation-of-powers functions for the courts: (1) hearing only cases possessing sufficient concrete adversity to make them susceptible of judicial resolution; (2) avoiding questions better answered by the political branches; and (3) resisting Congress's use of citizen suits—and therefore Congress's conscription of the courts—to monitor the compliance of the executive branch with the law.⁷⁰

68. *Friends of the Earth, Inc. v. Chevron Chem. Co.*, 129 F.3d 826, 828–29 (5th Cir. 1997) ("The [district] court found that [Friends of the Earth] did not have any members under the laws of the District of Columbia and, as a result, did not have any members for purposes of constitutional standing. . . . [W]e do not believe this defect should overshadow the considerable activities of [Friends of the Earth] with and for those persons its officers and staff have consistently considered to be members."); *Pub. Interest Research Group v. Magnesium Elektron, Inc.*, 123 F.3d 111, 119 (3d Cir. 1997) ("[Magnesium Elektron's] counsel also contended at oral argument that [Public Interest Research Group] and [Friends of the Earth] lacked standing because their charters prohibit them from having members. We do not accept this formalistic argument because it lacks merit. To meet the requirements of organizational standing, [Public Interest Research Group] and [Friends of the Earth] need only prove that their members possess the 'indicia of membership' in their organizations."); *Upper Chattahoochee Riverkeeper Fund v. City of Atlanta*, 986 F. Supp. 1406, 1409 (N.D. Ga. 1997) ("The Chattahoochee Riverkeeper, Inc. is a defacto membership organization."); Coplan, *supra* note 56, at 65–67 (discussing cases). *But cf.* *Basel Action Network v. Maritime Admin'r*, 370 F. Supp. 2d 57, 69–70 (D.D.C. 2005) (rejecting associational standing asserted by a plaintiff organization that gave no voting or control rights to those injured individuals it sought to represent); Coplan, *supra* note 56, at 68–69 (discussing *Basel Action Network*). *See generally id.* at 49, 88 & *passim* (observing that lower courts have disagreed about whether membership voting rights are essential for associational standing and arguing that voting rights should not be determinative in deciding whether someone is a "member" of an organization).

69. *See DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 341 (2006) (quoting *Allen v. Wright*, 468 U.S. 737, 750 (1984)); *accord Elliott*, *supra* note 17, at 475; Mank, *supra* note 51, at 26; Antonin Scalia, *The Doctrine of Standing as an Essential Element of the Separation of Powers*, 17 SUFFOLK U. L. REV. 881, 881, 896 (1983).

70. Elliott, *supra* note 17, at 459.

1. Concrete Adversity

The concrete adversity portion of standing doctrine requires a genuine case and controversy for judicial resolution and precludes unconstitutional advisory opinions.⁷¹ Further, the injury requirement excludes plaintiffs who have no genuine stake in a controversy and could be unreliable advocates as a result.⁷² The Court has generally rejected standing based on the legal rights or interests of third parties because such suits usually fail the concrete adversity test.⁷³ On the other hand, Justice Blackmun in his dissenting opinion in *Sierra Club* argued that “bona fida” public interest groups such as the Sierra Club are often better suited than anyone else to represent the public interest even if none of their members has a concrete injury, but the Court rejected his approach.⁷⁴

2. Generalized Injuries and the Political Branches

In part, the rejection of the rights of associations to sue in the public interest reflects a desire to limit standing to those with a particular and special interest in the issues. Courts have refused to grant standing where a plaintiff has

71. *DaimlerChrysler*, 547 U.S. at 341–42; *Fed. Elections Comm’n v. Akins*, 524 U.S. 11, 23–24 (1998); *Muskrat v. United States*, 219 U.S. 346, 357–61 (1911); Elliott, *supra* note 17, at 469–73 & n.56; Mank, *supra* note 32, at 1705, 1709–11; Tacy F. Flint, Comment, *A New Brand of Representational Standing*, 70 U. CHI. L. REV. 1037, 1052–53 (2003) (arguing case and controversy requirement promotes quality of adversary system).

72. While it does not matter how many persons have been injured by the challenged action, the party bringing suit must show that the action injures him in a concrete and personal way. This requirement is not just an empty formality. It preserves the vitality of the adversarial process by assuring both that the parties before the court have an actual, as opposed to professed, stake in the outcome, and that the legal questions presented . . . will be resolved, not in the rarified atmosphere of a debating society, but in a concrete factual context conducive to a realistic appreciation of the consequences of judicial action.

Massachusetts v. EPA, 549 U.S. 497, 517 (2007) (quoting with approval *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 581 (1992) (Kennedy, J., concurring)); *Duke Power Co. v. Carolina Env’tl. Study Group, Inc.*, 438 U.S. 59, 80 (1978) (stating standing requirements assure “that the most effective advocate of the rights at issue is present to champion them”); Elliott, *supra* note 17, at 470–71; Flint, *supra* note 71, at 1052–53 (arguing case and controversy requirement promotes quality of adversary system).

73. *Duke Power*, 438 U.S. at 80 (“There are good and sufficient reasons for this prudential limitation on standing when rights of third parties are implicated—the avoidance of the adjudication of rights which those not before the Court may not wish to assert, and the assurance that the most effective advocate of the rights at issue is present to champion them.”); *Warth v. Seldin*, 422 U.S. 490, 498 (1975); Mank, *supra* note 51, at 28. *But see* *Young Apartments, Inc. v. Town of Jupiter*, 2008 WL 2277521 (11th Cir. 2008) (recognizing exception to general rule against third party standing where non-Hispanic landlord has standing to sue Florida town for allegedly discriminatory enforcement of its housing code to drive out Hispanic immigrant tenants because he suffered economic loss from alleged discrimination); Flint, *supra* note 71, at 1048–51 (discussing cases where courts have allowed third-party standing).

74. *Sierra Club v. Morton*, 405 U.S. 727, 757–60 (1972) (Blackmun, J., dissenting); Scalia, *supra* note 69, at 891 (observing that person who has injury and standing may argue a case less effectively than a national public interest organization without injury); Elliott, *supra* note 17, at 474 (same).

only an abstract interest in seeing the law enforced that is shared by all other citizens.⁷⁵ Analogously, the Court generally has dismissed suits by taxpayers interested in making sure that the government spends money wisely, as such an interest is shared by all taxpayers and hence is not a particularized interest suitable for judicial review.⁷⁶ As is discussed in Part IV, the Supreme Court has stated that generalized grievances that affect all citizens in the same way are more appropriately redressed by the political branches than the federal judiciary in light of separation-of-powers principles.⁷⁷ Yet courts do grant standing in mass tort situations for “injuries that may be widely shared but are particularized for each plaintiff.”⁷⁸ A person who has suffered a concrete injury may bring a citizen suit even though that suit may vindicate broader interests through the payment of fines to the government as long as the plaintiff personally benefits from the deterrent effect of the civil penalties.⁷⁹

3. *Protecting Executive Authority from Congressional Encroachment*

According to Professor Elliott, “[r]ecent opinions by the Court and certain Justices, notably Justice Scalia, have suggested that standing serves a third separation-of-powers purpose—that of protecting the executive branch against an unholy alliance between Congress and the courts.”⁸⁰ Some “citizen suit” statutes, especially in the area of environmental law, allow “any person” to sue if the government underenforces the law.⁸¹ The implication in these statutes

75. *Lujan*, 504 U.S. at 573–74 (“We have consistently held that a plaintiff raising only a generally available grievance about government—claiming only harm to his and every citizen’s interest in proper application of the Constitution and laws, and seeking relief that no more directly and tangibly benefits him than it does the public at large—does not state an Article III case or controversy.”); *Lance v. Coffman*, 549 U.S. 437, 439–42 (2007) (holding voters may not challenge state constitutional provision where they have only an abstract interest in the enforcement of the law); Elliott, *supra* note 17, at 479–80.

76. *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 343–44 (2006) (observing that Court has on several occasions rejected federal taxpayers standing under Article III to challenge a particular expenditure of federal funds because it is not a particularized injury “but instead a grievance the taxpayer ‘suffers in some indefinite way in common with people generally.’” *Frothingham v. Mellon*, 262 U.S. 447, 488 (1923)); Brown, *supra* note 40, at 17–18; Elliott, *supra* note 17, at 480–81.

77. See *Lujan*, 504 U.S. at 573–77 (stating that the Constitution assigns the political branches of government the responsibility for addressing grievances affecting the public at large); *infra* Part IV.

78. Elliott, *supra* note 17, at 477; *accord Fed. Election Comm’n v. Akins*, 524 U.S. 11, 24–25 (1998); Mank, *supra* note 32, at 1714. See generally *infra* Part VI.B (discussing class action and mass tort cases).

79. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 185–88 (2000); Elliott, *supra* note 17, at 498.

80. Elliott, *supra* note 17, at 492–93; see also Kimberly N. Brown, *What’s Left Standing? FECA Citizen Suits and the Battle for Judicial Review*, 55 U. KAN. L. REV. 677, 702–03 (2007) (arguing that Justice Scalia believes that the Constitution limits the authority of Congress to authorize suits challenging the executive branch’s failure to enforce the law).

81. See, e.g., Federal Election Campaign Act of 1971, 2 U.S.C. § 437g(a)(8)(A) (2006); Toxic Substances Control Act § 119, 15 U.S.C. § 2619(a) (2006); Endangered Species Act, 16 U.S.C. §

that literally any person could sue the government could allow the judiciary to second guess a wide range of executive decisions. Professor Elliott writes,

But if literally *any* person can invoke the power of the courts to oversee the actions of the executive branch, there would be no limit on the courts' ability to intrude on executive functions. Any rulemaking priorities, decisions whether to prosecute, and other core activities of the Executive could be completely upset by citizen intervention using the courts.⁸²

Despite concerns about the possibility of excessive congressional interference with executive discretion, courts have recognized that Congress can authorize suits against the executive branch for its failure to implement legal requirements as long as the plaintiff has suffered at least a small concrete injury from the legal violation.⁸³

Sharing some of Professor Elliott's concerns about the impact of citizen suits on separation-of-powers principles, the Supreme Court has limited citizen suit standing to those who can meet the three-part constitutional standing test to prevent excessive judicial interference with executive actions. In *Lujan*, Justice Scalia for the majority stated that separation-of-powers and standing principles limited Congress's authority to use lawsuits to make the judiciary into "virtually continuing monitors of the wisdom and soundness of Executive action."⁸⁴ He stated, "The concrete injury requirement has . . . separation-of-powers significance," so Congress cannot convert "the public interest in proper administration of the laws (specifically, in agencies' observance of a particular, statutorily prescribed procedure) . . . into an individual right by a statute that denominates it as such, and that permits all citizens . . . to sue."⁸⁵ Without standing restrictions, Congress might attempt to use citizen suits as a means to give the judiciary "a position of authority over the governmental acts of another and co-equal department."⁸⁶ Besides Article III standing doctrine, Justice Scalia invoked the President's Article II authority, stating: "To permit Congress to convert the undifferentiated public interest in executive officers' compliance with the law into an 'individual right' vindicable in the courts is to permit Congress to transfer from the President to the courts the Chief Executive's most important constitutional duty, to 'take Care that the Laws be faithfully

1540(g) (2006); Surface Mining Control and Reclamation Act § 520, 30 U.S.C. § 1270(a) (2006); Federal Water Pollution Control Act § 505, 33 U.S.C. § 1365(a) (2006); Safe Water Drinking Act § 1449, 42 U.S.C. § 300j-8 (2006); Resource Conservation and Recovery Act § 702, 42 U.S.C. § 6972(a) (2006); Clean Air Act § 304, 42 U.S.C. § 7604(a) (2006); *see also* Elliott, *supra* note 17, at 493 & n.160.

82. Elliott, *supra* note 17, at 493 (emphasis in original).

83. *See infra* Part VI.D.

84. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 577 (1992) (quoting *Allen v. Wright*, 468 U.S. 737, 760 (1984)).

85. *Id.*; *accord* Mank, *supra* note 9, at 34.

86. *Lujan*, 504 U.S. at 577 (quoting *Massachusetts v. Mellon*, 262 U.S. 447, 489 (1923)); *accord* Elliott, *supra* note 17, at 493.

executed,' Art. II, § 3."⁸⁷ Congress may not waive the injury requirement for standing and allow citizens to file suit simply to enforce the public's interest in enforcing the law.⁸⁸ Even according to Justice Scalia's *Lujan* opinion, however, Congress may authorize citizen suits when a citizen suffers a concrete individual injury from the government's failure to enforce a law.⁸⁹

While Justice Scalia's *Lujan* opinion suggested that the Court would take a relatively restrictive approach to when citizens may sue the executive branch, subsequent Supreme Court decisions have adopted a broad view of which injuries are sufficiently concrete to justify standing; Justice Scalia has found himself in the dissenting minority in many of those cases.⁹⁰ For example, over Justice Scalia's dissent, the Court allowed citizens to sue when the government failed to provide information needed for voting decisions.⁹¹ The Court has also found standing when plaintiffs alleged that their recreational or aesthetic interests were diminished because of "reasonable concerns" about pollution.⁹² Additionally, the Court has allowed standing for qui tam relators even though the relators have suffered no harm to themselves, but simply receive a reward or bounty for suing on behalf of the United States to recover for fraud against the government, because parties have traditionally had the authority to assign a cause of action to another.⁹³ Furthermore, in a 2008 decision, *Sprint Communications v. APCC Services, Inc.*, the Court in a divided five to four decision arguably weakened the traditional rule that a plaintiff must suffer an injury to have standing by holding that an assignee has standing to sue on behalf of other parties, even if all the proceeds from the suit go back to the assignor.⁹⁴ Thus, after *Lujan*, the Court has defined what constitutes a "concrete" injury sufficient for standing in a broad way.

87. *Lujan*, 504 U.S. at 577. *But see* Brown, *supra* note 40, at 47 (arguing "Take Care" clause in Article II of the Constitution does not give the President discretion to ignore legal requirements, but requires the President to obey the law); Mary M. Cheh, *When Congress Commands a Thing to Be Done: An Essay on Marbury v. Madison, Executive Inaction, and the Duty of the Courts to Enforce the Law*, 72 GEO. WASH. L. REV. 253, 275 (2003) (same).

88. Leiter, *supra* note 9, at 399–400; Mank, *supra* note 9, at 33–34; Sunstein, *supra* note 6, at 226 (concluding *Lujan* "foreclose[d] 'pure' citizen suits," in which someone "with an ideological or law-enforcement interest initiates a proceeding against the government, seeking to require an agency to undertake action of the sort required by law").

89. *See Lujan*, 504 U.S. at 573 n.8, 577–78; Brown, *supra* note 80, at 702–03 (arguing Justice Scalia would limit lawsuits to those involving individual rights); Elliott, *supra* note 17, at 493–94 (arguing Justice Scalia seeks to limit suits against executive branch, but recognizes suits involving concrete injury).

90. *See infra* Parts II.A and IV.

91. Fed. Elections Comm'n v. Akins, 524 U.S. 11, 13–25 (1998); *see infra* Part IV.

92. Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167, 181–83 (2000); *see infra* Part II.A.

93. Vt. Agency of Natural Res. v. United States ex rel. Stevens, 529 U.S. 765 (2000); Elliott, *supra* note 17, at 495–96 (discussing *Vermont Agency*); Mank, *supra* note 9, at 34 (same).

94. *Sprint Commc'ns. v. APCC Services, Inc.*, 128 S. Ct. 2531 (2008).

In his crucial concurring opinion in *Lujan*, Justice Kennedy, who was joined by Justice Souter, arguably took a broader approach to congressional authority than the majority. Justice Kennedy's concurring opinion is important because he and Justice Souter supplied the necessary votes for the majority in *Lujan*.⁹⁵ Justice Kennedy stated that Congress has the authority "to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before," as long as a statute both identifies "the injury [Congress] seeks to vindicate" and ties that injury "to the class of persons entitled to bring suit."⁹⁶ In *Massachusetts v. EPA*, the majority quoted Justice Kennedy's language in the previous sentence and concluded that "[congressional] authorization is of critical importance to the standing inquiry."⁹⁷ While Congress may not authorize advisory opinions or suits by plaintiffs with a completely abstract interest in the enforcement of the law, it has broad authority to define when an injury is sufficient for standing.⁹⁸

II. STANDING AND THREATENED RISKS

As is discussed below in Part II, the Supreme Court has stated that imminent or threatened risks are sometimes sufficient injury for standing, but has not provided a clear test for future or probabilistic injuries. Several appellate decisions have concluded that probabilistic injuries are sufficient for standing, but other decisions have disagreed. Part II examines the leading cases involving standing and threatened risks, except for cases from the D.C. Circuit, which are discussed in Part III.

Significantly for the standing rights of statistical persons, the *Lujan* Court stated that standing was possible for an "imminent" injury that has not yet taken place.⁹⁹ Similarly, in *Babbitt v. United Farm Workers National Union*, the Court stated "One does not have to await the consummation of threatened injury to obtain preventive relief. If the injury is certainly impending that is

95. Without Justices Kennedy and Souter, only Chief Justice Rehnquist and Justices White and Thomas would have joined Justice Scalia's majority opinion. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 556 (1992). Part III.B of Justice Scalia's opinion, which addressed whether the plaintiff's claims were redressable by the Court, was a plurality opinion joined only by Chief Justice Rehnquist and Justices White and Thomas. *Id.* at 556, 568–71.

96. *Lujan*, 504 U.S. at 580 (Kennedy, J., concurring in part and concurring in the judgment); accord *Leiter*, *supra* note 9, at 400; *Mank*, *supra* note 9, at 35.

97. *Massachusetts v. EPA*, 549 U.S. at 516–17 (2007) (citing *Lujan*, 504 U.S. at 580 (Kennedy, J., concurring in part and concurring in the judgment)).

98. *Brown*, *supra* note 40, at 33.

99. *Lujan*, 504 U.S. at 560–61; see also *Ecological Rights Found. v. Pacific Lumber Co.*, 230 F.3d 1141, 1151 (9th Cir. 2000) (interpreting "imminent" standing test to include an increased risk of harm); *Mank*, *supra* note 51, at 39 (same).

enough.”¹⁰⁰ The Court has not defined how probable a risk must be or how soon it must occur for it to be considered “imminent.”¹⁰¹

In *Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc. (Laidlaw)*,¹⁰² the Court stated that a threatened injury that alters a plaintiff’s recreational activities may be enough for standing if the plaintiff has “reasonable concerns” about the risk.¹⁰³ Subsequently, several appellate court decisions recognized standing for threatened or probabilistic injuries, but they did not establish a clear test for how likely a risk must be for a plaintiff to have standing.¹⁰⁴ For example, the Eighth Circuit rejected standing where the alleged risks were too uncertain and likely to occur in the distant future.¹⁰⁵ Mostly recently, the *Massachusetts* decision found standing based in part on projected injuries from climate change through the year 2100.¹⁰⁶

A. Laidlaw

In *Laidlaw*, the Court recognized standing even though the plaintiffs could not show that the defendant’s activities had harmed them or that the defendant was likely to harm them in the future.¹⁰⁷ The plaintiffs argued that they had standing to sue a defendant that discharged mercury into a river because they avoided swimming or fishing in that river due to their fear of possible harms

100. *Babbitt v. United Farm Workers Nat. Union*, 442 U.S. 289, 298 (1979) (internal quotation marks omitted); *see also* *Valley Forge Christian College v. Ams. United for Separation of Church and State, Inc.*, 454 U.S. 464, 472 (1982); *Gladstone Realtors v. Village of Bellwood*, 441 U.S. 91, 99 (1979); *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 160 (4th Cir. 2000) (en banc) (“The Supreme Court has consistently recognized that threatened rather than actual injury can satisfy Article III standing requirements.”).

101. *Mank*, *supra* note 51, at 39.

102. *Friends of the Earth, Inc. v. Laidlaw Env'tl. Servs. (TOC), Inc.*, 528 U.S. 167 (2000).

103. *Id.* at 185–93.

104. *See* *Baur v. Veneman*, 352 F.3d 625, 633 (2d Cir. 2003) (“[T]he courts of appeals have generally recognized that threatened harm in the form of an increased risk of future injury may serve as injury-in-fact for Article III standing purposes.”); *Gaston Copper*, 204 F.3d at 160 (concluding that “threats or increased risk constitutes cognizable harm” sufficient to meet the injury-in-fact requirement); *Cent. Delta Water Agency v. United States*, 306 F.3d 938, 947–48 (9th Cir. 2002) (holding that “the possibility of future injury may be sufficient to confer standing on plaintiffs” and concluding that plaintiffs could proceed with their suit where they “raised a material question of fact . . . [as to] whether they will suffer a substantial risk of harm as a result of [the government’s] policies”); *Johnson v. Allsteel, Inc.*, 259 F.3d 885, 888 (7th Cir. 2001) (holding that the “increased risk that a plan participant faces” as a result of an ERISA plan administrator’s increase in discretionary authority satisfies Article III injury-in-fact requirements); *Walters v. Edgar*, 163 F.3d 430, 434 (7th Cir. 1998) (reasoning that “[a] probabilistic harm, if nontrivial, can support standing”); *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996) (recognizing that an incremental increase in the risk of forest fires caused by the Forest Service’s action satisfied Article III standing requirements); *Craig*, *supra* note 1, at 190–94 (discussing cases); *Mank*, *supra* note 51, at 40–45, 48 (same).

105. *Shain v. Veneman*, 376 F.3d 815 (8th Cir. 2004).

106. *Massachusetts v. EPA*, 549 U.S. 497, 521 n.20; *id.* at 540–42 (2007) (Roberts, C.J., dissenting) (criticizing Massachusetts use of estimates of sea level rise through 2100).

107. *Laidlaw*, 528 U.S. at 181–84 (2000); *Mank*, *supra* note 51, at 40–41.

from the mercury, although they could not prove that the concentrations of mercury were likely to harm them or the environment.¹⁰⁸ The *Laidlaw* decision did not require the plaintiffs to prove that the environment had suffered an actual injury or was likely to suffer an injury in the future, but instead focused on whether the plaintiffs had reasonable grounds to change their recreational activities.¹⁰⁹ The Court stated that, in environmental cases, “[t]he relevant showing for purposes of Article III standing . . . is not injury to the environment but injury to the plaintiff.”¹¹⁰ The Supreme Court determined that the plaintiffs had suffered a sufficient injury for Article III standing because their “reasonable concerns” about the harmfulness of the mercury caused them to discontinue recreational use of the river.¹¹¹ The Court treated the loss or diminishment of the plaintiff’s recreational or aesthetic enjoyment of the river as the concrete injury.¹¹² Because the diminished recreational and aesthetic enjoyment of the river was a sufficiently concrete injury to the plaintiffs, the Court avoided the more difficult question of whether the mercury pollution was harmful enough to the plaintiffs to constitute a concrete injury.¹¹³ Indirectly, the Court considered the toxicity and potential harmfulness of the mercury pollution to some extent by requiring that the plaintiffs demonstrate that their avoidance of recreational activities was based on “reasonable concerns” about a potentially harmful activity.¹¹⁴ If *Laidlaw* had been dumping a harmless substance into the river, it is doubtful that the Court would have found that reasonable grounds for avoiding recreational use of the river. Unfortunately, as is discussed below in Part II, because *Laidlaw* did not define when a plaintiff has “reasonable concerns” sufficient to meet standing requirements, it is not surprising that the various circuits have applied somewhat different tests in attempting to follow the Court’s decision.

In *Laidlaw*, the Court also addressed whether the plaintiffs had standing to seek civil penalties that would be paid to the United States. Because civil penalties would deter the defendant from committing future violations that could harm the plaintiff even though the plaintiffs could not prove that future violations were likely to occur in the absence of penalties, the Court concluded that plaintiffs had standing to seek such penalties.¹¹⁵ *Laidlaw* concluded that if a plaintiff has “reasonable concerns” about a present threatened harm, the

108. *Laidlaw*, 528 U.S. at 181–83; Craig, *supra* note 1, at 181; Mank, *supra* note 51, at 40.

109. *Laidlaw*, 528 U.S. at 181; Craig, *supra* note 1, at 181–84; Mank, *supra* note 51, at 40–41. *But see Laidlaw*, 528 U.S. at 199–201 (Scalia, J., dissenting) (arguing that plaintiffs should have to prove that defendant’s activities actually harmed the environment).

110. *Laidlaw*, 528 U.S. at 181; accord Craig, *supra* note 1, at 181.

111. *Laidlaw*, 528 U.S. at 181; Mank, *supra* note 51, at 40–41.

112. *Laidlaw*, 528 U.S. at 181–84; Craig, *supra* note 1, at 184.

113. Craig, *supra* note 1, at 184.

114. *See Laidlaw*, 528 U.S. at 181–83.

115. *Id.* at 185–88; Mank, *supra* note 51, at 41.

plaintiff may seek injunctive relief or civil penalties to prevent future harms to the plaintiff from similar conduct in the future.¹¹⁶ Although the defendant in *Laidlaw* was a private corporation, the reasoning in the *Laidlaw* decision should allow plaintiffs to sue the government to challenge governmental actions that cause the plaintiffs to diminish their recreational or aesthetic activities because of reasonable concerns about that action.

B. Gaston Copper

However, *Laidlaw* did not establish any test evaluating the sufficiency of a plaintiff's "reasonable concerns," but left that issue for case-by-case development by the lower courts. After the *Laidlaw* decision, several courts of appeals have found standing where a plaintiff avoids recreational activities because of reasonable concerns that a defendant's activities pose a risk of harm.¹¹⁷ In *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp. (Gaston Copper)*,¹¹⁸ the plaintiff alleged that he swam and fished in a lake less often because of his concern about the defendant's discharge of pollution into the lake.¹¹⁹ The Fourth Circuit in an en banc decision concluded that the plaintiff "has plainly demonstrated injury in fact" because "[h]e has produced evidence of actual or threatened injury to a waterway in which he has a legally protected interest."¹²⁰ The court interpreted *Laidlaw* to allow standing where a plaintiff has reasonable concerns about a probabilistic injury and stated:

The Supreme Court has consistently recognized that threatened rather than actual injury can satisfy Article III standing requirements Threats or increased risk thus constitutes cognizable harm. Threatened environmental injury is by nature *probabilistic*.¹²¹

Going a step beyond *Laidlaw*, the *Gaston Copper* court explicitly stated that a plaintiff can sue based on a probabilistic threatened injury.¹²² Furthermore, the court stated that "risk itself" is of "injurious nature."¹²³ According to *Gaston Copper*'s reasoning, a plaintiff can sue if her recreational activities are harmed or diminished because of her reasonable concern about a potential probabilistic injury.

116. *Laidlaw*, 528 U.S. at 185–93; Mank, *supra* note 51, at 41.

117. See Mank, *supra* note 51, at 40–45; see *infra* Parts II.B–E.

118. *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149 (4th Cir. 2000) (en banc).

119. *Id.* at 156.

120. *Id.* at 156 (emphasis added); accord Craig, *supra* note 1, at 191 n.207.

121. *Gaston Copper*, 204 F.3d at 160 (emphasis added); accord *Ecological Rights Found. v. Pacific Lumber Co.*, 230 F.3d 1141, 1151 (9th Cir. 2000) (quoting *Gaston Copper* with approval); Craig, *supra* note 1, at 191 (discussing *Gaston Copper* as recognizing that increased risk is enough to provide standing for plaintiff); Mank, *supra* note 51, at 41.

122. See *Gaston Copper*, 204 F.3d at 156–60.

123. *Id.* at 160.

C. Ecological Rights Foundation

Like *Gaston*, the Ninth Circuit has also recognized that a plaintiff may demonstrate an injury in fact if the defendant's recreational activities are harmed or diminished by the threat of potential injury.¹²⁴ In *Ecological Rights Foundation v. Pacific Lumber Co.*, several plaintiffs alleged that they had regularly swam or fished in Yager Creek, but further alleged that they had stopped or diminished these recreational activities because of their fears about the harmfulness of the defendant's pollution of the Creek.¹²⁵ The Ninth Circuit interpreted *Laidlaw* as recognizing that

an individual can establish 'injury in fact' by showing a connection to the area of concern sufficient to make credible the contention that the person's future life will be less enjoyable—that he or she really has [suffered] or will suffer in his or her degree of aesthetic or recreational satisfaction—if the area in question remains or becomes environmentally degraded.¹²⁶

Following *Laidlaw*, the Ninth Circuit rejected the defendants' assertion that the plaintiffs must demonstrate actual harm to the environment.¹²⁷ Citing *Laidlaw* and *Gaston Copper*, the *Ecological Rights Foundation* decision stated that a plaintiff's reasonable concerns about an increased risk of harm from a defendant's activities is sufficient for standing.¹²⁸ While *Laidlaw* had implied that a plaintiff's "reasonable concerns" for standing purposes might include possible future injuries, the Ninth Circuit explicitly stated that a plaintiff could obtain standing to reduce the risk of future pollution even if no actual harm had occurred yet, stating:

The Clean Water Act . . . not only regulates actual water pollution, but embodies a range of prophylactic, procedural rules designed to reduce the risk of pollution. It is not necessary for a plaintiff challenging violations of rules designed to reduce the *risk* of pollution to show the presence of *actual* pollution in order to obtain standing.¹²⁹

D. Maine People's Alliance

Like the Fourth Circuit in *Gaston Copper*, the First Circuit has recognized that a plaintiff has standing if a defendant's actions present a realistic threat of a probabilistic near-term harm.¹³⁰ In *Maine People's Alliance v. Mallinckrodt*,

124. Craig, *supra* note 1, at 191–92; Mank, *supra* note 51, at 42–43.

125. *Ecological Rights Found.*, 230 F.3d at 1144–45.

126. *Id.* at 1149; accord Craig, *supra* note 1, at 191–92; Mank, *supra* note 51, at 42.

127. *Ecological Rights Found.*, 230 F.3d at 1151.

128. *Id.* at 1151–52.

129. *Id.* at 1152 n.12 (emphasis in original); accord Craig, *supra* note 1, at 192; Mank, *supra* note 51, at 43.

130. Mank, *supra* note 51, at 43–44.

Inc.,¹³¹ the First Circuit determined that the Resource Conservation and Recovery Act's citizen suit provision "allows citizen suits when there is a reasonable prospect that a serious, *near-term* threat to human health or the environment exists."¹³² The court explained that "[i]t is the *threat* that must be close at hand, even if the perceived *harm* is not."¹³³ Providing an example, the court observed that "if there is a reasonable prospect that a carcinogen released into the environment today may cause cancer twenty years hence, the threat is near-term even though the perceived harm will only occur in the distant future."¹³⁴ Rejecting the defendant's claim that the plaintiffs must provide evidence of actual environmental harm, the First Circuit determined that "probabilistic harms are legally cognizable, and the district court made a supportable finding that a sufficient probability of harm exists to satisfy the Article III standing inquiry."¹³⁵

The First Circuit interpreted *Laidlaw's* reasonable concerns standing test to require the plaintiffs to prove a "realistic threat" of harm.¹³⁶ The court stated:

Still, neither a bald assertion of such a harm nor a purely subjective fear that an environmental hazard may have been created is enough to ground standing. Rather, an individual's decision to deny herself aesthetic or recreational pleasures based on concern about pollution will constitute a cognizable injury only when the concern is premised upon a realistic threat.¹³⁷

The First Circuit explained that "the plaintiffs must show that Mallinckrodt's activities created a significantly increased risk of harm to health or the environment so as to make it objectively reasonable for the plaintiffs' members to deny themselves aesthetic and recreational use of the river."¹³⁸ The First Circuit's "significantly increased risk of harm to health or the environment" test appears to be more stringent than the Ninth Circuit's requirement of a "credible" risk in *Ecological Rights Foundation*, although the First Circuit never compared its approach in *Maine People's Alliance* to the Ninth Circuit's approach. The First Circuit concluded that the plaintiffs had standing because

131. *Me. People's Alliance v. Mallinckrodt, Inc.*, 471 F.3d 277 (1st Cir. 2006), *cert. denied*, 128 S. Ct. 93 (2007).

132. *Me. People's Alliance*, 471 F.3d at 279 (emphasis added); *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 43.

133. *Me. People's Alliance*, 471 F.3d at 279 n.1 (emphasis in original); *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 43.

134. *Me. People's Alliance*, 471 F.3d at 279 n.1; *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 43.

135. *Me. People's Alliance*, 471 F.3d at 283–84; *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 43.

136. *Me. People's Alliance*, 471 F.3d at 284; *accord* Mank, *supra* note 51, at 43–44.

137. *Me. People's Alliance*, 471 F.3d at 284.

138. *Id.* at 284; *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 44.

they had introduced sufficient evidence of harm to the river from the defendant's actions by presenting expert testimony that the defendant was the primary source of mercury in the Penobscot River and that the mercury was entering biota in bioavailable methylated form "in sufficient quantity that it may well present an imminent and substantial danger to the environment."¹³⁹

E. Baur

The Second Circuit has concluded that a plaintiff has standing if a government's alleged underenforcement of the law increases the plaintiff's lifetime risk of contracting a deadly and incurable disease.¹⁴⁰ In *Baur v. Veneman*, the Second Circuit found standing where the Department of Agriculture's inadequate regulations failed to prevent downed livestock potentially carrying mad cow disease from entering the food chain, and thereby increased the plaintiff's risk of contracting Creutzfeldt-Jacob disease (vCJD), which can be contracted by humans who eat meat infected with mad cow disease.¹⁴¹ The court concluded "that exposure to an enhanced risk of disease transmission may qualify as injury-in-fact in consumer food and drug safety suits."¹⁴²

To meet the injury-in-fact standing requirement in a case asserting government regulatory actions or omissions have increased the risk of harm to the plaintiff, the court explained that the plaintiff "must allege that he faces a direct risk of harm which rises above mere conjecture."¹⁴³ The court stated that it would consider the potential severity of the disease in assessing whether the plaintiff had demonstrated an injury in fact: "Because the evaluation of risk is qualitative, the probability of harm which a plaintiff must demonstrate in order to allege a cognizable injury-in-fact logically varies with the severity of the probable harm."¹⁴⁴ The court determined that Baur's allegation that he was at increased risk of harm from an inadequate government regulation was sufficient to meet standing requirements because vCJD is "a deadly disease with no known cure or treatment" and therefore "even a moderate increase in

139. *Me. People's Alliance*, 471 F.3d at 285; *accord* Craig, *supra* note 1, at 193; Mank, *supra* note 51, at 44.

140. Mank, *supra* note 51, at 44–45.

141. *Baur v. Veneman*, 352 F.3d 625, 628–43 (2d Cir. 2003); *accord* Craig, *supra* note 1, at 198–200; Mank, *supra* note 51, at 44. Specifically, Baur alleged that the Department of Agriculture's inadequate regulations increased "the risk that humans will contract a fatal form of TSE [Transmissible Spongiform Encephalopathy] known as variant Creutzfeldt-Jacob disease ("vCJD") by eating BSE [Bovine Spongiform Encephalopathy]-contaminated beef products." *Baur*, 352 F.3d at 628; *accord* Craig, *supra* note 1, at 199 n.263; Mank, *supra* note 51, at 44 n.208.

142. *Baur*, 352 F.3d at 628; *accord* Craig, *supra* note 1, at 199; Mank, *supra* note 51, at 44.

143. *Baur*, 352 F.3d at 636; *accord* Craig, *supra* note 1, at 199; Mank, *supra* note 51, at 44–45.

144. *Baur*, 352 F.3d at 637; *accord* Craig, *supra* note 1, at 199; Mank, *supra* note 51, at 45.

the risk of disease may be sufficient to confer standing.”¹⁴⁵ Because “Baur [had] successfully alleged a credible threat of harm from downed cattle,”¹⁴⁶ the Second Circuit rejected the government’s argument that he must quantify to what extent he is at increased risk of disease to meet standing requirements.¹⁴⁷ Further, the court commented that “the evaluation of the amount of tolerable risk is better analyzed as an administrative decision governed by the relevant statutes rather than a constitutional question governed by Article III.”¹⁴⁸

The Second Circuit’s requirement that a plaintiff “must allege that he faces a direct risk of harm which rises above mere conjecture”¹⁴⁹ appears to be less stringent than the First Circuit’s requirement that a plaintiff must demonstrate a “significantly increased risk of harm to health or the environment so as to make it objectively reasonable for the plaintiffs’ members to deny themselves aesthetic and recreational use of the river.”¹⁵⁰ The Second Circuit rejected a quantitative approach to standing, but sought to provide some substance to standing criteria by using the severity of the threat as a criterion for deciding which risks are sufficient for standing purposes. As is discussed in Part VII.D.3, this Article proposes a quantitative approach to standing where possible and discusses whether standing was appropriate in *Baur*.

F. *Shain v. Veneman*

In *Shain v. Veneman*,¹⁵¹ the Eighth Circuit rejected plaintiffs’ standing argument because the alleged risk was not likely to occur during the plaintiffs’ lifetimes or ownership of the property at issue.¹⁵² The plaintiffs alleged that the government would violate federal law by financing the building of a sewage-treatment plant on a 100-year flood plain near the property they owned or rented.¹⁵³ The district court concluded that the plaintiffs’ had failed to allege an adequate injury because the risk of a 100-year flood is not “imminent” and “is by definition speculative and unpredictable.”¹⁵⁴ Affirming the district court’s dismissal of the case for lack of standing, the Eighth Circuit agreed that the possibility of a 100-year flood was too remote for standing:

If the possibility of a 100-year flood is remote in the abstract, the possibility the flood will occur while they own or occupy the land

145. *Baur*, 352 F.3d at 637–41; accord Craig, *supra* note 1, at 199; Mank, *supra* note 51, at 45.

146. *Baur*, 352 F.3d at 637; accord Craig, *supra* note 1, at 200; Mank, *supra* note 51, at 45.

147. *Baur*, 352 F.2d at 643.

148. *Id.*; accord Craig, *supra* note 1, at 200; Mank, *supra* note 51, at 45.

149. *Baur*, 352 F.3d at 636.

150. *Me. People’s Alliance v. Mallinckrodt, Inc.*, 471 F.3d 277, 284 (1st Cir. 2006), *cert. denied*, 128 S. Ct. 93 (2007); Craig, *supra* note 1, at 193.

151. *Shain v. Veneman*, 376 F.3d 815 (8th Cir. 2004).

152. Mank, *supra* note 51, at 55–57.

153. *Shain*, 376 F.3d at 816; Mank, *supra* note 51, at 55.

154. *Shain*, 376 F.3d at 816, 818; accord Mank, *supra* note 51, at 55.

becomes a matter of sheer speculation. Indeed, one wonders whether any of the parties (or the court) in this case will be alive the next time a 100-year flood occurs upon the land.¹⁵⁵

Additionally, the court argued that the lagoons associated with building project would have only a slight impact on the risk of a flood: “To whatever extent the lagoons increase the theoretical risk of flooding on the plaintiffs’ property, they will do so only if the remote risk of a 100-year flood first materializes while the plaintiffs have a property interest in the land.”¹⁵⁶

The Eighth Circuit sought to distinguish the Seventh Circuit’s arguably different approach in *Village of Elk Grove Village v. Evans*,¹⁵⁷ which had found standing where the plaintiffs alleged that the construction of a radio tower on a floodplain would limit the creek’s drainage area and increase the risk of flooding.¹⁵⁸ Although the facts of the case involved the defendant placing “a huge slab of concrete near the creek . . . limiting the creek’s drainage area,” the *Elk Grove Village* court stated, arguably in dicta, that “even a small probability of injury is sufficient to create a case or controversy—to take a suit out of the category of the hypothetical—provided of course that the relief sought would, if granted, reduce the probability.”¹⁵⁹ The *Shain* decision distinguished the facts in its case from those in *Elk Grove Village*:

In our mind, *Elk Grove* is easily distinguishable from this case. There, the flood plain was a *common* flood area, which continually imposed sandbagging and other flood-control costs on the Village of Elk Grove. Thus, the Village had a direct stake in ensuring the defendant’s conduct did not aggravate a known and predictable danger, even if the marginal increase in risk defied calculation. Here, in contrast, the danger of the flood itself is remote and improbable. To whatever extent the lagoons increase the theoretical risk of flooding on the plaintiffs’ property, they will do so only if the remote risk of a 100-year flood first materializes while the plaintiffs have a property interest in the land.¹⁶⁰

However, because the *Elk Grove* court did not quantify the increased risk caused by the construction of the radio tower from the prior risk, it is not clear whether the risk in *Elk Grove* was substantially different from the risk in *Shain*.¹⁶¹

155. *Shain*, 376 F.3d at 818; accord Mank, *supra* note 51, at 55.

156. *Shain*, 376 F.3d at 819; accord Mank, *supra* note 51, at 55.

157. *Village of Elk Grove Village v. Evans*, 997 F.2d 328 (7th Cir. 1993).

158. *Id.* at 328–29; accord Mank, *supra* note 51, at 55.

159. *Elk Grove Village*, 997 F.2d at 329; *Shain*, 376 F.3d at 819; accord Mank, *supra* note 51, at 55–56.

160. *Shain*, 376 F.3d at 816, 818–19; accord Mank, *supra* note 51, at 56.

161. Mank, *supra* note 51, at 56–57.

The *Shain* decision also distinguished the D.C. Circuit's decision in *Mountain States Legal Foundation v. Glickman*,¹⁶² which is discussed below,¹⁶³ where the court had recognized standing for plaintiffs who challenged the Forest Service's plan to prohibit logging in a national forest because the plan would increase the probability of a catastrophic fire by permitting fuel to accumulate in dead trees.¹⁶⁴ In characterizing *Mountain States*, the Eighth Circuit contended that there was a distinction between direct and intervening factors in determining whether there was sufficient injury to satisfy standing requirements:

The analogy between *Glickman* and the instant case, of course, is flawed. There, the defendant's conduct directly and measurably increased the chances a fire would start; the defendant's conduct was not merely an intervening factor that could aggravate an independently occurring natural disaster. For this case to become truly analogous to *Glickman*, the lagoons would have to increase the probability of a 100-year flood itself.¹⁶⁵

The *Shain* court's distinction between the facts of its case and *Mountain States* is debatable because the Forest Service plan in *Mountain States* arguably aggravated the "independently occurring natural disaster" of fire by providing more fuel in the same manner as the lagoons in *Shain* increased the harmfulness of the natural disaster of flooding.¹⁶⁶ Additionally, a government action that significantly aggravates an "independently occurring natural disaster" should be a sufficient injury for standing if it significantly increases either the probability of harm or the magnitude of the harm.¹⁶⁷ A stronger argument would be that the lagoons have such a minor and hypothetical effect on the risk of flooding that their impact is too remote to justify standing, although it is not certain from the case how significant a risk the lagoons represented.¹⁶⁸

Although it reached a different result by denying standing, the Eighth Circuit's reasoning is arguably consistent with the other court of appeals decisions addressing a plaintiffs' increased risk of disease or harm.¹⁶⁹ The *Shain* decision's emphasis that the harm must occur during the lifetime or ownership of the plaintiffs is consistent with *NRDC II* and even *Baur*. In *NRDC II*, the D.C. Circuit explicitly focused on lifetime risk.¹⁷⁰ Even the broad *Baur*

162. *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228 (D.C. Cir. 1996).

163. *See infra* Part III.B.

164. *Mountain States*, 92 F.3d at 1234–35; Mank, *supra* note 51, at 46, 56–57.

165. *Shain*, 376 F.3d at 819; *accord* Mank, *supra* note 51, at 56.

166. Mank, *supra* note 51, at 56–57.

167. *Id.* at 57.

168. *Id.*

169. *Id.*

170. *NRDC II*, 464 F.3d 1, 6–7 (D.C. Cir. 2006) ; Mank, *supra* note 51, at 57; Sturkie & Seltzer, *supra* note 9, at 10294.

decision looked at the risk that the plaintiff would contract mad cow disease during his lifetime.¹⁷¹ Arguably, the result in *Shain* was appropriately different because it was the only case in which there was a significant possibility that the harm would occur after the lifetime of or ownership by the plaintiffs.¹⁷²

The *Shain* decision is also consistent with *Laidlaw*'s framework that courts should focus on whether there has been an injury to the plaintiff rather than the environment.¹⁷³ It is likely that a 100-year flood will occur someday near the plaintiffs' property.¹⁷⁴ Indeed, the risk of a flood is likely far greater than the risk that the plaintiff in *Baur* will contract mad cow disease.¹⁷⁵ The Eighth Circuit focusing on the harm to the plaintiffs and not the environment, however, stated that any such flood likely would take place after the plaintiffs died or sold or no longer rented the properties.¹⁷⁶ The court ignored the approximately one in one hundred risk per year that a flood would take place; that risk is far from trivial during the plaintiffs' lifetimes. Arguably, the Eighth Circuit in *Shain* was wrong to find no standing because there was a non-trivial threat of injury to the plaintiffs.

Pursuant to the *Shain* decision's reasoning, a private plaintiff cannot sue for risks that will probably occur after her lifetime.¹⁷⁷ Although less explicit, the *NRDC II* and *Baur* decisions based on a plaintiff's increased risk of future harm seem to assume that the risk must occur during the plaintiff's lifetime.¹⁷⁸ All of the court of appeals decisions discussed above involved private persons or non-governmental organizations.¹⁷⁹ Standing for a government may be different from private persons or non-governmental organizations because governments have no fixed lifespan, but are assumed to last indefinitely.¹⁸⁰

G. Massachusetts v. EPA

In *Massachusetts*, the Supreme Court found standing based in part on projected injuries through the year 2100 to Massachusetts's coastline from rising sea levels caused by anthropogenic climate change,¹⁸¹ although Chief

171. *Baur v. Veneman*, 352 F.3d 625, 637–41 (2d Cir. 2003); Mank, *supra* note 51, at 57.

172. Mank, *supra* note 51, at 57.

173. *Id.*

174. *Id.*

175. *Id.*

176. *Id.*

177. *Id.*

178. *Id.*

179. *Id.*

180. See *Massachusetts v. EPA*, 549 U.S. 497, 523 n.20 (2007) (considering future impacts of global warming through 2100 on Massachusetts coastline in determining that Commonwealth of Massachusetts had injury sufficient for standing); Mank, *supra* note 51, at 57–58 (arguing Supreme Court in *Massachusetts* considered future impacts of global warming in deciding that Commonwealth of Massachusetts had injury sufficient for standing).

181. *Massachusetts*, 549 U.S. at 497 & n.20.

Justice Roberts argued in his dissenting opinion that the computer model projections used as evidence were too unreliable to justify standing.¹⁸² The Court found that Massachusetts had already suffered injury from the release of greenhouse gases that trapped heat in the atmosphere and that rising temperatures caused sea levels to rise.¹⁸³ The Court specifically found that “global sea levels rose somewhere between 10 and 20 centimeters over the twentieth century as a result of global warming” and that “[t]hese rising seas have already begun to swallow Massachusetts’s coastal land.”¹⁸⁴ Additionally, the majority opinion found that “[t]he severity of that injury will only increase over the course of the next century.”¹⁸⁵ In a footnote, the Court relied upon a declaration submitted by an expert witness for Massachusetts “discussing possible loss of roughly 14 acres of land per miles of coastline by 2100.”¹⁸⁶ In his dissenting opinion, Chief Justice Roberts argued that the computer model projections used as evidence were too unreliable to justify standing, and, even if the projections were correct about the loss of Massachusetts’s coastline, that “accepting a century-long time horizon and a series of compounded estimates renders requirements of imminence and immediacy utterly toothless.”¹⁸⁷

Agreeing with Chief Justice Roberts, Professor Jonathan Adler has argued that the *Massachusetts* decision undermined “the traditional requirement that an alleged injury be ‘actual or imminent’” by for the first time allowing a future injury to satisfy the injury requirement.¹⁸⁸ As the discussion in Part II has demonstrated, *Laidlaw* and subsequent lower court decisions have allowed standing based on threatened injury in the near future, although none of the cases before *Massachusetts* allowed standing for an injury that might take place up to ninety-three years into the future. An important issue is whether *Massachusetts*’s relaxed approach to the imminence requirement for standing is limited to state plaintiffs.¹⁸⁹ As discussed in Part I.A and Part II.G, *Massachusetts* stated that states were entitled to special standing rights by virtue of their status in our federal system of government, but also stated that Massachusetts was entitled to a relaxed approach to the imminence and redressability portions of the standing test because it was asserting procedural

182. *Id.* at 541–43 (Roberts, C.J., dissenting) (criticizing Massachusetts use of estimates of sea level rise through 2100); see Jonathan H. Adler, Essay, *Warming Up to Climate Change Litigation*, 93 VA. L. REV. IN BRIEF 63, 67–68 (2007) (discussing *Massachusetts* Court’s consideration of future harms from climate change through 2100); Mank, *supra* note 32, at 1731, 1741 (same).

183. *Massachusetts*, 549 U.S. at 521.

184. *Id.*; accord Mank, *supra* note 32, at 1731.

185. *Massachusetts*, 549 U.S. at 521; accord Mank, *supra* note 32, at 1731.

186. *Massachusetts*, 549 U.S. at 523 n.20.

187. *Id.* at 540–42 (Roberts, C.J., dissenting); accord Mank, *supra* note 32, at 1741.

188. Adler, *supra* note 182, at 67–68.

189. Mank, *supra* note 32, at 1727–29, 1746–52 (discussing to what extent the relaxed standing approach in *Massachusetts* is based on special standing rights for states); Mank, *supra* note 51, at 68–75 (same).

rights.¹⁹⁰ A non-state plaintiff asserting a procedural injury could argue that *Massachusetts* allows consideration of future injuries,¹⁹¹ but it remains to be seen whether a court would limit the standing analysis in *Massachusetts* to state plaintiffs or any plaintiff asserting procedural injuries.¹⁹² The *Massachusetts* decision suggested that the Court in the future might adopt a lenient approach to standing issues, but the Court did not resolve the uncertainties created for lower courts by *Laidlaw*'s imprecise "reasonable concerns" test.

III. THE D.C. CIRCUIT APPROACH TO PROBABILISTIC STANDING

The D.C. Circuit has adopted the most stringent standard for plaintiffs alleging that a government action increased their risk of harm by requiring plaintiffs to prove that there is a "substantial probability" that the action will harm them.¹⁹³ The D.C. Circuit's standing test is important because the circuit has exclusive or concurrent jurisdiction for many regulatory statutes and hears more regulatory cases than any other circuit.¹⁹⁴ Despite its stringent standing test, the D.C. Circuit has recognized standing for probabilistic injuries in at least three cases.¹⁹⁵ In its 2007 and 2008 decisions in *Public Citizen v. National Highway Traffic Administration*,¹⁹⁶ however, a panel of the D.C. Circuit argued that probabilistic standing was inconsistent with separation-of-powers

190. *Massachusetts*, 549 U.S. at 516–22; see *supra* Parts I.A and II.G.

191. Brown, *supra* note 40, at 31 (arguing *Massachusetts* used procedural rights framework to expand standing rights). *But cf.* Pub. Citizen v. Nat'l Highway Safety Admin. (*Public Citizen I*), 489 F.3d 1279, 1294 n.2 (D.C. Cir. 2007) ("In *Massachusetts v. EPA*, the Supreme Court held that states receive 'special solicitude' in standing analysis, including analysis of imminence. See 549 U.S. at 1454–55. No state is involved in this case, however.").

192. Mank, *supra* note 32, at 1727–29, 1746–52 (discussing to what extent the relaxed standing approach in *Massachusetts* is based on special standing rights for states or procedural rights in general).

193. Fla. Audubon Society v. Bentsen, 94 F.3d 658, 665–72 (D.C. Cir. 1996) (applying strict test for standing in procedural rights case, including requiring a procedural rights plaintiff to demonstrate a particularized injury, that "a particularized environmental interest of theirs that will suffer demonstrably increased risk" and that it is "substantially probable" that the agency action will cause the demonstrable injury alleged by the plaintiff); Leiter, *supra* note 9, at 404; Mank, *supra* note 51, at 45–46; Mank, *supra* note 9, at 45–63 (discussing split in circuits about how to apply footnote seven standing test in NEPA cases); Sturkie & Logan, *supra* note 9, at 10461 (discussing substantial probability test in D.C. Circuit); Sturkie & Seltzer, *supra* note 9, at 10290–91 (same).

194. Leiter, *supra* note 9, at 404 n.76 (citing statutes); *supra* note 11 and accompanying text.

195. *NRDC II*, 464 F.3d 1, 4–5 (D.C. Cir. 2006) (recognizing standing where members of organization had increased risk of one in 129,000 and 1 in 200,000 of developing skin cancer because of government exemptions for methyl bromide); La. Envtl. Action Network v. EPA, 172 F.3d 65, 67–68 (D.C. Cir. 1999) (recognizing standing where members of organization had increased risk of harm from hazardous waste sites because of variances granted by EPA); Mountain States Legal Found. v. Glickman, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996) (recognizing that an incremental increase in the risk of forest fires caused by the Forest Service's action satisfied Article III standing requirements).

196. *Public Citizen I*, 489 F.3d 1279 (2007), modified on reh'g, *Public Citizen II*, 513 F.3d 234 (D.C. Cir. 2008) (per curiam).

principles and in dicta suggested that the Circuit should reconsider prior cases that allowed standing in cases involving probabilistic future injuries.¹⁹⁷

The D.C. Circuit should abandon its overly strict substantial probability test and instead adopt a reasonable probability or reasonable concerns test.¹⁹⁸ The substantial probability test is arguably more restrictive than demanded by *Lujan*'s imminence and concreteness requirements.¹⁹⁹ Further, the substantial probability test is inconsistent with at least the spirit of *Laidlaw*'s "reasonable concerns" test.

A. Substantial Probability Test

1. Florida Audubon

In 1996, in *Florida Audubon Society v. Bentsen*, the D.C. Circuit in an en banc decision required a plaintiff establishing standing to demonstrate that is "substantially probable" that a challenged government regulatory action injured them by causing a "demonstrable increase in risk to their particularized interest."²⁰⁰ In his concurring opinion, Judge Buckley criticized the majority's test for placing a heavy burden on plaintiffs to provide evidence that they would be harmed even though the government was in a far better position to perform the necessary research.²⁰¹ Similarly, Judge Rogers's dissenting opinion, which was joined by Chief Judge Edwards and Judges Wald and Tatel, argued that the majority's standing test required plaintiffs to perform substantial research that should be performed instead by the government.²⁰²

197. Sturkie & Logan, *supra* note 9, at 10466; *see infra* Part III.D.

198. Mank, *supra* note 9, at 60–63; Mank, *supra* note 51, at 54.

199. *See* Citizens for Better Forestry v. USDA, 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Florida Audubon Society v. Bentsen*'s standing test for procedural rights plaintiffs and stating that such plaintiffs "need only establish 'the reasonable probability of the challenged action's threat to [their] concrete interest'"); *Comm. to Save the Rio Hondo v. Lucero*, 102 F.3d 445, 447–52 (10th Cir. 1996) (disagreeing with *Florida Audubon*'s "substantial probability" test for procedural rights plaintiffs and instead adopting a test that plaintiff must establish an "increased risk of adverse environmental consequences" from the alleged failure to follow NEPA); Leiter, *supra* note 9, at 404 (arguing D.C. Circuit's threshold test of substantial harm in standing cases is more stringent than *Lujan*), Mank, *supra* note 51, 54 n.261; Mank, *supra* note 9, at 45–63 (suggesting D.C. Circuit's standing test is too stringent and that other circuits have appropriately rejected it).

200. Fla. Audubon Soc'y v. Bentsen, 94 F.3d 658, 664–66 (D.C. Cir. 1996) (emphasis added); *see also id.* at 669, 671–72; Mank, *supra* note 9, at 54 (discussing substantial probability test in *Florida Audubon*), Sturkie & Seltzer, *supra* note 9, at 10289–90; Ilyssa Birnbach, Note, *Newly Imposed Limitations on Citizens' Right to Sue for Standing in a Procedural Rights Case*, 9 FORDHAM ENVTL. L. REV. 311, 312, 325 (1998) (same).

201. Fla. Audubon, 94 F.3d at 672 (Buckley, J., concurring); Mank, *supra* note 9, at 55. *See generally* Leiter, *supra* note 9, at 415 (criticizing D.C. Circuit's standing test for imposing heavy evidentiary burden and costs to establish standing).

202. Fla. Audubon, 94 F.3d at 674 (Rogers, J., dissenting); Mank, *supra* note 9, at 55.

The Ninth and Tenth Circuits have disagreed with the test and several commentators have criticized the substantial probability test for imposing too heavy a burden of proof on plaintiffs to establish standing.²⁰³

In applying the standard, the *Florida Audubon* court held that the plaintiffs' probabilistic allegations were insufficient to meet the court's new standing test. The plaintiffs sued the Treasury Department and the Internal Revenue Service for failing to prepare an EIS pursuant to NEPA²⁰⁴ regarding the environmental impacts of a tax credit for ethyl-tertiary butyl ether (ETBE), a fuel additive derived from plant-based ethanol.²⁰⁵ The plaintiffs alleged that the tax credit for ETBE would encourage farmers to increase their production of corn, sugar cane, and sugar beets—natural sources of ethanol and its derivative ETBE—and that increased production of these crops would harm neighboring wildlife areas that the plaintiffs used for recreation and aesthetic enjoyment.²⁰⁶

The district court granted summary judgment for the government because it determined that the plaintiffs did not meet standing requirements. A divided panel of the D.C. Circuit, however, in an opinion by Judge Rogers, reversed the district court and concluded that the plaintiffs' allegations met standing requirements for both injury in fact and causation because the agencies' preparation of an EIS might result in the tax credit being canceled or adjusted.²⁰⁷ After granting en banc review, the D.C. Circuit affirmed the district court's dismissal for lack of standing because the majority concluded that the plaintiffs had failed to prove that it was substantially probable that the tax credit would cause them particularized injury.²⁰⁸ Even though Congress had predicted that the tax cut would increase agricultural production in the United States in the statute's legislative history, the D.C. Circuit found that there were too many "uncertain links in a causal chain" to be sure that the tax credit would result in increased crop production among the farmers adjacent to the plaintiffs'

203. *Citizens for Better Forestry*, 341 F.3d at 972–75 (rejecting D.C. Circuit's substantial probability and stating that such plaintiffs "need only establish 'the reasonable probability of the challenged action's threat to [their] concrete interest'"); *Rio Hondo*, 102 F.3d at 447–52 (disagreeing with D.C. Circuit's "substantial probability" test for procedural rights plaintiffs and instead adopting a test that plaintiff must establish an "increased risk of adverse environmental consequences" from the alleged failure to follow NEPA); Leiter, *supra* note 9, at 393–95, 403–15 (criticizing D.C. Circuit's substantial probability test); Mank, *supra* note 9, at 56–63 (discussing and agreeing with Ninth and Tenth Circuit decisions rejecting D.C. Circuit's substantial probability test and applying more lenient standing test).

204. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–70(f) (2006); Mank, *supra* note 9, at 45–47 (discussing the basic structure of the NEPA).

205. *Fla. Audubon*, 94 F.3d at 662; Mank, *supra* note 9, at 51; Sturkie & Seltzer, *supra* note 9, at 10290.

206. *Fla. Audubon*, 94 F.3d at 662; Mank, *supra* note 9, at 51–52.

207. *Fla. Audubon Soc'y v. Bentsen*, 54 F.3d 873 (D.C. Cir. 1995), *overruled by* 94 F.3d 658 (D.C. Cir. 1996) (en banc); Mank, *supra* note 9, at 52.

208. *Fla. Audubon*, 94 F.3d at 668–672.

land.²⁰⁹ Additionally, since the plaintiffs could not prove that increased crop production would occur in areas near them, the court determined that the plaintiffs had failed to demonstrate “a geographical nexus to any asserted environmental injury.”²¹⁰

In her dissenting opinion, Judge Rogers argued that the plaintiffs “[had] demonstrated concrete and particularized injury by establishing that they had a ‘geographical nexus’ to the threatened environmental injury.”²¹¹ She contended that the plaintiffs had presented “voluminous evidence” that the tax credit would encourage neighboring farmers to abandon crop rotation to exclusively plant crops that produce ethanol, that the resulting monoculture would likely cause increased erosion of their farm lands, and that soil erosion and water pollution resulting from greater use of pesticides and fertilizer for crops producing ethanol ingredients would harm wildlife habitats used and enjoyed by the plaintiffs.²¹² Additionally, one plaintiff presented evidence that the tax credit would encourage farmers to use more pesticides and that these uses would result in contamination of her groundwater and drinking water.²¹³

2. *Impact of Substantial Probability Test on Probabilistic Claims*

The *Florida Audubon*'s standing test presents serious difficulties for plaintiffs asserting probabilistic injuries against the government. A plaintiff must demonstrate that it is substantially probable that the government's action will increase the risk of particularized injuries within an area with a “geographical nexus” to where the plaintiffs live or recreate.²¹⁴ Judge Rogers's dissenting opinion made a sound argument that tax credits would likely cause problems for the plaintiffs' recreational activities and aesthetic enjoyment, but the majority demanded greater exactitude in how the credits would precisely affect neighboring farmers. The majority's evidentiary demands were formidable despite the fact that the government was in a far better position to determine the impact of the tax credit.²¹⁵

209. *Fla. Audubon*, 94 F.3d at 666–670; accord Mank, *supra* note 9, at 52–54; Sturkie & Seltzer, *supra* note 9, at 10290.

210. *Fla. Audubon*, 94 F.3d at 668; accord Mank, *supra* note 9, at 54–55.

211. *Fla. Audubon*, 94 F.3d at 677 (Rogers, J., dissenting); accord Mank, *supra* note 9, at 56.

212. *Fla. Audubon*, 94 F.3d at 677 (Rogers, J., dissenting); accord Mank, *supra* note 9, at 56.

213. *Fla. Audubon*, 94 F.3d at 677–78 (Rogers, J., dissenting); Mank, *supra* note 9, at 56.

214. *Fla. Audubon*, 94 F.3d at 666–670; Mank, *supra* note 9, at 52–54; Sturkie & Seltzer, *supra* note 9, at 10290.

215. *Fla. Audubon*, 94 F.3d at 672 (Buckley, J., concurring) (arguing that it was inappropriate to place heavy evidentiary burden on plaintiffs to prove standing when statute required government to research the environmental impacts of its projects); *Id.* at 674 (Rogers, J., dissenting) (same); Mank, *supra* note 9, at 55 (same). See generally Leiter, *supra* note 9, at 415 (criticizing D.C. Circuit's standing test for imposing heavy evidentiary burden and costs to establish standing).

Even after *Florida Audubon*, the D.C. Circuit has sometimes recognized probabilistic risk. In *Louisiana Environmental Action Network v. EPA (LEAN)*,²¹⁶ the D.C. Circuit applied a relatively broad view of what constitutes a substantial probability of injury. LEAN challenged EPA regulations that allowed variances from otherwise required treatment standards for hazardous wastes deposited in landfills.²¹⁷ Three members of LEAN lived near a landfill that received waste potentially subject to the challenged regulations.²¹⁸ Although the risks of the hazardous waste to the three plaintiffs were uncertain and were contingent on which variances the EPA might grant in the future, a majority of the court found those allegations sufficient for standing since the government had already required the remediation of many other landfills in Louisiana to prevent harm to the public and EPA had a common practice of granting some variances at comparable landfills.²¹⁹ Citing *Florida Audubon*, the *LEAN* court concluded that the plaintiffs had met the injury-in-fact standing test because there was a “very ‘substantial probability’ that *some* variances will be granted, increasing risk to LEAN members near the Carlyss site.”²²⁰ In a dissenting opinion, Judge Sentelle argued that the court should have concluded that the plaintiffs had failed to establish standing because it was speculative whether the EPA would grant variances in the future and therefore that the plaintiffs could not prove that there was a substantial probability that the regulations would harm them.²²¹ The *LEAN* decision was not even cited by the *Public Citizen II* decision and thus appears to have had less influence in the D.C. Circuit than the *Mountain States* and *NRDC II* decisions, discussed below, which were extensively discussed in *Public Citizen II*.²²²

B. Mountain States

Only three days after *Florida Audubon* was decided, a panel of the D.C. Circuit recognized standing for probabilistic injuries in *Mountain States Legal Foundation v. Glickman*.²²³ The *Mountain States* decision did not cite *Florida Audubon* or use the substantial probability test even though two of the three

216. *La. Env'tl. Action Network v. EPA*, 172 F.3d 65 (D.C. Cir. 1999).

217. *Id.* at 67; Sturkie & Seltzer, *supra* note 9, at 10291.

218. *La. Env'tl. Action Network*, 172 F.3d at 67; Sturkie & Seltzer, *supra* note 9, at 10291.

219. *La. Env'tl. Action Network*, 172 F.3d at 67–68.

220. *La. Env'tl. Action Network*, 172 F.3d at 68 (emphasis in original) (quoting *Fla. Audubon*, 94 F.3d at 666); accord Sturkie & Seltzer, *supra* note 9, at 10291.

221. *La. Env'tl. Action Network*, 172 F.3d at 71–72 (Sentelle, J., dissenting).

222. *Public Citizen II*, 513 F.3d 234, 241 (D.C. Cir. 2008) (per curiam) (discussing *Mountain States* and *NRDC II* as examples of decisions in the D.C. Circuit allowing standing for probabilistic risk, but not citing *LEAN*).

223. *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228 (D.C. Cir. 1996); Sturkie & Seltzer, *supra* note 9, at 10290. *Mountain States* was decided on August 23, 1996. *Mountain States*, 92 F.3d at 1228. *Florida Audubon* was decided on August 20, 1996. *Fla. Audubon*, 94 F.3d at 658.

judges on the panel had joined the en banc decision just three days before: Judge Stephen F. Williams, who wrote the *Mountain States* opinion, and Judge Henderson.²²⁴ One might speculate that perhaps the *Mountain States* decision avoided discussing *Florida Audubon* because the third member of the panel, Judge Buckley, had only concurred in the en banc decision.²²⁵ There is also the possibility that the panel did not want to change an opinion that was almost finished, but it is impossible to know for certain.

In *Mountain States*, the court held that the incremental increase in the risk of future forest fires resulting from the government's action was a sufficient injury to support constitutional standing for plaintiffs who challenged a Forest Service plan to prohibit logging in a national forest.²²⁶ The plaintiffs demonstrated that the plan would increase the probability of a catastrophic fire by permitting fuel to accumulate in dead trees.²²⁷ Applying an incremental approach to risk, the court stated that "[t]he more drastic the injury the government action makes more likely, the lesser the increment in probability necessary to establish standing."²²⁸ The court explained that "even a small probability" of a drastic harm, such as wildfire, "is sufficient to . . . take [the] suit out of the category of the hypothetical" and make it an appropriate case for Article III courts.²²⁹ Agreeing with decisions in other circuits that a court should consider the severity of a risk in determining standing, the court concluded that "the potential destruction of fire is so severe that *relatively modest increments in risk* should qualify for standing."²³⁰ Thus, the *Mountain States*' decision focused more on the expectation of harm rather the risk in assessing the probabilistic injury.

C. Natural Resources Defense Council v. EPA I and II

In *NRDC II*, the D.C. Circuit recognized standing in a case involving probabilistic future risk, although it had initially rejected probabilistic standing in *NRDC I*.²³¹ In both *NRDC* decisions, unlike *Baur*'s qualitative approach to

224. See *Mountain States*, 92 F.3d at 1231.

225. *Fla. Audubon*, 94 F.3d at 661.

226. *Mountain States*, 92 F.3d at 1234–35; Mank, *supra* note 51, at 46; Sturkie & Seltzer, *supra* note 9, at 10290.

227. *Mountain States*, 92 F.3d at 1234–35; Mank, *supra* note 51, at 46; Sturkie & Seltzer, *supra* note 9, at 10290.

228. *Mountain States*, 92 F.3d at 1234; accord Sturkie & Seltzer, *supra* note 9, at 10290.

229. *Mountain States*, 92 F.3d at 1235 (citing *Village of Elk Grove Village v. Evans*, 997 F.2d 328, 329 (7th Cir.1993)); accord Sturkie & Seltzer, *supra* note 9, at 10290.

230. *Mountain States*, 92 F.3d at 1235 (emphasis added); accord Sturkie & Seltzer, *supra* note 9, at 10290.

231. *Natural Res. Def. Council v. EPA (NRDC I)*, 440 F.3d 476 (D.C. Cir. 2006), *withdrawn*, *NRDC II*, 464 F.3d 1 (D.C. Cir. 2006); Craig, *supra* note 1, at 200–01 (discussing *NRDC I*'s rejection of standing and *NRDC II*'s finding of standing); Sturkie & Seltzer, *supra* note 9, at 10287–88, 10291–96 (same).

standing, the D.C. Circuit used a quantitative methodology for assessing whether the plaintiffs had standing, although the court reheard the case after deciding that its original standing analysis was flawed.²³² The court's approach in *NRDC II* suggested a reasonable approach to a quantitative standing test, but also raised questions about its use of the NRDS's membership size as a factor in standing analysis.²³³

I. NRDC I

In *NRDC I*, the plaintiff NRDC petitioned for review of a final rule issued by the EPA exempting for the year 2005 certain "critical uses" for agricultural users of the otherwise banned chemical methyl bromide, which destroys stratospheric ozone.²³⁴ NRDC argued that the rule violated the United States' treaty obligations under the 1987 Montreal Protocol,²³⁵ which requires signatory nations to phase out and eventually ban chemicals that destroy stratospheric ozone, and also violated provisions of the Clean Air Act that implement the Protocol.²³⁶ NRDC argued that the exemptions in the final rule were more than necessary to satisfy critical U.S. uses.²³⁷

NRDC argued that it had standing because the exemptions would increase its members' risk of contracting skin cancer or cataracts because the exempted methyl bromide would destroy some stratospheric ozone, which serves a critical role in protecting human beings by absorbing most dangerous ultraviolet radiation from the sun so that high levels never reach the surface of the earth.²³⁸ NRDC supported its standing allegations with an affidavit submitted by Dr. Sasha Madronich, which states that "it is reasonable to expect more than 10 deaths, more than 2,000 non-fatal skin cancer cases, and more

232. *NRDC I*, 440 F.3d at 481–83 (quantifying risk of harm to plaintiffs); *NRDC II*, 464 F.3d at 7 (same); Craig, *supra* note 1, at 200–01 (discussing quantitative approach in *NRDC I* rejecting standing and subsequent decision finding standing); Sturkie & Seltzer, *supra* note 9, at 10287–88, 10291–96 (same).

233. See *infra* Parts III.C.2 and V.

234. *NRDC I*, 440 F.3d at 478–80; see EPA, Protection of Stratospheric Ozone: Process for Exempting Critical Uses From the Phaseout of Methyl Bromide, Final Rule, 69 Fed. Reg. 76,982, 76,990 (2004) (codified at 40 C.F.R. pt. 82) (exempting certain "critical uses" of methyl bromide for 2005).

235. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. Treaty Doc. No. 100-10, 1522 U.N.T.S. 29; Sturkie & Seltzer, *supra* note 9, at 10291.

236. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. VI, 104 Stat. 2399, 2648 (implementing the Montreal Protocol), 42 U.S.C. § 7671c(h) (2006) (requiring EPA to "promulgate rules for reductions in, and terminate the production, importation, and consumption of, methyl bromide under a schedule that is in accordance with, but not more stringent than, the phaseout schedule of the Montreal Protocol Treaty as in effect on October 21, 1998"); Mank, *supra* note 51, at 47 n.226; Sturkie & Seltzer, *supra* note 9, at 10291.

237. *NRDC I*, 440 F.3d at 480; Sturkie & Seltzer, *supra* note 9, at 10292.

238. *NRDC I*, 440 F.3d at 481–82; Sturkie & Seltzer, *supra* note 9, at 10292.

than 700 cataract cases to result from the 16.8 million pounds of new production and consumption allowed by the 2005 exemption rule.”²³⁹ Because it conceded standing, the EPA did not contest these assumptions or offer a different analysis.²⁴⁰

In its initial but later withdrawn decision, the D.C. Circuit held that NRDC did not have standing to petition the court to review the final rule because the annualized risk to members of NRDC was too remote and hypothetical to meet the injury-in-fact portion of the standing test.²⁴¹ Interpreting Dr. Madronich’s affidavit as predicting deaths over the next 145 years and spread among the American population of 293 million persons, the D.C. Circuit concluded that “[w]ith ten more cancer deaths in 145 years, the probability of fatality from EPA’s rule comes to 1 in 4.2 billion per person per year.”²⁴² Among NRDC’s 490,000 members, the court observed that the risk of death was “infinitesimal:” one death in approximately 12,000 years.²⁴³ Additionally, the court determined that the “other risks” were “similarly small”—“a 1 in 21 million chance of contracting non-fatal skin cancer and a 1 in 61 million chance of getting a cataract over the next 145 years.”²⁴⁴ The court concluded that the injury was insufficient to meet the D.C. Circuit’s substantial probability test because an injury must be more than a “‘non-trivial’ chance of injury” according to *Mountain States* and the risk from the exempted methyl bromide to NRDC’s members did not even meet that low standard.²⁴⁵ In light of its decision when it re-heard the case, it is significant that the court dismissed a 1 in 21 million risk of contracting skin cancer as too small to justify standing.

Critically, the *NRDC I* court embraced a quantitative approach to determining whether the plaintiffs had a sufficient injury for standing.²⁴⁶ The court acknowledged that “[i]n some cases it might not be possible to quantify the probability of harm;” however, “[i]n other cases, the ‘risk’—that is, the combination of the probability of a negative event and the impact of it—may affect the assessment.”²⁴⁷ The court made its own quantitative calculations by taking Dr. Madronich’s numbers and dividing them by the U.S. population.²⁴⁸

239. *NRDC I*, 440 F.3d at 481; accord *Sturkie & Seltzer*, *supra* note 9, at 10292.

240. *Sturkie & Seltzer*, *supra* note 9, at 10292 n.89 (“In its merits brief, EPA stated that it ‘believes that Petitioner has satisfied the requirements for Article III standing.’”).

241. *NRDC I*, 440 F.3d at 483–84; *Craig*, *supra* note 1, at 200–01; *Mank*, *supra* note 51, at 47; *Sturkie & Seltzer*, *supra* note 9, at 10292.

242. *NRDC I*, 440 F.3d at 481 (emphasis in original); accord *Sturkie & Seltzer*, *supra* note 9, at 10292.

243. *NRDC I*, 440 F.3d at 482; accord *Sturkie & Seltzer*, *supra* note 9, at 10292.

244. *NRDC I*, 440 F.3d at 482; accord *Sturkie & Seltzer*, *supra* note 9, at 10292.

245. *NRDC I*, 440 F.3d at 483 (citing *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1235 (D.C. Cir.1996)); accord *Sturkie & Seltzer*, *supra* note 9, at 10292–93.

246. *NRDC I*, 440 F.3d at 481–82; *Sturkie & Seltzer*, *supra* note 9, at 10292.

247. *NRDC I*, 440 F.3d at 483; *Sturkie & Seltzer*, *supra* note 9, at 10293.

248. *NRDC I*, 440 F.3d at 481–82.

Furthermore, the court divided the numbers by 145 to determine the annualized risk.²⁴⁹ If the court's risk analysis had been correct, then it would have been right to dismiss the plaintiff's injury as too small for standing, but the court's quantitative analysis was flawed, as it conceded in *NRDC II*.²⁵⁰

Despite its calculation of probabilistic risk, *NRDC I* took a skeptical approach to probabilistic injuries. The court stated:

Among those [injuries] which fit least well [in deciding which injuries are actual or imminent for the Court's standing test] are purely probabilistic injuries. Environmental or public health injuries, for example, may have complex etiologies that involve the interaction of many discrete risk factors. The chance that one may develop cancer can hardly be said to be an "actual" injury—the harm has not yet come to pass. Nor is it "imminent" in the sense of temporal proximity.²⁵¹

The court rejected the suggestion in decisions by the Second, Fourth, and Ninth Circuits, citing *Baur* and *Gaston Copper* among others, that any "increase in probability itself constitutes an 'actual or imminent' injury."²⁵² The D.C. Circuit agreed instead with the Eighth Circuit's position in *Shain* "rejecting 'the proposition that a heightened risk of future harm is a cognizable injury.'"²⁵³ The court concluded "the law of this circuit is that an increase in the likelihood of harm may constitute injury in fact only if the increase is sufficient to 'take a suit out of the category of the hypothetical.'"²⁵⁴

2. NRDC II

NRDC petitioned for a re-hearing on the grounds that the court had miscalculated the risk of the methyl bromide exemption to its members and therefore had erroneously concluded that NRDC failed to prove an injury in fact.²⁵⁵ First, NRDC argued that the court erred by focusing only on the ten predicted fatalities from skin cancer, but had largely ignored the 2700 predicted nonfatal illnesses.²⁵⁶ Second, NRDC argued that the court mistakenly assumed the health risks "were spread over 145 years" and as a result erred in dividing by 145 to determine the annual risk to each person.²⁵⁷ Because of methyl

249. *Id.* at 481–82; Sturkie & Seltzer, *supra* note 9, at 10292.

250. *See infra* Part III.C.2.

251. *NRDC I*, 440 F.3d at 483; *accord* Sturkie & Seltzer, *supra* note 9, at 10292.

252. *NRDC I*, 440 F.3d at 483–84; *accord* Sturkie & Seltzer, *supra* note 9, at 10293.

253. *NRDC I*, 440 F.3d at 484 (quoting *Shain v. Veneman*, 376 F.3d 815, 818 (8th Cir. 2004)); *accord* Sturkie & Seltzer, *supra* note 9, at 10293.

254. *NRDC I*, 440 F.3d at 484 (quoting *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996)); *accord* Sturkie & Seltzer, *supra* note 9, at 10293.

255. NRDC Petition for Rehearing or Rehearing En Banc, No. 04-1438, at 1, 8–11 (D.C. Cir. Apr. 21, 2006) [hereinafter *NRDC Pet.*]; Sturkie & Seltzer, *supra* note 9, at 10293.

256. *NRDC Pet.*, *supra* note 255, at 9; Sturkie & Seltzer, *supra* note 9, at 10293.

257. *NRDC Pet.*, *supra* note 255, at 9; *accord* Sturkie & Seltzer, *supra* note 9, at 10293.

bromide's short atmospheric lifetime, almost all the risks will occur during the lifetimes of the 293 million Americans alive at the time of the suit and therefore the court should have based its calculations on lifetime risk rather than annual risks.²⁵⁸ NRDC argued that the court's one in 4.2 billion risk estimate grossly underestimated the risk to its members and that the actual risk of death or serious illness was about one in 100,000, or approximately five of its 490,000 members.²⁵⁹ NRDC argued that the risk of death or serious illness to five of its members was sufficient for standing, although it also argued that the court should have used a qualitative rather than a quantitative approach to standing.²⁶⁰ In opposing NRDC's petition for rehearing, the EPA acknowledged that the court should not have divided the risk by 145, but argued that the risk was not "almost 40,000" times higher as NRDC claimed.²⁶¹

The court granted the petition for rehearing and withdrew its previous opinion because "[i]n their respective petition for and opposition to rehearing, NRDC and EPA offered new information that has led us to change our view of the standing issue."²⁶² Both the EPA and the methyl bromide industry intervenor argued that NRDC had "procedurally defaulted or waived the arguments it makes in its rehearing petition."²⁶³ Although NRDC had the burden of proving standing, the court stated that it granted the petition for rehearing to "correct[]" the "panel's misperception of the evidence" in the first decision.²⁶⁴

In *NRDC II*, the court was noticeably less antagonistic to NRDC's probabilistic standing argument, perhaps chastened by its mistaken analysis in its first decision.²⁶⁵ While the first decision had characterized probabilistic claims of increased risk as "[a]mong those that fit least well" in the "definitions of 'actual' or 'imminent,'"²⁶⁶ the second decision more favorably observed:

Although this claim does not fit comfortably within the Supreme Court's description of what constitutes an "injury in fact" sufficient to confer standing—such injuries must be "actual or imminent, not 'conjectural' or 'hypothetical,'" . . . —we have recognized that increases in risk can at times be "injuries in fact" sufficient to confer standing.²⁶⁷

258. *NRDC Pet.*, *supra* note 255, at 9; Sturkie & Seltzer, *supra* note 9, at 10293.

259. *NRDC Pet.*, *supra* note 255, at 9–10; Sturkie & Seltzer, *supra* note 9, at 10293.

260. *NRDC Pet.*, *supra* note 255, at 10–11; Sturkie & Seltzer, *supra* note 9, at 10293.

261. Respondent EPA's Opposition to NRDC's Petition for Rehearing or Rehearing En Banc, No. 04-1438, at 6 n.7 (D.C. Cir. June 16, 2006); *accord* Sturkie & Seltzer, *supra* note 9, at 10293–94.

262. *NRDC II*, 464 F.3d 1, 3 (D.C. Cir. 2006); *accord* Sturkie & Seltzer, *supra* note 9, at 10294.

263. *NRDC II*, 464 F.3d at 7 n.6.

264. *Id.*; *accord* Sturkie & Seltzer, *supra* note 9, at 10294.

265. Sturkie & Seltzer, *supra* note 9, at 10294.

266. *NRDC I*, 440 F.3d at 483; *accord* Sturkie & Seltzer, *supra* note 9, at 10294.

267. *NRDC II*, 464 F.3d at 6; *accord* Sturkie & Seltzer, *supra* note 9, at 10294.

The first decision had mocked the Ninth Circuit's admission that probabilistic standing claims can be expansive by sarcastically declaring that "expansiveness is an understatement,"²⁶⁸ but the second decision merely cautioned that "this category of injury may be too expansive."²⁶⁹ The first decision was clearly hostile to courts of appeals that had adopted a liberal approach to recognizing probabilistic standing claims.²⁷⁰ The second decision merely observed that the courts of appeals have disagreed about when an increased risk of harm is enough to justify standing, and whether the plaintiff must quantify that risk; the court concluded that it did not have to "answer" that difficult question in this case.²⁷¹ The court did not repudiate its earlier criticism of probabilistic standing, but its tone was less hostile in its second opinion. Cassandra Sturkie and Nathan Seltzer, two attorneys, argue that the court likely did not change its generally negative view of probabilistic standing claims expressed in *NRDC I*, but believe the court felt compelled to soften its criticism of the plaintiff's standing allegations when presented with evidence that its erroneous mathematical calculations in the first opinion significantly underestimated the risk to the plaintiffs.²⁷² They believe that the D.C. Circuit remains generally hostile to claims of standing based on increased risk of injury despite NRDC's ultimate success in the methyl bromide case.²⁷³

The court concluded that NRDC had standing because skin cancer caused by the methyl bromide exemptions represented a significant lifetime risk to its members.²⁷⁴ The court adopted evidence from an EPA expert that the best measure of risk from ozone depletion is lifetime risk and not the annualized risk methodology used in its first decision.²⁷⁵ However, the *NRDC* decisions did not provide a precise threshold for what constitutes a substantial probability of injury. The court found that the lifetime risk that an individual will develop nonfatal skin cancer as a result of EPA's rule is about one in 200,000 according to the intervenor's expert or one in 129,000 by the EPA's analysis.²⁷⁶ The court determined that this evidence demonstrating that two to four members of NRDC's approximately half a million members would develop skin cancer during their lifetimes as a result of EPA's rule was sufficient injury for NRDC to have standing.²⁷⁷ By contrast, in *NRDC I*, a one in 21 million chance of

268. *NRDC I*, 440 F.3d at 484; accord Sturkie & Seltzer, *supra* note 9, at 10294.

269. *NRDC II*, 464 F.3d at 6; accord Sturkie & Seltzer, *supra* note 9, at 10294.

270. See *NRDC I*, 440 F.3d at 483–84; Sturkie & Seltzer, *supra* note 9, at 10293.

271. *NRDC II*, 464 F.3d at 6; Craig, *supra* note 1, at 201.

272. Sturkie & Seltzer, *supra* note 9, at 10295–96.

273. *Id.*

274. *NRDC II*, 464 F.3d at 5–7; Craig, *supra* note 1, at 201; Mank, *supra* note 51, at 47.

275. *NRDC II*, 464 F.3d at 7; Craig, *supra* note 1, at 201; Mank, *supra* note 51, at 48.

276. *NRDC II*, 464 F.3d at 7; Sturkie & Seltzer, *supra* note 9, at 10294.

277. *NRDC II*, 464 F.3d at 7; Craig, *supra* note 1, at 201; Mank, *supra* note 51, at 48.

contracting nonfatal skin cancer was insufficient for standing.²⁷⁸ Although the court did not explain what level of risk was sufficient for standing, it may have implicitly used a one in one million standard, which, as is discussed below, is used by many regulatory agencies and statutes as a key risk threshold.²⁷⁹

D. Public Citizen I and II

Following the *NRDC* decisions, a panel of the D.C. Circuit in two related decisions questioned whether probabilistic injuries are ever sufficient for constitutional standing in *Public Citizen v. National Highway Traffic Safety Administration* (*Public Citizen I* and *Public Citizen II*).²⁸⁰ Despite serious questions about whether Public Citizen could meet standing requirements, the *Public Citizen I* decision allowed Public Citizen to file affidavits demonstrating the specific risks that the National Highway Traffic Safety Administration's (NHTSA) rule posed to its members.²⁸¹ In *Public Citizen II*, the court acknowledged that the D.C. Circuit in *Mountain States* and *NRDC II* had allowed standing for probabilistic future injuries, but strongly questioned whether standing in such cases violated separation-of-powers principles by intruding on the role of the political branches.²⁸² The *Public Citizen II* court suggested that the Circuit should sit as an en banc court in a future case to address whether probabilistic standing should be allowable at all.²⁸³

Public Citizen alleged that its members had an increased probability of future injury from an automobile accident because the NHTSA's standards for tire pressure monitors were less stringent than the alternative requirements that Public Citizen had proposed.²⁸⁴ In 2000, Congress enacted the Transportation Recall Enhancement, Accountability, and Documentation Act (TREAD Act) to require new tire safety requirements.²⁸⁵ The TREAD Act required the Secretary of Transportation to issue regulations mandating new vehicles to include a

278. *NRDC I*, 440 F.3d at 482; Sturkie & Seltzer, *supra* note 9, at 10292.

279. See *infra* Parts VII.B and VII.D.1.

280. *Public Citizen I*, 489 F.3d 1279, 1291–98 (D.C. Cir. 2007), *modified after rehearing*, *Public Citizen II*, 513 F.3d 234, 237 (D.C. Cir. 2008) (per curiam); Sturkie & Logan, *supra* note 9, at 10463–67, 10470–72 (arguing that the two *Public Citizen* decisions seek to severely limit or eliminate probabilistic standing claims).

281. *Public Citizen I*, 489 F.3d at 1296–98; Mank, *supra* note 51, at 51–52.

282. *Public Citizen I*, 489 F.3d at 1291–98, *Public Citizen II*, 513 F.3d at 237, 241; Sturkie & Logan, *supra* note 9, at 10465–66.

283. *Public Citizen II*, 513 F.3d at 241; Sturkie & Logan, *supra* note 9, at 10466.

284. *Public Citizen I*, 489 F.3d at 1291–98; Mank, *supra* note 51, at 51–52; Sturkie & Logan, *supra* note 9, at 10464.

285. See Transportation Recall Enhancement, Accountability and Documentation Act, Pub. L. No. 106-414, § 13, 114 Stat. 1800 (2000); Mank, *supra* note 51, at 49.

warning system “to indicate to the operator when a tire is significantly under-inflated.”²⁸⁶

In 2005, the NHTSA promulgated a final rule regulating tire safety: Federal Motor Vehicle Safety Standard 138.²⁸⁷ Standard 138 requires automakers to install tire pressure monitoring systems that warn drivers “when the pressure in the vehicle’s tires is approaching a level at which permanent tire damage could be sustained as a result of heat buildup and tire failure is possible.”²⁸⁸ Public Citizen, four individual tire manufacturers, and the Tire Industry Association filed petitions for review in the D.C. Circuit that challenged Standard 138 for four alleged deficiencies: (1) the absence of a requirement that pressure monitors be compatible with all replacement tires; (2) the up to twenty minute delay between significant under-inflation and the illumination of the dashboard warning light; (3) the use of the 25 percent below placard pressure standard for under-inflation; and (4) the testing that NHTSA required for pressure monitors.²⁸⁹

I. Public Citizen I

Public Citizen I was hostile to Public Citizen’s claim of probabilistic standing.²⁹⁰ The court suggested that Public Citizen had failed to meet standing requirements, but a majority of the court allowed Public Citizen to file supplemental briefs to address whether Standard 138 increased the probability that its members would be injured in a traffic accident.²⁹¹ The court first acknowledged that Public Citizen had demonstrated a “concrete” and “particularized” injury because “injuries from car accidents are particularized—each person who is in an accident is harmed personally and distinctly” and they are concrete even if many other persons suffer similar injuries.²⁹² The court, however, questioned whether Public Citizen’s alleged injuries were “actual or imminent” because Public Citizen raised only “remote and speculative claims of possible future harm to its members.”²⁹³ The court

286. Transportation Recall Enhancement, Accountability and Documentation Act, Pub. L. no. 106-414, § 13, 114 Stat. at 1806 (codified at 49 U.S.C. § 30123 note); *accord* Sturkie & Logan, *supra* note 9, at 10464.

287. *See* Tire Pressure Monitoring Systems, 70 Fed. Reg. 18,136 (Apr. 8, 2005) (codified at 49 C.F.R. pts. 571, 585), *recon. granted in part*, 70 Fed. Reg. 53,079 (Sept. 7, 2005); Mank, *supra* note 51, at 49.

288. 70 Fed. Reg. at 18,148; *accord* Mank, *supra* note 51, at 49.

289. *Public Citizen I*, 489 F.3d at 1286; Mank, *supra* note 51, at 49.

290. Sturkie & Logan, *supra* note 9, at 10464–65.

291. *Public Citizen I*, 489 F.3d 1291–98; Mank, *supra* note 51, at 50; Sturkie & Logan, *supra* note 9, at 10464–65.

292. *Public Citizen I*, 489 F.3d at 1292–93; *accord* Sturkie & Logan, *supra* note 9, at 10464.

293. *Public Citizen I*, 489 F.3d at 1293–95; *accord* Sturkie & Logan, *supra* note 9, at 10464.

doubted whether the future traffic injuries alleged by Public Citizen were “imminent” because:

no one can say who those several hundred individuals are out of the 300 million people in the United States, nor can anyone say when such accidents might occur. For any particular individual, the odds of such an accident occurring are extremely remote and speculative, and the time (if ever) when any such accident would occur is entirely uncertain.²⁹⁴

Further, the court stated that Public Citizen could not gain standing by aggregating the claims of its members, stating, “[n]or does it help Public Citizen to aggregate a series of remote and speculative claims.”²⁹⁵ The fact that Public Citizens had 130,000 members did not help its standing case. The court stated:

Under the Supreme Court’s precedents, it therefore does Public Citizen no good to string together 130,000 remote and speculative claims rather than one remote and speculative claim. Each claim is still remote and speculative, which under the Supreme Court’s precedents is an impermissible basis for our exercising the judicial power.²⁹⁶

Unlike *NRDC II*, the number of members of the plaintiff’s organization did not affect whether it had standing because *Public Citizen I* treated the plaintiff’s allegations of future probabilistic harm as speculative.

The *Public Citizen* court maintained that the political branches rather than the courts should decide claims of probabilistic harm:

To the extent Congress is concerned about Executive under-regulation or under-enforcement of statutes, it also may exercise its oversight role and power of the purse The Supreme Court has repeatedly held that disputes about future events where the possibility of harm to any given individual is remote and speculative are properly left to the policymaking Branches, not the Article III courts.²⁹⁷

The court concluded that judicial recognition of probabilistic harm cases was improper because “virtually *any* citizen—because of a fractional chance of benefit from alternative action—would have standing to obtain judicial review of the agency’s choice” and recognition of such claims would open the floodgates to judicial challenges of almost all executive actions.²⁹⁸ The recognition of probabilistic claims:

would drain the “actual or imminent” requirement of meaning in cases involving consumer challenges to an agency’s regulation (or lack of

294. *Public Citizen I*, 489 F.3d at 1293–94; accord Mank, *supra* note 51, at 50; Sturkie & Logan, *supra* note 9, at 10464.

295. *Public Citizen I*, 489 F.3d at 1294.

296. *Id.*

297. *Id.*

298. *Id.* at 1295; accord Sturkie & Logan, *supra* note 9, at 10464–65.

regulation); would expand the “proper—and properly limited”—constitutional role of the Judicial Branch beyond deciding actual cases or controversies; and would entail the Judiciary exercising some part of the Executive’s responsibility to take care that the law be faithfully executed.²⁹⁹

Accordingly, the court asserted that, “[a]llowing a party to assert such remote and speculative claims to obtain federal court jurisdiction threatens . . . to eviscerate the Supreme Court’s standing doctrine”³⁰⁰

Public Citizen I posed the following question: “What increase in the risk of harm and what level of ultimate risk are high enough to be ‘substantial’—and thus to render the harm sufficiently ‘imminent’?”³⁰¹ The court observed that “*Mountain States* did not specify any hard-and-fast numerical rules” for what constitutes a substantial injury.³⁰² The *Public Citizen* court concluded that Supreme Court precedents required a strict approach to what is a substantial risk:

In applying the “substantial” standard, we are mindful, of course, that the constitutional requirement of imminence as articulated by the Supreme Court—even if this Court has said it does not completely bar increased-risk-of-harm claims—necessarily compels a very strict understanding of what increases in risk and overall risk levels can count as “substantial.”³⁰³

The court explained that it had allowed increased risk of harm claims when a plaintiff met two tests: “We have allowed standing when there was at least *both* . . . a *substantially* increased risk of harm and . . . a *substantial* probability of harm with that increase taken into account.”³⁰⁴ This two-part interpretation of the substantial probability test is arguably more stringent than the way the D.C. Circuit had applied the test in previous cases.³⁰⁵

The *Public Citizen* decision rejected the suggestion by Professor Cass Sunstein that an “‘increased risk’ is *itself* concrete, particularized, and *actual*

299. *Public Citizen I*, 489 F.3d at 1295 (some internal quotation marks omitted).

300. *Id.* at 1294. *But see* Brown, *supra* note 40, at 47 (arguing “Take Care” clause in Article II of the Constitution does not give the President discretion to ignore legal requirements, but requires the President to obey the law); Cheh, *supra* note 87, at 275 (same).

301. *Public Citizen I*, 489 F.3d at 1295.

302. *Id.* at 1296; *accord* Sturkie & Logan, *supra* note 9, at 10465.

303. *Public Citizen I*, 489 F.3d at 1296; *accord* Sturkie & Logan, *supra* note 9, at 10465.

304. *Public Citizen I*, 489 F.3d at 1295 (citing *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1234–35 (D.C. Cir. 1996)) (emphasis in original); *accord* Sturkie & Logan, *supra* note 9, at 10465 (arguing *Public Citizen*’s two-part substantial probability test is more stringent than the test used in prior cases).

305. Sturkie & Logan, *supra* note 9, at 10465 (arguing that *Public Citizen*’s two-part substantial probability test is more stringent than the test used in prior cases).

injury for standing purposes.”³⁰⁶ The court raised several objections to that possibility. It stated:

First, the mere increased risk of some event occurring is utterly abstract—not concrete, direct, real, and palpable Second, increased risk falls on a population in an undifferentiated and generalized manner; everyone in the relevant population is hit with the same dose of risk, so there is no particularization Third, the Supreme Court has said that, in temporal terms, there are three kinds of harm—actual harms, imminent harms, and potential future harms that are not imminent Treating the increased risk of future harm as an actual harm, however, would eliminate these categories. Under this approach, possible future injuries, whether or not they are imminent, would magically become concrete, particularized, and actual injuries merely because they *could* occur. That makes no sense, except as a creative way to end-run the Supreme Court’s standing precedents.³⁰⁷

2. Public Citizen II

After the litigants submitted supplemental briefs, the D.C. Circuit in *Public Citizen II* held in a per curiam opinion that Public Citizen did not have standing.³⁰⁸ The court determined that Public Citizen’s statistical analysis did not prove that its members were at an increased risk of traffic injuries from Standard 138 compared to Public Citizen’s alternative proposals.³⁰⁹ Public Citizen was not able to quantify the number of excess injuries resulting from Standard 138’s allowance of up to a twenty minute lag time between under-inflation of a tire and the activation of a dashboard warning light compared to Public Citizen’s one-minute lag time proposal.³¹⁰ Additionally, Public Citizen’s argument that Standard 138’s use of a 25 percent below placard pressure measure would result in a lifetime risk of fatalities between 1.2 and 8.3 per 100,000 compared to its more stringent pressure proposal was fatally flawed, according to the court, because Public Citizen statistical calculations included recalled tires and tires subject to safety programs that are more likely to suffer from structural defects than tire pressure problems.³¹¹

306. *Public Citizen I*, 489 F.3d at 1297 (emphasis in original) (citing *cf.* Sunstein, *supra* note 6, at 228).

307. *Public Citizen I*, 489 F.3d at 1297–98 (emphasis in original); accord Sturkie & Logan, *supra* note 9, at 10465.

308. *Public Citizen II*, 513 F.3d 234 (D.C. Cir. 2008); Mank, *supra* note 51, at 52–54; Sturkie & Logan, *supra* note 9, at 10465–67.

309. *Public Citizen II*, 513 F.3d at 238–41; Mank, *supra* note 51, at 52; Sturkie & Logan, *supra* note 9, at 10465–66.

310. *Public Citizen II*, 513 F.3d at 239–40; Sturkie & Logan, *supra* note 9, at 10466.

311. *Public Citizen II*, 513 F.3d at 240; Sturkie & Logan, *supra* note 9, at 10466.

The *Public Citizen II* majority suggested that it believed that courts should not recognize standing in any case alleging probabilistic injury, but conceded that a panel decision could not prohibit such suits in light of *Mountain States* and *NRDC II*, even though the majority viewed these decisions as flawed.³¹² The court stated, “[i]f we were deciding this case based solely on the Supreme Court’s precedents, we would agree with the separate opinion.”³¹³ In light of the circuit’s precedent allowing standing in those two cases, the *Public Citizen II* decision acknowledged that “[a]s we read our decisions in *Mountain States* and *NRDC [II]*, however, ‘this Court has not closed the door to all increased-risk-of-harm cases.’”³¹⁴ The court suggested that the circuit should address the appropriateness of standing based on probabilistic injuries in an en banc decision: “[i]n an appropriate case, the en banc Court may have to consider whether or how the *Mountain States* principle should apply to general consumer challenges to safety regulations.”³¹⁵ The *Public Citizen II* court concluded that it would apply a stringent standard of proof in cases in which a plaintiff sought standing based upon probabilistic injuries because “‘the constitutional requirement of imminence as articulated by the Supreme Court’ requires ‘a very strict understanding of what increases in risk and overall risk levels’ will support injury in fact.”³¹⁶

In his separate concurring opinion in *Public Citizen II*, Judge Sentelle argued that courts should reject all probabilistic standing cases based on an increased risk of injury because their consideration results in courts violating their limited constitutional role and interfering with the functions of the political branches:

As the majority noted in the earlier iteration of this litigation, the probabilistic approach to standing now being applied in increased-risk cases expands the “‘proper—and properly limited’—constitutional role of the Judicial Branch beyond deciding actual cases or controversies; and . . . entail[s] the Judiciary exercising some part of the Executive’s responsibility to take care that the law be faithfully executed.”³¹⁷

312. *Public Citizen II*, 513 F.3d at 241; Mank, *supra* note 51, at 52–53; Sturkie & Logan, *supra* note 9, at 10466.

313. *Public Citizen II*, 513 F.3d at 241.

314. *Id.* at 241 (quoting *Public Citizen I*, 1279, 1295 (D.C. Cir. 2007)); *accord* Mank, *supra* note 51, at 53.

315. *Public Citizen II*, 513 F.3d at 241; *accord* Mank, *supra* note 51, at 53; Sturkie & Logan, *supra* note 9, at 10466. *Public Citizen* will apparently not seek en banc review because it fears that an en banc court might hold that standing may never be based on future injuries. Dawn Reeves & Lara Beaven, *Key Court Eyes New Bid To Limit Standing In Suits Against EPA, Experts Say*, INSIDE EPA, January 25, 2008, available at insideepa.com (subscription required), LEXIS Allnews, 2008 WLNR 1340003.

316. *Public Citizen II*, 513 F.3d at 241 (quoting *Public Citizen I*, 489 F.3d at 1296); *accord* Mank, *supra* note 51, at 53–54; Sturkie & Logan, *supra* note 9, at 10466–67.

317. *Public Citizen II*, 513 F.3d at 242 (Sentelle, J., concurring in the judgment) (quoting *Public Citizen I*, 489 F.3d at 1295).

....

The majority's discussion today illustrates the ill fit between judicial power and that sort of future event and possible harm. The wide-ranging, near-merits discussion at the standing threshold is the sort of thing that congressional committees and executive agencies exist to explore. The judicial process is constitutionally designed for cases or controversies involving actual or imminent harm to identified persons—that is, the persons who have standing. If we do not soon abandon this idea of probabilistic harm, we will find ourselves looking more and more like legislatures rather than courts.³¹⁸

Part VI.D disagrees with the *Public Citizen* majority decision and Judge Sentelle's standing analysis, and argues that probabilistic standing can be consistent with separation-of-powers principles.³¹⁹

3. International Board of Teamsters v. Peña

It is instructive to compare *Public Citizen* with a 1994 decision of the D.C. Circuit, which was decided after *Lujan* but before the circuit adopted the substantial probability test in its 1996 *Florida Audubon* decision. In *International Board of Teamsters v. Peña*, a labor union representing truck drivers sued to challenge a regulation promulgated by Federal Highway Administration to implement a memorandum of understanding between the United States and Mexico regarding recognition of each country's commercial drivers licenses.³²⁰ The union argued that allowing Mexican truckers to drive on American roads would threaten not only their members' livelihood because of increased competition, but also their safety "from a possible increase in the number of truck accidents" since the requirements for commercial drivers licenses are less stringent in Mexico.³²¹ The court found that the union's allegations of a possible safety risk were sufficient for standing. The court declared:

Focusing on the union's claims about highway safety, the government protests that these claims—even if true—would merely establish an injury that the union's members share with everyone who uses the highways . . . Since the union has adequately alleged a concrete injury, there appears to be no constitutional bar to standing, even if every inhabitant of the country suffers the same concrete injury But we need not address this point,

318. *Id.*; Mank, *supra* note 51, at 52–53; Sturkie & Logan, *supra* note 9, at 10466–67. *But see* Brown, *supra* note 40, at 47 (arguing "Take Care" clause in Article II of the Constitution does not give the President discretion to ignore legal requirements, but requires the President to obey the law); Cheh, *supra* note 87, at 275 (same).

319. *See infra* Part VI.D.

320. Int'l Bd. of Teamsters v. Peña, 17 F.3d 1478, 1480–81 (D.C. Cir. 1994).

321. *Id.* at 1482–83.

because the union's members spend far more time on the roads than most other Americans. Reductions in highway safety would cause more harm to them than to typical members of the public at large, and so the injury is not "common to all members of the public."³²²

Because commercial truckers drive more than the average member of the public, the court concluded that their increased risk was enough to give them a differentiated risk not common to the public.³²³ It is not clear that the *Public Citizen* court would have found standing with these facts because the possibility of increased accidents probably is not enough to constitute a "substantial probability" of injury since it is not clear how likely it is that those injuries will occur.

Although only in dicta, *International Board of Teamsters* suggested that it might have allowed standing for the public at large because the injury was concrete, and cited *SCRAP* for the principle that there is standing for concrete injuries even if every person in the United States is injured. Professor Sunstein cited the case as supporting the proposition that Congress could "give standing to all drivers to challenge acts that increase the risk of accidents on highways."³²⁴ The *Public Citizen* decisions would clearly reject that proposition. It is remarkable how different the approach to standing is in *Public Citizen* compared to *International Board of Teamsters* even though both decisions were applying the same standing test announced in *Lujan*.

E. *The D.C. Circuit's Substantial Probability Test Should Be Abandoned*

The substantial probability test places too heavy an evidentiary burden on plaintiffs and should be abandoned. In *Florida Audubon*, both Judge Buckley's concurring opinion³²⁵ and Judge Roger's dissenting opinion convincingly argued that the majority's standing test unreasonably required plaintiffs to perform substantial and burdensome research about the impacts of the government's action that the government should be required to address.³²⁶ The Ninth Circuit and the Tenth Circuit have rejected the D.C. Circuit's standing test because of its unreasonably heavy burdens on plaintiffs.³²⁷ Professor

322. *Id.* at 1483 (citing *SCRAP*, 412 U.S. 669, 687 (1973)).

323. *Id.* at 1483.

324. Sunstein, *Informational Regulation and Informational Standing: Akins and Beyond*, 147 U. PA. L. REV. 613, at 672, n.256 (1999) (citing *International Bd. of Teamsters*, 17 F.3d at 1483-87).

325. *Fla. Audubon Soc'y v. Bentsen*, 94 F.3d 658, 672 (D.C. Cir. 1996) (Buckley, J., concurring).

326. *Id.* at 674 (Rogers, J., dissenting).

327. *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 972-75 (9th Cir. 2003) (rejecting *Fla. Audubon's* standing test for procedural rights plaintiffs and stating that such plaintiffs "need only establish 'the reasonable probability of the challenged action's threat to [their] concrete interest'"); *Comm. to Save the Rio Hondo v. Lucero*, 102 F.3d 445, 447-52 (10th Cir. 1996) (disagreeing with *Fla. Audubon's* "substantial probability" test for procedural rights plaintiffs and instead adopting a test that plaintiff must establish an "increased risk of adverse environmental consequences" from the alleged

Amanda Leiter notes that “[u]nder the D.C. Circuit precedents, plaintiffs bear the burden of establishing the substantiality of the challenged risk in their first substantive filing to the court—a requirement that may necessitate conducting extensive interviews, preparing myriad affidavits, hiring statistical experts, and perhaps even developing new statistical models.”³²⁸ The D.C. Circuit’s standing test is likely to be especially burdensome on plaintiffs raising probabilistic claims that depend upon statistical and risk analysis.³²⁹

The substantial probability test is contrary to *Laidlaw*, at least in spirit. Pursuant to *Laidlaw* and decisions in the Second, Fourth, and Ninth Circuits, a person who alters their recreational activities because of a reasonable fear of possible harm from pollution has standing to sue, even though many other persons have a similar risk and the actual risk to the plaintiff may be quite small.³³⁰

The D.C. Circuit has sometimes avoided the substantial probability test by relying on *Laidlaw*’s exception for recreational or aesthetic injuries. For example, in *Natural Resources Defense Council v. EPA (NRDC Plywood)*,³³¹ which was decided four days after *Public Citizen I*, a panel of the D.C. Circuit held that NRDC had standing because two of its members curtailed their recreational activities because of air pollution from plywood and composite wood products plants.³³² The court avoided addressing whether the probability of injury was too low, despite extensive discussion in the briefs and oral argument.³³³ In fact, the EPA had classified the plants as “low risk.”³³⁴ The relatively lenient approach to standing in *NRDC Plywood* is inconsistent with the spirit of the stringent approach to standing in *Public Citizen*.

The contrast between the lenient approach to standing in *NRDC Plywood* and the stringent approach in *Public Citizen* suggests that there are tensions

failure to follow NEPA); *see also* Mank, *supra* note 9, at 45–63 (discussing split in circuits about how to apply footnote seven standing test in NEPA cases); Mank, *supra* note 32, at 1720 n.91; Bertagna, *supra* note 14, at 461–64 (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test); Sakas, *supra* note 53, at 192–204 (“The Ninth and Seventh Circuits have held that a plaintiff need not have a claim that is site-specific, while the D.C., Eighth, and Eleventh Circuits have created a stricter standing doctrine where a site-specific injury is necessary” in procedural injury challenges to programmatic rules.).

328. Leiter, *supra* note 9, at 415.

329. *See id.* (arguing D.C. Circuit’s standing text places heavier burden on plaintiffs raising complicated issues).

330. *See supra* Parts II.A–D.

331. *Natural Res. Def. Council v. EPA*, 489 F.3d 1364 (D.C. Cir. 2007).

332. *Id.* at 1370–71.

333. Sturkie & Logan, *supra* note 9, at 10467–70; Panel Discussion, *Risky Business*, Massachusetts v. EPA, *Risk-Based Harm, and Standing in the D.C. Circuit*, 38 *Envtl. L. Rep.* (Envtl. Law Inst.) 10057, 10058 (2008) (comments of Amanda Leiter, Visiting Professor, Georgetown Law School and former attorney, Natural Resources Defense Council).

334. *Natural Res. Def. Council*, 489 F.3d at 1369–70; *accord* Sturkie & Logan, *supra* note 9, at 10467–70.

between the stringent substantial probability test and the more relaxed *Laidlaw* “reasonable concerns” test. Cassandra Sturkie and Suzanne Logan, two attorneys, argue that the different result in *NRDC Plywood* may be because the court applies a more relaxed approach to standing in environmental cases involving increased risk claims in light of *Laidlaw* and that the circuit now takes a consistently stringent approach to standing in non-environmental cases.³³⁵ In *Virginia State Corp. Commission v. Federal Energy Regulatory Commission (Virginia SCC)*,³³⁶ a panel of the D.C. Circuit in dicta distinguished between its approach to standing in environmental and non-environmental cases, stating that “[o]utside the realm of environmental disputes . . . we have suggested that a claim of increased risk or probability cannot suffice.”³³⁷ Even if the D.C. Circuit is applying the test differently in environmental and non-environmental cases, the circuit’s different approach between those two types of cases raises questions about the intellectual consistency of its approach to standing. The *Virginia SCC* decision acknowledged that “[t]he word ‘substantial’” in the “substantial probability” standard “poses questions of degree . . . far from fully resolved.”³³⁸ Accordingly, the D.C. Circuit should abandon its complicated and difficult-to-apply substantial probability test for standing because it is more stringent than required by *Laidlaw*, and should instead adopt the reasonable probability test used in the Ninth Circuit because the latter test is closer to the spirit of the *Laidlaw* decision.³³⁹ Further, if the D.C. Circuit abandoned the “substantial probability” test it arguably could achieve more consistent decisions by eliminating the sharp contrast between that test and the *Laidlaw* exception for aesthetic and recreational injuries.

Further, the D.C. Circuit should reject *Public Citizen*’s hostile approach to cases involving probabilistic injury. As is discussed below, a probabilistic approach to standing is necessary to address risks that pose concrete injuries to many people.³⁴⁰ Additionally, probabilistic standing is consistent with *Laidlaw*’s allowance of standing where plaintiffs have “reasonable concerns” about a risky activity but no proven injury.³⁴¹ This Article’s proposal for a one in one million risk standard for those cases where statistical evidence is

335. Sturkie & Logan, *supra* note 9, at 10469–70.

336. *Va. State Corp. Comm’n v. Fed. Energy Regulatory Comm’n*, 468 F.3d 845 (D.C. Cir. 2006).

337. *Id.* at 848; accord Sturkie & Logan, *supra* note 9, at 10463.

338. *Va. State Corp. Comm’n*, 468 F.3d at 848; accord Sturkie & Logan, *supra* note 9, at 10463.

339. See *Citizens for Better Forestry v. USDA*, 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Fla. Audubon*’s standing test for procedural rights plaintiffs and stating that such plaintiffs “need only establish ‘the reasonable probability of the challenged action’s threat to [their] concrete interest’”); Mank, *supra* note 9, at 59, 82–83 (arguing courts should use Ninth Circuit’s reasonable probability standard in deciding standing in cases involving probabilistic injuries).

340. See *infra* Parts VI.C and VII.

341. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181–83 (2000).

available would exclude weak cases that could overburden the judiciary, but would allow cases involving a meaningful level of risk to proceed.³⁴²

IV. ARE PROBABILISTIC RISKS “GENERALIZED GRIEVANCES” FOR THE POLITICAL BRANCHES OR WIDELY SHARED CONCRETE INJURIES FOR THE COURTS?

The two *Public Citizen* decisions held that claims of probabilistic injuries were better decided by the political branches.³⁴³ These two decisions failed to distinguish between abstract suits seeking general compliance with general statutory duties, and suits where the plaintiff is at risk of a genuine concrete injury. Professor Elliott has observed that courts have distinguished between generalized grievance claims “when the plaintiff cannot distinguish himself in a meaningful way from other citizens,” which do not give rise to standing, from “injuries that are widely shared yet particularized for each plaintiff,” which are an appropriate basis for standing.³⁴⁴ Citizens should be able to sue the government to prevent environmental and consumer safety violations that may result in concrete and particularized injuries to the plaintiffs.

Before 1998, the Court stated in several cases that it is inappropriate to grant standing to plaintiffs with generalized injuries because the political branches are better suited to address issues that affect all citizens equally.³⁴⁵ In *Duke Power Co. v. Carolina Environmental Study Group, Inc.*, the Supreme Court stated that “we have declined to grant standing where the harm asserted amounts only to a generalized grievance shared by a large number of citizens in a substantially equal measure” because such suits raised “general prudential concerns ‘about the proper—and properly limited—role of the courts in a democratic society.’”³⁴⁶ In *Gladstone Realtors v. Bellwood*, the Court

342. See *infra* Part VII.C.

343. *Public Citizen II*, 513 F.3d at 237–38; *Public Citizen I*, 489 F.3d at 1292–95.

344. Elliott, *supra* note 17, at 477.

345. Elliott, *supra* note 17, at 475–78.

346. *Duke Power Co. v. Carolina Env’t Study Group, Inc.*, 438 U.S. 59, 80 (1978) (quoting *Warth v. Seldin*, 422 U.S. 490, 498 (1975)). There has been controversy about whether the Supreme Court’s limitation on suits involving generalized grievances is a prudential limitation that Congress can override or is a constitutional requirement that is beyond Congress’s authority to waive. Justice Scalia’s *Lujan* opinion suggested that the judicial rule against suits involving generalized grievances was constitutional in nature. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 573–77 (1992); ERWIN CHERMERINSKY, *FEDERAL JURISDICTION* 94 (4th ed. 2003) (discussing *Lujan* holding); Brown, *supra* note 80, at 681 (“[I]n *Lujan*, the plurality construed [the generalized grievance restriction] as part-and-parcel of the case-or-controversy requirement.”); Sunstein, *supra* note 324, at 643–44 (“Before *Akins*, it was fair to say that the ban on generalized grievances was moving from a prudential one to one rooted in Article III. *Lujan* seemed to suggest that to have standing, citizens would have to show that their injuries were ‘particular’ in the sense that they were not widely shared.”). Subsequently, the Court in *Akins* suggested that the restriction on general grievances suits was usually a prudential limitation, but did not rule out that the restriction might sometimes be a constitutional barrier to standing. *Fed. Elections Comm’n v. Akins*, 524 U.S. 11, 23 (1998) (“Whether styled as a constitutional or prudential limit on standing, the Court has sometimes determined that where large numbers of Americans suffer alike, the political process, rather than the judicial process, may provide the more appropriate remedy for a widely shared

explained that the generalized grievance doctrine enabled “the judiciary . . . to avoid deciding questions of broad social import where no individual rights would be vindicated and to limit access to the federal courts to those litigants best suited to assert a particular claim.”³⁴⁷ The Court in *Warth v. Seldin* declared that the concrete injury requirement of the standing doctrine is necessary because “[w]ithout such limitations . . . the courts would be called upon to decide abstract questions of wide public significance even though other governmental institutions may be more competent to address the questions and even though judicial intervention may be unnecessary to protect individual rights.”³⁴⁸

In its 1998 decision *Federal Election Commission v. Akins* (*Akins*), the Supreme Court explained which types of mass or general injuries are appropriate for judicial review.³⁴⁹ Although the plaintiffs were situated similarly to other voters, the Court granted standing to plaintiffs requesting information from the Federal Election Commission because the statute specifically authorized citizen suits, as many environmental statutes do, and thus overrode any prudential limitations against generalized grievances.³⁵⁰ The Court explained that it would deny standing for widely shared, generalized injuries only if the harm is both widely shared and additionally of “an abstract and indefinite nature—for example, harm to the ‘common concern for obedience to law.’”³⁵¹ The *Akins* decision read the Court’s prior decisions as denying standing only if an alleged injury was too abstract, but as approving standing even if many people suffered similar concrete injuries.³⁵² The Court observed that the fact that “an injury . . . [is] widely shared . . . does not, by

grievance.” (citing cases)); Brown, *supra* note 80, at 681; Mank, *supra* note 32, at 1715; Sunstein, *supra* note 324, at 643–45; *see infra* note 360 and accompanying text.

347. *Gladstone Realtors v. Bellwood*, 441 U.S. 91, 99–100 (1979).

348. *Warth*, 422 U.S. at 500; *accord* Elliott, *supra* note 17, at 463, 478.

349. 524 U.S. at 21–25 (discussing Federal Election Campaign Act of 1971, 2 U.S.C. § 437g(a)(8) (1994) (stating that an aggrieved party may file a petition if the FEC dismisses a complaint or fails to act on a complaint within the stated time period)); David R. Hodas, *Standing and Climate Change: Can Anyone Complain About the Weather?*, 15 J. LAND USE & ENVTL. L. 451, 471 (2000) (discussing *Akins*); Mank, *supra* note 9, at 37–40 (same); Mank, *supra* note 32, at 1713 (same); Sunstein, *supra* note 324, at 634–36, 644–45 (same).

350. *Akins*, 524 U.S. at 13–21; Hodas, *supra* note 349, at 471; Brown, *supra* note 80, at 678; Mank, *supra* note 9, at 37; Mank, *supra* note 32, at 1713; Sunstein, *supra* note 324, at 616, 634–36, 642–45, 671–75 (stating that *Akins* concluded that statute at issue overrode any prudential limitations against generalized grievances).

351. *Akins*, 524 U.S. at 24–25 (1998); *accord* Hodas, *supra* note 349, at 471–72; Mank, *supra* note 9, at 37–40 (discussing *Akins*); Mank, *supra* note 32, at 1713 (same); Sunstein, *supra* note 324, at 634–36 (same).

352. *Akins*, 524 U.S. at 24–25; Mank, *supra* note 9, at 38; Mank, *supra* note 32, at 1713–14; Sunstein, *supra* note 324, at 636, 644 (same).

itself, automatically disqualify an interest for Article III purposes. Such an interest, *where sufficiently concrete*, may count as an ‘injury in fact.’”³⁵³

Thus, under *Akins*, a plaintiff who suffers a concrete actual injury may sue even though many others have suffered similar injuries:

The fact that a political forum may be more readily available where an injury is widely shared . . . does not, by itself, automatically disqualify an interest for Article III purposes This conclusion seems particularly obvious where (to use a hypothetical example) large numbers of individuals suffer the same common-law injury (say, a widespread mass tort), or where large numbers of voters suffer interference with voting rights conferred by law.³⁵⁴

In *Pye v. United States*, the Fourth Circuit summarized *Akins* as holding that “so long as the plaintiff . . . has a concrete and particularized injury, it does not matter that legions of other persons have the same injury.”³⁵⁵ Thus, *Akins* makes clear that courts should not deny standing merely because large numbers of persons have the same or similar injuries so long as those injuries are concrete.

The *Akins* decision emphasized that courts should weigh congressional intent when determining whether an injury is concrete or abstract.³⁵⁶ The Court stated: “The informational injury at issue here, directly related to voting, the most basic of political rights, is sufficiently concrete and specific” so as not to “deprive Congress of constitutional power to authorize its vindication in the federal courts.”³⁵⁷ In recognizing that Congress has broad authority to define which injuries are sufficient for constitutional standing, the *Akins* majority was closer to the approach in Justice Kennedy’s concurring opinion in *Lujan* than Justice Scalia’s majority opinion in *Lujan*.³⁵⁸ In his *Lujan* opinion, Justice

353. *Akins*, 524 U.S. at 24 (emphasis added); accord Mank, *supra* note 9, at 38; Mank, *supra* note 32, at 1714.

354. *Akins*, 524 U.S. at 24–25; accord Hodas, *supra* note 349, at 472; Mank, *supra* note 9, at 38; Mank, *supra* note 32, at 1714.

355. *Pye v. United States*, 269 F.3d 459, 469 (4th Cir. 2001); accord Mank, *supra* note 32, at 1714.

356. *Akins*, 524 U.S. at 24–25; Brown, *supra* note 80, at 688, 690–94 (arguing *Akins* recognized that Congress has significant power to define which injuries are sufficient for Article III standing); Sunstein, *supra* note 324, at 616–17, 636, 645 (arguing *Akins* gives Congress the authority to waive the prudential presumption against suits involving generalized grievances, especially in suits involving informational injuries).

357. *Akins*, 524 U.S. at 24–25; accord Brown, *supra* note 80, at 688, 690–94 (arguing *Akins* recognized that Congress has significant power to define which injuries are sufficient for Article III standing); Sunstein, *supra* note 324, at 616–17, 636, 645 (arguing *Akins* gives Congress the authority to waive the prudential presumption against suits involving generalized grievances, especially in suits involving informational injuries).

358. See Brown, *supra* note 80, at 693–94 (arguing that *Akins* “elevated Justice Kennedy’s concurrence in *Lujan*, in which he reiterated that Congress is empowered to define injuries that give rise to a cause of action that did not exist at common law”); Sunstein, *supra* note 324, at 617 (“*Akins* appears to vindicate the passage from Justice Kennedy’s important concurring opinion in *Lujan*.”). It is

Scalia emphasized that Article III prohibits standing for a plaintiff who has only a mere generalized grievance about the failure of the government to enforce the law and no concrete injury even if Congress has authorized any citizen to sue.³⁵⁹ By contrast, *Akins* suggested that the standing doctrine disfavoring generalized grievances is largely a prudential limitation that Congress can waive if it defines under which circumstances a class of litigants may seek a remedy for a widely shared injury, such as information pertinent to voting.³⁶⁰

In his dissenting opinion in *Akins*, Justice Scalia, who was joined by Justices O'Connor and Thomas, argued that the plaintiffs' request for information that would assist them in making voting decisions was a generalized grievance common to all members of the public.³⁶¹ He argued that Article III prohibits all generalized grievances, even ones involving concrete injuries, because the *Lujan* decision requires not only that an injury be concrete, but also that the harm be "particularized," which the *Lujan* Court had defined as an injury that "affects the plaintiff in a personal and individual way."³⁶² He contended that the plaintiffs' "undifferentiated" generalized grievance was "common to all members of the public" and, therefore, that they must resolve it "by political, rather than judicial, means."³⁶³ Justice Scalia dissented in *Akins* because the majority opinion gives the judiciary the authority to resolve many types of generalized grievances that he believes are the exclusive responsibility

noteworthy that Justice Kennedy joined the majority opinion in *Akins*, but that Justice Scalia dissented. *Akins*, 524 U.S. at 13.

359. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 573–77 (1992); Sunstein, *supra* note 324, at 643–44 ("Before *Akins*, it was fair to say that the ban on generalized grievances was moving from a prudential one to one rooted in Article III. *Lujan* seemed to suggest that to have standing, citizens would have to show that their injuries were "particular" in the sense that they were not widely shared."). Justice Scalia also suggested that the Constitution's Article II, § 3 provision that the President is responsible to "take Care that the Laws be faithfully executed" bars Congress from authorizing citizen suits as private attorneys general by those who lack a concrete injury. *Lujan*, 504 U.S. at 576–77.

360. See Brown, *supra* note 80, at 689–94 (arguing *Akins* recognized that Congress has substantial authority to define standing rights in a statute and thus is inconsistent with *Lujan*); Mank, *supra* note 32, at 1714–15 (arguing that *Akins* treated the prohibition against generalized grievances as a largely prudential barrier that Congress can waive, although the decision did not resolve all constitutional questions about Congress's authority to define standing); Sunstein, *supra* note 324, at 636–37, 644–45, 671–75 (same). *Akins* did not address or resolve whether Article III in some circumstances forbids suits that are generalized grievances. *Akins*, 524 U.S. at 23 ("Whether styled as a constitutional or prudential limit on standing, the Court has sometimes determined that where large numbers of Americans suffer alike, the political process, rather than the judicial process, may provide the more appropriate remedy for a widely shared grievance." (citing cases)); Brown, *supra* note 80, at 681; Mank, *supra* note 32, at 1715; Sunstein, *supra* note 324, at 645.

361. *Akins*, 524 U.S. at 31–35 (Scalia, J., dissenting); Brown, *supra* note 80, at 703–04.

362. *Akins*, 524 U.S. at 35 (Scalia, J., dissenting) (quoting *Lujan*, 504 U.S. at 560 n.1); accord Sunstein, *supra* note 324, at 637.

363. *Akins*, 524 U.S. at 35 (Scalia, J., dissenting) (quoting *United States v. Richardson*, 418 U.S. 166, 177 (1974)); accord Mank, *supra* note 9, at 39.

of the political branches under both Article III and the President's Article II authority.³⁶⁴

Akins made it clear that victims of mass torts who suffer concrete injuries are entitled to standing even if many others suffer similar injuries, especially if Congress has authorized the suit through a citizen suit provision.³⁶⁵ Similarly, “public rights” statutes that regulate the environment or consumer safety are intended in many cases to provide individual protection to any one person adversely affected by pollution or defective products even if many other persons suffer similar injuries.³⁶⁶ Each person injured by pollution or a defective product suffers an individual injury that is concrete and particularized even if there are many other similar injuries.³⁶⁷ For instance, *Public Citizen I* acknowledged that “[i]njuries from car accidents—including death, physical injuries, and property damage—are plainly concrete harms under the Supreme Court’s precedents.”³⁶⁸

Another possible interpretation of *Akins* is that the lack of the same concrete information can affect each voter differently when each person decides how to vote.³⁶⁹ Each voter thus suffers an individualized concrete and particular injury and is not simply sharing a generalized grievance. Professor Elliott observes that environmental injuries are not generalized grievances because pollution affects each individually differently.³⁷⁰ She writes: “Even if environmental harm is widely shared, each individual suffers a harm concrete and particularized to herself.”³⁷¹ For example, ozone pollution affects

364. *Akins*, 524 U.S. at 31–37 (Scalia, J., dissenting); Brown, *supra* note 80, at 702–03; Sunstein, *supra* note 324, at 616–17, 637, 643–47.

365. *Akins*, 524 U.S. at 24–25; Brown, *supra* note 80, at 688, 690–91 (arguing *Akins* recognized that Congress has significant power to define which injuries are sufficient for Article III standing); Sunstein, *supra* note 324, at 616–17, 636, 645 (arguing *Akins* gives Congress the authority to waive the prudential presumption against suits involving generalized grievances, especially in suits involving informational injuries).

366. See, e.g., Clean Air Act, 42 U.S.C. §§ 7401–4671p (2006); Clean Water Act, 33 U.S.C. §§ 1251–1387 (2006); Consumer Product Safety Act, 15 U.S.C. §§ 2051–2085 (2006); see also Elliott, *supra* note 17, at 484 (arguing that public rights statutes that give many citizens the right to clean environment or safe products affect each citizen differently). See generally Abram Chayes, *The Role of the Judge in Public Law Litigation*, 89 HARV. L. REV. 1281 (1976) (discussing public rights statutes that give each citizen the right to clean environment or safe products).

367. Elliott, *supra* note 17, at 484 (arguing that public rights statutes that give many citizens the right to clean environment or safe products affect allow citizens to have standing to sue because each citizen has a concrete and particularized injury).

368. *Public Citizen I*, 489 F.3d 1279, 1292 (D.C. Cir. 2007), modified after rehearing, *Public Citizen II*, 513 F.3d 234 (D.C. Cir. 2008) (per curiam); accord Sturkie & Logan, *supra* note 9, at 10464.

369. See Brown, *supra* note 40, at 43.

370. Elliott, *supra* note 17, at 485–86. See generally Jamie A. Grodsky, *Genomics and Toxic Torts: Dismantling the Risk-Injury Divide*, 59 STAN. L. REV. 1671 (2007) (discussing increasing scientific evidence that a person's genetic characteristics affects the impact of chemical exposures on their bodies).

371. Elliott, *supra* note 17, at 485.

asthmatics, the young and the elderly more than many other demographic groups.³⁷² Protecting the public from non-trivial future environmental or health threats is at least as important to the public welfare as the voting rights at issue in *Akins* or the recreational interests involved in *Laidlaw*. The only way for Congress or courts to grant standing to persons threatened by serious future environmental or health threats is to recognize probabilistic standing. To avoid the possibility of suits involving trivial injuries, this Article recommends that Congress or the courts adopt a one in one million standard as the standing threshold for what constitutes a serious enough injury to justify a suit in Article III courts.

V. SHOULD LARGE ORGANIZATIONS HAVE GREATER STANDING RIGHTS?:
PROFESSOR ELLIOTT'S ARGUMENT THAT ORGANIZATIONAL SIZE SHOULD NOT MATTER

Professor Elliott has questioned the *NRDC II* court's consideration of the plaintiff's organizational size as a factor in deciding whether it has standing.³⁷³ *NRDC II* concluded that NRDC had organizational standing because two to four of its nearly half million members were likely to develop skin cancer because of the exemptions that the government granted for the use of methyl bromide.³⁷⁴ She infers that an organization with 10,000 members would not have had standing in *NRDC II*, because it would have been statistically unlikely that any of its members would develop skin cancer.³⁷⁵ She writes:

[I]t seems unlikely that the D.C. Circuit, in the [*NRDC II*] case, would have reached the same conclusion had the case been brought by a much smaller organization. For example, an environmental group with 10,000 members could show only that it had one-twentieth of a member would likely die from the methyl bromide rule, arguably insufficient for standing. But there is no reason that an association's ability to sue should be exclusively contingent on its size.³⁷⁶

Although the *NRDC II* court did not directly address the issue of organizational size and standing, Professor Elliott appears to be correct that the court assumed that an organization must have at least one member suffer a serious injury. Thus, implicitly, the *NRDC II* decision appears to give larger organizations an advantage in determining whether they have standing because they are more likely to have at least one injured member.

372. Michael R. Campbell, *The Employer Trip Reduction Program: Driving Restrictions Arrive in Pennsylvania via the Clean Air Act*, 3 DICK. J. ENVTL. L. & POL'Y 71, 77 (1994) ("Those especially vulnerable to ozone pollution include 31 million children, 19 million elderly, 6 million asthmatics, and 7.5 million individuals with chronic lung disease.").

373. Elliott, *supra* note 17, at 504-05.

374. *Id.* at 504.

375. *Id.* at 504-05 n.222.

376. *Id.*

Professor Elliott observes that the logical result of *NRDC II*'s reasoning is that an organization with millions of members would have standing even if the risk of harm were extremely small.³⁷⁷ She writes:

Conversely, were America's environmental organizations to band together to produce an umbrella organization whose membership numbered in the millions or tens of millions, they would be able to show standing under the statistical theory for virtually any risk, running counter to the pro-democracy argument and even the general ban on private attorneys general.³⁷⁸

Professor Elliott is right to raise the question of whether a doctrine that appears to favor extremely large organizations with greater standing rights is contrary to the principle that the Court disfavors generalized grievances. Yet the Court in *Akins* recognized that large numbers of plaintiffs may have standing so long as each has a concrete individualized injury and not a mere abstract injury, so the size of an organization cannot automatically disqualify it from having standing.³⁷⁹

Further, Professor Elliott questions the *NRDC II* decision because the court recognized standing even though it was impossible to identify which of NRDC's members would suffer from skin cancer in the future as a result of the methyl bromide exemptions. She observes that it "was and is impossible to identify *which* of [NRDC's] members might die from increased methyl bromide levels, or even if any member would be so affected."³⁸⁰ She concludes, "There was *no* identifiable member to support the association's standing—only the statistical likelihood that some small number of NRDC's members would be adversely affected by the regulation."³⁸¹ Finally, Professor Elliott argues that the absence of an identifiable plaintiff in *NRDC II* raises separation of powers problems.

But if one emphasizes the anticonscription or pro-democracy view, this kind of standing makes scant sense. In particular, *Hunt*'s requirement that organizations work with actual people might be described as promoting "small-d" democratic values. If that is a good idea, the move in *NRDC [II]* to permit statistical standing is somewhat troubling.³⁸²

As is discussed below, the assumption that there must be an identifiable plaintiff is antiquated.³⁸³ Professor Elliott acknowledges that a statistical approach to standing may be the best way to address environmental risks. She

377. *Id.*

378. *Id.*

379. Fed. Elections Comm'n v. Akins, 524 U.S. 11, 24–25 (1998).

380. Elliott, *supra* note 17, at 504 (emphasis in original) (footnote omitted).

381. *Id.* at 504–05 (emphasis in original) (footnote omitted).

382. *Id.* at 506.

383. See *infra* Part VI.C.

writes, “None of this is to say that finding standing in these cases is *wrong*. There are many reasons to suspect, for example, that environmental injury is best addressed by associations precisely because certain types of environmental risk are spread across populations.”³⁸⁴ Further, she concedes that recognizing standing for plaintiffs with a statistical probability of injury can serve a constitutional function by enabling courts to force the executive branch to comply with the law.³⁸⁵

To avoid the problem raised by Professor Elliott—giving organizations greater standing rights if they can aggregate larger number of members and hence potential injuries than a smaller organization—Congress or the courts should instead set an individual risk threshold for standing. If any member of organization has a probabilistic risk of serious injury exceeding one in one million, that organization should have standing regardless of the size of the organization. This Article’s proposed individual risk threshold for standing avoids the messy constitutional difficulties raised by Professor Elliot and therefore is a better standing test for organizations than the approach used in *NRDC II*.

VI. WHY ASSOCIATIONS SHOULD HAVE STANDING EVEN IF
WE CANNOT IDENTIFY WHICH MEMBERS WILL BE INJURED

There are at least four reasons why associations should have standing even if we cannot identify which of its members will be injured. First, *Hunt* did not limit the size of organizations that may have associational standing nor require that those organization members be identifiable. Second, class action suits provide a model for standing by large associations challenging government regulations. Third, any requirement of identifiable victims for standing is anachronistic when most environmental and safety risks are probabilistic in nature. Fourth, separation-of-powers principles do not require identifiable victims when only statistical plaintiffs can ensure that the executive branch complies with regulatory mandates required in a statute.

A. *Hunt Does Not Require Identifiable
Plaintiffs or Limit Organizational Size*

The first part of the *Hunt* test states that an association has standing only if “its members would otherwise have standing to sue in their own right.”³⁸⁶ Arguably, the first part of the test requires identifiable victims because of *Lujan*’s requirement of “concrete and particularized” injuries.³⁸⁷ Nevertheless,

384. Elliott, *supra* note 17, at 506 (emphasis in original).

385. *Id.*

386. *Hunt v. Wash. State Apple Advert. Comm’n*, 432 U.S. 333, 343 (1977).

387. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992).

while it may seem that *Hunt* requires “that organizations work with actual people”³⁸⁸ (since the apple growers and sellers that the Washington State Commission represented were actual people³⁸⁹), the reasoning of *Hunt* does not focus on how the North Carolina regulations affected individual growers or sellers. In fact, the third prong of the *Hunt* test forbids associational standing “if the relief requested requires the participation of individual members in the lawsuit.”³⁹⁰ Not only does the third prong of the test clearly not require an identifiable plaintiff, *Hunt* makes the identification of individual plaintiffs with injuries specific only to them a barrier to associational standing.

*B. Class Action Suits Provide a Model for Standing
by Large Associations Challenging Government Regulations*

Professor Leiter has criticized the D.C. Circuit’s threshold requirement that an individual plaintiff demonstrate a substantial risk of future harm to have standing because it may prevent suits where many small injuries are relatively insignificant individually, but there are significant harms if aggregated.³⁹¹ As an analogy, she suggests that courts should lower barriers for aggregating regulatory injuries in the same way that class action suits routinely allow plaintiffs to seek damages where the amount of harm is too small to justify individual litigation.³⁹² As an example, she argues that an electric utility that over charges each residential customer by one penny imposes only a small harm, but the aggregate harm would be \$38,000 if the utility has 3.8 million residential customers.³⁹³ She does not directly address the organizational size issue raised by Professor Elliott, but her analysis suggests that aggregating risk of harm makes sense to protect the public from significant harms that have only a small impact on individual victims or plaintiffs.³⁹⁴ She argues that courts should consider the aggregate risk of a challenged action to a population group, region or all persons in the United States in determining whether standing is appropriate, rather than focus on the risk to the plaintiffs alone, whether individually or as part of an organization.³⁹⁵ Arguably, her proposed approach is what the *NRDC II* decision did in aggregating the total skin cancer risk across all members of NRDC. Additionally, she argues that courts should look

388. Elliott, *supra* note 17, at 506.

389. See *Hunt*, 432 U.S. at 336–45.

390. *Id.* at 343.

391. Leiter, *supra* note 9, at 393–95, 403–15.

392. *Id.* at 406, 412–14.

393. *Id.* at 412–14.

394. See *id.*

395. *Id.* at 411–14; accord Matthew D. Adler, *Policy analysis for natural hazards: Some cautionary lessons from environmental policy analysis*, 56 DUKE L.J. 1, 25–31, 37–40 (2006) (arguing agencies should consider population size in predicting severity of natural disasters).

“at the size of the anticipated harm.”³⁹⁶ She also observes that the individuals who will be harmed in the future by a risk have a “significant present interest in averting their outcome,” even if we cannot predict who they will be.³⁹⁷

1. *Future Claimants in Mass Tort and Regulatory Suits*

Modern class action suits increasingly use statistical sampling techniques to measure the harm to large numbers of victims.³⁹⁸ The data from these samples can be used to develop grids to estimate the value of individual cases, including future cases.³⁹⁹ For example, in asbestos cases, lawyers use sophisticated grids or matrices to estimate the value of present and future cases.⁴⁰⁰

In reviewing proposed class action settlements of asbestos litigation, the Supreme Court has considered the interests of future claimants who are not yet physically injured. In *Amchem Products, Inc. v. Windsor*, the Court rejected a proposed global settlement for both present and future claims because there was a conflict between “generous immediate payments” for currently injured plaintiffs and “the interest of exposure-only plaintiffs in ensuring an ample, inflation-protected fund for the future.”⁴⁰¹ In *Ortiz v. Fibreboard Corp.*, the Court rejected a global asbestos settlement because future claimants without present injuries were not provided with separate legal representation.⁴⁰² The Court stated, “it is obvious after *Amchem* that a class divided between holders of present and future claims (some of the latter involving no physical injury and attributable to claimants not yet born) requires division into homogeneous subclasses under Rule 23(c)(4)(B), with separate representation to eliminate conflicting interests of counsel.”⁴⁰³ The future claimants in *Amchem* and *Ortiz* were statistical plaintiffs because one can only estimate what diseases persons exposed to asbestos will develop in the future.⁴⁰⁴ If the Court is willing to recognize the rights of future claimants in asbestos cases, it should also give standing rights to plaintiffs asserting that government underenforcement of the law will harm them in the future.

396. Leiter, *supra* note 9, at 412.

397. *Id.* at 414 n.122.

398. See Roche, *supra* note 60, at 1502–06.

399. Samuel Issacharoff & John Fabian Witt, *The Inevitability of Aggregate Settlement: An Institutional Account of American Tort Law*, 57 VAND. L. REV. 1571, 1625–31 (2004).

400. *Id.* at 1626–29.

401. *Amchem Prods., Inc. v. Windsor*, 521 U.S. 591, 626–28 (1997); see also *id.* at 597–98, 600–01, 603–04 (discussing efforts of parties to reach global settlement addressing present and future claimants).

402. *Ortiz v. Fibreboard Corp.*, 527 U.S. 815, 856 (1999).

403. *Id.* (citing *Amchem*, 521 U.S. at 627).

404. It may be easier to predict the consequences of asbestos exposure than the exposure of persons to many other toxic substances, but the principle of statistical estimation still applies.

The *Hunt* decision arguably implies that a suit seeking prospective relief for potential injuries is appropriate if an organization can equally represent all members and there is no basis for differentiating among individual members. *Hunt*'s third requirement for associational standing that "neither the claim asserted nor the relief requested [can] require[] the participation of individual members in the lawsuit" is less of an issue in regulatory cases that typically seek prospective relief than in tort cases involving damages where individual participation is frequently required.⁴⁰⁵ Courts often deny class certification in mass tort cases because defendants may have been injured in different ways.⁴⁰⁶ Courts are more willing to grant class certification, however, if plaintiffs do not request damages, but only seek to recover the future cost of a medical monitoring program to detect the development of a disease that may result from the plaintiff's exposure to the defendant's product.⁴⁰⁷ In *Warth*, the Court recognized that in cases seeking prospective relief it is often not necessary to consult with each individual member of the association:

If in a proper case the association seeks a declaration, injunction, or some other form of prospective relief, it can reasonably be supposed that the remedy, if granted, will inure to the benefit of those members of the association actually injured. Indeed, in all cases in which we have expressly

405. *Warth v. Seldin*, 422 U.S. 490, 515–16 (1975) (recognizing extent of participation by association members depends on type of relief sought); *accord* Pa. Psychiatric Soc'y v. Green Spring Health Servs., 280 F.3d 278, 284 (3d Cir. 2002) (concluding that "damages claims usually require significant individual participation, which fatally undercuts a request for associational standing"); Nathaniel B. Edmonds, Comment, *Associational Standing for Organizations with Internal Conflicts of Interest*, 69 U. CHI. L. REV. 351, 364 (2002) ("Courts have typically denied associational standing when the remedy requested includes damages because individual participation is necessary in identifying the appropriate levels of individual damages. When an association requests damages, the damage claims are typically not shared by all members, and thus require individualized participation. In this situation, the advantages of associational standing are minimized: the organization is not the best representative of any member's individual interest because the organization is seeking to maximize the membership's total gain, perhaps necessitating sacrifices from individual members."); Roche, *supra* note 60, at 1498–1502.

406. Donald G. Gifford, *The Challenge to the Individual Causation Requirement in Mass Products Torts*, 62 WASH. & LEE L. REV. 873, 895–98 (2005) ("Today, with rare exceptions or in unusual circumstances, courts almost always deny class certification in mass product torts." (footnotes omitted)).

407. Class actions may remain, however, a viable vehicle for handling mass products claims in at least one situation. When members of the putative class have been exposed to a dangerous product that may cause a latent disease, some courts have allowed class certification for purposes of "medical monitoring" claims under Federal Rule of Civil Procedure 23(b)(2), which provides for certification of an action seeking declaratory or injunctive relief when "the party opposing the class has acted or refused to act on grounds generally applicable to the class, thereby making appropriate final injunctive relief . . . with respect to the class as a whole." In these claims, plaintiffs typically ask the court to establish a medical monitoring program intended to detect the onset of any injuries or diseases that might occur in the future as a result of exposure to defendants' products.

Gifford, *supra* note 406, at 897 (footnotes omitted).

recognized standing in associations to represent their members, the relief sought has been of this kind.⁴⁰⁸

When an association seeks prospective relief, there is usually no reason to limit the number of plaintiffs or to exclude plaintiffs who have a statistical probability of future injury because individual members will not need to actively participate in fashioning any prospective remedy.

C. The Requirement of Identifiable Victims for Standing is Misguided

The requirement of identifiable victims for standing is anachronistic when most environmental and safety risks are probabilistic in nature. Nevertheless, *Lujan's* requirement of a concrete injury makes it unlikely that courts will completely dismiss the idea of identifiable victims. An important step toward modernizing standing would be for courts to recognize that an increased risk of serious injury greater than one in one million is a real injury that should entitle a potential victim to have standing. This approach is not radically different from the *NRDC II* decision's aggregation of NRDC's nearly half a million members to find standing.

Professor Shi-Ling Hsu has convincingly argued that courts that focus on identifying actual victims of pollution endanger the public safety because, as Professor Elliott acknowledges, environmental risks are probabilistic in nature.⁴⁰⁹ First, Professor Hsu reviews psychological research findings demonstrating "the propensity for people to have stronger emotions regarding identifiable individuals or groups rather than abstract, unidentifiable ones."⁴¹⁰ He argues that there is an "identifiability bias" against environmental protection because beneficiaries of environmental law tend to be less identifiable than those that might be economically harmed by environmental law.⁴¹¹ Additionally, he contends that standing doctrine has an "identifiability bias" in favor of suits that address harms to specific individuals, but disfavors suits where the victims are less specifically identifiable such as victims of broad diffuse environmental problems, including future generations.⁴¹² In particular, Professor Hsu argues that *Lujan's* requirement of concrete and immediate injuries makes it difficult for plaintiffs to challenge diffuse environmental problems that affect large numbers of persons.⁴¹³ He writes:

408. *Warth*, 422 U.S. at 515.

409. Hsu, *supra* note 3, at 440–51, 466–69; see Elliott, *supra* note 17, at 506 (stating "that environmental injury is best addressed by associations precisely because certain types of environmental risk are spread across populations").

410. *Id.* at 437.

411. *Id.* at 436, 440–51.

412. *Id.* at 466–69.

413. *Id.*

Why is this an identifiability problem? “Concrete and particularized” injuries occur to *people* that are concrete and particularized. Unidentifiable individuals are exposed to substantial risks that courts have not deemed to be “actual and imminent” injuries. The nature of environmental harm is such that it rarely attaches to such identifiable individuals, but only *populations* of individuals. Two of the theories of identifiability illustrate how this doctrine biases against environmental protection: the diffuse and widespread nature of environmental or ecological harms make the *reference group* necessarily large, reducing the human compulsion to act; and the proactive nature of most environmental lawsuits renders relief *ex ante* rather than *ex post*, making relief or preventative action seem less compelling.⁴¹⁴

While *Lujan*’s requirement of concrete and particularized injuries may seem to require identifiable victims, as Professor Hsu suggests, Justice Kennedy’s crucial concurring opinion emphasized that Congress may define new types of injuries that were not traditionally recognized at common law, presumably including probabilistic injuries.⁴¹⁵ Additionally, two subsequent decisions by the Court open up the possibility of probabilistic standing. *Akins* concluded that standing is possible even if many other persons have similar injuries as long as the plaintiff’s injury is concrete and not abstract, recognizing Congress’s authority in most circumstances to waive the largely prudential barrier to suits involving generalized grievances.⁴¹⁶ As discussed below, a plaintiff with a risk of being injured by a pollutant or defective consumer good has an injury at least as concrete as the plaintiffs in *Akins* who sought information on political contributions.⁴¹⁷

Further, in *Laidlaw*, the Court found standing even though the plaintiffs could not prove an injury, but merely had reasonable concerns about pollution of a river that they had used for recreation.⁴¹⁸ The Fourth and Ninth Circuits have interpreted *Laidlaw* to allow plaintiffs to sue when they diminish

414. *Id.* at 467 (emphasis added).

415. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 580 (1992) (Kennedy, J., concurring in part); Leiter, *supra* note 9, at 400; Mank, *supra* note 9, at 35.

416. *Fed. Elections Comm’n v. Akins*, 524 U.S. 11, 24–25 (1998); Brown, *supra* note 80, at 689–94 (arguing *Akins* recognized that Congress has substantial authority to define standing rights in a statute and thus is inconsistent with *Lujan*); Elliott, note 17, at 24–25 (acknowledging that victims of mass torts can file suit even if this result in numerous lawsuits); Mank, *supra* note 32, at 1714–15 (arguing that *Akins* treated the prohibition against generalized grievances as a largely prudential barrier that Congress can waive, although the decision did not resolve all constitutional questions about Congress’s authority to define standing); Sunstein, *supra* note 324, at 636–37, 644–45, 671–75 (same).

417. *Akins*, 524 U.S. at 13–21; *see supra* Part IV; *infra* notes 349–360 and accompanying text; *infra* Part VII.

418. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181–83 (2000).

recreational uses because of their fear of threatened risks in the future.⁴¹⁹ The Second Circuit in *Baur* arguably went further in allowing a plaintiff to sue the government because of his fear that inadequate regulation would increase his risk of developing a deadly disease in the future.⁴²⁰ At least for the present generation, the *Baur* approach significantly addresses Professor Hsu's identifiability problem by allowing standing whenever a plaintiff has a non-trivial elevated risk of future serious harm.⁴²¹ Additionally, the First Circuit has also allowed suits based on future harms, although it suggested that a plaintiff must have stronger evidence of harm than required by the Second, Fourth or Ninth Circuits.⁴²²

The solution to the identifiability bias in standing is for courts to recognize that persons who are at an increased risk of harm in the future have suffered an injury as long as the risk of serious injury is greater than one in one million. Professor Hsu proposes a thought exercise to demonstrate that the persons affected by pollution in the future are as real as a tort victim hurt by an accident that we can see. Responding to the argument that courts should leave the protection of potential pollution victims to the political branches out of respect for democratic values, he writes:

[I]t is useful to repeat a thought exercise posed earlier in this [a]rticle: what if we could actually name, see, and identify certain victims of pollution, the way that we can identify victims of a plane crash? What if, we knew, *beforehand*, the names of 30,000 individuals that would die in the coming year from air pollution from power plants? What would we then demand of our judicial system in terms of seeking redress? Would we not be in an uproar if the judiciary simply demurred, "it's not my job"?⁴²³

The *NRDC II* decision effectively addressed Professor Hsu's thought exercise by aggregating NRDC's nearly half million members to find that two to four of them were likely to contract skin cancer.⁴²⁴ Professor Elliott is probably correct that the court would not have granted standing if the organization had only 10,000 members and less than one member was likely to develop skin cancer.⁴²⁵ Yet the risk to each individual member of developing

419. See *Ecological Rights Found. v. Pacific Lumber Co.*, 230 F.3d 1141, 1152 n.12 (9th Cir. 2000); *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, 204 F.3d 149, 156-60 (4th Cir. 2000) (en banc).

420. See *Baur v. Veneman*, 352 F.3d 625, 637-43 (2d Cir. 2003).

421. See *id.* The issue of when future generations have standing presents a different issue. In another article, the author argues that states can file suit on behalf of future generations. Mank, *supra* note 51, at 77-97.

422. See *Me. People's Alliance v. Mallinckrodt, Inc.*, 471 F.3d 277, 284 (1st Cir. 2006) (requiring plaintiffs to prove a "realistic threat" of harm), *cert. denied*, 76 U.S.L.W. 3156 (2007).

423. Hsu, *supra* note 3, at 473 (emphasis added).

424. *NRDC II*, 464 F.3d 1, 7 (D.C. Cir. 2006).

425. Elliott, *supra* note 17, at 505 n.222.

skin cancer would be the regardless of the size of the organization.⁴²⁶ By looking at individual risk rather than the aggregate risk to the organization, the court could have avoided favoring large organizations at the expense of small ones.

D. Separation of Powers Issues Do Not Bar Statistical Standing

Professor Elliott argues that the *NRDC II* decision's implicit granting of greater standing rights to large organizations than small organizations when addressing probabilistic risks raises troubling separation-of-powers questions.⁴²⁷ She suggests that probabilistic standing is questionable under both the pro-democracy approach and the anti-conscription function.⁴²⁸ Although Elliott raises legitimate questions, probabilistic standing serves the fundamental constitutional goal of ensuring that the executive branch complies with the laws enacted by Congress. The current approach to standing undermines the separation of powers by giving unelected judges too much discretion in determining whether an injury is sufficient for standing because judges are in effect engaging in policy making regarding which injuries are subject to redress and which are not.⁴²⁹

The Supreme Court has warned that courts should not usurp the role of the political branches and the democratic electoral process.⁴³⁰ To avoid such usurpation, the Court has expressed reluctance to allow standing in cases involving generalized grievances that are common to the public at large.⁴³¹ Nevertheless, *Akins* allows citizens to sue regarding mass injuries as long as each plaintiff has a concrete and particularized injury and is not simply seeking to enforce an abstract interest in compliance with the law.⁴³² Further, *Akins* suggested that Congress in most circumstances can waive the largely prudential

426. *NRDC II*, 464 F.3d at 7.

427. Elliott, *supra* note 17, at 504–06.

428. *Id.* at 506.

429. Brown, *supra* note 80, at 687.

430. *Massachusetts v. EPA*, 549 U.S. 497, 535 (2007) (Roberts, C.J., dissenting) (“[R]edress of grievances of the sort at issue here ‘is the function of Congress and the Chief Executive,’ not the federal courts.” (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 576 (1992))); *Lujan*, 504 U.S. at 573–77 (stating that Constitution assigns the political branches of government the responsibility for addressing grievances affecting the public at large); *Schlesinger v. Reservists Comm. to Stop the War*, 418 U.S. 208, 221 n.10 (1974) (stating the judicial role of deciding cases involving particularized injuries “is in sharp contrast to the political processes in which the Congress can initiate inquiry and action, define issues and objectives, and exercise virtually unlimited power by way of hearings and reports, thus making a record for plenary consideration and solutions. The legislative function is inherently general rather than particular and is not intended to be responsive to adversaries asserting specific claims or interests peculiar to themselves.”); Elliott, *supra* note 17, at 477–80; Mank, *supra* note 9, at 18–22.

431. *Duke Power Co. v. Carolina Env'tl. Study Group, Inc.*, 438 U.S. 59, 80 (1978); *Warth v. Seldin*, 422 U.S. 490, 499 (1975); Elliott, *supra* note 17, at 477–80.

432. *Fed. Elections Comm'n v. Akins*, 524 U.S. 11, 24–25 (1998); Elliott, *supra* note 17, at 481.

limitation against generalized grievances, although it did not decide whether there are ever constitutional barriers to such suits.⁴³³ Additionally, *Laidlaw* allows citizen suits that result in penalties to the government as long as the suits deter a defendant from conduct that could harm the plaintiffs in the future.⁴³⁴

Citizen suits in general and probabilistic suits in particular enable Congress to make sure that the executive branch enforces the law.⁴³⁵ Elliott herself concedes that “the pro-Congress view of separation of powers counsels that courts are needed to help enforce the rules as Congress (or the Constitution . . .) has established them.”⁴³⁶ She admits that the public often fails to mobilize to seek redress through the political process and therefore that lawsuits are often the only practical way for the public to prevent abuses by the government.⁴³⁷ She also acknowledges that courts should not use a restrictive standing test as “a backdoor way to limit Congress’s legislative power” to require the executive branch to follow the law.⁴³⁸ Even worse, courts can manipulate current standing doctrine to pick and choose when the executive is required to follow the law and when it is not.

Courts have a duty to enforce the law if the executive branch fails to obey the law and a plaintiff with any concrete injury from that violation sues to enforce that law.⁴³⁹ Since its seminal 1803 decision in *Marbury v. Madison*,⁴⁴⁰ the Supreme Court has made it clear that the President and the executive branch are bound by mandates in a statute.⁴⁴¹ Professor Sunstein has argued that the President’s authority under the “take care” clause of Article II of the Constitution does not give the President the license to ignore the law or prevent the judiciary from enforcing the law:⁴⁴²

433. *Akins*, 524 U.S. at 24–25; Brown, *supra* note 80, at 689–94 (arguing *Akins* recognized that Congress has substantial authority to define standing rights in a statute and thus is inconsistent with *Lujan*); Mank, *supra* note 32, at 1714–15 (arguing that *Akins* treated the prohibition against generalized grievances as a largely prudential barrier that Congress can waive, although the decision did not resolve all constitutional questions about Congress’s authority to define standing); Sunstein, *supra* note 324, at 636–37, 644–45, 671–75 (same); *see supra* Part IV.

434. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 185–88 (2000); *see supra* Part II.A.

435. Elliott, *supra* note 17, at 489–90, 499–500; Pierce, *supra* note 50, at 1170–71; *see* Sunstein, *supra* note 6, at 165.

436. Elliott, *supra* note 17, at 506.

437. *Id.* at 489–90, 499–500.

438. *Id.* at 496.

439. *See* Brown, *supra* note 40, at 55 (arguing courts have a duty to enforce the law if the executive fails to obey it); Cheh, *supra* note 87, at 255, 261–62, 278, 288 (same).

440. *Marbury v. Madison*, 5 U.S. (1 Cranch) 137 (1803).

441. *See* Cheh, *supra* note 87, at 253–63 (discussing *Marbury*’s recognition that courts have the authority to enforce legal mandates against the executive branch and its implications for modern law).

442. Cass Sunstein, *Standing and the Privatization of Public Law*, 88 COLUM. L. REV. 1432, 1471 (1988); Elliott, *supra* note 17, at 514 n.279 (discussing Sunstein’s argument that courts may allow suits challenging executive compliance with the law).

The “take Care” clause . . . is a duty, not a license. The clause requires the President to carry out the law as enacted by Congress [T]he President’s discretion, and the “take Care” clause in general, do not authorize the executive branch to violate the law through insufficient action any more than they authorize it to do so through overzealous enforcement.

If administrative action is legally inadequate or if the agency has violated the law by failing to act at all, there is no usurpation of executive prerogatives in a judicial decision to that effect. Such a decision is necessary in order to vindicate congressional directives, as part of the judicial function “to say what the law is.”⁴⁴³

Professor Elliott acknowledges that Congress may use the courts to ensure that the executive branch follows procedural mandates in a statute.⁴⁴⁴

If the courts refuse to allow standing in probabilistic risk cases, they will undermine Congress’s authority to regulate any type of probabilistic risks.⁴⁴⁵ A stringent standing test that rejects probabilistic risk is inconsistent with Justice Kennedy’s concurring opinion in *Lujan*, which stated that Congress has the authority “to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before.”⁴⁴⁶ Accordingly, courts do not violate the separation of powers when they allow standing in a case alleging increased risk if a statute requires the executive branch to follow certain procedures and the executive’s failure to do so results in a non-trivial risk of injury to the plaintiff.

VII. A PROPOSAL FOR RECOGNIZING STATISTICAL INJURIES

As illustrated, one of the most critical questions in standing law is whether plaintiffs who challenge allegedly ineffective government regulation that poses a future, statistical risk to them have imminent, concrete injuries or merely the abstract possibility of injury. The *Public Citizen* decisions argued that potential injuries are abstract and not imminent until they actually occur. Yet agencies treat probabilistic risk as real and important enough to justify a wide range of

443. Sunstein, *supra* note 442, at 1471 (quoting *Marbury*, 5 U.S. at 137) (footnotes omitted); accord Brown, *supra* note 40, at 47 (arguing “Take Care” clause in Article II of the Constitution does not give the President discretion to ignore legal requirements, but requires the President to obey the law); Cheh, *supra* note 87, at 275 (same); see also Elliott, *supra* note 17, at 514 n.279 (discussing Sunstein’s argument that courts may allow suits challenging executive compliance with the law).

444. Elliott, *supra* note 17, at 500 n.200 (citing *Mistretta v. United States*, 488 U.S. 361, 372 (“We have long recognized that the nondelegation doctrine does not prevent Congress from seeking assistance, within proper limits, from its coordinate Branches.”)).

445. Leiter, *supra* note 9, at 420–21 (“In the D.C. circuit, no statute, no matter how specific and well-drafted, may recognize tiny risks as legally cognizable.”).

446. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 580 (1992) (J. Kennedy, concurring in part); accord Leiter, *supra* note 9, at 420–21 (arguing D.C. Circuit’s substantial probability standing test is inconsistent with Justice Kennedy’s concurring opinion in *Lujan*).

regulations costing billions of dollars and affecting thousands of lives.⁴⁴⁷ If a government regulation is less protective than required by statute, probability theory predicts that the challenged regulation will likely cause a greater number of concrete injuries to unidentified persons in the future.⁴⁴⁸ Accordingly, courts should treat statistical injuries as sufficiently concrete for standing as long as the increased risk of serious harm caused by inadequate government regulation is at least one in one million. If it is difficult to quantify a risk, courts can resort to a qualitative standard.

A. *Modern Tort Law Increasingly Recognizes Probabilistic Harms*

Tort law provides a useful analogy for why statistical injuries should be considered to be sufficient injury for standing purposes. Under the loss of chance doctrine, a majority of states currently allow a plaintiff injured by medical malpractice to recover for her injuries even if there was a less than 50 percent probability that she would have recovered absent any malpractice because the malpractice *may* have prevented her recovery.⁴⁴⁹ Pursuant to traditional common law principles, a tort plaintiff had to demonstrate a greater than 50 percent probability that medical malpractice would result in an injury.⁴⁵⁰ By contrast, a majority of courts today will allow medical malpractice claims where there is less than a 50 percent probability that the malpractice caused the injury or prevented a recovery.⁴⁵¹ In loss of chance

447. See R. SHEP MELNICK, REGULATION AND THE COURTS: THE CASE OF THE CLEAN AIR ACT 239 (1983) (discussing the Clean Air Act, the author observed, "If the EPA sets excessively stringent standards, billions of dollars of unnecessary control costs will be imposed on the economy. If standards are too lenient, then the health of thousands of individuals will suffer."); Howard Latin, *Good Science, Bad Regulation, and Toxic Risk Assessment*, 5 YALE J. ON REG. 89, 105 (1988) ("It is important to stress that thousands of lives and billions of dollars in regulatory costs may depend on an agency's choice of controversial risk-assessment principles.").

448. The larger the affected population, the more likely an estimate is to come true, but all estimates are just predictions and not certain to occur. Elliott, *supra* note 17, at 504 n.221 ("An individual risk of death of 1 in 200,000 does not actually translate into certainty that one person in a particular group of 200,000 people will die; the larger the group gets, the more likely that it contains someone who will eventually suffer the event subject to the risk analysis, but the question is always one of *probability*, not one of *certainty*." (emphasis in original)).

449. *Smith v. State*, 676 So. 2d 543, 547 n.8 (La. 1996) (observing that "the loss of a chance of survival doctrine has been recognized by a majority of the states"); David A. Fischer, *Tort Recovery for Loss of a Chance*, 36 WAKE FOREST L. REV. 605, 611 (2001); Leiter, *supra* note 9, at 408 (arguing D.C. Circuit standing test's rejection of probabilistic injuries is inconsistent with loss of chance doctrine).

450. Joseph H. King, Jr., *Causation, Valuation, and Chance in Personal Injury Torts Involving Preexisting Conditions and Future Consequences*, 90 YALE L. J. 1353, 1363 (1981) ("Under the traditional approach, . . . loss of a not-better-than-even chance of recovering from . . . cancer would not be compensable because it did not appear more likely that not that the patient would have survived with proper care."); Leiter, *supra* note 9, at 407-08 (same).

451. One who undertakes, gratuitously or for consideration, to render services to another which he should recognize as necessary for the protection of the other's person or things, is subject to liability to the other for physical harm resulting from his failure to exercise

cases, courts have increasingly recognized that an increased risk of injury alone is compensable even if the increase in risk is relatively small.⁴⁵²

A minority of jurisdictions requires defendants to pay for medical monitoring of plaintiffs who are at an increased risk of disease because of exposure to chemicals released by the defendant even though they have not yet suffered an injury.⁴⁵³ These cases recognize that a plaintiff suffers a cognizable harm worthy of compensation when a defendant's actions increase the plaintiff's risk of developing a disease in the future.⁴⁵⁴ Federal courts have not recognized a federal cause of action for medical monitoring expenses, but they also have not squarely rejected such claims. In *Metro-North Commuter*

reasonable care to perform his undertaking, if (a) his failure to exercise such care increases the risk of such harm, or (b) the harm is suffered because of the other's reliance upon the undertaking.

Restatement (Second) of Torts § 323 (1977); see *Herber v. Johns-Manville Corp.*, 785 F.2d 79, 83 (3d Cir. 1986) ("The degree of causation required under the lost chance doctrine is lower than that traditionally required. Rather than requiring 'but for' causation, the lost chance doctrine requires only a showing that the defendant's negligence was a 'substantial factor' in the causation of the injury."); *Smith*, 676 So. 2d at 547 n.8 (observing that "the loss of a chance of survival doctrine has been recognized by a majority of the states"); Fischer, *supra* note 449, at 611; Leiter, *supra* note 9, at 407–08.

452. *Alexander v. Scheid*, 726 N.E.2d 272 (Ind. 2000); Leiter, *supra* note 9, at 408.

453. To support a monitoring claim, plaintiffs generally must prove that they were (1) significantly exposed to a hazardous substance through the actions of the defendant; (2) as a proximate result of exposure, they suffered a significantly increased risk of contracting a serious latent disease; (3) as a consequence of the exposure, a reasonable physician would prescribe a monitoring regime different from the one that would have been prescribed in the absence of the exposure; and (4) testing procedures exist that make the early detection and treatment of disease possible and beneficial. *Brown v. Monsanto Co.*, 916 F.2d 829, 852 (3d Cir. 1990); *Ayers v. Township of Jackson*, 525 A.2d 287, 312 (N.J. 1987); *Grodsky*, *supra* note 370, at 1685–86 (citing *Brown v. Monsanto Co.*, 35 F.3d 717, 788 (3d Cir. 1994)); *accord Friends for All Children, Inc. v. Lockheed Aircraft, Corp.*, 746 F.2d 816 (D.C. Cir. 1984) (allowing medical monitoring claim in District of Columbia); *Lewis v. Lead Indus. Ass'n*, 793 N.E.2d 869, 874 (Ill. App Ct. 2003) (allowing medical monitoring claim); *Petito v. A.H. Robins Co.*, 750 So. 2d 103 (Fla. Dist Ct. App. 1999) (same); *Bower v. Westinghouse Electric Corp.*, 522 S.E.2d 424, 426, 432–34 (W. Va. 1999) (allowing plaintiff to recover for medical monitoring even if there is no proof that early detection will improve the course of the disease because future medical advances may make information useful in the future); *Potter v. Firestone Tire & Rubber Co.*, 863 P.2d 795 (Cal. 1993) (allowing medical monitoring claim); *Hansen v. Mountain Fuel Supply*, 858 P.2d 970 (Utah 1993) (same); *Burns v. Jaquays Mining Corp.*, 752 P.2d 28 (Ariz. Ct. App. 1987) (same). *But see Henry v. Dow Chem. Co.*, 701 N.W.2d 684, 690 (Mich. 2005) (rejecting medical monitoring claims in the absence of "a present physical injury"). See generally D. Scott Aberson, Note, *A Fifty-State Survey of Medical Monitoring and the Approach the Minnesota Supreme Court Should Take When Confronted with the Issue*, 32 WM. MITCHELL L. REV. 1095, 1114–16 (2006) (listing 15 jurisdictions that allow medical monitoring claims in the absence of an injury, a slightly larger number that do not and those jurisdictions that have not yet addressed the issue); *id.* at 1129–43 (summarizing law regarding recovery of medical monitoring costs in all 50 states and also U.S. territories); Kara L. McCall, *Medical Monitoring Plaintiffs and Subsequent Claims for Disease*, 66 U. CHI. L. REV. 969, 973–78 (1999) (summarizing development of medical monitoring doctrine).

454. *Hansen v. Mountain Fuel Supply Co.*, 858 P.2d 970, 977 (Utah 1993) ("Although the physical manifestations of an injury may not appear for years, the reality is that many of those exposed have suffered some legal detriment; the exposure itself and the concomitant need for medical testing constitute the injury.").

Railroad Co. v. Buckley, a case involving the Federal Employers' Liability Act, the Supreme Court held that a plaintiff could not recover lump sum damages to pay for future medical monitoring costs.⁴⁵⁵ However, the Court did not decide whether a plaintiff could recover such expenses through a court supervised fund, as is the practice in several state courts, and hinted that it would be more receptive to a medical monitoring claim that sought the creation of such a fund.⁴⁵⁶

It is true that standing doctrine is not the same as substantive tort law, but generally standing doctrine is supposed to be a threshold test for whether a suit should be allowed all and is not supposed to be more stringent than whether a plaintiff can win a suit on the merits. Modern tort law has become more receptive to probabilistic claims, especially loss of chance suits. The medical monitoring cases suggest that a plaintiff who has been exposed to toxic substances is entitled to some relief for possible future injuries, even if she is not entitled to full damages. As a threshold test for whether a suit should be allowed at all, standing doctrine is not supposed to be more stringent than whether a plaintiff can win a suit on the merits. If modern substantive law recognizes probabilistic injuries, even small ones, then *Public Citizen's* rejection of probabilistic injuries as too trivial to constitute an injury for standing purposes is questionable to say the least.⁴⁵⁷

B. Federal Agencies Regulate Probabilistic Risk

Congress and federal agencies often use a one in one million lifetime risk of death standard in determining if an activity is dangerous enough to regulate.⁴⁵⁸ Since the 1970s, the Food and Drug Administration has applied a one in one million threshold in determining whether certain food or color additives with possible carcinogenic risk should enter or remain in the food supply because their risk is de minimis, although the Delaney Clause mandates a zero-risk approach for other additives.⁴⁵⁹ In the Food Quality Protection Act

455. *Metro-North Commuter R.R. Co. v. Buckley*, 521 U.S. 424, 438–44 (1997).

456. *Id.* (rejecting plaintiff's claim for lump sum damages for future medical monitoring costs, but observing that several states that reject lump sum payments for such expenses have created court monitored funds for those expenses and suggesting that a claim requesting a court monitored fund would be more acceptable to the court); *see id.* at 444–55 (Ginsburg, J., concurring in part and dissenting in part) (arguing that Court should have plainly explained to lower courts whether plaintiffs can recover medical monitoring costs through a court-supervised fund).

457. *See Leiter, supra* note 9, at 407–09.

458. Matthew D. Adler, *Against "Individual Risk": A Sympathetic Critique of Risk Assessment*, 153 U. PA. L. REV. 1121, 1123–24 (2005).

459. *See* FDA, Revision of the Definition of the Term "No Residue" in the New Animal Drug Regulations, 67 Fed. Reg. 78,172, 78,172–73 (Dec. 23, 2002) (codified at 21 C.F.R. pt. 500) (defining "no residue" as including a risk less than a life time cancer one in one million if available detection methods are unable to assess lower risks); FDA, Sponsored Compounds in Food-Producing Animals, 52 Fed. Reg. 49,572, 49,572–74 (Dec. 31, 1987) (codified at 21 C.F.R. pt. 500) (defining safe level of food

of 1996,⁴⁶⁰ Congress also adopted a one in one million lifetime cancer risk as the appropriate maximum risk tolerance for pesticides residues on food.⁴⁶¹ In Section 112 of the Clean Air Act, Congress also adopted a one in one million risk threshold, which requires the EPA to issue technology-based emission standards to reduce emissions of hazardous air pollutants and then requires EPA to consider issuing residual risk emission standards if “excess cancer risks to the individual most exposed to emissions . . . [exceed] one in one million.”⁴⁶² Additionally, the Consumer Product Safety Commission defines a product containing a carcinogen as “hazardous” if a consumer using the product incurs an “individual risk” exceeding one in one million.⁴⁶³ The

or color additives as less than 1 in one in one million lifetime risk of cancer); Adler, *supra* note 458, at 1123, 1134, 1165–68 (discussing history of FDA’s regulation of food additives); Dominic P. Madigan, *Setting an Anti-Cancer Policy: Risk, Politics, and the Food Quality Protection Act of 1996*, 17 VA. ENVTL. L.J. 187, 206–26 (1998) (discussing Delaney Clause and regulation of pesticide residues before 1996 legislation created exemption to Delaney Clause). The Delaney Clause prohibits any additive if it is “found to induce cancer when ingested by man or animal, or if it is found, after tests which are appropriate for the evaluation of the safety of . . . additives, to induce cancer in man or animal.” 21 U.S.C. § 348(c)(3)(A) (2006) (food additives); *see id.* § 379e(b)(5)(B) (parallel provision for color additives); Adler, *supra* note 458, at 1165–66. The FDA, however, has long interpreted the Clause to not apply to an additive that itself has not been found to be carcinogenic, but has some nonfunctional chemical constituent that is carcinogenic. *Id.* at 1166–68.

460. Pub. L. No. 104-170, § 110 Stat. 1489 (1996). The FDA also exempted pesticides on raw food and exempted pesticide residue on processed food if the pesticide did not concentrate as a result of the processing. Madigan, *supra* note 459, at 193–94.

461. In the case of a nonthreshold effect which can be assessed through quantitative risk assessment, such as a cancer effect, the Committee expects, based on its understanding of current EPA practice, that a tolerance will be considered to provide a “reasonable certainty of no harm” if any increase in lifetime risk, based on quantitative risk assessment using conservative assumptions, will be no greater than “negligible.” It is the Committee’s understanding that, under current EPA practice . . . EPA interprets a negligible risk to be a one-in-a-million lifetime risk. The Committee expects the Administrator to continue to follow this interpretation.

H.R. Rep. No. 104-669, pt.2, at 41 (1996), *reprinted in* 1996 U.S.C.C.A.N. 1268, 1280; *see also* Vern R. Walker, *The Myth of Science as a “Neutral Arbiter” for Triggering Precautions*, 26 B.C. INT’L & COMP. L. REV. 197, 221 n.60 (2003); Madigan, *supra* note 459, at 202, 228.

462. 42 U.S.C. § 7412(f)(2)(A) (2006) (directing EPA to consider promulgating emission standards for hazardous air pollutants if a category or subcategory of sources poses a risk greater than one in one million “to the individual most exposed to emissions from a source in the category or subcategory”); *see also* Adler, *supra* note 458, at 1123, 1151–52. The one in one million risk standard triggers the EPA’s consideration of additional regulations for hazardous air pollutants, but the EPA has adopted a one in ten thousand risk standard for the most exposed individual. *Natural Res. Def. Council v. EPA*, No. 07-1053, 2008 WL 2310951, 2008 U.S. App. LEXIS 12113 (D.C. Cir. June 6, 2008) (holding EPA may apply one in ten thousand excess cancer risk rather than one in one million standard for regulating residual risks from hazardous air pollutants); Bradford C. Mank, *A Scrivener’s Error or Greater Protection of the Public: Does the EPA Have the Authority to Delist “Low-Risk” Sources of Carcinogens From Section 112’s Maximum Available Control Technology Requirements?*, 24 VA. ENVTL. L.J. 75, 94–96 (2005) (explaining that section 112 of the Clean Air Act uses one in one million risk standard as trigger for regulation, but allows risks as high as one in ten thousand).

463. Labeling Requirements for Art Materials Presenting Chronic Hazards, 57 Fed. Reg. 46,626, 46,656 (Oct. 9, 1992) (codified at 16 C.F.R. 1500.14(b)(8)); Adler, *supra* note 458, at 1178–79.

Occupational Health and Safety Administration allows workers in some cases to be exposed to a maximum risk of one in ten thousand, but higher risks are arguably more acceptable if a worker voluntarily accepts a dangerous job.⁴⁶⁴

Not all statutes or regulations use the one in one million lifetime risk standard, but it is the most widely used standard for public protection.⁴⁶⁵ The Consumer Product Safety Commission observed that other risk thresholds had “been considered or proposed” by other agencies, but concluded that “the use of one in a million has been most prominent and also has the most precedent in the case of actions taken by the Commission and other agencies for carcinogens.”⁴⁶⁶ Even some statutes or regulations that allow higher risks use a one in one million standard as the ideal goal.⁴⁶⁷

464. Occupational Exposure to Methylene Chloride, 62 Fed. Reg. 1494, 1560 (Jan. 10, 1997) (codified at 29 C.F.R. pt. 1910) (“[A] risk of 1/1000 . . . is clearly significant. It represents the uppermost end of a million-fold range suggested by the Court, somewhere below which the boundary of acceptable versus unacceptable risk must fall.” (citing *Industrial Union Dept. v. American Petroleum Institute*, 448 U.S. 607, 655 (1980)); Adler, *supra* note 458, at 1170 (“The [*Industrial Union (Benzene)*] Court then went on to suggest, famously, that the ‘significant risk’ requirement might be understood in terms of ‘individual risk.’ A 1 in 1000 ‘individual risk’ was clearly significant, the Court said; a 1 in 1 billion risk was not.”).

465. Wendy E. Wagner, *Choosing Ignorance in the Manufacture of Toxic Products*, 82 CORNELL L. REV. 773, 838 n.241 (“Typically, Congress and regulatory agencies consider risks greater than one in one million to be publicly unacceptable, although risks of one in ten thousand have been considered acceptable under certain circumstances.”).

466. Labeling Requirements for Art Materials and Other Products Subject to the FHSA Presenting Chronic Hazards, 56 Fed. Reg. 15,672, 15,696 (April 17, 1991).

467. See National Emission Standards for Hazardous Air Pollutants; Benzene Emissions from Maleic Anhydride Plants, Ethylbenzene/Styrene Plants, Benzene Storage Vessels, Benzene Equipment Leaks, and Coke By-Product Recovery Plants, 54 Fed. Reg. 38,044, 38,044–45 (Sept. 14, 1989) (codified at 40 C.F.R. pt. 61) (setting goal of reducing risk of benzene exposure to maximum exposed individual for seventy years to one in one million, but allowing risk as high as one in ten thousand); *Natural Res. Def. Council v. EPA*, 529 F.3d 1077, 1082 (D.C. Cir. 2008) (“In the *Benzene* rulemaking, EPA set forth its interpretation of ‘ample margin of safety,’ as that term was used in the 1970 version of the Clean Air Act. It said that the ‘ample margin’ was met if as many people as possible faced excess lifetime cancer risks no greater than one-in-one million, and that no person faced a risk greater than 100-in-one million (one-in-ten thousand). 54 Fed.Reg. at 38,044–45. In other words, the *Benzene* standard established a maximum excess risk of 100-in-one million, while adopting the one-in-one million standard as an *aspirational goal*. This standard, incorporated into the amended version of the Clean Air Act, undermines petitioners’ assertion that EPA *must* reduce residual risks to one-in-one million for all sources that emit carcinogenic hazardous air pollutants.”) (first emphasis added); Adler, *supra* note 458, at 1151–52 (stating that Section 112 of the Clean Air Act “appears to contemplate that EPA will employ its hybrid, pre-1990 test (no ‘individual risk’ above one in ten thousand; minimize the number of individuals incurring a risk above one in one million, taking into consideration cost and feasibility) as the substantive criterion here.”), 1155 (“RCRA also empowers EPA to order remedial action at active waste-disposal sites. The general agency practice, here, is apparently to perform a detailed study of remedial options for particular sites producing more than a one in one million risk to the highly exposed individual, and then to consider cost and feasibility in choosing among these options but reject remedial options resulting in more than a one in ten thousand risk (again to the highly exposed individual).”), 1157 (“EPA policy (more formalized than in the RCRA context) is to order clean-up at a CERCLA site where the individual cancer risk consequent upon ‘reasonable maximum exposure’ exceeds one in ten thousand; to refrain from clean-up where this risk is less than one in one million; and to exercise

C. *A Proposal for a One in One Million Test for Standing*

Courts should find standing to sue whenever an individual has a non-trivial statistical risk of injury, and should adopt a presumptive standard that a regulatory action that increases a plaintiff's risk of serious injury or death by a factor of one in one million is the necessary standing threshold for citizens to sue. A one in one million risk of death or serious injury is the most plausible quantitative threshold for standing because it is the most common risk threshold used by agencies in determining when the government regulation is necessary to protect the public health, although less stringent risk thresholds are sometimes used to minimize the cost to industry.⁴⁶⁸ It makes sense to match the standing threshold with the regulatory threshold so that citizens can usually challenge most regulations, unless Congress has strong reasons for limiting judicial challenges for a specific type of regulation. As risk estimates are inherently imprecise because of scientific uncertainties and data limitations,⁴⁶⁹ courts should err on the side of allowing a claim if there is a plausible argument that the risk is greater than one in one million, even if there are conflicting estimates. The one in one million threshold would exclude cases involving the smallest risks and avoid overloading the judicial system. Ideally, Congress would adopt the one in one million excess risk of serious injury or death standard as a standing threshold to guide courts in deciding what is a sufficient injury for standing, except if Congress believes that a particular statute or regulation deserves its own special standard. Alternatively, courts could adopt the one in one million standard as a judge-made prudential limitation and then invite Congress to adopt a lower or higher risk standard for particular regulatory statutes or agencies. Thus, if the proposed one in one million standard is not suitable for some issues, Congress could choose a different standard for particular statutes or regulations.

discretion in the range between the two levels."); Mank, *supra* note 462, at 94–96 (explaining that section 112 of the Clean Air Act uses one in one million risk standard as trigger for regulation, but allows risks as high as one in ten thousand).

468. Wagner, *supra* note 465, at 835 n.229 (“The courts will need to define what constitutes an ‘exposure’ to a particular product. One approach would require plaintiffs to demonstrate sufficient ‘exposure’ contact (either in time or concentration) to pose a risk of latent harm of greater than 1 in 10,000 or 1 in 1 million.”), 838 n.241 (suggesting that courts use one in ten thousand to one in one million risk threshold in tort suits “for determining when a risk becomes significant.”).

469. Judith Jones, *Regulatory Design for Scientific Uncertainty: Acknowledging the Diversity of Approaches in Environmental Regulation and Public Administration*, 19 J. ENVTL. L. & LITIG. 347, 349–52 (2007) (discussing scientific uncertainty and data limitations in area of environmental regulation); Latin, *supra* note 447, at 91–92 (observing that scientific uncertainties and data limitations often result in conflicting risk estimates); Wagner, *supra* note 465, at 777–80 (discussing inherent limitations in determining cause-and-effect between chemical exposure and resulting latent harms because of uncertainties in extrapolating animal data to human health and the fact that humans are exposed to multiple chemicals so that it is often impossible to isolate the impact of a particular chemical); Walker, *supra* note 461, at 204–11 (discussing five types of scientific uncertainty).

A risk threshold is needed to exclude trivial suits and to reduce decision costs for courts and agencies. Professor Adler has argued that *de minimis* thresholds would not be justified in a world of unlimited resources and perfect decision makers,⁴⁷⁰ but he has acknowledged that such thresholds allow agencies to “economize on decision costs” by excluding minimally risky or improbable issues.⁴⁷¹ Professor Leiter observes that similar concerns about economizing judicial decision costs may justify “allow[ing] judges to economize on decision costs by conserving judicial resources for cases of greater import in the relevant moral frame.”⁴⁷²

Courts may exclude suits where the alleged risks are relatively trivial. In *Korsinsky v. EPA*, a federal district court dismissed a case for lack of standing where the plaintiff alleged that his chronic sinus condition made him more vulnerable to illness from environmental harms resulting from global climate change.⁴⁷³ The court concluded that the plaintiff’s contention that climate change could worsen his sinus condition were insufficient for Article III standing because “[s]uch allegations fall more within the realm of the hypothetical and conjectural than the actual or imminent and therefore are insufficient for purposes of standing.”⁴⁷⁴ In a footnote, the district court distinguished the facts in its case from those in *Baur*, in which the Second Circuit had found standing because the plaintiff had alleged that he was at a moderately elevated risk of contracting an incurable disease, *v*CJD.⁴⁷⁵ The *Korsinsky* case appropriately applied a threshold to standing decisions by distinguishing between relatively trivial harms and serious ones. If it had not found the allegations were insufficient for Article III standing, the court might have alternatively dismissed the case for the prudential reason that the cost of litigating a case involving such relatively trivial harms far outweighs any possible benefits to the plaintiff.⁴⁷⁶ Professor Leiter observes, “A plaintiff who

470. MATTHEW D. ADLER, WHY DE MINIMIS? 1, 19, 22 (Univ. of Pa. Law Sch., Research Paper No. 07-26, 2007), available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=992878.

471. *Id.* at 24; accord Leiter, *supra* note 9, at 410 (discussing Adler’s acknowledgement that *de minimis* thresholds have practical justifications).

472. Leiter, *supra* note 9, at 410.

473. *Korsinsky v. EPA*, No. 05 Civ. 1528, 2005 WL 1423345, 2005 U.S. Dist. LEXIS 21778, at *6–8 (S.D.N.Y. Sept. 29, 2005), *aff’d*, 192 Fed. Appx. 71 (2d Cir. Aug. 10, 2006); Bradford C. Mank, *Civil Remedies*, in GLOBAL CLIMATE CHANGE AND U.S. LAW 184–85 (Michael B. Gerrard ed., 2007) (discussing *Korsinsky*).

474. *Korsinsky*, 2005 U.S. Dist. LEXIS 21778, at *8.

475. *Id.* at *8 n.5 (“Here, by contrast, plaintiff alleges nothing more than an increase in risk over a long period of time of aggravating a chronic condition similar to allergies,” distinguishing *Baur v. Veneman*, 352 F.3d 625, 634–37 (2d Cir. 2003)); Mank, *supra* note 473, at 185 (discussing *Korsinsky*).

476. See *Covington v. Jefferson County*, 358 F.3d 626, 654–55 n.12 (9th Cir. 2004) (Gould, J., concurring) (discussing the authority of federal courts to limit suits that are excessively burdensome if political branches or suit by the United States could address issue); Mank, *supra* note 9, at 28, 44–45 (agreeing with Judge Gould that courts may invoke prudential standing barrier to that are excessively burdensome).

faces a 1:1000 probability of getting sunburned may or may not have a sufficient stake in the outcome of a lawsuit challenging the underlying agency action, but a plaintiff who faces a much smaller probability of developing melanoma surely does.”⁴⁷⁷ This Article’s proposed approach would allow a melanoma suit if the risk of developing the disease were at least one in one million, but would reject suits involving trivial injuries such as getting sunburned to limit judicial decision-making costs.

Some scholars may argue that a risk threshold for standing will exclude valid claims. If a safety problem affected the entire U.S. population—around 300 million people⁴⁷⁸—at least 300 people would have to be at risk of death or serious harm for a plaintiff to sue pursuant to a one in one million standing risk threshold.⁴⁷⁹ Certainly, a government action that kills 299 people is significant.

Because the proposed test applies not just to deaths, but to any serious illness, it is less likely to preclude suits where there is genuine harm. In *NRDC II*, the court found sufficient injury for standing because the risk of non-fatal skin cancer was between one in 129,000 and one in 200,000, according to expert evidence.⁴⁸⁰ Because many chemicals can cause not only death, but also non-fatal illnesses, even if a one in one million threshold excludes a suit based on death, the court may still find standing if there is a one in one million probability of some serious non-fatal health consequences or other injuries. Furthermore, as discussed below, *Laidlaw*’s “reasonable concerns” test would allow plaintiffs to sue in some circumstances where the risk is less than one in one million if the plaintiff’s recreational activities or aesthetic enjoyment is diminished by a defendant’s actions.⁴⁸¹ *Laidlaw*’s liberal approach in cases involving recreational or aesthetic issues lessens any concerns that the quantitative one in one million test will exclude too many valid cases.

A balance needs to be struck between allowing plaintiffs with non-trivial injuries to sue and limiting the number of suits to a manageable number for courts. If courts eliminated all standing barriers to suits against the government, *Public Citizen* suggested that plaintiffs might file so many suits that they would overwhelm both the judiciary and executive branch.⁴⁸² On the other hand,

477. Leiter, *supra* note 9, at 411.

478. As of June 21, 2009, the U.S. population was estimated to be over 306 million. U.S. Census Bureau, U.S. POPClock Projection, <http://www.census.gov/main/www/popclock.html> (last visited July 21, 2009).

479. See Craig, *supra* note 1, at 151–52, 220–21 (arguing that courts should adopt a precautionary, preventative approach in granting standing where plaintiffs allege probabilistic risks); Leiter, *supra* note 9, at 409–10 (arguing that in ideal world standing thresholds would be unnecessary). See generally Adler, *supra* note 395, at 1, 19, 22 (criticizing de minimis criteria as “difficult to justify . . . as a matter of non-ideal, not ideal, moral theory”).

480. *NRDC II*, 464 F.3d 1, 7 (D.C. Cir. 2006).

481. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181–83 (2000).

482. *Public Citizen I*, 489 F.3d 1279, 1295 (D.C. Cir. 2007).

plaintiffs with non-trivial injuries resulting from government action or inaction should be able to sue the government. Courts need a standing threshold test to distinguish between valid and trivial cases. As is discussed above, the one in one million threshold is the one most widely used by agencies as a de minimis threshold and there are no convincing grounds for using a different threshold for courts, unless Congress provides more specific guidance in a statute.⁴⁸³

Because agencies often possess considerable data about the risks of injury posed by their regulatory decisions, courts can ask agencies to provide risk data in many cases without imposing excessive burdens on the courts or agencies.⁴⁸⁴ Sturkie and Logan argue that government agencies often avoid standing issues and let industry intervenors challenge the standing of petitioners, unless the court orders the government to address standing issues.⁴⁸⁵ They argue that the government's reluctance to engage in standing issues is unfortunate because in both *NRDC II* and *Public Citizen II* the complicated standing issues in each case were only clarified when the government provided crucial statistical evidence during re-argument of the cases.⁴⁸⁶ Sturkie and Logan contend: "In sum, if agencies wish to conserve taxpayer resources and most effectively defend their actions, they should consider submitting a declaration as soon as increased-risk claims arise, not sit on the sidelines until the court is already grappling with these issues."⁴⁸⁷ If quantitative data does not exist, then courts may use a qualitative approach to determine when prudential considerations might justify limiting standing and access to the judicial system.

D. Applying the One in One Million Test

To explain how the proposed test would work, this Part will examine how some of the cases discussed previously would be decided pursuant to the

483. See generally Wagner, *supra* note 465, at 835 n.229, 838 n.241.

484. Cf. Sturkie & Logan, *supra* note 9, at 10472 (observing that "agencies are often in the best position to address—and quantify—the risks of injury presented under their chosen action and other alternatives.").

485. As seen in *NRDC I* and *II* . . . , federal agencies (and their counsel, the U.S. Department of Justice) typically let the industry intervenors slog out their standing dispute with the petitioners. They often concede standing early in a case and/or do not weigh in unless ordered to do so by the court.

Id.

486. But as *NRDC II* and *Public Citizen II* demonstrate, the agencies are often in the best position to address—and quantify—the risks of injury presented under their chosen action and other alternatives.¹⁹⁰ For example, it was only after EPA weighed in on the risk calculations at the rehearing stage in *NRDC II* that the court revamped its quantitative analysis and changed its holding. Similarly, in *Public Citizen II*, the NHTSA's declaration and risk assessment had the imprimatur of the agency's chief tire safety expert, and thus were both valuable and highly influential.

Id. (internal citations omitted).

487. *Id.*

proposed one in one million standard. The one in one million standard works best where there is sufficient information to quantify the risk. If it is difficult to quantify a risk, courts could continue to use a qualitative standard.

I. NRDC I and II

NRDC I and *NRDC II* are the easiest cases in which to apply a quantitative risk standard. In *NRDC I*, the court concluded that a one in 21 million risk of developing skin cancer was insufficient injury for standing.⁴⁸⁸ Although the court did not explain what level of risk was sufficient for standing, it may have implicitly used something approximating the one in one million standard to determine which risks are sufficient for standing. When the court re-heard the case, two different experts estimated the risk that NRDC members would develop skin cancer from the impacts of the government's methyl bromide exemptions on the stratospheric ozone to be between one in 129,000 and one in 200,000.⁴⁸⁹ *NRDC II* found that this risk was sufficient for standing because two to four of NRDC's approximately half a million members would develop skin cancer.⁴⁹⁰ As Professor Elliott argues, the court may have implicitly required that at least one member of NRDC is predicted to develop skin cancer for the organization to have standing.⁴⁹¹ The one in 129,000 and one in 200,000 risk standard used in *NRDC II* is consistent with this Article's one in one million risk of serious injury standard.

As was discussed in Part V, this Article's proposed *individual* one in one million risk standard for standing avoids the possible constitutional problems raised by *NRDC II*'s aggregation of the risk of all members of NRDC to determine organizational standing. Professor Elliott is right that *NRDC II* implies that large organizations with many members are more likely to be able to demonstrate that at least one of their members will be injured in the future by a probabilistic risk than small organizations.⁴⁹² This Article's proposal avoids bias against small organizations by asking whether any individual in that organization has at least a one in one million excess risk of death or serious injury from a challenged government action.⁴⁹³

488. *NRDC I*, 440 F.3d 476, 482 (D.C. Cir. 2006), *withdrawn*, *NRDC II*, 464 F.3d 1 (D.C. Cir. 2006); Sturkie & Seltzer, *supra* note 9, at 10292.

489. *NRDC II*, 464 F.3d at 7.

490. *Id.*

491. Elliott, *supra* note 17, at 504–05 & n.222.

492. *See supra* Part V.

493. *See supra* Part V.

2. Laidlaw

Laidlaw is a much more difficult case in which to apply a quantitative risk standard. Laidlaw's mercury discharges violated its permit because they exceeded a stringent 1.3 parts per billion standard used by the EPA.⁴⁹⁴ The district court, however, specifically found that there was "no demonstrated proof of harm to the environment," or human health, based upon fish tissue studies that measured the actual amounts of mercury in the North Tyger River.⁴⁹⁵ Although the Supreme Court did not quantify the risk, based on the district court's interpretation of the evidence, it appears that the plaintiffs could not have met a one in one million standard.

Nevertheless, the majority of the *Laidlaw* Court granted standing because the plaintiffs altered or discontinued their recreational activities because of their "reasonable concerns" about the harmfulness impacts of the defendant's discharges into the River.⁴⁹⁶ The Court did not require the plaintiffs to prove that the environment had suffered an actual injury or was likely to suffer an injury in the future, but instead focused on whether the plaintiffs had reasonable grounds to change their recreational activities.⁴⁹⁷ The Court stated that, in environmental cases, "[t]he relevant showing for purposes of Article III standing . . . is not injury to the environment but injury to the plaintiff."⁴⁹⁸ Yet the Court did not require the plaintiffs to prove that they would suffer an injury themselves, because their loss of recreational use of the river was a sufficient concrete injury.⁴⁹⁹

The *Laidlaw* decision appears to be at odds with this Article's one in one million standard. Yet there is a possible way to reconcile risk standards with *Laidlaw*. In dicta from *Virginia SCC*, the D.C. Circuit interpreted *Laidlaw* as applying a more lenient standing test in environmental cases involving recreational and aesthetic values than the Court does in non-recreational and non-aesthetic cases.⁵⁰⁰ In non-recreational or non-aesthetic cases, a court may still apply a one in one million standard as in *NRDC II* or a regulatory

494. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 167–68, 176 (2000) ("Laidlaw consistently failed to meet the permit's stringent 1.3 ppb (parts per billion) daily average limit on mercury discharges. The District Court later found that Laidlaw had violated the mercury limits on 489 occasions between 1987 and 1995. 956 F. Supp. at 613–621.").

495. *Id.* at 181 (quoting *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 956 F. Supp. 588, 602 (D.S.C. 1997)); *accord id.* at 199 (Scalia, J., dissenting).

496. *Id.* at 181 (majority opinion).

497. *Id.* at 181; Craig, *supra* note 1, at 181–84; Mank, *supra* note 32. *But see Laidlaw*, 528 U.S. at 199–201 (Scalia, J., dissenting) (arguing that plaintiffs should have prove that defendant's activities actually harmed the environment).

498. *Laidlaw*, 528 U.S. at 181; Craig, *supra* note 1, at 181.

499. Craig, *supra* note 1, at 184.

500. *Va. State Corp. Comm'n v. Fed. Energy Regulatory Comm'n*, 468 F.3d 845, 848 (D.C. Cir. 2006); Sturkie & Logan, *supra* note 9, at 10463.

challenge like *Public Citizen II*. The recreational activities exception to the one in one million standard is appropriate because while recreational activities and aesthetics constitute a valid, concrete injury, they cannot be fully measured through quantitative methods.⁵⁰¹ The one in one million standard should be used only where it is reasonable to measure risks, but not if a court is addressing a fundamentally qualitative issue such as a person's recreational or aesthetic enjoyment of nature.⁵⁰²

3. Baur

The Second Circuit in *Baur* rejected a quantitative approach to standing and instead relied on the severity of vCJD as a deciding factor in granting standing.⁵⁰³ In his dissenting opinion in *Baur*, Judge Pooler argued that it was inappropriate to grant standing to Baur because he was indistinguishable from millions of other Americans who eat beef.⁵⁰⁴ Judge Pooler complained: "Allowing a lawsuit to go forward on the basis of such a remote harm would be akin to saying that any citizen has standing to sue the National Aeronautics and Space Administration because it currently does not do enough to prevent meteorites from falling to Earth."⁵⁰⁵ The majority responded by arguing that Judge Pooler had failed to specify what statistical test should be used to decide which cases meet standing criteria: "For example, it is unclear what statistical showing the dissent would deem sufficient to establish standing in this case. Would a 0.00011% chance of exposure to BSE contaminated beef be sufficient to demonstrate sufficient injury, or would the risk of exposure be too minuscule to merit standing?"⁵⁰⁶ The Court answered this question by arguing that statistical risk assessment should not decide Article III standing questions, but instead should be used only by administrative agencies to decide substantive issues: "In our view, the evaluation of the amount of tolerable risk is better analyzed as an administrative decision governed by the relevant statutes rather than a constitutional question governed by Article III."⁵⁰⁷

The *Baur* decision did not present detailed statistical evidence, so it is impossible to know for sure whether Baur was exposed to a one in one million risk of death or serious disease. It is possible, however, to answer the majority's hypothetical question of "would a 0.00011% chance of exposure to BSE

501. *Laidlaw*, 528 U.S. at 181–84; Craig, *supra* note 1, at 184.

502. The contrast between the Court's lenient approach to standing in *Laidlaw*, which is discussed at *supra* Part II, and its restrictive approach in other cases, which are discussed at *supra* Parts I and III, raises serious questions about its standing jurisprudence that I plan to address in a future article.

503. *Baur v. Veneman*, 352 F.3d 625, 637–41 (2d Cir. 2003).

504. *Id.* at 646–48, 651–52 (Pooler, J., dissenting).

505. *Id.* at 651 n.3.

506. *Id.* at 643 (majority opinion).

507. *Id.*

contaminated beef be sufficient to demonstrate sufficient injury, or would the risk of exposure be too minuscule to merit standing?”⁵⁰⁸ This percent chance equals an approximately 1 in 9091 risk, which would be clearly sufficient for standing pursuant to this Article’s proposed test.

On the other hand, let us assume that only one or two people out of many millions of Americans is likely to contract vCJD. Pursuant to the proposed one in one million test, a court should deny standing. Was the *Baur* decision wrong to grant standing or is the notion of a quantitative test fundamentally flawed?

In the first methyl bromide decision, the D.C. Circuit criticized *Baur* and other cases that apparently allowed standing whenever there was any increased risk of injury.⁵⁰⁹ The D.C. Circuit stated:

NRDC contends, and several other courts of appeals have suggested, that an increase in probability itself constitutes an “actual or imminent” injury. . . . Put another way, the fact that governmental action or inaction increases the likelihood of injury—regardless of the magnitude of the increase—constitutes injury in the constitutional sense. Strictly speaking, this cannot be correct. For example, if the original probability of harm is 1 in 100 billion per person per year, doubling the probability to 2 in 100 billion would still leave an individual with a trivial chance of injury. The *Baur* court acknowledged the “potential expansiveness of recognizing exposure to enhanced risk as injury-in-fact.” “Expansiveness” is an understatement.⁵¹⁰

The D.C. Circuit is correct that some risks are too trivial to justify standing.

The risk in *Baur*, however, was more than a trivial one in 100 billion risk. Let us suppose it was a one in ten million risk. Some would certainly argue that such a risk should be enough to justify standing. Yet there are limits to judicial resources. Even if it might seem appropriate to grant standing in a case like *Baur*, the one in one million standard may be necessary to exclude relatively insignificant cases that would clog the courts. Any type of standing threshold is likely to exclude merited cases, yet the absence of any threshold could result in an excessively large work load for the federal courts.

There may be another way to present the evidence in *Baur* that might justify standing. Suppose surveys demonstrated that fewer people ate meat because of fear of contracting vCJD. As an example, in 2008, there were mass protests in South Korea after the government proposed to allow the importation of U.S. beef, which has been banned in that country since 2003 after the first U.S. case of mad cow disease was discovered in Washington state.⁵¹¹ In Japan,

508. *Id.* at 643.

509. *NRDC I*, 440 F.3d 476 (D.C. Cir. 2006), *withdrawn*, *NRDC II*, 464 F.3d 1 (D.C. Cir. 2006).

510. *NRDC I*, 440 F.3d at 484 (citations omitted); *accord* Sturkie & Seltzer, *supra* note 9, at 10294.

511. Kelly Olsen, *Mad Cow Disease Fears Grip South Koreans*, FOXNEWS.COM, May 29, 2008 (reporting protests of up to 10,000 person per day in Seoul, Korea against importation of United States

beef consumption diminished because of fear of mad cow disease.⁵¹² A person who alleged that he stopped eating meat because of fear of contracting vCJD arguably should have standing if a non-trivial number of persons also stopped eating meat. This would be akin to the plaintiffs in *Laidlaw* not using the river because of “reasonable concerns” about the pollution in the water. Perhaps one’s choice of what to eat is a non-quantitative issue based on more subjective criteria like recreational or aesthetic activities. Courts should make exceptions to the quantitative threshold if there are compelling qualitative reasons to hear a case.

E. Should the One in One Million Standard Be Used in All Cases?

In many cases, it may not be possible to calculate a risk, especially in cases involving recreational or aesthetic activities. In those cases, courts should use their best judgment in deciding whether the risk of injury meets the “reasonable concerns” test in *Laidlaw*, discussed in Part II. The Supreme Court in *Laidlaw* recognized standing where a plaintiff alleged that pollution diminished their recreation activities or aesthetic enjoyment as long as the plaintiff has “reasonable concerns.” A concern about a one in one million risk of serious illness is certainly reasonable, but even risks that cannot be quantified may be reasonable grounds for standing based on the diminishment of recreational or aesthetic interests. The *Laidlaw* Court acknowledged that it was not clear whether the mercury pollution released by the defendant into the river posed a serious health risk, but the Court took a precautionary approach given the plaintiffs’ reasonable fears about the impact of a toxic pollutant on their recreational or aesthetic activities.⁵¹³ On the other hand, the district court in *Korsinsky* appropriately concluded that a possible increased probability of contracting relatively minor health problems from climate change was insufficient for standing.⁵¹⁴ Courts will continue to make judgment calls in deciding which cases are worthy of standing. The one in one million presumption would be helpful in deciding some standing cases, but it will not resolve every case. Ideally, Congress could enact a statute or series of statutes

beef because of fears of mad cow disease), available at <http://origin.foxnews.com/wires/2008May29/0,4670,SKoreaMadCowMania,00.html>.

512. James Brooke, *In Japan, Beef Business Sinks in a Sea of Skepticism*, N.Y. TIMES, Nov. 4, 2001, available at <http://www.nytimes.com/2001/11/04/world/in-japan-beef-business-sinks-in-a-sea-of-skepticism.html>. Similarly, in 2000, sales of beef in France plummeted because of fear of mad cow disease. Chris Marsden, *France gripped by fear of deaths from Mad Cow Disease*, WORLD SOCIALIST WEB SITE, Nov. 9, 2000, <http://www.wsws.org/articles/2000/nov2000/fbse-n09.shtml> (last visited July 21, 2009).

513. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181–83 (2000).

514. *Korsinsky v. EPA*, No. 05 Civ. 1528, 2005 WL 1423345, 2005 U.S. Dist. LEXIS 21778, at *6–8 (S.D.N.Y. Sept. 29, 2005), *aff’d*, 192 Fed. Appx. 71 (2d Cir. Aug. 10, 2006).

that determine under what circumstances the one in one million standard is appropriate.

CONCLUSION

In light of Justice Kennedy's concurring opinion in *Lujan*, and the Supreme Court's decisions in *Akins* and *Laidlaw*, federal courts should reject *Public Citizen's* hostile approach to cases involving probabilistic injury. Although *Lujan's* requirement of a concrete and imminent injury could be interpreted to forbid any suit based on a probabilistic risk of future injury,⁵¹⁵ Justice Kennedy's crucial concurring opinion in *Lujan* emphasized that Congress may define new types of injuries that were not traditionally recognized at common law, presumably including probabilistic injuries.⁵¹⁶ *Akins* recognized that large numbers of plaintiffs may sue as long as each has a concrete and particularized injury.⁵¹⁷ Additionally, *Akins* suggested that the rule against suits involving generalized grievances is a largely prudential barrier that Congress can waive in most circumstances.⁵¹⁸ A plaintiff with a risk of being injured by a pollutant or defective consumer good has an injury at least as concrete as the plaintiffs in *Akins* who sought information on political contributions.⁵¹⁹ Further, the *Laidlaw* decision implicitly suggested that probabilistic standing is valid when it allowed the plaintiffs in that case to sue based on "reasonable concerns" about future injury."⁵²⁰ The First, Second, Fourth, and Ninth Circuits have allowed suits based on threatened harms in the future, although they have differed to some extent on how significant the risk must be to justify standing.⁵²¹ Further, the *Mountain States*, *LEAN* and *NRDC II* decisions appropriately allowed standing for probabilistic injuries despite the D.C. Circuit's overly stringent substantial probability test.⁵²²

At least some suits alleging future risks from government action involve procedural violations by the government. These suits are entitled to more lenient standing criteria. Justice Scalia's *Lujan* opinion recognized that in procedural rights cases courts must relax the imminence and redressability

515. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992); Hsu, *supra* note 3, at 466–69.

516. *Lujan*, 504 U.S. at 580 (Kennedy, J., concurring in part); Leiter, *supra* note 9, at 400; Mank, *supra* note 9, at 35.

517. See *supra* Parts IV and VI.C.

518. See Brown, *supra* note 80, at 689–94 (arguing *Akins* recognized that Congress has substantial authority to define standing rights in a statute and thus is inconsistent with *Lujan*); Mank, *supra* note 32, at 1714–15 (arguing that *Akins* treated the prohibition against generalized grievances as a largely prudential barrier that Congress can waive, although the decision did not resolve all constitutional questions about Congress's authority to define standing); Sunstein, *supra* note 324, at 636–37, 644–45, 671–75 (same); see *supra* Parts IV and VI.C.

519. *Akins*, 524 U.S. at 13–21.

520. *Friends of the Earth, Inc. v. Laidlaw Env'tl. Servs. (TOC), Inc.*, 528 U.S. 167, 181 (2000).

521. See *supra* Parts II.B–E.

522. See *supra* Parts III.A.2, III.B and III.C.2.

requirements of standing.⁵²³ Applying a relaxed standing approach in a procedural rights case, *Massachusetts* recognized that incremental remedies are sufficient for standing even if the remedy cannot solve the entire regulatory issue.⁵²⁴ As such, this approach supports suits by plaintiffs who seek redress for procedural violations if the remedy can reduce the plaintiff's future risk of injury.

Professor Elliott raises an interesting question in asking whether it was appropriate for the *NRDC II* decision to give greater standing rights to larger organizations.⁵²⁵ Pursuant to the *Hunt* test, standing for large organizations is appropriate as long as individual members do not have to participate in the selection of the remedy.⁵²⁶ Because suits alleging government underenforcement of the law seek prospective relief rather than damages,⁵²⁷ the third prong of the *Hunt* test is no barrier to increased risk of harm cases.

The answer to Professor Elliott's concern that *NRDC II* gives greater standing rights to large organizations is not to eliminate associational standing, but to enhance individual standing. While public interest organizations have many virtues, one should not have to join a large public interest organization to sue the government. The one in one million risk of serious harm standing threshold would allow individuals to sue without being members of large public interest organizations. A one in one million risk of death or serious injury is the most plausible quantitative threshold for standing because it is the most common risk threshold used by agencies, although other thresholds are sometimes used.⁵²⁸ The one in one million standard is compatible with the one in 129,000 or one in 200,000 risk in *NRDC II*. A one in one million standard would also limit the number of probabilistic suits and thus avoid the concern in the *Public Citizen II* decision that such suits would overtax limited judicial resources.⁵²⁹

A one in one million risk-based approach to standing would expand standing rights for individuals or smaller organizations that cannot show that at least one of their members will be harmed in the future. A one in one million increased risk of a serious injury in the future is a sufficiently concrete risk to justify standing because regulatory agencies have most often used this standard as the threshold for regulation, as is discussed in Part VII. An individual whose

523. *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572 n.7 (1992).

524. *See Massachusetts v. EPA*, 549 U.S. 497, 523–25 (2007).

525. Elliott, *supra* note 17, at 504–06.

526. *Hunt v. Wash. State Apple Advert. Comm'n*, 432 U.S. 333, 343 (1977); *see supra* Part VI.A.

527. *Warth v. Seldin*, 422 U.S. 490, 515 (1975); Roche, *supra* note 60, at 1499.

528. *See Wagner*, *supra* note 465, at 838 n.241 (observing that Congress and agencies most often use one in one million risk standard, although they sometimes use one in ten thousand standard); *see supra* Part VII.B.

529. *See Public Citizen I*, 489 F.3d 1279, 1295 (D.C. Cir. 2007), *modified after rehearing*, *Public Citizen II*, 513 F.3d 234 (D.C. Cir. 2008) (per curiam); *supra* notes 301, 487 and accompanying text.

risk of serious injury is increased by at least one in one million ought to be able to sue the government to challenge its underenforcement of the law.

This Article's proposed quantitative risk in some cases will expand the standing rights of plaintiffs alleging that they are at an increased risk of non-trivial harm from the government's underenforcement of the law. The *Baur* decision rejected a quantitative approach to standing because it feared that such an approach would narrow standing rights.⁵³⁰ The *Baur* decision, however, failed to recognize that a quantitative test in some circumstances can enable a plaintiff to sue if she meets a threshold standard even if she or the association to which she belongs cannot prove that at least one person will be seriously injured by a government action. For example, if the plaintiffs in *Public Citizen* had been able to show that the government's tire regulations placed them at an elevated risk of injury of more than one in one million compared to alternative regulations that they alleged were mandated, they should have been able to sue.

This Article's approach to standing recognizes that some risks are not easily quantified, especially recreational and aesthetic values. Courts should continue to recognize qualitative standing where quantification is difficult or inappropriate. Following *Laidlaw*, courts would continue to allow suits if a plaintiff can demonstrate that she has avoided or reduced recreational use of an area because of "reasonable concerns" about pollution.⁵³¹ The proposed one in one million standard would only decide cases where there are no reasonable concerns about recreational and aesthetic issues.

A quantitative test can supplement today's mostly qualitative approach to standing. Parts II and III demonstrate that courts apply the Court's standing test in widely divergent ways. Where good statistical data is available, a quantitative test would allow judges to be more consistent and fair to plaintiffs and defendants.

SUMMERS ADDENDUM

Just prior to this Article's publication, the Supreme Court issued its five to four decision in *Summers v. Earth Island Institute*, rejecting the dissent's proposal for organizational standing based upon the statistical probability that some of an organization's members would be harmed in the future by the government's allegedly illegal actions.⁵³² Several environmental organizations had filed suit to enjoin the U.S. Forest Service from applying its regulations to exempt the Burnt Ridge Project in the Sequoia National Forest—a salvage sale of timber on 238 acres of fire-damaged federal land—from the notice,

530. *Baur v. Veneman*, 352 F.3d 625, 643 (2d Cir. 2003); Craig, *supra* note 1, at 200.

531. *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc.*, 528 U.S. 167, 181 (2000).

532. *Summers v. Earth Island Inst.*, 129 S. Ct. 1142, 1151–53 (2009). Justice Scalia's majority opinion was joined by Chief Justice Roberts and Justices Kennedy, Thomas and Alito. *Id.* at 1146. Justice Breyer's dissenting opinion was joined by Justices Stevens, Souter and Ginsburg. *Id.*

comment, and appeal process that Congress requires the Forest Service to apply to “more significant land management decisions.”⁵³³ The district court granted a preliminary injunction against the Burnt Ridge salvage-timber sale and the parties settled their dispute over that Project.⁵³⁴ Despite the government’s argument that the plaintiffs lacked standing as soon as they settled the Burnt Ridge Project dispute, the district court proceeded to decide the merits of the plaintiffs’ challenges by invalidating five of the Forest Service’s regulations and entered a nationwide injunction against their application.⁵³⁵ The Ninth Circuit held that the plaintiffs’ challenges to regulations not at issue in the Burnt Ridge Project were not ripe for adjudication, but affirmed the district court’s conclusion that two regulations applicable to the Burnt Ridge Project were contrary to law, and upheld the nationwide injunction against their application.⁵³⁶

In *Summers*, Justice Scalia’s majority opinion concluded that the plaintiffs no longer satisfied the injury prong of the standing test once they settled the Burnt Ridge Project dispute.⁵³⁷ The plaintiffs had initially satisfied the injury requirement by submitting an affidavit alleging that organization member Ara Marderosian had repeatedly visited the Burnt Ridge site, that he had imminent plans to visit the site again, and that the government’s actions would harm his aesthetic interest in viewing the flora and fauna at the site.⁵³⁸ The settlement, however, had remedied Marderosian’s injury and no other affidavit submitted by the plaintiffs alleged that the Forest Service’s application of the challenged regulations was causing a particular organization member an imminent injury at a specific site.⁵³⁹

In its *Summers* decision, the Supreme Court for the first time specifically addressed the question of probabilistic standing based on potential future injuries to an organization’s members. The Sierra Club asserted in its pleadings that it has more than 700,000 members nationwide, including thousands of members in California who use and enjoy the Sequoia National Forest. Therefore, the Sierra Club argued that it was probable that the Forest Service’s application of its challenged regulations would harm at least one of its

533. *Id.* at 1147; *see* Forest Service Decisionmaking and Appeals Reform Act, Pub. L. No. 102-381, Tit. III, § 322, 106 Stat. 1419, note following 16 U.S.C. § 1612. (requiring the Forest Service to establish a notice, comment, and appeal process for “proposed actions of the Forest Service concerning projects and activities implementing land and resource management plans developed under the Forest and Rangeland Renewable Resources Planning Act of 1974”).

534. *Summers*, 129 S. Ct. at 1148.

535. *Id.*

536. *Id.*

537. *Id.* at 1149–50.

538. *Id.* at 1149.

539. *Id.* at 1149–51.

members.⁵⁴⁰ Justice Scalia's majority opinion rejected the plaintiffs' probabilistic standing argument because "[t]his novel approach to the law of organizational standing would make a mockery of our prior cases, which have required plaintiff-organizations to make specific allegations establishing that at least one identified member had suffered or would suffer harm."⁵⁴¹ He maintained that a court cannot rely on an organization's general assertions about its members' activities and that the Court's precedent required an organizational member to file an individual affidavit confirming that he or she uses the affected site and that his or her recreational interests will be harmed by the government's alleged failure to comply with legal requirements.⁵⁴² Justice Scalia argued, "While it is certainly possible—perhaps even likely—that one individual will meet all of these criteria, that speculation does not suffice."⁵⁴³ The majority rejected all affidavits introduced by the plaintiffs after the district court entered its judgment and after they had filed a notice of appeal because the majority concluded that such late supplementation of the record was inappropriate under the Federal Rules of Civil Procedure despite the dissenting opinion's contrary view.⁵⁴⁴ Because it concluded that the plaintiffs failed to establish standing, the Court did not address the Forest Service's contention that the case was not ripe for review or whether a nationwide injunction would have been appropriate if the plaintiffs had prevailed.⁵⁴⁵

Justice Breyer's dissenting opinion argued that the plaintiffs had standing because their members were likely to be affected by the government's allegedly illegal salvage timber sales in the future.⁵⁴⁶ He acknowledged that the Court had used the term "imminent" in its standing decisions, but he argued that the majority had inappropriately used the term to bar standing in contrast to previous decisions that had used that term to reject standing only where the alleged harm was merely "hypothetical," "conjectural," "or otherwise speculative."⁵⁴⁷ Justice Breyer argued that the majority's use of the "imminent" test was inappropriate where a plaintiff has "already been subject to the injury it wishes to challenge," as it had in the case at issue, and that prior decisions in cases involving prior harm had asked "whether there is a *realistic likelihood* that the challenged future conduct will, in fact, recur and harm the plaintiff."⁵⁴⁸ In *Los Angeles v. Lyons*, the Court stated that the plaintiff, who had been subject to an unlawful police chokehold in the past, "would have had standing

540. *Id.* at 1151.

541. *Id.*

542. *Id.* at 1151–52.

543. *Id.* at 1152.

544. *Id.* at 1153.

545. *Id.*

546. *Id.* at 1154–55 (Breyer, J., dissenting).

547. *Id.* at 1155.

548. *Id.* at 1155–56 (emphasis in original).

had he shown ‘a realistic threat’ that reoccurrence of the challenged activity would cause him harm ‘in the reasonably near future.’”⁵⁴⁹ Even though the plaintiffs could not predict which tracts of fire-damage land the Forest Service would sell as salvage without following the disputed procedural rules, Justice Breyer concluded that there was a “realistic threat” that some member of the plaintiff organizations would be harmed by a sale by the Forest Service, and, therefore, that the plaintiffs ought to have standing.⁵⁵⁰

Summers might appear to close the door to statistical standing, but there are valid reasons to believe that probabilistic standing may continue to be an issue in the future. First, Justice Breyer observed that if Congress had expressly enacted a statute allowing standing for parties injured by salvage sales in the past if they are likely to use salvage parcels in the future, provided that they have objected to such sales in the past and would do so in the future, “[t]he majority cannot, and does not, claim that such a statute would be unconstitutional.”⁵⁵¹ In his concurring opinion, Justice Kennedy quoted his concurring opinion in *Lujan* that “[t]his case would present different considerations if Congress had sought to provide redress for a concrete injury ‘giv[ing] rise to a case or controversy where none existed before.’”⁵⁵² There is a reasonable chance that Justice Breyer is correct and that the Court would find standing if the statute at issue specifically approved probabilistic standing for plaintiffs like those in *Summers*. It is possible that organizations such as Earth Island Institute or the Sierra Club will lobby Congress to amend statutes to give them standing in similar cases in the future.

Second, in light of the five to four split in *Summers*, if one of the Justices in the majority were replaced by a new Justice who agrees with Justice Breyer’s approach of a “realistic threat” of injury, then the Court might overturn *Summers* and allow probabilistic standing. Without overly simplifying the complex relationship between politics and judicial decision making, it is worth observing that all members of the *Summers* majority were appointed by Republican presidents. As a senator, President Obama voted against the confirmation of both Chief Justice Roberts and Justice Alito, both members of the *Summers* majority.⁵⁵³ His appointments as President are likely to represent

549. *Id.* at 1156 (quoting *Los Angeles v. Lyons*, 461 U.S. 95, 107 n.7, 108 (1983)) (emphasis added by Justice Breyer).

550. *Id.* at 1156–58.

551. *Id.* at 1155.

552. *Id.* at 1153 (Kennedy, J., concurring) (quoting *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 572, 580 (1992) (Kennedy, J., concurring in part and concurring in judgment)).

553. C-Span.org, Final Senate Vote: Confirmation John Roberts (September 29, 2005), http://www.c-span.org/congress/roberts_senate.asp (last visited July 21, 2009) (Senator Obama voted against confirmation of Chief Justice Roberts); United States Senate, U.S. Senate Roll Call Votes 109th Congress – 2nd Session (January 31, 2006), <http://www.senate.gov/legislative/LIS/>

a different judicial philosophy. Third, it may be possible to distinguish *Summers* in some cases involving probabilistic standing; the author will address that possibility in a future article.

roll_call_lists/roll_call_vote_cfm.cfm?congress=109&session=2&vote=00002 (last visited July 21, 2009) (Senator Obama voted against confirmation of Justice Alito).

We welcome responses to this Article. If you are interested in submitted a response for our online companion journal, *Ecology Law Currents*, please contact ecologylawcurrents@boalt.org. Responses to articles may be viewed at our website, <http://www.boalt.org/elq>.