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Standing and Future Generations: Does Massachusetts v. EPA Open Standing for Generations to Come?

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INTRODUCTION

Many issues, especially potential environmental catastrophes caused by climate change, affect not just the living, but also future generations.[1] Indeed, climate change is likely to have greater

1. Neil H. Buchanan, *What Do We Owe Future Generations?: Framing the Issues, with an Application to Budget Policy* 1–7, 56–57 & *passim* (The George Washington Univ. Law Sch. Pub. Law and Legal Theory Working Paper No. 351, 2007), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1014042 (discussing impact of fiscal policies on future generations); Daniel A. Farber, *From Here to Eternity: Environmental Law and Future Generations*, 2003 U. ILL. L. REV. 289, 290 ("[l]ong-term issues seem increasingly common in environmental law."); Jon Owens, *Comparative Law and Standing to Sue: A Petition for Redress for the Environment*, 7 ENVTL. L. 321, 339 (2001) ("[h]arms to the environment are unique due to their propensity to create diffuse, collective injuries over a long period of time and due to their tendency to harm those not protected by the political branches of government, such as future generations."). In primitive, pre-industrial societies, a generation was considered to last approximately twenty years. WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 945 (1981) ("[a]mong primitive peoples twenty years may make a [generation]."). Some dictionaries now define a generation as thirty years because of the longer life spans in modern societies. WEBSTER'S DELUXE UNABRIDGED DICTIONARY 763 (2d ed. 1979). Currently, however, an average American woman has her first child at approximately age twenty-five, while in 1970 the average age of first birth was closer to 21. Joyce A. Martin et al., *Births: Final Data for 2005, in* National Vital Statistics Reports, Vol 56 No 6. (Nat'l Ctr for Health Statistics, Hyattsville, Md.), Dec. 5, 2007, at 2, *available at.* http://www.cdc.gov/nchs/data/nvsr/nvsr56/nvsr56_06.pdf ("The mean or average age at first birth for U.S. women was 25.2 years in 2005, unchanged since 2003. The mean age at first birth has risen nearly 4 years since 1970."). College-educated women on average have their first child at age 30. Ian Shapira, *Twentysomethings Feel Alienated From Peers, Older Parents,*

impacts on those living fifty or one hundred years from now than those alive today.[2] Many commentators have observed that the American political system does not adequately protect the interests of future generations.[3] Because the unborn cannot vote in today's elections, elected officials, including the President and Congress, normally focus on the short-term interests of current voters and largely ignore long-term problems that will arise after they have left office or died.[4] The bias in our political system against addressing

WASH. POST, Jan. 15, 2008, *available at* 2008 WLNR 821477 ("New data from the National Center for Health Statistics also show that college-educated mothers are usually about 30 when they deliver their first child.").

2. Richard B. Alley et al., *Summary for Policymakers, in* CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS. CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 13, 13–17 (Susan Solomon et al. eds., 2007), *available at* http://ipcc-wg1.ucar.edu/wg1/Report/AR4WG1_Print_SPM.pdf [hereinafter *Climate Change 2007*] (reporting that based on several computer models of greenhouse gases and climate change that majority of scientists predict that by 2100 there will be significant increases in surface temperatures, more severe weather, including hurricanes and typhoons, more heavy precipitation, more heat waves, rising sea levels, less snow cover, and melting polar ice); Farber, supra note 1, at 290 ("[a]ccording to one model, the annual benefit of reducing carbon emissions by a thousand tons today rises to the $500 level only after a delay of fifty years. The benefit peaks in fifty additional years at over $1,000 year, and then gradually tails back to the $500 level over the next three centuries. Thus, the major benefits of current control measures will take hold only after a fifty-year delay, but will then extend over several centuries."); Bradford C. Mank, *Standing and Global Warming: Is Injury to All Injury to None?*, 35 ENVTL. L. 1, 15–16 (2005) [herinafter Mank, *Global Warming*] (reporting that majority of climatologists believe that by 2100 increasing levels of greenhouse gases will lead to significant increases in surface temperatures, more severe weather, more flooding, more droughts, rising sea levels, less snow melt, melting polar ice and more disease).

3. John Edward Davidson, *Tomorrow's Standing Today: How the Equitable Jurisdiction Clause of Article III, Section 2 Confers Standing Upon Future Generations*, 28 COLUM. J. ENVTL. L. 185, 188–91 (2003); Richard A. Epstein, *Justice Across the Generations*, 67 TEX. L. REV. 1465, 1465 (1989); Bradford C. Mank, *Protecting the Environment for Future Generations: A Proposal for a "Republican" Superagency*, 5 N.Y.U. ENVTL. L.J. 444, 445–48, 455–72 (1996) [herinafter Mank, *Future Generations*]; Rodger Schlickeisen, *Protecting Biodiversity for Future Generations: An Argument for a Constitutional Amendment*, 8 TUL. ENVTL. L.J. 181, 182, 219 (1994); R. George Wright, *The Interests of Posterity in the Constitutional Scheme*, 59 U. Cin. L. Rev. 113, 113, 122 (1990).

4. Davidson, *supra* note 3, at 190; Epstein, *supra* note 3, at 1465 ("Democratic processes with universal suffrage cannot register the preferences of the unborn, and dialogue between generations is frustrated when future generations, or at least some future generations, are of necessity silent."); Shi-Ling Hsu, *The Identifiability Bias in Environmental Law*, 35 FLA. ST. U. L. REV. 433, 444–45 (2008) ("It has never been a secret that future generations are frequently and systematically shortchanged in a wide variety of public policies. We demand income tax cuts that drive budgets into deficit and mortgage our children's future, so that we have higher current disposable income."); Mank, *Future Generations, supra* note 3, at 445–46, 455–65; Schlickeisen, *supra* note 3, at 182, 219 ("[N]ormal legislative processes are systemically biased in favor of current benefits as opposed to the long-term future . . . . Elected officials align themselves with beggar-the-children policies . . . to provide immediate economic

the interests of future generations poses serious obstacles in solving long-term environmental problems such as global warming.[5] For instance, there is mounting evidence that our generation's carbon dioxide emissions will increase global temperatures for hundreds or even thousands of years.[6]

An important question is whether anyone has standing to sue on behalf of future generations in the federal courts.[7] Because future generations cannot vote, unelected federal judges are more suited to protect their interests than the political branches.[8] The Supreme Court, however, has interpreted Article III of the Constitution to impose a standing test usually requiring plaintiffs to demonstrate that they have personally suffered an injury that is "actual and imminent," and not merely "conjectural or

benefits for constituents who vote now to the detriment of future generations who cannot."); Wright, *supra* note 3, at 113, 122 ("Once a society chooses, consciously or not, to take advantage of future generations, the democratic process of electoral competition tends to facilitate, rather than inhibit such a choice."); J.A. Doeleman, *On the Social Rate of Discount: The Case for Macroenvironmental Policy*, 2 ENVTL. ETHICS 45, 51 (1980) ("Most persons, including politicians, are caught up in the myopic demands of their work, making grass-roots decisions, compromising the environment when it seems optimal to do so under the immediate pressure of scarcity.").

5. Davidson, *supra* note 3, at 186–90; Hsu, *supra* note 5, at 446 ("There is no sharper illustration of the human propensity to dramatically discount the welfare of future generations than the world's abject failure to deal with the problem of climate change."); Mank, *Future Generations*, *supra* note 3, at 445–46, 450–72, 506–16; Schlickeisen, *supra* note 3, at 182, 219.

6. Juliet Eilperin, *Carbon Output Must Near Zero To Avert Danger, New Studies Say*, WASH. POST, Mar. 10, 2008, at A1 ("While natural cycles remove roughly half of human-emitted carbon dioxide from the atmosphere within a hundred years, a significant portion persists for thousands of years. Some of this carbon triggers deep-sea warming, which keeps raising the global average temperature even after emissions halt.").

7. Owens, *supra* note 1, at 326 ("In this last century, the United States Supreme Court has changed standing to sue from a highly liberalized requirement to a serious constitutional obstacle to public interest litigants. Modern standing requirements pose an especially high barrier to citizen suits that seek to enforce environmental laws through bringing suit on behalf of natural resources, future generations and other entities that are otherwise underrepresented in the political process and voiceless in the judicial system."), 376–77 (observing that the Supreme Court's restrictive standing test probably prevents suits on behalf of future generations and arguing for liberalized standing).

8. *See id.* at 340 ("Because future generations cannot vote, the judiciary should provide broad standing to protect such special classes. In fact, active judicial involvement in the interests of these non-voting classes may be said to be consistent with Justice Scalia's vision of the court's role as a protector against the impositions of the majority."). Conversely, there is an argument that federal judges are sometimes too isolated from the democratic process. *See* Mank, *Future Generations*, *supra* note 3, at 469 ("While Congress is often overly responsive to interest group political pressures, federal judges, who normally serve for life, are frequently overly insulated from popular values.").

hypothetical."[9] This "actual and imminent" requirement can make it difficult for federal courts to hear cases addressing the interests of future generations. The "actual and imminent" requirement is inherently biased against suits that seek to prevent future harm since it is nearly impossible to show with certainty that such harm will occur.[10]

The Supreme Court has generally rejected standing based on the legal rights or interests of third parties.[11] In *Sierra Club v. Morton*,[12] the Court held that the Sierra Club did not have standing to seek declaratory and injunctive relief against the granting of permits for commercial exploitation of Mineral King Valley, a national game refuge adjacent to Sequoia National Park, because it did not allege that any of its members used the park or would be injured by the proposed development.[13] 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.[14] Accordingly, federal courts are likely to deny standing to

9. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560, 563–64 (1992) (stating standing test under Article III of the Constitution); Davidson, *supra* note 3, at 212 (acknowledging imminence requirement in standing may bar suits on behalf of future generations); Ted Allen, Note, *The Philippine Children's Case: Recognizing Legal Standing for Future Generations*, 6 GEO. INT'L ENVTL. L. REV. 713, 732 (1994) ("Scalia's language requiring that an injury be 'actual and imminent' . . . could be read strictly by the Court to deny standing for those unborn. While a representative of future generations could prove that a particular agency action would produce some future harm, persuading the Court that the harm is particularized, actual, and imminent and not 'conjectural or hypothetical' would be difficult."); E. Joshua Rosenkranz, Note, *A Ghost of Christmas Yet to Come: Standing to Sue For Future Generations*, 1 J.L. & TECH. 67, 104 (1986) ("The root of the problem in posterity suits is that the injury is, by definition, not imminent. The ancient structure of the injunction rule must be refurbished in twenty-first century decor if the posterity suit is to survive."); *see generally* Cass R. Sunstein, *What's Standing After* Lujan *? Of Citizen Suits, "Injuries," and Article III*, 91 MICH. L. REV. 163 (1992) [herinafter Sunstein, *What's Standing?*] (criticizing standing requirement that plaintiff must prove an injury is "imminent").

10. Hsu, *supra* note 4, at 467–68.

11. Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59, 80 (1978); Warth v. Seldin, 422 U.S. 490, 498–499 (1975).

12. 405 U.S. 727 (1972).

13. *Id.* at 734–35.

14. *Id.* 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). 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. *Id.* at 757–60 (Blackmun, J., dissenting).

a plaintiff who seeks only to protect the rights or interests of future generations.

In some circumstances, a non-governmental party might be able to sue on behalf of both its own interests and those of future generations. The federal National Environmental Policy Act (NEPA) requires agencies to examine the long-term environmental impacts of their proposed projects.[15] NEPA, however, provides no substantive protection to future generations because it is a purely procedural statute that does not mandate that agencies actually protect either present or future generations.[16]

Courts have divided whether and when probabilistic risks justify standing.[17] Notably, the Court of Appeals for the District of Columbia Circuit has required plaintiffs to demonstrate that there is a "substantial probability" that a challenged government action will harm them, but other circuits have applied a more lenient test.[18] Despite the differences among lower courts, however, the

15. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370f (2006). In particular, NEPA requires federal agencies to prepare an environmental assessment of proposed federal actions that addresses "the environmental impact of the proposed action." 42 U.S.C. § 4332(C)(i); *see generally infra* notes 92, 95–97, 172–73, 283, 285–312 and accompanying text (discussing to what extent federal agencies must address environmental impacts pursuant to NEPA).

16. *See infra* note 93 and accompanying text.

17. *See infra* note 18 and accompanying text.

18. *Compare* 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) *with* Citizens for Better Forestry v. U.S. Dept. of Agric., 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Florida 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" (quotation marks omitted)); 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); Amanda Leiter, *Substance or Illusion? The Dangers of Imposing a Standing Threshold* 2–5 (Feb. 27, 2008) (unpublished manuscript) (on file with author), *available at* http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1099108 (arguing D.C. Circuit's threshold test of substantial harm in standing cases is inappropriate); Mank, *Future Generations, supra* note 3, at 445–63 (discussing split in circuits about how to apply footnote seven standing test in NEPA cases); 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, 1720 n.91 (2008) [herinafter Mank, *States Standing*]; 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 B.Y.U.L. REV. 415, 461–64 (2006)

courts of appeals have generally required non-government plaintiffs to demonstrate that they will likely be injured during their lifetimes to have sufficient injury for standing and, therefore, non-government plaintiffs may not be able to sue to prevent future harms that are unlikely to affect them during their lifetimes.[19]

In *Massachusetts v. EPA*,[20] the Supreme Court held that Massachusetts had standing to challenge the EPA's refusal to regulate carbon dioxide (CO_2) and other greenhouse gases (GHGs) emitted by new motor vehicles, in part because states are entitled to more lenient standing criteria than ordinary citizens.[21] The Court concluded that the Commonwealth of Massachusetts' allegation that increasing levels of GHGs from vehicles were causing sea levels to rise and damage its coastline was sufficient injury to meet standing requirements.[22] The Court considered evidence from computer models that climate change caused by gases such as GHGs through the year 2100 would result in ever rising sea levels and damage to Massachusetts coastline, despite Chief Justice Roberts' argument in his dissenting opinion that these models were too uncertain to justify standing.[23]

The Court's consideration of future harm to Massachusetts through the year 2100 arguably supports giving standing to other plaintiffs who seek to protect future generations, but the Court recognized standing for Massachusetts as a state and specifically announced that states are entitled to special consideration in standing analysis.[24] Additionally, the Court stressed that

(discussing split between Ninth and District of Columbia Circuits on causation portion of standing test).

19. *See infra* notes 275–80 and accompanying text.

20. 549 U.S. 497, 127 S. Ct. 1438 (2007).

21. *Id.* at 1452–58; Jonathan H. Adler, Essay, *Warming Up to Climate Change Litigation*, 93 VA. L. REV. IN BRIEF 63 (2007), *available at* http://www.virginialawreview.org/inbrief/2007/05/21/adler.pdf; Dru Stevenson, *Special Solicitude for State Standing:* Massachusetts v. EPA, 112 PENN ST. L. REV. 1, 2, 4–5 (2007); Mank, *Should States Have Greater Standing Rights Than Ordinary Citizens?*, *supra* note 19, at 1706–08, 1727–29; Kathryn A. Watts & Amy J. Wildermuth, Massachusetts v. EPA*: Breaking New Ground on Issues Other Than Global Warming*, *102 NW. U. L. REV. COLLOQUY* 1, 2 (2007), *available at* http://www.law.northwestern.edu/lawreview/Colloquy/2007/17/LRColl2007n17Watts.pdf.

22. *Massachusetts*, 127 S. Ct. at 1452–58.

23. *Id.* at 1456 n.20; *but see id.* at 1467–68 (Roberts, C.J., dissenting) (criticizing Massachusetts' use of estimates of sea level rise through 2100); *see* Adler, *supra* note 21, at 65; Mank, *States Standing*, *supra* note 18, at 1731, 1741, 1786.

24. *Massachusetts*, 127 S. Ct. at 1454–55; Adler, *supra* note 21, at 66–70; Robin Kundis Craig, *Removing "The Cloak of a Standing Inquiry": Pollution Regulation, Public Health, and Private*

Massachusetts was currently experiencing harms from climate change and rising sea levels.[25] It is not clear whether the Court would have recognized standing if all alleged harms were to occur in the future.

Ideally from the perspective of future generations, the Supreme Court should eliminate the "actual and imminent" requirement for Article III standing because it is inherently biased against suits that seek to prevent future harm.[26] The Court likely did not consider the interests of future generations when it established the "actual and imminent" requirement for standing. Nevertheless, the Court is unlikely to change its standing test in the near future.

Despite the "actual and imminent" requirement limitation of suits on behalf of future generations, the *Massachusetts* decision supports the protection of future generations in some circumstances. The Court recognized that states have a quasi-sovereign interest in protecting the health and safety interests of their citizens pursuant to the long established *parens patriae* doctrine.[27]

There is a good argument that states have a quasi-sovereign interest in not just their current citizens but also their future citizens.[28] Furthermore, the modern public trust doctrine and several state laws recognize that states have a duty to protect natural resources for future generations.[29] Because both federal and state law recognizes the important role of states in protecting natural resources for future generations, federal courts should apply a liberal approach to standing issues when states bring *parens patriae* or public trust suits to protect those resources for the state's future citizens.

Part I examines philosophical reasons for protecting future generations. Part II explores how international law and foreign law addresses the issue. Part III shows that federal law in several instances encourages or requires government agencies to consider

Risk in the Injury-in-Fact Analysis, 29 CARDOZO L. REV. 149, 194–96 (2007); Mank, *supra* note 22, at 1706–08, 1727–29; Jonathan Remy Nash, Essay, *Standing and the Precautionary Principle*, 108 COLUM. L. REV. 494, 513–14 (2008).

25. *Massachusetts*, 127 S. Ct. at 1455–1456; Craig, *supra* note 24, at 195–96; Mank, *States Standing*, *supra* note 18, at 1731.

26. Hsu, *supra* note 4, at 466–69.

27. *Massachusetts*, 127 S. Ct. at 1454–55; Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907); Mank, *States Standing*, *supra* note 18, at 1727–29.

28. *See infra* Part VII.

29. *See infra* notes 396, 419, 464–79 and accompanying text.

harms to or preserve resources for future generations. Part IV explains why current standing requirements including the requirement of "imminent" injury raise substantial obstacles for petitioners seeking to protect future generations. Part V discusses the ability of non-government plaintiffs to sue pursuant to NEPA or a substantive statute. Part VI examines *Massachusetts* and its possible implications for suits seeking standing for future generations. Part VII argues that both the *parens patriae* doctrine and the public trust doctrine support giving states the opportunity to protect future generations.

I. TO WHAT DEGREE SHOULD PRESENT GENERATIONS PROTECT FUTURE GENERATIONS?

Some argue that the present generation has a fiduciary responsibility to see that future generations enjoy resources and opportunities comparable to those enjoyed by the present generation.[30] Others argue that the present generation does not have a fiduciary duty to maximize the assets of or to preserve all resources for future generations, but does have a duty to act responsibly and not to impose undue burdens on future generations.[31] This article adopts a pragmatic approach, suggesting that we should protect future generations but only to the extent that doing so can be justified based on our ability to predict the future. There are persuasive arguments for the present generation to consider the interests of future generations for at least the next one hundred years, because we have some reasonable ability to estimate conditions for that period of time.[32] For example, the

30. *See generally* BRUCE ACKERMAN, SOCIAL JUSTICE IN THE LIBERAL STATE 203 (1980) (arguing that people alive today should have no priority over the unborn because "all citizens are at least as good as one another regardless of their date of birth"); JOHN RAWLS, A THEORY OF JUSTICE 284–93 (1971) (arguing that each generation should set aside some capital for future generations until just institutions are firmly established and suggesting that the temporal priority of people alive today yields them no moral priority); MARK SAGOFF, THE ECONOMY OF THE EARTH: PHILOSOPHY, LAW, AND THE ENVIRONMENT 63 (1988) (citation omitted) ("Our obligation to provide future individuals with an environment consistent with ideals we know to be good is an obligation not necessarily to those individuals but to the ideals themselves."); Mank, *Future Generations, supra* note 3, at 448 (summarizing arguments for protecting future generations).

31. Daniel A. Farber & Paul A. Hemmersbaugh, *The Shadow of the Future: Discount Rates, Later Generations, and the Environment*, 46 Vand. L. Rev. 267, 294–95 (1993); Mank, *Future Generations, supra* note 3, at 450.

32. *See generally* Jeffrey Gaba, *Environmental Ethics and Our Moral Relationship to Future*

United Nations' Intergovernmental Panel on Climate Change (IPCC) has made detailed estimates and projections concerning climate change through the year 2100.[33] Where it is feasible to estimate the impacts of our activities on future generations, the present generation should take reasonable steps to avoid actions that are likely to cause serious harms to future generations because we would have wanted past generations to do the same for us and we would likely want the present generation to help us if we knew that we would live in the future instead of now.[34]

Philosophers have questioned whether the present generation has a moral duty to help future generations: first, the present generation cannot know the moral and non-moral value preferences of future generations because they cannot communicate with us; second, we cannot quantify the impact of our actions on future generations; and third, we are uncertain about which intervening events or future inventions will affect the physical conditions in which future generations will live, especially those potentially living in the distant future.[35] But this epistemological objection is less convincing when we limit our concern for future generations to the impacts on those living one or two generations into the future.[36] Furthermore, some

Generations: Future Rights and Present Virtue, 24 Colum. J. Envtl. L. 249, 253–54 (1999) ("Several factors suggest that there is a sharp distinction in our moral relationship to people who will exist within the next few generations and those that will exist in the more distant future."); Mank, *Future Generations*, *supra* note 3, at 448–50; *see also* Farber, *supra* note 1, at 294 ("It would be a tremendous advance if our society took seriously the impacts of our actions over the next several centuries, even if we leave the truly distant future to fend for itself.").

33. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, FOURTH ASSESSMENT REPORT: CLIMATE CHANGE 2007: SYNTHESIS REPORT SUMMARY FOR POLICY MAKERS, 30 (Nov. 17, 2007) ("[w]arming of the climate system is unequivocal, as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice, and rising global average sea level"), available at http://www.ipcc.ch/pdf/assessment-report/ar4/syr/ar4_syr.pdf.

34. Mank, *Future Generations*, *supra* note 3, at 448.

35. Gaba, *supra* note 32, at 255–65 (questioning the ability of current generation to know preferences of distant future generations, predict the impact of our actions on them, or predict how intervening events or inventions will affect future generations); Christopher D. Stone, *Beyond Rio: "Insuring" Against Global Warming*, 86 Am. J. Int'l L. 445, 447–48 (1992) (questioning ability of climate science to predict changes in climate); Mank, *Future Generations*, *supra* note 3, at 448–49 (discussing epistemological objection to helping future generations).

36. Gaba, *supra* note 32, at 253–55 (arguing that present generation has a sufficient connection to the next two generations after us to sufficiently estimate some of their value preferences and therefore that the present generation has some moral obligation to protect

fundamental values such as preserving human health, species diversity, and natural beauty are unlikely to change in the near future.[37]

Professor Buchanan differentiates among "four roughly discrete groups of people: today's adults, today's children, people not yet born but who will have been born before those living today have died, and those people who will be born after everyone living today has passed on."[38] Today's adults can vote for themselves and make choices for their future. Although today's children cannot yet vote, society has a significant amount of information about today's children because we have an emotional connection with them, and children's values are at least partly shaped by their parents' values during their childhood, even if later experiences may change their views somewhat.[39] We also have enough information about people not yet born but who will have been born before those living today have died, or, in other words, people born within approximately the next one hundred years. We can estimate to some extent the preferences and values of our unborn grandchildren and even great-grandchildren.[40] Our actions affect the values of near future generations.[41] Many people who are young adults today between the ages of eighteen to thirty will still be living and voting fifty or

at least the next two generations); Mank, *Future Generations*, *supra* note 3, at 448–49 (rejecting epistemological objection to helping near future generations).

37. *Id.* at 449; Jeffrey Spear, Comment, *Remedy Selection Under CERCLA and Our Responsibilities to Future Generations*, 2 N.Y.U. ENVTL. L.J. 117, 124, 129–30 (1993) ("Certain fundamental interests exist such that no passage of time could conceivably be said to lessen their importance for sustaining the basic qualities of human life. These fundamental interests at a minimum would comprise interests in food, shelter, health, and, in the environmental context, interests in clean air, water and land."). *But see* Gaba, *supra* note 32, at 261–63 ("Recognition of an interest in preserving humanity as a whole, however, is of little practical value in addressing most environmental issues. . . . Different societies have, over time, placed different values on the sanctity or worth of life and the relationship of the individual to society as a whole. A universal and timeless belief in the value of life becomes even more problematic when the issue involves not the certainty, but the risk, of death or injury. The willingness, as a matter of personal choice or preference, to incur health risks certainly seems to be variable. . . .[W]e can be sure that the preferences and values of future generations will be different from our own.").

38. Buchanan, *supra* note 1, at 13.

39. Gaba, *supra* note 32, at 253–54 ("[W]e can and do have a direct emotional connection to our children and grandchildren, and even to our great-grandchildren.").

40. *Id.* at 254–55 ("[W]e are also capable of imagining the preferences and values of people who will exist within the immediate future. . . . [C]urrent humans who have an immediate emotional tie to their grandchildren's well-being and who understand the preferences of those grandchildren now can, and do, speak on their behalf.").

41. *Id.* at 264 (arguing "Present Actions Shape and Alter Future Preferences").

even up to seventy-five years into the future, and many children today will live to see the year 2100, as life expectancy is likely to increase in coming decades.[42] Today's adults usually have enough of a connection with their children and grandchildren to care about how they will live in the next fifty or one hundred years.[43] Conversely, for people who will be born after everyone living today has passed on, roughly those born more than a hundred years from now, there are greater uncertainties about both future conditions and the value preferences of future generations.[44]

The second philosophical objection to helping future generations is ontological. We cannot know the identity of future humans, if any, and therefore we owe no obligations to nameless, contingent persons.[45] Furthermore, the present generation cannot be legally or morally obligated to act on their behalf, because our actions in choosing one policy rather than another determines the composition of any future generation, and thus it is pointless to act for any future generations' benefit.[46] A counterargument to the

42. FELICITIE C. BELL & MICHAEL L. MILLER, LIFE TABLES FOR THE UNITED STATES SOCIAL SECURITY AREA 1900–2100, ACTUARIAL STUDY NO. 116, TABLE 14 & *passim* (estimating American life expectancy will increase significantly through 2100), available at http://www.socialsecurity.gov/OACT/NOTES/as116/as116TOC.html.

43. *See* Buchanan, *supra* note 1, at 16 ("People who have had children must have done so because they wanted to be parents (with obvious exceptions), so if they want their children to be happy, they will want their children to experience the happiness of parenting. This makes the original parents care about their grandchildren indirectly. . . .").

44. Gaba, *supra* note 32, at 255 ("[P]redictions of impacts in the more distant future involve greater and distinctive levels of uncertainty associated with the greater likelihood of unanticipated intervening events."), 263–64 (questioning ability of current generation to know preferences of distant future generations), 268 ("[H]istory suggests that we cannot predict the marginal utility of resources one hundred years from now.").

45. *Id.* at 257–58 (discussing non-identity problem regarding future generations); Aaron-Andrew P. Bruhl, Note, *Justice Unconceived: How Posterity Has Rights*, 14 Yale J.L. & Human. 393, 393–97 (2002) (same).

46. DEREK PARFIT, REASONS AND PERSONS 351–55 (1984) (summarizing the ontological argument that current generation's choices affect the very composition of future generations); Anthony D'Amato, *Do We Owe a Duty to Future Generations to Preserve the Global Environment?*, 84 Am. J. Int'l. L. 190, 190–92 (1990) (making the ontological objection that society does not owe a duty to the future, because our very act of discharging that duty determines the very individuals to whom we allegedly owed that duty); Buchanan, *supra* note 1, at 17 ("After everyone currently alive has died, however, the content of future generations will be determined by the combination of factors that determine the path of human existence. That is, every choice and non-choice brings into existence one possible universe while destroying other possible universes. Each choice determines, in one way or another through path dependence (or what is in essence the familiar butterfly effect), which of an infinite number of potential future human beings will actually come into existence."); Gaba, *supra* note 32, at 260 ("Our actions may have consequences on humans who will live one

ontological argument is that we can benefit a future generation regardless of which specific individuals are members by improving and preserving the environment in general, improving the conditions in which they will live.[47] Human beings appear to care about the future, even though they cannot predict who will live in that future.[48]

At a minimum, we have a duty to help future generations live in dignity and avoid misery.[49] We have a greater duty to persons living one or two generations into the future because we have more information about how our actions will affect them and have a stronger basis for predicting their value preferences.[50] This Article concludes that the present generation owes greater obligations to our children and grandchildren, but should also take reasonably cost-effective steps to protect more distant generations, including our great-grandchildren to the degree that present society can reasonably make estimates, perhaps as much as 100 years into the

hundred, five hundred, or a thousand years hence, and there is no single set of preferences held by 'the future.'"), 264–65 (arguing present actions shape and alter future preferences); Mank, *Future Generations*, *supra* note 3, at 449 (summarizing the ontological objection); Ruth Macklin, *Can Future Generations Properly Be Said to Have Rights?*, *in* RESPONSIBILITIES TO FUTURE GENERATIONS: ENVIRONMENTAL ETHICS, 151 (Ernest Partridge ed., 1980) (arguing future generations have no rights because they are not sentient persons); Spear, *supra* note 37, at 124–26 (summarizing the ontological objection); Bruhl, *supra* note 45, at 393–97 (same).

47. Buchanan, *supra* note 1, at 18–19; Mank, *Future Generations*, *supra* note 3, at 449; Spear, *supra* note 37, at 125–30 ("Certain fundamental interests exist such that no passage of time could conceivably be said to lessen their importance for sustaining the basic qualities of human life. These fundamental interests at a minimum would comprise interests in food, shelter, health, and, in the environmental context, interests in clean air, water and land."); Bruhl, *supra* note 45, at 413–17 (arguing moral duty exists to prevent obvious harms such as planting bomb even if we do not know identity of victims; Meyer, Lukas, *Intergenerational Justice*, *in* THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY (Edward N. Zalta ed., Summer 2003), http://plato.stanford.edu/archives/sum2003/entries/justice-intergenerational/ (last visited November 13, 2008). *See also* D'Amato, *supra* note 46, at 194–98 (acknowledging that it is possible to avoid the ontologic al argument if we owe a duty to act responsibly not to our descendants, but to all species and the environment in general); *but see* Gaba, *supra* note 32, at 261–63 ("Recognition of an interest in preserving humanity as a whole, however, is of little practical value in addressing most environmental issues. . . . Different societies have, over time, placed different values on the sanctity or worth of life and the relationship of the individual to society as a whole. A universal and timeless belief in the value of life becomes even more problematic when the issue involves not the certainty, but the risk, of death or injury. The willingness, as a matter of personal choice or preference, to incur health risks certainly seems to be variable. . . .[W]e can be sure that the preferences and values of future generations will be different from our own").

48. *Id.* at 258–59.

49. *See* Buchanan, *supra* note 1, at 18–19.

50. *Id.* at 16; Mank, *Future Generations*, *supra* note 3, at 450.

future.[51]

Related to the question of whether society should protect future generations is the complicated issue of quantifying and comparing present and future costs and benefits, which presents difficult questions about whether it is appropriate to discount future costs and benefits.[52] Because there are potentially an infinite number of future generations, one could argue that the present generation should sacrifice to ensure a better future for infinite future generations, but that same argument could be applied to every single generation in the future.[53] Professor Farber argues that some form of discounting of future benefits is necessary because the assumption that we owe a duty to an infinite number of future generations would result in the paradoxical result that each generation should indefinitely postpone enjoying environmental benefits so that future generations can enjoy greater benefits at some distant time that never arrives.[54] Accordingly, he argues that

51. Gaba, *supra* note 32, at 253–55; Mank, *Future Generations, supra* note 3, at 450.

52. *See generally* John J. Donohue III, *Why We Should Discount the Views of Those Who Discount Discounting*, 108 Yale L.J. 1901, 1905 (1999) ("While human lives are priceless from a philosophical or religious perspective, the resources that can be used to save lives are limited. If we fail to recognize this economic reality as we go about the process of choosing regulations, we will expend resources in a way that prevents us from saving as many lives as possible. It is not the idea that future lives are less valuable in any moral or ethical sense that leads to the process of discounting at a current rate of interest. Rather, discounting is appropriate in that, if invested, our resources are expected to grow at that rate, so that if we forego spending and invest the money instead, we can save more lives in the future with the amount foregone today."); Farber, *supra* note 1 (arguing in favor of discounting future costs and benefits); Farber & Hemmersbaugh, *supra* note 31 (discussing appropriate discount rate for future and suggesting low discount rate); Gaba, *supra* note 33, at 268–70 (discussing appropriate discount rate for future costs and benefits); Richard Revesz, *Environmental Regulation, Cost-Benefit Analysis, and the Discounting of Human Lives*, 99 Colum. L. Rev. 941, 987–1017 (1999) ("With respect to harms to future generations, the Article shows that the use of discounting is ethically unjustified. It privileges the interests of the current generation without a defensible foundation."); Cass R. Sunstein & Arden Rowell, *On Discounting Regulatory Benefits: Risk, Money, and Intergenerational Equity*, 74 U. Chi. L. Rev. 171 (2007) (discussing whether society should discount benefits to future generations, and arguing that it is appropriate to discount future benefits of money invested for health and environmental benefits).

53. Farber, *supra* note 1, at 293, 303–04; Gaba, *supra* note 32, at 268–69 ("If we attempt to maximize the utility experienced by all future humans, we run into the inescapable fact that there are simply more of them then there are of us . . . . This leads to the conclusion that each generation should sacrifice its present interests, at least beyond consumption to ensure minimal survival, to provide benefits to the future. Since this logic applies equally to each generation, we are led to a world of perpetual denial for the sake of a future that never arrives.").

54. Farber, *supra* note 1, at 293, 303–04, 308–18 ("A second normative argument is that

some form of discounting of future benefits is necessary, as society cannot allocate finite resources equally over an infinite number of future time periods.[55] However, a discount rate that is too high and favors present benefits over future benefits would lead us to reject small expenditures now that could save large numbers of lives a few hundred years from now.[56]

Another reasonable argument for discounting our investment in protecting future generations stems from the idea that it is usually more difficult to predict the impact of our actions on distant future generations than on the near future.[57] Even if future lives are as valuable as present lives, we are less certain about the impact of our actions on distant future generations.[58] For generations living in the twenty-second century and beyond, society probably lacks sufficient information about future environmental issues or the

failure to discount benefits will lead to indefinite postponement of environmental benefits. Investment returns provide an argument for postponing environmental benefits, perhaps even indefinitely. . .By the same logic, we can save even more lives if we further postpone our action and continue allowing the investment to grow, and so on ad infinitum. Thus, without discounting, we will continually put off the realization of the environmental benefit."); *see also* Gaba, *supra* note 32, at 268–69 ("[I]f we compare the benefits of present consumption enjoyed by the finite class of existing humans with the costs imposed by that consumption on the potentially infinite class of future humans, existing humans lose. Whatever costs, however small, that would be experienced by all future humans, will overwhelm whatever benefit, however great, to present humans.").

55. Farber, *supra* note 1, at 293, 303–04 ("A second normative argument is that failure to discount benefits will lead to indefinite postponement of environmental benefits. Investment returns provide an argument for postponing environmental benefits, perhaps even indefinitely. . .By the same logic, we can save even more lives if we further postpone our action and continue allowing the investment to grow, and so on ad infinitum. Thus, without discounting, we will continually put off the realization of the environmental benefit."), 308–18; *see also* Gaba, *supra* note 32, at 268–69 ("[I]f we compare the benefits of present consumption enjoyed by the finite class of existing humans with the costs imposed by that consumption on the potentially infinite class of future humans, existing humans lose. Whatever costs, however small, that would be experienced by all future humans, will overwhelm whatever benefit, however great, to present humans.").

56. *Id.* at 269–70 ("Discounting of future benefits is perverse and paradoxical since, for example, it can lead to a conclusion that one life saved today is of greater benefit than billions of lives saved hundreds of years from now. For example, with a five percent discount rate, one life today would have the same value as more than 3 billion lives in four hundred fifty years."); Sunstein & Rowell, *supra* note 52, at 172–76 (same).

57. Gaba, *supra* note 32, at 272–74 (arguing uncertainties of our impact on future generations justifies discounting future benefits); *see also* Farber & Hemmersbaugh, *supra* note 31, at 290 n.93 (same); *but see* Lisa Heinzerling, *Regulatory Costs of Mythic Proportions*, 107 Yale L.J. 1981, 2044–46 (1998) (criticizing future uncertainty rationale for discounting benefits to future generations because uncertainties can result in either greater or less benefits than predicted).

58. Gaba, *supra* note 32, at 272–74.

future societies to make wise choices, although we should try to avoid decisions that have long-term irreversible adverse consequences.[59] For example, a pollutant that causes cancer today may not be a threat in the future if science develops a cure for cancer or a process to contain or eliminate the pollutant.[60] Furthermore, future societies are likely to be substantially richer than today's society and thus better able to address problems than our society, in which case our generation should not make substantial sacrifices that may or may not improve the lives of distant future generations.[61] Because of these uncertainties, the current generation has a moral duty to avoid creating only those risks of irreversible environmental harm that could lead to catastrophic changes in human life or ecosystems.[62] Even with our limited knowledge of future events and the preferences of future generations, society can avoid obvious long-range harms such as nuclear war or drastic climate change that are likely to negatively affect distant generations.[63]

II. INTERNATIONAL LAW AND FOREIGN LAW RECOGNIZES THE RIGHTS OF FUTURE GENERATIONS

International law has recognized that nations and human beings in general have a moral and legal obligation to protect the rights of

59. *Id.* at 253–54 ("[A]lthough all predictions of the future are uncertain, the likelihood that we can accurately predict events that will occur several generations in the future is small."); Bruhl, *supra* note 45, at 437–38 (same); Lukas, *supra* note 47 (arguing that our knowledge of the future is limited, especially with respect to "the specific identities of persons in the further future").

60. Gaba, *supra* note 32, at 272–73.

61. Buchanan, *supra* note 1, at 35 ("If future generations will almost certainly be significantly richer than current generations, why must current generations make still more sacrifices to prevent any erosion at all in the (much higher) living standards of future generations?"); Donohue, *supra* note 52, at 1910 (arguing remote future generations are likely to have more resources than our generation).

62. Buchanan, *supra* note 1, at 24–25 (arguing that catastrophic environmental harms are cause for greater concern than economic harms because of their irreversibility); Farber & Hemmersbaugh, *supra* note 31, at 299–300, 303 (same); Louis Kaplow, *Discounting Dollars, Discounting Lives: Intergenerational Distributive Justice and Efficiency*, 74 U CHI. L. REV. 79, 117 (2007) ("It may be that due to the increasing marginal harm caused by certain forms of environmental degradation, the existence of irreversibilities, and certain forms of uncertainty, efficiency requires that a great deal of investment be made to preserve the environment."); Mank, *Future Generations*, *supra* note 3, at 450 (arguing that society "should try to avoid creating substantial risks of future disaster.").

63. *Id.* at 450.

future generations.[64] The 1972 Stockholm Declaration of the United Nations Conference on the Human Environment declares that, "man has the fundamental right to freedom, equality and adequate conditions of life, in an environment of a quality that permits a life of dignity and well-being, and he bears a solemn responsibility to protect and improve the environment for present and future generations."[65] In addition to the Stockholm Declaration, the 1973 Convention on International Trade in Endangered Species (CITES),[66] the 1972 Convention Concerning the Protection of the World Cultural and Natural Heritage,[67] the 1982 United Nations World Charter for Nature,[68] and the 1992 Convention on Biological Diversity[69] include language supporting the preservation of the environment for future generations.[70] Additionally, the preamble of the 1993 North American Agreement on Environmental Cooperation, joined by the United States, Canada and Mexico, emphasizes the importance of "cooperation [on environmental issues] in achieving sustainable development for the well-being of present and future generations."[71] None of

64. Allen, *supra* note 9, at 719–22; Raymond A. Just, Comment, *Intergenerational Standing under the Endangered Species Act: Giving Back the Right to Biodiversity after* Lujan v. Defenders of Wildlife, 71 TUL. L. REV. 597, 612–14 (1996).

65. Stockholm Declaration of the United Nations Conference on the Human Environment, U.N. Doc. A/CONF.48/14/Rev. 1, at 3 (1973), reprinted in 11 I.L.M. 1416 (1972). Section 6 of the Stockholm Declaration's preamble states, "To defend and improve the environment for present and future generations has become an imperative goal for mankind." Principle 2 provides, "The natural resources of this earth, including the air, water, land, flora and fauna . . . must be safeguarded for the benefit of present and future generations.'" *Id.* Finally, Principle 5 provides, "The non-renewable resources of the earth must be employed in such a way as to guard against the danger of their future exhaustion and to ensure that benefits from such employment are shared by all mankind." *See* Allen, *supra* note 9, at 719 n.29; Just, *supra* note 64, at 612 n.79.

66. Convention on International Trade in Endangered Species of Wild Fauna and Flora, Mar. 6, 1973, 27 U.S.T. 1087, 993 U.N.T.S. 243, *available at* http://www.cites.org/eng/disc/text.shtml.

67. United Nations Educational, Scientific & Cultural Organization Convention Concerning the Protection of the World Cultural and Natural Heritage, Nov. 16, 1972, 27 U.S.T. 37, U.N. Doc. ST/LEG/SER.C./10.

68. World Charter for Nature, Oct. 28, 1982, G.A.Res. 37/7, 37 U.N. GAOR Supp. (No. 51) at 17, U.N.Doc. A/37/51, reprinted in 22 I.L.M. 455 (1983), *available at* http://www.un.org/documents/ga/res/37/a37r007.htm.

69. Convention on Biological Diversity, UNEP, June 5, 1992, preamble, 31 I.L.M 818, 823 (stating that the parties to the agreement are "[d]etermined to conserve and sustainably use biological diversity for the benefit of present and future generations.").

70. *See* Allen, *supra* note 9, at 720–21; Bruhl, *supra* note 45, at 428–29; Just, *supra* note 64, at 613–14.

71. North American Agreement on Environmental Cooperation, Sept. 8–14, 1993,

these international agreements, however, specifically requires American courts to give standing rights to plaintiffs who seek to represent future generations.

Several laws and decisions of foreign nations at least indirectly support the protection of future generations. The laws or constitutions of several nations impose on the people a general duty to conserve natural resources or the environment, which at least indirectly confers some implied protection for future generations, and a few foreign laws and constitutional provisions more specifically address the interests of future generations.[72] The United States Supreme Court is increasingly open to considering foreign law as helpful guidance in considering the difficult policy choices that are at the heart of modern constitutional decision making, although Justice Scalia and Justice Thomas have vigorously opposed this trend.[73]

preamble, 32 I.L.M. 1480, 1482, *available at* http://www.cec.org/pubs_info_resources/law_treat_agree/naaec/naaec01.cfm?varlan=english.

72. Const. of the Argentine Nation § 41 (1998) (granting "[a]ll inhabitants . . . the right to a healthy and balanced environment fit for human development in order that productive activities shall meet present needs without endangering those of future generations" and committing the Argentine federal government to "provide for the protection of this right, the rational use of natural resources, the preservation of the [nation's] natural and cultural heritage and of [its] biological diversity"); Braz. Const. art. 225 (1988) ("All persons are entitled to an ecologically balanced environment, which is an asset for the people's common use and is essential to healthy life, it being the duty of the Government and of the community to defend and preserve it for present and future generations."); Const. of India, art. 48A (1950) ("The State shall endeavour to protect and improve the environment and to safeguard the forests and wild life of the country."); Environment Act, No. 127 (1986) (N.Z.) ("An Act to . . . [e]nsure that, in the management of natural and physical resources, full and balanced account is taken of . . . [t]he needs of future generations"); Const. of the Rep. of Poland, art. 74(1), (3) (1997) (providing that "[p]ublic authorities shall pursue policies ensuring the ecological security of current and future generations" and granting "[e]veryone. . . the right to be informed of the quality of the environment and its protection"); EDITH BROWN WEISS, IN FAIRNESS TO FUTURE GENERATIONS 107 & app. B (1989) (listing and excerpting foreign constitutions that impose on the people a general duty to conserve natural resources or the environment); Kristian Skagen Ekeli, *Green Constitutionalism: The Constitutional Protection of Future Generations*, 20 RATIO JURIS 378, 381 n.2 (2007) (listing the constitutions of Norway, Poland and South Africa as addressing the interests of future generations to natural resources or a healthy environment); Bruhl, *supra* note 45, at 431; Jim Chen, *Webs of Life: Biodiversity Conservation as a Species of Information Policy*, 89 IOWA L. REV. 495, 516 n.142 (2004); Dan L. Gildor, *Preserving the Priceless: A Constitutional Amendment to Empower Congress to Preserve, Protect, and Promote the Environment*, 32 ECOLOGY L.Q. 821, 849 n.195 (2005).

73. *See* Lawrence v. Texas, 539 U.S. 558, 572–73, 576–77 (2003) (relying in part on decisions of British Parliament, the European Court of Human Rights and other nations for the principle that homosexual adults have a right to engage in intimate, consensual sexual

In particular, one foreign decision has clearly addressed the problem of standing for future generations. In *Minors Oposa v. Secretary of the Department of Environment and Natural Resources*, the Supreme Court of the Philippines in 1994 held that a group of schoolchildren had standing to challenge timber leasing of old growth forests "for themselves, for others of their generation and for the succeeding generations."[74] The Supreme Court of the Philippines recognized that the present generation has responsibility for future generations, stating:

> Needless to say, every generation has a responsibility to the next to preserve that rhythm and harmony for the full enjoyment of a balanced and healthful ecology. Put a little differently, the minors' assertion of their right to a sound environment constitutes, at the same time, the performance of their obligation to ensure the protection of that right for the generations to come.[75]

Although it relied in part on the Constitution of the Philippines and national law, the *Oposa* decision emphasized the universal natural law principle that the right to a healthy environment "concerns nothing less than self-preservation and self-perpetuation . . . the advancement of which may even be said to predate all governments and constitutions. As a matter of fact,

conduct); *but see Lawrence*, 539 U.S. at 598 (Scalia, J., dissenting) (rejecting majority's consideration of foreign law); *Foster* v. *Florida*, 537 U.S. 990 n.* (2002) (Thomas, J., concurring in denial of certiorari) ("this Court's Eighth Amendment jurisprudence should not impose foreign moods, fads, or fashions on Americans."); *see generally The Relevance of Foreign Legal Materials in U.S. Constitutional Cases: A Conversation Between Justice Antonin Scalia and Justice Stephen Breyer*, 3 INT'L J. CONST. L.519 (2005) (transcribing debate between Justice Breyer and Justice Scalia about whether Supreme Court should consider foreign law in making constitutional decisions).

74. *The Philippines: S. Ct. Decision in* Minors Oposa v. Sec. of DENR, 33 I.L.M. 173, 185 (1994); Allen, *supra* note 9, at 714–18 (discussing *Oposa*); Just, *supra* note 64, at 617–21 (same); Owens, *supra* note 1, at 366–68 (same). The Indian Supreme Court has also emphasized the importance of protecting forests for future generations. State of Himachal Pradesh v. Ganesh Wood Products, AIR 1996 SC 149, 163 (the Indian Supreme Court recognized the importance of inter-generational equity in protecting forests, holding a government forest plan was invalid because "it is contrary to public interest involved in preserving forest wealth, maintenance of environment and ecology and considerations of sustainable growth and inter-generational equity. After all, the present generation has no right to deplete all the existing forests and leave nothing for the next and future generations.").

75. *Oposa*, 33 I.L.M. at 185; Allen, *supra* note 9, at 717–18 (discussing *Oposa's* recognition of standing for future generations); Just, *supra* note 64, at 619–21 (same); Owens, *supra* note 1, at 366–68 (same).

these basic rights need not even be written in the Constitution for they are assumed to exist from the inception of humankind."[76] The *Oposa* decision's broad natural law philosophy of standing is inconsistent with the United States Supreme Court's requirement, laid out in *Sierra Club,* that a plaintiff's standing depends on whether she has suffered an injury and its rejection of the Sierra Club's claim that it had standing as a representative of future generations.[77]

III. UNITED STATES FEDERAL LAW AND FUTURE GENERATIONS

Several federal statutes refer to the interests of future generations. These provisions are often vague and leave broad discretion to government agencies in how the agencies address the interests of future generations. In some cases, NEPA[78] requires that agencies examine the long-term environmental impacts of their projects, but it is a purely procedural statute that does not mandate the protection of future generations.[79] Part III will focus on federal law relating to future generations; Part VII will address state laws that are concerned with future generations.

The United States Constitution's preamble describes a broad intergenerational goal to "secure the blessings of Liberty to ourselves and our Posterity. . . ."[80] That general goal, however, is

76. *Oposa,* 33 I.L.M. at 187; Allen, *supra* note 9, at 717–18 (discussing *Oposa* decision's use of Philippines' law and natural law); Just, *supra* note 64, at 619–21 (emphasizing *Oposa* decision's use of natural law).

77. Sierra Club v. Morton, 405 U.S. 727, 734–35 (1972). One district court case decided before *Sierra Club* allowed an environmental public interest group to represent unborn generations. Cape May County Chapter, Inc., Izaak Walton League of Am. v. Machia, 329 F. Supp. 504, 510–17 (D.N.J. 1971); Bruhl, *supra* note 45, at 432 n.104. In his dissenting opinion in *Sierra Club,* Justice Blackmun cited *Cape May* among a number of lower court decisions that had taken a broader view of standing than adopted by the *Sierra Club* majority opinion. *Sierra Club,* 405 U.S. at 759–60 n.1 (Blackmun, J., dissenting). It is likely that the *Cape May* decision is no longer good law in light of the *Sierra Club* decision's requirement that an organization demonstrate that its members suffer a concrete injury. *Sierra Club,* 405 U.S. at 734–40.

78. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321–4370f (2006). In particular, NEPA requires federal agencies to prepare an environmental assessment of proposed federal actions that addresses "the environmental impact of the proposed action." 42 U.S.C. § 4332(C)(i); *see generally infra* notes 92, 94–96, 171–73, 282, 284–312 and accompanying text (discussing to what extent federal agencies must address environmental impacts pursuant to NEPA).

79. *See infra* note 94 and accompanying text.

80. U.S. CONST. pmbl.; Allen, *supra* note 9, at 723; Just, *supra* note 64, at 615. At least one commentator has argued that the framers of the Constitution intended to protect the rights

not specifically enforceable. None of the Constitution's specific provisions or amendments mention future generations.

The preambles or opening policy statements of several federal environmental laws recognize the importance of protecting future generations,[81] but these laws leave it to the discretion of the current presidential administration and its agencies to enforce that goal.[82] These laws include the Coastal Zone Management Act,[83] the acid rain provisions of the Clean Air Act,[84] the Nuclear Waste Policy Act,[85] and the National Park Service Act.[86]

Most importantly, the NEPA requires federal agencies, including their surrogates in some cases, to assess environmental impacts before they take any major action.[87] NEPA specifically states that "it is the continuing responsibility of the Federal government to use all practicable means, consistent with other essential considerations of national policy, to [ensure] . . . that the Nation may . . . fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."[88] NEPA also states that the government, in its environmental statements, should address "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term

of future generations. Jim Gardner, *Discrimination Against Future Generations: The Possibility of Constitutional Limitation*, 9 ENVTL. L. 29, 35–38 (1978); *see also* Owens, *supra* note 1, at 340.

81. Allen, *supra* note 9, at 724–25; Just, *supra* note 64, at 615.

82. Mank, *Future Generations*, *supra* note 4, at 453–65 (discussing failure of Congress, President and agencies to address the goal of protecting future generations contained in several federal environmental statutes).

83. 16 U.S.C. §§ 1451–1464 (2006) (proclaiming in § 1452(1) a policy "to preserve, protect, develop, and where possible, to restore or enhance, the resources of the Nation's coastal zone for this and succeeding generations").

84. 42 U.S.C. §§ 7401–7671(q) (2006) (stating in § 7651(a)(5) that "current and future generations of Americans will be adversely affected by delaying measures to remedy the [acid rain] problem.").

85. 42 U.S.C. §§ 10,101–10,270 (2006) (stating in § 10,131(a)(7) that "appropriate precautions must be taken to ensure that [high-level radioactive] waste and spent [nuclear] fuel do not adversely affect the public health and safety and the environment for this or future generations").

86. 16 U.S.C. § 1 (2006) (establishing the National Park Service). Section 1 states: "The service thus established shall promote and regulate the use of the Federal areas known as national parks, monuments, and reservations . . . by such means and measures as conform to the fundamental purpose of the said parks, monuments, and reservations, which purpose is to conserve the scenery and the natural and historic objects and the wild life therein and to provide for the enjoyment of the same in such manner and by such means as will leave them unimpaired for the enjoyment of future generations."

87. *See supra* note 78 and accompanying text

88. 42 U.S.C. § 4331(b)(1); Allen, *supra* note 9, at 723–24; Just, *supra* note 64, at 616.

productivity."[89] This provision could include the impacts of present projects on future generations. Furthermore, NEPA recognizes "the worldwide and long-range character of environmental problems."[90] Although NEPA lacks a citizen suit provision, environmental groups can use the Administrative Procedure Act to challenge a government agency's finding that a project does not have significant environmental impacts (a finding which allows the agency to prepare a shorter environmental assessment instead of a full environmental impact assessment) or to challenge the adequacy of the assessment.[91] As is discussed in Part IV, standing requirements for NEPA plaintiffs are relaxed compared to others, and therefore it may be easier for NEPA plaintiffs to obtain standing for future generations than in other lawsuits.[92] Because NEPA is a purely procedural statute, however, courts lack any substantive power to protect the rights of future generations.[93]

The United States Supreme Court has held that NEPA requirements apply only when the government actively proposes to build a project, not when the government merely contemplates the possibility of doing so in the future.[94] The Council on

89. 42 U.S.C. § 4332(2)(C)(iv).

90. 42 U.S.C. § 4332(2)(F); Lynton K. Caldwell, *Beyond NEPA: Future Significance of the National Environmental Policy Act*, 22 HARV. ENVTL. L. REV. 203, 203–05, 236–39 (1998) (arguing NEPA has an "orientation towards the future").

91. 5 U.S.C. § 702 (2006) ("A person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof."); Mank, *Global Warming*, *supra* note 2, at 47; Allen, *supra* note 9, at 723–24; Matthew William Nelson, Comment, *NEPA and Standing: Halting the Spread of "Slash-and-Burn" Jurisprudence*, 31 U.C. DAVIS L. REV. 253, 256 n.10 (1997).

92. *See infra* notes 165–81 and accompanying text.

93. *See generally* Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) ("NEPA itself does not mandate particular results, but simply prescribes the necessary process."); Strycker's Bay Neighborhood Council, Inc. v. Karlen, 444 U.S. 223, 227–28 (1980) (citation omitted) ("Once an agency has made a decision subject to NEPA's procedural requirements, the only role for a court is to ensure that the agency has considered the environmental consequences; it cannot 'interject itself within the area of discretion of the executive as to the choice of the action to be taken.'"); William L. Andreen, *In Pursuit of NEPA's Promise: The Role of Executive Oversight in the Implementation of Environmental Policy*, 64 IND. L.J. 205, 243–45 (1989) (discussing cases holding that NEPA is only procedural – but also discussing cases holding that NEPA has a very narrow form of substantive review); Mank, *Global Warming*, *supra* note 2, at 47; Philip Weinberg, *It's Time to Put NEPA Back on Course*, 3 N.Y.U. ENVTL. L.J. 99 (1994) (discussing cases holding NEPA is only procedural and arguing Congress intended NEPA to have substantive consequences); Nelson, *supra* note 91, at 257 ("Therefore, while environmental groups can challenge the procedural adequacy of an EIS, they cannot use the courts to impose or require any particular result."), 279–80.

94. Kleppe v. Sierra Club, 427 U.S. 390, 405–06 (1976).

Environmental Quality's (CEQ) regulations define a "proposal" requiring NEPA review as one where a federal agency has a "goal and is actively preparing to make a decision on one or more alternative means of accomplishing that goal and the effects can be meaningfully evaluated."[95] Thus, a plaintiff likely cannot get the government to address the impacts of what might happen if the government is considering the possibility of building projects that may increase GHGs in the future, but has not yet committed to building them.[96]

IV. STANDING AND FUTURE GENERATIONS

A major obstacle for plaintiffs who wish to sue on behalf of future generations, as was permitted in the *Oposa* decision in the Philippines, is the federal Article III standing doctrine, which requires that a plaintiff have suffered concrete and actual or imminent injuries from the defendant's actions. A non-government plaintiff cannot usually sue on behalf of third parties and, therefore, likely cannot sue directly on behalf of future generations.[97] There is also a serious issue whether a non-government plaintiff can sue to address generalized injuries that affect everyone, such as climate change caused by greenhouse

95. 40 C.F.R. § 1508.23 (2007).

96. *Kleppe*, 427 U.S. at 405–06 (holding NEPA requires agency to address only the impacts of actually proposed projects).

97. Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59, 80 (1978) ("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.") (case involving non-government plaintiffs); Warth v. Seldin, 422 U.S. 490, 499 (1975) (same) (case involving non-government plaintiffs). Pursuant to the *parens patriae* doctrine, however, the government in some circumstances may sue to protect third parties who lack the legal capacity to protect themselves, such as minors or the mentally incompetent, to protect its quasi-sovereign interest in the health or welfare of its citizens, or to protect its quasi-sovereign interest in its natural resources or environment for its citizens. *See* Massachusetts v. E.P.A., 549 U.S. 497, 127 S. Ct. 1438, 1454–55 (2007) (holding states are entitled to more lenient standing criteria when they sue as *parens patriae* to protect quasi-sovereign interests of citizens); Alfred L. Snapp & Son, Inc. v. Puerto Rico *ex rel.* Barez, 458 U.S. 592, 600–10 (1982) (reviewing history and rationale for role of states in suing as *parens patriae* to protect quasi-sovereign interests of its citizens); Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907) (recognizing right of state to protect its quasi-sovereign interest in the health and safety of its citizens); Mank, *States Standing*, *supra* note 18, at 1727–28, 1756–68 (discussing *parens patriae* doctrine and standing rights of states).

gases.[98]

On the other hand, some aspects of the Article III standing doctrine are somewhat favorable to or at least not hostile to plaintiffs who may suffer harms in the future. Except for tax cases, which impose a nexus requirement, a plaintiff who is suffering some injuries at the present time because of a defendant's conduct can also sue to address at least some injuries that may occur in the future.[99] The Supreme Court has relaxed the immediacy and redressability requirements in procedural cases and recognized that plaintiffs may sue in some circumstances if procedural violations of the law by the government may cause future harms.[100] In some cases, courts have allowed plaintiffs to sue where there is a statistical probability of future injury from a defendant's action even though no actual injury has yet occurred, although a recent D.C. Circuit decision has questioned the constitutionality of probabilistic standing.[101] The Eighth Circuit, however, has suggested that a non-government plaintiff must show that a probabilistic injury is likely to occur during his lifetime and may not sue to address harms more likely to occur after his death.[102] A non-government plaintiff may sometimes have standing to sue to address harms that may affect him in the future, but it is more questionable whether he can sue to protect future generations that live beyond his lifetime.

A. Constitutional Standing

Standing addresses whether a party to a law suit is a proper party to sue, and does not address whether the asserted claim is appropriate.[103] Standing is one factor in determining whether a suit is legitimately justiciable in court.[104] All litigants in federal Article III courts must meet certain standing requirements to bring

98. *See infra* notes 126–42 and accompanying text.

99. *See infra* notes 143–164 and accompanying text.

100. *See infra* notes 165 –81 and accompanying text.

101. Public Citizen, Inc. v. Nat'l Highway Traffic Safety Admin., 489 F.3d 1279 (D.C. Cir. 2007); *See infra* notes 248–50 and accompanying text.

102. Shain v. Veneman, 376 F.3d 815 (8th Cir. 2004); *infra* notes 263–75, 279 and accompanying text.

103. Jeremy Gaston, Note, *Standing on Its Head: The Problem of Future Claimants in Mass Tort Class Actions*, 77 TEX. L. REV. 215, 219 (1998).

104. *Id.* "Other aspects of justiciability include the doctrines of ripeness, mootness, advisory opinions, and political questions." *Id.*

a suit.[105] The federal courts have jurisdiction over a case only if at least one plaintiff can prove that he or she has standing for each form of relief sought.[106] A federal court must dismiss a case without deciding the merits if the plaintiff fails to meet the constitutional standing test.[107]

Although the Constitution does not explicitly require that a plaintiff have standing to file suit in federal courts, since 1944 the Supreme Court has inferred from Article III's limitation of judicial decisions to "Cases" and "Controversies" that federal courts must utilize standing requirements to guarantee that the plaintiff has a genuine interest and stake in a case.[108] Before 1944, the Court had relied on common law principles to determine if a litigant had a sufficient legal interest to sue.[109] With the development of the administrative state, and statutes that protected the interests of vast numbers of people, the Court created a formal standing doctrine to limit suits to plaintiffs who have an actual injury that a court

105. Mank, *States Standing*, *supra* note 18, at 1709–10; Michael E. Solimine, *Recalibrating Justiciability in Ohio Courts*, 51 CLEV. ST. L. REV. 531, 533 (2004).

106. DaimlerChrysler Corp. v. Cuno, 547 U.S. 332, 351–54 (2006); Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc., 528 U.S. 167, 185 (2000) ("a plaintiff must demonstrate standing separately for each form of relief sought."); Mank, *States Standing*, *supra* note 18, at 1710.

107. *See DaimlerChrysler*, 547 U.S. at 339–43; *Friends of the Earth*, 528 U.S. at 180 ("[W]e have an obligation to assure ourselves that [petitioner] had Article III standing at the outset of the litigation."); Mank, *States Standing*, *supra* note 18, at 1710; Mank, *Global Warming*, *supra* note 2, at 23.

108. "The judicial Power shall extend to all Cases, in Law and Equity, arising under this Constitution, the Laws of the United States, and Treaties made, or which shall be made, under their Authority; to all Cases affecting Ambassadors, other public Ministers and Consuls; to all Cases of admiralty and maritime Jurisdiction; to Controversies to which the United States shall be a Party; to Controversies between two or more States; between a State and Citizens of another State; between Citizens of different States; between Citizens of the same State claiming Lands under Grants of different States, and between a State, or the Citizens thereof, and foreign States, Citizens or Subjects." U.S. CONST. art. III, § 2; Stark v. Wickard, 321 U.S. 288, 310 (1944) (stating explicitly the Article III standing requirement in a Supreme Court case for the first time); *DaimlerChrysler*, 547 U.S. at 339–43 (explaining why Supreme Court infers that Article III's case and controversy requirement necessitates standing limitations); Elk Grove Unified School Dist. v. Newdow, 542 U.S. 1, 11 (2004) ("Article III standing . . . enforces the Constitution's case-or-controversy requirement."); Mank, *States Standing*, *supra* note 18, at 1709–10; Mank, *Global Warming*, *supra* note 2, at 22 (stating Supreme Court first explicitly referred to standing in 1944 *Stark* decision); 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 9, at 168–79, 208 (arguing framers of the Constitution did not intend that Article III would require standing).

109. RICHARD H. FALLON, JR., ET AL., HART AND WECHSLER'S THE FEDERAL COURTS AND THE FEDERAL SYSTEM 127 (5th ed. 2003); Nash, *supra* note 24, at 505.

could redress if the suit was successful.[110]

Standing requirements promote broader constitutional principles. Standing doctrine precludes unconstitutional advisory opinions.[111] Additionally, standing requirements support separation of powers principles defining the division of powers between the judiciary and political branches of government so that the "Federal Judiciary respects 'the proper — and properly limited — role of the courts in a democratic society.'"[112]

For standing in an Article III court, the Supreme Court, in its 1992 decision *Lujan v. Defenders of Wildlife*, required a plaintiff to show that: (1) she has "suffered an injury-in-fact," which is (a) "concrete and particularized" and (b) "actual or imminent, not conjectural or hypothetical"; (2) "there must be a causal connection between the injury and the conduct complained of-the injury has to be fairly. . .trace[able] to the challenged action of the defendant, and not. . .th[e] result [of] the independent action of some third party not before the court"; and (3) "it must be likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision."[113] A plaintiff has the burden of establishing all three prongs of the standing test.[114]

In *Lujan*, the Court held that plaintiffs who alleged that they intended to visit Egypt and Sri Lanka in the future to observe endangered species in those countries did not have standing to challenge the United States government's funding of projects that might cause the extinction of those species. Plaintiffs had not met

110. Valley Forge Christian College v. Americans United for Separation of Church and State, Inc., 454 U.S. 464, 472 (1982) (stating that standing's injury requirement "tends to assure that the legal questions presented to the court 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."); FALLON ET AL., *supra* note 109, at 127; Nash, *supra* note 24, at 505.

111. *DaimlerChrysler*, 547 U.S. at 340; FEC v. Akins, 524 U.S. 11, 23–24 (1998); Nash, *supra* note 24, at 506.

112. *DaimlerChrysler*, 547 U.S. at 339–41 (quoting Allen v. Wright, 468 U.S. 737, 750 (1984)); Mank, *States Standing*, *supra* note 18, at 1710; Nash, *supra* note 24, at 506; Antonin Scalia, *The Doctrine of Standing as an Essential Element of the Separation of Powers*, 17 SUFFOLK U. L. REV. 881, 881, 896 (1983).

113. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560–61 (1992) (citations and quotation marks omitted); Mank, *Global Warming*, *supra* note 2, at 23–24.

114. *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(stating also that parties asserting federal jurisdiction must carry the burden of establishing standing under Article III); Mank, *Global Warming*, *supra* note 2, at 24.

the first prong of the standing test because they were not suffering actual or imminent injuries, but merely speculative injuries depending on whether they ever traveled to observe these species.[115] Additionally, the *Lujan* decision rejected the plaintiffs' ecosystem nexus theory that they were harmed by distant events in Egypt and Sri Lanka since all nature is interconnected, finding that such vague allegations are not concrete and particularized injuries.[116] Furthermore, the Court rejected the plaintiffs' animal nexus and vocational nexus theories that a sincere interest or professional interest in these endangered species was enough to establish standing in the absence of any direct concrete contact with these species.[117]

Professor Hsu has argued 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 or future generations.[118] 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 that will harm unidentifiable persons in the future.[119] He proposes a standing and legal regime that recognizes probabilistic environmental harms, such as climate change, that will cause future injuries;[120] however, his approach to standing is contrary to the prevailing *Lujan* standing framework that an injury must be (a) "concrete and particularized" and (b) "actual or imminent, not conjectural or hypothetical."[121]

In addition to constitutional standing limitations, the courts may impose prudential standing limitations.[122] As is discussed below,

115. *Lujan*, 504 U.S. at 562–64; Mank, *Global Warming*, *supra* note 2, at 30.

116. 504 U.S. at 565–66; Mank, *Global Warming*, *supra* note 2, at 31–32.

117. *Lujan*, 504 U.S. at 566–67; Mank, *Global Warming*, *supra* note 2, at 31–32.

118. Hsu, *supra* note 4, at 466–69.

119. *Id.* at 436, 440–51, 466–69.

120. *Id.* at 436–37, 440–51, 466–69, 472–73, 485–504 (arguing that courts, agencies and legislatures should recognize standing and legal liability for probabilistic harms even if the future victims cannot yet be identified).

121. *Lujan*, 504 U.S. at 560 (quotation marks omitted).

122. Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59, 80 (1978) ("Our prior cases have, however, acknowledged 'other limits on the class of persons who may invoke the courts' decisional and remedial powers,' ... which derive from general prudential concerns 'about the proper-and properly limited-role of the courts in a democratic society.'") (citing Warth v. Seldin, 422 U.S. 490, 498–99 (1975).

the Court, for example, has "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."[123] Additionally, the Court has generally rejected standing based on the legal rights or interests of third parties.[124] In *Duke Power*, the Court explained why it usually rejects third party standing:

> 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.[125]

The prudential limitation against third party suits likely bars a plaintiff from filing suit on behalf of future generations unless the plaintiff is likely to be harmed by the same thing that threatens future generations.

B. Generalized Injuries

The Supreme Court has been cautious about allowing standing where a plaintiff asserts generalized injuries that affect many people.[126] The Court, however, has in some cases allowed standing if the plaintiff can demonstrate concrete injuries rather than abstract ones.[127] Because suits seeking to protect future generations usually involve generalized injuries, it is important to examine the Court's approach to standing in cases involving generalized injuries.

In cases involving alleged constitutional violations that affect the public as a whole, especially in cases involving alleged misuse of taxpayer funds,[128] the Court has sometimes declared that these

123. *Duke Power*, 438 U.S. at 80; *infra* note 125 and accompanying text.

124. *Duke Power*, 438 U.S. at 80; *Warth*, 422 U.S. at 498.

125. 438 U.S. at 80.

126. *See infra* notes 130–36 and accompanying text.

127. *See infra* notes 137–42 and accompanying text.

128. Hein v. Freedom From Religion Found. Inc., 127 S. Ct. 2553 (2007) (holding taxpayers do not have standing to challenge the White House program on federal aid to faith-based organizations and limiting taxpayer challenges under the First Amendment's Establishment Clause to congressional legislation benefiting religion); DaimlerChrysler Corp. v. Cuno, 547 U.S. 332, 342–49 (2006) (denying standing in state taxpayer suit in part because plaintiffs' alleged injuries were common to the public at large and stating that

injuries are more appropriately redressed by the political branches than the federal judiciary in light of separation of powers principles.[129] In *Duke Power*, 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.'"[130] In *Gladstone Realtors v. Bellwood*, the Court 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."[131] Additionally, the generalized grievance doctrine assists courts in avoiding broader remedies than that "required by the precise facts to which the court's ruling would be applied."[132]

In its 1998 decision *Federal Election Commission v. Akins* (*Akins*),[133] the Court clarified which types of mass or general injuries are appropriate for judicial redress.[134] The Court granted standing to

federal taxpayers generally lack standing unless suit is based on Constitution's Establishment Clause); Mank, *States Standing*, *supra* note 18, at 1710–13 (discussing Supreme Court's doctrine regarding standing for tax cases and for generalized injuries). *But see* Flast v. Cohen, 392 U.S. 83, 105–06 (1968) (holding that a federal taxpayer had standing to challenge spending allegedly in violation of Constitution's Establishment Clause because "the *Establishment Clause*. . .specifically limit(s) the taxing and spending power conferred by Art. I, § 8.").

129. *See* Lujan v. Defenders of Wildlife, 504 U.S. 555, 560–61 (1992) (requiring "particularized" injury); *id.* at 573–77 (stating that the Constitution assigns the responsibility for addressing grievances affecting the public at large to the political branches of government); Schlesinger v. Reservists Comm. to Stop the War, 418 U.S. 208, 221 n.10 (stating the judicial role of deciding cases involving particularized injuries "[i]s 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."); Mank, *Global Warming*, *supra* note 2, at 21–22.

130. 438 U.S. 59, 80 (1978) (quoting Warth v. Seldin, 422 U.S. 490, 498 (1975)); Mank, *States Standing*, *supra* note 18, at 1711.

131. 441 U.S. 91, 99–100 (U.S. 1979); Mank, *States Standing*, *supra* note 18, at 1711.

132. *Schlesinger*, 418 U.S. at 221–222; Mank, *States Standing*, *supra* note 18, at 1711.

133. 524 U.S. 11 (1998).

134. *Id.* at 21–25; 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, *Global Warming*, *supra* note 2, at 37–40 (same); Mank, *States Standing*, *supra* note 18, at 1713; Cass R.

voters who requested information from the Federal Election Commission, even though the plaintiffs were similarly situated to other voters, because the statute at issue overcame any prudential limitations against generalized grievances.[135] 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.'"[136] The *Akins* Court stated that its prior decisions had denied standing only if an alleged injury was too abstract, but had approved standing even if many people suffered the same injury if the harm was concrete.[137] Justice Breyer's majority opinion, which was joined by Chief Justice Rehnquist and Justices Stevens, Kennedy, Souter and Ginsburg, observed that "an injury . . . widely shared . . . does not, by itself, automatically disqualify an interest for Article III purposes. Such an interest, *where sufficiently concrete*, may count as an 'injury-in-fact.'"[138] The *Akins* decision stated that a plaintiff who suffers a concrete actual injury normally can fulfill the injury-in-fact requirement 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. We conclude that, similarly, the informational injury at issue here, directly related to voting, the most basic of political rights, is sufficiently concrete and specific such that the fact that it is widely shared does not deprive

Sunstein, *Informational Regulation and Informational Standing:* Akins *and Beyond*, 147 U. PA. L. REV. 613, 634–636, 644–645 (1999) [herinafter Sunstein, *Informational Standing*].

135. *Akins*, 524 U.S. at 13–21; Hodas, *supra* note 134, at 471; Mank, *Global Warming*, *supra* note 2, at 37; Mank, *States Standing*, *supra* note 18, at 1713; Sunstein, *Informational Standing*, *supra* note 134, at 634–36, 642–45, 671–75 (concluding in *Akins* that the statute at issue overrode any prudential limitations against generalized grievances).

136. *Akins*, 524 U.S. at 24–25; Hodas, *supra* note 134, at 471–72; Mank, *Global Warming*, *supra* note 2, at 37–40 (discussing *Akins*); Mank, *States Standing*, *supra* note 18, at 1713; Sunstein, *Informational Standing*, *supra* note 134, at 634–36 (same).

137. *Akins*, 524 U.S. at 24–25; Mank, *Global Warming*, *supra* note 2, at 38; Mank, *States Standing*, *supra* note 18, at 1714; Sunstein, *Informational Standing*, *supra* note 134, at 636, 644.

138. *Akins*, 524 U.S. at 24 (emphasis added); Mank, *Global Warming*, *supra* note 2, at 38.

> Congress of constitutional power to authorize its vindication in the federal courts.[139]

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."[140]

The *Akins* decision did not settle all questions about when plaintiffs alleging generalized grievances are entitled to standing. *Akins* suggested that the Court's reservations about standing for generalized grievances are usually prudential limitations that Congress may override in a statute, but the decision did not completely eliminate the possibility that Article III in some circumstances places constitutional limits on generalized grievances.[141] For plaintiffs seeking to represent future generations, the Court's concerns about suits involving generalized grievances could lead courts to find that the allegations are too generalized to warrant standing. Arguably in light of *Akins*, harms that may occur in future generations are abstract and not concrete because they have not happened yet and there are many uncertainties about what impacts will occur in the future. On the other hand, the *Massachusetts* decision considered computer modeling evidence that sea levels would rise significantly between 2007 and 2100 in concluding that the Commonwealth had standing.[142] Subpart E will examine how courts have addressed when plaintiffs may have standing for probabilistic injuries.

C. No Nexus Requirement Outside of Tax Cases

The *Duke Power* decision rejected the need for a nexus between the injuries asserted and the constitutional rights asserted, except in the special case of suits brought by taxpayers challenging alleged

139. *Akins*, 524 U.S. at 24–25; Hodas, *supra* note 134, at 472; Mank, *Global Warming*, *supra* note 2, at 38.

140. 269 F.3d 459, 469 (4th Cir. 2001).

141. Sunstein, *Informational Standing*, *supra* note 135, at 637, 642–645, 671–675; Mank, *States Standing*, *supra* note 18, at 1714–1715.

142. Massachusetts v. E.P.A., 549 U.S. 497, 127 S. Ct. 1438, 1456 n.20 (2007); *but see id.* at 1467–68 (Roberts, C.J., dissenting) (criticizing Massachusetts' use of estimates of sea level rise through 2100); *see* Adler, *supra* note 21, at 65; Mank, *States Standing*, *supra* note 18, at 1731, 1741, 1786.

constitutional violations.[143] The Court observed that it had only applied the nexus requirement in taxpayer cases and had rejected it in other types of suits.[144] In citizen suit cases, the Court concluded that a plaintiff need satisfy only the Article III standing requirements and need not meet a nexus test.[145]

In *Duke Power*, the plaintiffs challenged a $560 million dollar liability limit in the Price-Anderson Act that limited the liability of nuclear power plant operators in the case of a serious accident.[146] The Court concluded that the plaintiffs would suffer immediate injuries from the two proposed nuclear plants from a "'sharp increase' in the temperature of two lakes presently used for recreational purposes resulting from the use of the lake waters to produce steam and to cool the reactor" and the plants' emission of non-natural radiation into the air and water of the plaintiff's environment.[147] By finding that the plaintiffs had met the injury prong of the standing test based on these immediate injuries, the Court avoided the more contentious issue of whether the possibility of a future nuclear accident would have constituted a sufficient injury for Article III standing.[148] The Court concluded that the plaintiffs' injuries were fairly traceable to the enactment of the Price-Anderson Act because the district court had found, based on the testimony of Duke Power employees, that the utility company would not build or operate the two proposed plants but for the limited liability provisions in the Act.[149]

Appellant Duke Power argued that "in addition to proof of injury and of a causal link between such injury and the challenged conduct, appellees must demonstrate a connection between the injuries they claim and the constitutional rights being asserted."[150] In *Flast v. Cohen*,[151] which addressed whether taxpayers have standing to challenge the federal government's alleged misuse of appropriations for unconstitutional purposes, the Court had imposed a nexus requirement: "The nexus demanded of federal

143. Duke Power Co. v. Carolina Envtl. Study Group, Inc., 438 U.S. 59, 78–79 (1978).
144. *Id.* at 78–79.
145. *Id.* at 79.
146. *Id.* at 59, 64.
147. *Id.* at 73–74.
148. *Id.*
149. *Id.* at 74–78.
150. *Id.* at 78–79.
151. 392 U.S. 83 (1968).

taxpayers has two aspects to it. First, the taxpayer must establish a logical link between that status and the type of legislative enactment attacked. . . . Secondly, the taxpayer must establish a nexus between that status and the precise nature of the constitutional infringement alleged."[152] Summarizing Duke Power's nexus argument, the Court stated: "Since the environmental and health injuries claimed by appellees are not directly related to the constitutional attack on the Price-Anderson Act, such injuries, the argument continues, cannot supply a predicate for standing."[153] In other words, Duke Power argued that a plaintiff could challenge the liability provisions only if there was an actual accident exceeding the liability limits in the Act.[154]

Both Justice Stewart and Justice Stevens in their respective concurrences argued that the connection between the petitioners' present injuries and the possibility that a serious nuclear accident at the reactors would exceed the liability limits was too remote to justify standing or federal jurisdiction over the case.[155] Justice Stewart objected:

> The claim under federal law is to be found in the allegation that the Act, if enforced, will deprive the appellees of certain property rights, in violation of the Due Process Clause of the Fifth Amendment. One of those property rights, and perhaps the sole cognizable one, is a state-created right to recover full compensation for tort injuries. The Act impinges on that right by limiting recovery in major accidents.
>
> But there never has been such an accident, and it is sheer speculation that one will ever occur. For this reason I think there is no present justiciable controversy, and that the appellees were without standing to initiate this litigation.[156]

Similarly, Justice Stevens argued:

> The string of contingencies that supposedly holds this litigation together is too delicate for me. We are told that but for the Price-Anderson Act there would be no financing of nuclear power plants, no development of those plants by private parties, and hence no

152. *Id.* at 102.

153. *Duke Power*, 438 U.S. at 78.

154. *Id.* at 78 n.23.

155. Daniel A. Farber, *Uncertainty as a Basis for Standing*, 33 HOFSTRA L. REV. 1123, 1124–25 (2005) [herinafter Farber, *Uncertainty*].

156. *Duke Power*, 438 U.S. at 94–95 (Stewart, J., concurring).

> present injury to persons such as appellees; we are then asked to remedy an alleged due process violation that may possibly occur at some uncertain time in the future, and may possibly injure the appellees in a way that has no significant connection with any present injury. It is remarkable that such a series of speculations is considered sufficient either to make this litigation ripe for decision or to establish appellees' standing . . . .[157]

Quoting from the Act's legislative history, even the majority acknowledged that "the likelihood of an accident occurring which would result in claims exceeding the sum of the financial protection required and the governmental indemnity is exceedingly remote, albeit theoretically possible."[158]

Some commentators have suggested that the *Duke Power* court deliberately manipulated its standing test to find standing because the majority wanted to reach the merits and find the Act constitutional so that the nuclear power industry could continue to operate.[159] Some lower courts have questioned whether *Duke Power* remains good law, although the Supreme Court has never overruled the decision.[160] Professor Farber, however, observes that the uncertainty about whether courts would uphold the liability limits had real consequences for the nuclear power industry's ability to finance and build reactors and argues that the real world consequences on the industry to resolve the liability issue should have been enough for standing in the case without the Court's manipulation of the facts to justify standing.[161] Conversely, Justice Stevens acknowledged that "[t]he Court's opinion will serve the national interest in removing doubts concerning the constitutionality of the Price-Anderson Act," but nevertheless

157. *Duke Power*, 438 U.S. at 102–03 (Stevens, J., concurring).

158. *Duke Power*, 438 U.S. at 85–86 (quoting H.R. REP. No. 89-883, at 6–7 (1965)); Farber, *Uncertainty*, *supra* note 155, at 1125.

159. *See, e.g.*, ERWIN CHEMERINSKY, FEDERAL JURISDICTION 82 (3d ed. 1999); Farber, *Uncertainty*, *supra* note 155, at 1125 ("Scholars have been equally skeptical and have tended to view the case as an example of the manipulation of standing doctrine to obtain a desired outcome.").

160. *See, e.g.*, United Artists Theatre Circuit, Inc. v. the Fed. Commc'ns Comm'n, 147 F. Supp. 2d 965, 974 n.5 (2000) (observing that "[a] leading treatise criticizes *Duke Power's* standing and justiciability analysis, questioning why the NRC was found to be a proper party when it had no enforcement authority over the liability limit statute (citing *Moore's Federal Practice*, § 103.44[2] at 103–71.")); Oceanport Indus., Inc. v. Wilmington Stevedores, Inc., 636 A.2d 892, 904 n.16 (1994) (arguing that *Duke Power* "ha[s] long been called into question, and narrowed to the point of invalidation.").

161. Farber, *Uncertainty*, *supra* note 155, at 1123–26.

objected that the case was premature until an event occurred that exceeded the liability limits.[162]

The *Duke Power* decision's rejection of a nexus between the injuries asserted and the relief requested can be helpful to plaintiffs seeking remedies that will benefit both the plaintiffs and future generations. In *Duke Power*, the Court held that the liability provisions did not violate the due process clause or equal protection clauses of the Constitution.[163] If the plaintiffs' constitutional challenge had succeeded, however, their suit would have stopped the construction of the plants to their immediate benefit, but also potentially to the benefit of future generations who would not be exposed to radiation from a potential accident that exceeded the Act's liability limits. Similarly, if it concluded that a plaintiff demonstrated injuries from global warming, a court might issue a remedy that benefits not just the plaintiffs, but also those who might be harmed in the future even though those persons could not sue because their future injuries are too speculative. Indeed, the benefits to future generations from a successful law suit involving climate change might be far larger than to present day plaintiffs.[164]

D. Relaxed Standing in Procedural Rights Cases

Especially in NEPA cases, the Court has relaxed the immediacy and redressability standing requirements for procedural rights plaintiffs who will likely suffer a concrete injury in the future if the government builds a proposed project.[165] In footnote seven of *Lujan v. Defenders of Wildlife*, Justice Scalia stated that plaintiffs who may suffer a concrete injury resulting from a procedural error by the government are entitled to a more relaxed application of redressability and immediacy standing requirements because there is often a significant time lag between when a procedural error occurs and when that error could cause concrete injuries to the plaintiff. Justice Scalia offered the example of a plaintiff who lives

162. *Duke Power*, 438 U.S. at 103 (Stevens, J., concurring).

163. *Duke Power*, 438 U.S. at 82–94.

164. Owens, *supra* note 1, at 339 n.97 ("For instance, problems such as the accumulation of low-level nuclear waste, the gradual destruction of the ozone layer, and global warming may have minimal impacts on the present generation but their cumulative effects may have much more severe consequences for generations in the future.").

165. Mank, *Global Warming*, *supra* note 2, at 35.

near a proposed dam who seeks an environmental assessment under NEPA to study its potential environmental impacts as the prototypical example of a procedural injury.[166] He stated:

> 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.[167]

Justice Scalia limited footnote seven standing to plaintiffs who would suffer concrete injuries resulting from the government's procedural error. Under footnote seven, a plaintiff living near a proposed dam has a potential concrete injury that poses a risk significant enough to provide standing, but "persons who live (and propose to live) at the other end of the country from the dam" do not have "concrete interests affected" and do not have standing to challenge a procedural violation.[168]

Footnote seven's relaxed approach to standing applies only to suits challenging procedural errors by the government.[169] That raises the question of which cases are primarily procedural in nature and which are substantive in nature.[170] Justice Scalia likely chose a NEPA suit as his example in footnote seven because such suits are purely procedural in nature. NEPA is a procedural statute that requires the government to assess and to report the

166. Lujan v. Defenders of Wildlife, 504 U.S. 555, 572 n.7 (1992); Mank, *Global Warming*, *supra* note 2, at 35–36; Mank, *States Standing*, *supra* note 18, at 1716.

167. *Lujan*, 504 U.S. at 572 n.7; *see* Cantrell v. Long Beach, 241 F.3d 674, 682 (9th Cir. 2001) (discussing relaxed standing requirements for procedural injuries); Bertagna, *supra* note 18, at 457 (same); Mank, *Global Warming*, *supra* note 2, at 35–36 & n.240 (same).

168. *Lujan*, 504 U.S. at 572 n.7; *Id.* at 573 n.8 ("we do *not* hold that an individual cannot enforce procedural rights; he assuredly can, so long as the procedures in question are designed to protect some threatened concrete interest of his that is the ultimate basis of his standing."); William W. Buzbee, *Citizen Suits and the Future of Standing in the 21st Century: From* Lujan *to* Laidlaw *and Beyond: Standing and the Statutory Universe*, 11 Duke Envtl. L. & Pol'y F. 247, 257 (2001); Mank, *States Standing*, *supra* note 18 at 1716.

169. *Lujan*, 504 U.S. at 572 n.7.

170. Mank, *States Standing*, *supra* note 18, at 1716.

environmental impacts of its proposed actions, but does not contain any substantive rules defining whether an agency may build a project.[171] If a NEPA suit is successful, a court will order the government to correct any procedural errors in its assessment process, including requiring an agency to conduct additional studies of the environmental impacts of a proposed project, but a court cannot order the government to make any substantive changes in the project because the agency has the sole policymaking discretion to decide whether the value of the proposed action outweighs any environmental consequences.[172] Accordingly, even if a plaintiff is successful in forcing the government to conduct additional studies assessing the environmental impacts of a proposed dam, the government has sole discretion in decide whether to build or not build the dam.[173] Without the relaxed standards for redressability and immediacy in footnote seven, NEPA plaintiffs generally could not establish standing because the government could cancel a proposed project for any number of reasons.[174]

A serious flaw concerning footnote seven is that it does not clearly explain the degree to which redressability and immediacy requirements for standing are waived or relaxed in procedural rights cases, the plaintiff's burden of proof to establish standing in a procedural rights case, or how to define what is a procedural right.[175] For example, in the dam hypothetical, the immediacy

171. Zachary D. Sakas, *Footnotes, Forests, and Fallacy: An Examination of the Circuit Split Regarding Standing in Procedural Injury-Based Programmatic Challengers*, 13 U. BALT. J. ENVTL. L. 175, 187 (2006); Miriam S. Wolok, *Standing for Environmental Groups: Procedural Injury as Injury-In-Fact*, 32 NAT. RESOURCES J. 163, 182 (1992) ("Generally, the procedural injuries . . . [alleged under NEPA are the] increased risk that an agency overlooked environmental consequences in its decision-making process and the lost opportunity to participate in that process."); Mank, *States Standing*, *supra* note 18, at 1717.

172. Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 350 (1989) ("NEPA itself does not mandate particular results, but simply prescribes the necessary process."); Mank, *Global Warming*, *supra* note 2, at 47; Mank, *States Standing*, *supra* note 18, at 1717; Matthew William Nelson, Comment, *NEPA and Standing: Halting the Spread of "Slash-and-Burn" Jurisprudence*, 31 U.C. DAVIS L. REV. 253, 257 (1997) ("Therefore, while environmental groups can challenge the procedural adequacy of an EIS, they cannot use the courts to impose or require any particular results."); *Id.* at 279–80.

173. Mank, *States Standing*, *supra* note 18, at 1717.

174. Mank, *Global Warming*, *supra* note 2, at 36; Mank, *States Standing*, *supra* note 18, at 1717.

175. See Brian J. Gatchel, *Informational and Procedural Standing after* Lujan v. Defenders of Wildlife, 11 J. LAND USE & ENVTL. L. 75, 92–108 (1995) (criticizing footnote seven in *Lujan* for failing to explain to what extent immediacy and redressability standing requirements are

requirement arguably should be eliminated for plaintiffs because they have no control over how quickly the government will build the dam, but the Court never expressly addresses that issue.[176] Nor did footnote seven provide any clear guidelines about to what extent courts are to relax or eliminate redressability requirements for procedural rights plaintiffs.[177] The simplest solution would be to eliminate redressability requirements for procedural rights plaintiffs who meet footnote seven requirements rather than establish a complicated intermediate redressability test for such plaintiffs.[178] This is complicated however, by the fact that it is not clear whether *Lujan* intended to eliminate that requirement.

The courts of appeals have divided regarding how to apply footnote seven to NEPA cases, disagreeing about the burden of proof a plaintiff must meet to demonstrate that she is likely to be harmed by the agency's action.[179] As is discussed below, courts

relaxed or eliminated for procedural rights plaintiffs); Mank, *Global Warming, supra* note 2, at 36–37 & n.244 (same and citing commentators); Mank, *States Standing, supra* note 18, at 1718–20 (same); Sunstein, *What's Standing?, supra* note 9, at 208, 225–26 (same); Christopher T. Burt, Comment, *Procedural Injury Standing After* Lujan v. Defenders of Wildlife, 62 U. CHI. L. REV. 275, 285 (1995) ("*Lujan*'s procedural injury dicta is not without its problems, however. At best, it is vague and provides little guidance for prospective plaintiffs and the lower courts."); Douglas Sinor, *Environmental Law*, 75 DENV. U. L. REV. 859, 879–81 (1998) (same).

176. Gatchel, *supra* note 175, at 93–94, 99–100; Sinor, *supra* note 175, at 880.

177. Gatchel, *supra* note 175, at 100–06, 108; Sinor, *supra* note 175, at 880; Mank, *States Standing, supra* note 18, at 1719.

178. Gatchel, *supra* note 175, at 105–06, 108; Mank, *States Standing, supra* note 18, at 1720.

179. 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); *compare* Citizens for Better Forestry v. United States Dept. of Agriculture, 341 F.3d 961, 972 (9th Cir. 2003) (rejecting *Florida 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.'"); Committee to Save the Rio Hondo v. Lucero (*Rio Hondo*), 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); Mank, *Global Warming, supra* note 2, at 45–63 (discussing split in circuits about how to apply footnote seven standing test in NEPA cases); Mank, *States Standing, supra* note 18, at 1720; Bertagna, *supra* note 18, at 461–64 (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test); *see also* Sakas, *supra* note 171, 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).

should reject the unduly stringent "substantial probability" test used in the D.C. Circuit and instead adopt the "reasonable probability" test used in the Ninth Circuit.[180]

Even under footnote seven's relaxed standing requirements, there are substantial questions about whether a plaintiff may obtain standing on behalf of future generations. Under footnote seven, a plaintiff must allege that it would experience concrete harms if the government actually builds a proposed project.[181] What is not clear from footnote seven alone is whether a plaintiff could require the government to assess the impact on future generations beyond the plaintiffs' likely lifespan.

E. Standing and Threatened Risks

Footnote seven in the *Lujan* decision implies that a procedural rights plaintiff may obtain standing for a threatened risk, such as a dam that might be built in the future.[182] Even in ordinary, non-procedural standing cases, the Court has suggested that a plaintiff may obtain standing for a threatened risk. In *Babbitt v. United Farm Workers Nat'l 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 enough."[183] The *Lujan* court's three-part test stated that standing was possible for an "imminent" injury, which would appear to include injuries that have not yet taken place, but not for one that is "conjectural or hypothetical."[184] The "imminent" injury test, however, does not clearly explain how probable a risk to a plaintiff must be for the litigant to have standing.

180. *See supra* note 179 and accompanying text.

181. Lujan v. Defenders of Wildlife, 504 U.S. 555, 572 n.7 (1992) (stating standing is available in NEPA action where plaintiff seeks government to address concrete harms that will occur in the future if project is built).

182. *See supra* notes 166–68 and accompanying text.

183. Babbitt v. United Farm Workers National Union, 442 U.S. 289, 298 (1979) (internal quotation marks omitted); *see also* Valley Forge Christian College v. Americans 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.").

184. *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).

In its *Laidlaw* decision, the Court suggested that a threatened injury to a plaintiff's health is enough for standing if the plaintiff has "reasonable concerns" about the risk.[185] Subsequently, several courts of appeals decisions have recognized standing for threatened or probabilistic injuries.[186] Most of these cases have involved threatened risks that would occur during the plaintiffs' lifetimes. In particular, the Eighth Circuit has rejected standing where the alleged risks were likely to occur after the plaintiffs' lifetimes.[187] Part V, infra, will examine cases involving future risks that might occur beyond the plaintiffs' lifetime.

1. *Laidlaw*

In *Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc. (Laidlaw)*,[188] the Court addressed allegations involving a threatened harm that had not yet caused injury to the plaintiffs. The plaintiffs claimed that they had standing to sue a defendant that discharged mercury into a river since they avoided swimming or fishing in the river because of their fear of potential harms from the mercury, although they could not prove that the levels of mercury were high enough to harm them or the environment.[189] The Supreme Court concluded that the plaintiffs had met the test for Article III standing because their "reasonable concerns" about recreational

185. *See* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc., 528 U.S. 167, 183 (2000).

186. *See* Baur v. Veneman, 352 F.3d 625, 633 (2d Cir. 2003) ("the 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); Central 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 24, at 190–94 (discussing cases).

187. Shain v. Veneman, 376 F.3d 815, 818 (8th Cir. 2004); *see infra* notes 263–75, 279 and accompanying text.

188. 528 U.S. 167 (2000).

189. *Id.* at 181–83; Craig, *supra* note 24, at 181.

use of the river were sufficient.[190] 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."[191] In addressing whether the plaintiffs had standing to seek civil penalties that would be paid to the United States, the Court determined that plaintiffs had standing to seek such penalties because they would deter the defendant from committing future violations that could harm the plaintiff.[192] Accordingly, *Laidlaw* appears to recognize that if a plaintiff has "reasonable concerns" about a present threatened harm, the plaintiff may seek injunctive relief or civil penalties to prevent future harms to the plaintiff from similar conduct in the future.[193] The Court's focus on whether the plaintiffs had suffered personal injuries arguably ignores whether the environment has suffered injuries both present and long-term.[194]

2. *Gaston Copper*

After the *Laidlaw* decision, several courts of appeals decisions have found standing where the plaintiff has reasonable concerns that a defendant's activities pose a probabilistic risk of harm to them in the future. In *Friends of the Earth, Inc. v. Gaston Copper Recycling Corp.*, the Fourth Circuit, in an en banc decision, declared:

> 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. . . . [O]ther circuits have had no trouble understanding the injurious nature of risk itself. . . .
>
> . . . By producing evidence that Gaston Copper is polluting Shealy's nearby water source, CLEAN has shown an increased risk to its member's downstream uses. This threatened injury is sufficient to provide injury-in-fact. Shealy need not wait until his lake becomes barren and sterile or assumes an unpleasant color and smell before he can invoke the protections of the Clean Water Act. Such a novel

190. *Laidlaw*, 528 U.S. at 181.
191. *Id.* at 181; Craig, *supra* note 24, at 181.
192. *Laidlaw*, 528 U.S. at 181.
193. *See id.* at 185–93.
194. Craig, *supra* note 24, at 181–84.

> demand would eliminate the claims of those who are directly threatened but not yet engulfed by an unlawful discharge. Article III does not bar such concrete disputes from court.[195]

The court concluded the plaintiff, who alleged that he and his family swam and fished in a lake less often because they feared the defendant's discharges, "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."[196] The court's reference to threatened injury presumably referred to potential future injuries.[197]

3. *Ecological Rights Foundation*

Similarly, the Ninth Circuit has recognized that a plaintiff may demonstrate an injury-in-fact if the defendant's actions significantly increase the plaintiff's risk of future injury. In *Ecological Rights Foundation v. Pacific Lumber Co.*, the Ninth Circuit interpreted *Laidlaw* as recognizing that:

> [A]n 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 or will suffer in his or her degree of aesthetic or recreational satisfaction—if the area in question remains or becomes environmentally degraded.[198]

In *Ecological Rights Foundation*, several plaintiffs claimed to use Yager Creek for recreational activities such as swimming and fishing, but that their use and enjoyment was diminished by the defendant's pollution.[199] The Ninth Circuit rejected defendants' assertion that the plaintiffs must demonstrate actual harm to the environment.[200] Citing *Laidlaw* and *Gaston Copper*, the *Ecological Rights Foundation*

195. Friends of the Earth, Inc. v. Gaston Copper Recycling Corp., 204 F.3d 149, 160 (4th Cir. 2000) (en banc); *accord* Ecological Rights Found. v. Pacific Lumber Co., 230 F.3d 1141, 1151 (9th Cir. 2000) (quoting *Gaston Copper* with approval); Craig, *supra* note 24, at 191 (discussing *Gaston Copper* as recognizing that increased risk is enough to provide standing for plaintiff).

196. *Gaston Copper*, 204 F.3d at 156.

197. *See id.*

198. *Ecological Rights Found.*, 230 F.3d at 1149; Craig, *supra* note 24, at 191–92.

199. *Ecological Rights Found.*, 230 F.3d at 1144–45, 1150–53.

200. *Id.* at 1151.

court stated that a plaintiff's reasonable concerns about an increased risk of harm from a defendant's activities is sufficient.[201] The Ninth Circuit recognized 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.[202]

4. *Maine People's Alliance*

The First Circuit has also recognized a plaintiff's standing if a defendant's actions pose a reasonable possibility of future harm. In *Maine People's Alliance and Natural Resources Defense Council v. Mallinckrodt,* the First Circuit concluded that the Resource Conservation and Recovery Act's (RCRA) 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."[203] The court explained:

> It is the *threat* that must be close at hand, even if the perceived *harm* is not. For example, 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.[204]

Rejecting the defendant's assertion that the plaintiffs had failed to prove an injury-in-fact because there was no 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."[205] Following

201. *Id.* at 1151–52.

202. *Id.* at 1152 n.12.

203. 471 F.3d 277, 279 (1st Cir. 2006) (emphasis added), *cert. denied,* 128 S. Ct. 93 (2007); Craig, *supra* note 25, at 193–94.

204. *Maine People's Alliance,* 471 F.3d at 279 n.1.

205. *Id.* at 283–84.

Laidlaw's reasonable concerns standing test for plaintiffs, the First Circuit stated 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."[206] The court concluded that the plaintiffs had standing because 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 "in sufficient quantity that it may well present an imminent and substantial danger to the environment."[207]

5. *Baur*

Credible evidence that a plaintiff faces an increased lifetime risk of harm caused by a defendant's activities may be sufficient to obtain standing. In *Baur v. Veneman*, the Second Circuit found standing where Department of Agriculture regulations permitted livestock potentially infected with mad cow disease to enter the food chain, thereby increasing the plaintiff's risk of contracting a fatal neurological disease.[208] The court determined "that exposure to an enhanced risk of disease transmission may qualify as injury-in-fact in consumer food and drug safety suits. . . ."[209] To demonstrate an injury-in-fact created by an increased risk of contracting a disease due to regulatory action or omission, the court stated that the plaintiff "must allege that he faces a direct risk of harm which rises above mere conjecture."[210] The court explained that it would consider the seriousness of the disease in assessing whether the plaintiff had demonstrated an injury-in-fact: "[b]ecause the evaluation of risk is qualitative, the probability of harm which a plaintiff must demonstrate in order to allege a cognizable injury-in-

206. *Id.* at 284.

207. *Id.* at 285.

208. 352 F.3d 625 (2nd Cir. 2003); Craig, *supra* note 24, at 198–200. 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 Encephalophy]-contaminated beef products." *Baur*, 352 F.3d at 628; Craig, *supra* note 24, at 199 n.263.

209. *Baur*, 352 F.3d at 628; Craig, *supra* note 24, at 199 n.264.

210. *Baur*, 352 F.3d at 636; Craig, *supra* note 24, at 199 n.266.

fact logically varies with the severity of the probable harm."[211] The court concluded that Baur's allegation that he was at increased risk of contracting Variant Creutzfeldt-Jakob disease (vCJD) due to inadequate government regulation were sufficient to meet standing requirements because vCJD is "a deadly disease with no known cure or treatment. Thus, even a moderate increase in the risk of disease may be sufficient to confer standing."[212] Because Baur successfully alleged a credible threat of harm from downed cattle, the Second Circuit rejected the government's argument that he must also quantify the extent of the risk, concluding 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."[213]

6. Will the District of Columbia Circuit Continue to Recognize Standing in Cases Involving Future Harms? *NRDC and Public Citizen*

The Court of Appeals for the District of Columbia Circuit has adopted the most difficult test for plaintiffs alleging future injuries by requiring plaintiffs to demonstrate that there is a "substantial probability" that a challenged government action will harm them.[214] The D.C. Circuit's substantial probability test has been criticized by other circuits and is arguably more restrictive than the imminence and concreteness requirements detailed in *Lujan*.[215] As a result of

211. *Baur*, 352 F.3d at 637; Craig, *supra* note 24, at 199 n.267.

212. *Baur*, 352 F.3d at 637; Craig, *supra* note 24, at 199 n.268.

213. *Baur*, 352 F.3d at 643; *see generally id.* at 637–43 (discussing Baur's allegations of a credible threat of harm).

214. Fla. Audubon Soc'y v. Bentsen, 94 F.3d 658, 666–72 (D.C. Cir. 1996) (applying a restrictive, multipart test for standing in procedural rights cases, requiring that a plaintiff demonstrate (1) a particularized environmental injury (2) that is placed at demonstrably greater risk by governmental action or omission and (3) that such risk is fairly traceable to the agency action or omission); Mank, *Global Warming*, *supra* note 2, at 45–63 (discussing a circuit split over how to apply footnote seven standing test in NEPA cases); Mank, *States Standing*, *supra* note 18, at 1720 n.91; Bertagna, *supra* note 18, at 461–64 (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test).

215. *See* Citizens for Better Forestry v. United States Dept. of Agric., 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Florida 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) (criticizing *Florida Audubon's* "substantial probability" test and instead requiring that plaintiffs establish an "increased risk of adverse environmental consequences" from the alleged failure to follow NEPA); Leiter, *supra* note 18, (manuscript at 15–16) (arguing D.C. Circuit's threshold test of substantial harm in standing cases is more

its strict standing test, the D.C. Circuit has recognized standing in only a few cases involving probabilistic future injuries.[216] Further, in its 2007 and 2008 decisions in *Public Citizen v. National Highway Traffic Administration*, the D.C. Circuit suggested in dicta that the court should overrule even those prior cases that had allowed standing for probabilistic future injuries.[217]

In 1996, the D.C. Circuit recognized standing for probabilistic injuries in *Mountain States Legal Found. v. Glickman*, where 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 the Forest Service's plan to prohibit logging in a national forest.[218] The plaintiffs demonstrated that the plan would increase the probability of a catastrophic fire by permitting the accumulation of fuel in the form of dead trees and forest debris.[219] In *NRDC v. EPA*, the D.C. Circuit again recognized standing in a case involving probabilistic future risk, but also indicated that plaintiffs in such a case would have to demonstrate that there was a significant probability of serious harm from a challenged government action.[220] In *Public Citizen*,[221] the court acknowledged that the Circuit in its *Mountain States* and *NRDC* decisions had allowed standing in cases involving 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 and suggested that the en banc court should address that issue in a future case.[222]

a. *NRDC*

Unlike *Baur's* qualitative approach to standing, in *NRDC v. EPA*, the D.C. Circuit used a quantitative methodology for assessing whether the plaintiffs had standing, although the court subsequently reheard the case after deciding that its original

stringent than *Lujan*); Mank, *Global Warming*, *supra* note 2, at 45–63 (suggesting D.C. Circuit's standing test is too stringent and that other circuits have appropriately rejected it).

216. *See infra* notes 219–21, 230–31 and accompanying text.

217. 513 F.3d 234, 241 (D.C. Cir. 2008) (per curiam).

218. 92 F.3d 1228, 1234–35 (D.C. Cir. 1996).

219. *Id.*

220. 440 F.3d 476, *opinion withdrawn by*, 464 F.3d 1 (D.C. Cir. 2006); Craig, *supra* note 24, at 200–01.

221. 489 F.3d 1279, *modified on reh'g*, 513 F.3d 234 (D.C. Cir. 2008).

222. *Public Citizen*, 489 F.3d at 1291–98, *modified on reh'g*, 513 F.3d 234 at 239–41.

standing analysis was flawed.[223] The plaintiff NRDC filed a petition for review, challenging a final rule issued by the EPA exempting for the year 2005 certain "critical uses" of the otherwise banned chemical methyl bromide, a chemical that has beneficial uses, but also destroys stratospheric ozone.[224] The NRDC argued that the rule violated the United States' treaty obligations under the 1987 Montreal Protocol,[225] which phases out and eventually bans chemicals that destroy stratospheric ozone, and provisions of the Clean Air Act that implement the protocol.[226] The NRDC argued that it had standing because the exemptions would increase the risk to its members of contracting skin cancer or cataracts because the methyl bromide would destroy some stratospheric ozone, which performs an essential function in preserving life by absorbing most dangerous ultraviolet radiation from the Sun so that high levels never reach the surface of the Earth.[227] In its initial but later withdrawn decision, the court held that the NRDC did not have standing to petition the court to review the final rule because the annualized risk to members of the NRDC was too remote and hypothetical to meet the *Lujan* standing test.[228]

After the NRDC successfully petitioned for a re-hearing, the D.C. Circuit concluded that the NRDC had met standing requirements because skin cancer caused by use of methyl bromide posed a sufficient lifetime risk to its members.[229] In response to the NRDC's claim "that its members faced increased health risks from EPA's rule[,]" the court cautiously observed, "[a]lthough this claim does not fit comfortably within the Supreme Court's description of what constitutes an 'injury-in-fact' sufficient to confer standing. . .we

223. NRDC v. EPA, 440 F.3d 476, *opinion withdrawn by*, 464 F.3d 1 (D.C. Cir. 2006); Craig, *supra* note 24, at 200–01.

224. *NRDC*, 440 F.3d at 478–80, *opinion withdrawn by*, 464 F.3d at 4–5; *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) (exempting certain "critical uses" of methyl bromide for 2005).

225. Montreal Protocol on Substances that Deplete the Ozone Layer, Sept. 16, 1987, S. TREATY DOC. NO. 100–10, 1522 U.N.T.S. 29 ("Montreal Protocol").

226. Clean Air Act Amendments of 1990, Pub. L. No. 101-549, tit. VI, 104 Stat. 2399, 2648 (implementing "Montreal Protocol"), 42 U.S.C. § 7671c(h) (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.").

227. *NRDC*, 440 F.3d at 481–82, *opinion withdrawn by*, 464 F.3d at 6.

228. *NRDC*, 440 F.3d at 483–84, *opinion withdrawn by*, 464 F.3d 1, 5–7.

229. *NRDC*, 464 F.3d at 5–7; Craig, *supra* note 24, at 201.

have recognized that increases in risk can at times be 'injuries in fact' sufficient to confer standing."[230] Because of the danger that standing based on an increased risk of harm could be stretched to include hypothetical injuries, the court stated that it would recognize standing in such cases only where there is a "'substantial probability' of injury."[231] The court acknowledged that the courts of appeals have disagreed about when an increased risk of harm is enough to justify standing, and also whether the plaintiff must quantify that risk, but found that it did not have to "answer" those difficult questions in this case.[232] The court accepted evidence from an EPA expert that the best measure of risk from ozone depletion is lifetime risk, not annualized risk, and therefore the court found that its prior, withdrawn decision had improperly focused on annualized risk to the plaintiffs.[233] The court concluded that evidence demonstrating that two to four members of the NRDC's nearly half a million members would develop skin cancer during their lifetimes as a result of EPA's rule was more than sufficient injury for the NRDC to have Article III standing.[234] Because the risk of skin cancer was substantially probable, the court did not resolve whether a plaintiff must quantify a threatened risk in order to have standing.

The revised *NRDC* decision's consideration of lifetime health risks from ozone depletion is significant in demonstrating that concrete injuries do not have to be immediate, but include reasonably foreseeable impacts that may not occur until many years after the plaintiff's exposure to a harmful substance. Although it was willing to consider health impacts to NRDC members many years into the future, the decision only recognized harms to current members of the NRDC. Courts generally require an organization to demonstrate that at least one of its members has a concrete injury.[235] The *NRDC* court might well have rejected standing if the plaintiffs had alleged risks that affected only the members' unborn children or grandchildren.

230. *NRDC*, 464 F.3d at 6; Craig, *supra* note 24, at 201.

231. *NRDC*, 464 F.3d at 6.

232. *Id.* at 6–7; Craig, *supra* note 24, at 201.

233. *NRDC*, 464 F.3d at 7; Craig, *supra* note 24, at 201.

234. *NRDC*, 464 F.3d at 7; Craig, *supra* note 24, at 201.

235. Sierra Club v. Morton, 405 U.S. 727, 734–40 (1972); *supra* notes 13–14 and accompanying text.

b. *Public Citizen*

In a 2007 decision, *Public Citizen v. National Highway Traffic Safety Administration* (NHTSA),[236] the D.C. Circuit appeared to be less inclined to find standing where a public interest organization alleged that its members were at a greater risk of future injury from an automobile accident because the NHTSA standards for tire pressure monitors were less stringent than the alternative regulation that the Public Citizen organization supported.[237] In 2000, Congress enacted the Transportation Recall Enhancement, Accountability, and Documentation Act (TREAD Act) to impose new tire-safety requirements.[238] The TREAD Act required the Secretary of Transportation to promulgate a regulation requiring new vehicles to feature a warning system "to indicate to the operator when a tire is significantly under inflated."[239] In 2005, the NHTSA acting on behalf of the Secretary promulgated a final rule on this issue, Federal Motor Vehicle Safety Standard 138.[240] Standard 138 requires automakers to install tire pressure monitoring systems to 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."[241] Public Citizen, four individual tire manufacturers, and the Tire Industry Association filed petitions for review in the Court of Appeals for the District of Columbia Circuit that challenged Standard 138 for four alleged deficiencies: (i) the absence of a requirement that pressure monitors be compatible with all replacement tires; (ii) the up-to-20-minute delay between significant under-inflation and the illumination of the dashboard warning light; (iii) the use of the 25-percent-below-placard-pressure standard for under-inflation; and (iv) the testing that NHTSA required for pressure monitors.[242]

In its initial decision, the D.C. Circuit held that the tire

236. 489 F.3d 1279 (D.C. Cir. 2007).

237. *Id.* at 1291–98.

238. *See* Pub. L. No. 106-414, 114 Stat. 1800 (2000).

239. §13, 114 Stat. at 1806 (codified at 49 U.S.C. § 30123).

240. *See* Tire Pressure Monitoring Systems, 70 Fed. Reg. 18,136 (Apr. 8, 2005) (to be codified at 49 C.F.R. pts. 571, 585), recon. granted in part, 70 Fed. Reg. 53,079 (Sept. 7, 2005) (to be codified at 49 C.F.R. pts. 571, 585).

241. Tire Pressure Monitoring Systems, 70 Fed. Reg. at 18,148.

242. Public Citizen v. Nat'l Highway Traffic Safety Admin., 489 F.3d 1279, 1286 (D.C. Cir. 2007).

manufacturers and the trade association lacked standing to challenge the safety standard.[243] The court also suggested that Public Citizen failed to meet standing requirements, but allowed Public Citizen to file supplemental briefs to address whether Standard 138 increased the risk that its members would be injured in a traffic accident.[244] The court questioned 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."[245] In a footnote, the court observed that the *Massachusetts* decision had held that states were entitled to "'special solicitude'" in standing analysis, "including analysis of imminence," but noted that none of the plaintiffs in the case were states.[246]

The D.C. Circuit seemed to be less receptive to claims of future harms in *Public Citizen* than in its *NRDC* decision. The court stated:

> Public Citizen's injury-in-fact theory flouts these settled principles. Public Citizen is attempting to assert remote and speculative claims of possible future harm to its members. Allowing a party to assert such remote and speculative claims to obtain federal court jurisdiction threatens, however, to eviscerate the Supreme Court's standing doctrine. . . . Nor does it help Public Citizen to aggregate a series of remote and speculative claims.[247]

The court suggested that if courts freely granted standing in cases involving an alleged increased risk of injury claims, then the judiciary would likely intrude on the role of the political branches:

> The consequences of allowing standing in these kinds of increased-risk cases are perhaps obvious, but worth explicating. Much government regulation slightly increases a citizen's risk of injury—or insufficiently decreases the risk compared to what some citizens

243. *Id.* at 1290–91.

244. *Id.* at 1291–98.

245. *Id.* at 1293–94.

246. *Id.* at 1294 n.2 (quoting Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct 1438, 1454–55 (2007)).

247. *Public Citizen*, 489 F.3d. at 1294.

> might prefer. Under Public Citizen's theory of probabilistic injury, after an agency takes virtually any action, 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. Opening the courthouse to these kinds of increased-risk claims would drain the "actual or imminent" requirement of meaning in cases involving consumer challenges to an agency's regulation (or lack of 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.[248]

The court explained the dangers of future risk suits to the role of the political branches:

> Contrary to Public Citizen's far-reaching theory, the Supreme Court's precedents establish that injuries from a car accident become actual or imminent only when the accident has occurred or is "certainly impending" and "immediate." When harm actually happens, state tort law may provide an avenue to recover damages from a party unreasonably causing the harm (for example, from the automaker). To avoid the standing problem of increased-risk cases, moreover, Congress also can presumably create a private cause of action enabling consumers to sue private defendants such as automakers, for example, and obtain recovery for injuries *actually suffered* in car accidents as a result of federal statutory or regulatory violations by the automakers. *Cf. Lujan*, 504 U.S. at 578, 112 S. Ct. 2130; *id.* at 580, 112 S.Ct. 2130 (Kennedy, J., concurring in part and concurring in judgment). 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. *See Laird v. Tatum*, 408 U.S. 1, 15, 92 S. Ct. 2318, 33 L.Ed.2d 154 (1972). But all of that is far afield from allowing a consumer to sue an agency based solely on an event that, for any given individual, is extremely unlikely to occur and is not "imminent," "certainly impending," and "immediate." 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.[249]

Despite its serious doubts about whether Public Citizen could establish standing, the court allowed Public Citizen to file affidavits

248. *Id.* at 1295.
249. *Id.*

demonstrating the specific risks that the NHTSA's rule posed to its members.[250]

After the parties filed supplemental briefs, the D.C. Circuit in 2008 held in a *per curium* opinion that Public Citizen did not have standing.[251] The court concluded that Public Citizen's statistical analysis was flawed and failed to demonstrate that its members were at a higher risk of suffering traffic injuries in the future from the tire safety standards in Standard 138 than they would have been if the NHTSA had adopted Public Citizen's alternative safety standards.[252] First, the court concluded that Public Citizen had not made "*any* attempt to demonstrate the difference in risk between (i) Standard 138 and (ii) Public Citizen's proposal that automakers publish a list of compatible tires."[253] Additionally, the court concluded that Public Citizen had failed to demonstrate an increased future risk of traffic accidents due to the NHTSA's use of a 20-minute lag time between tire under-inflation and a warning in Standard 138, as compared to Public Citizen's one-minute warning proposal, and the court also found that Public Citizen failed to show that its members were subject to an increased future risk of injury from the 25-percent-below-placard pressure adopted by Standard 138, as compared to the alternative "Tire & Rim Association" proposal for a minimum pressure based on a vehicle's maximum load.[254]

The *Public Citizen* decision implied that it would prefer not to recognize standing in any future injury cases. The court stated, "If we were deciding this case based solely on the Supreme Court's precedents, we would agree with the separate opinion."[255] In his separate opinion, Judge Sentelle agreed with the majority's suggestion in its initial decision that any recognition of probabilistic future injury leads courts to exceed their constitutional role and intrude on the role of the political

250. *Id.* at 1296–98. In his opinion concurring in part and dissenting in part, Judge Sentelle would not have allowed Public Citizen another opportunity to establish standing and would have held that the court had no jurisdiction because Public Citizen had not demonstrated standing. *Id.* at 1298–99 (Sentelle, J., concurring in part and dissenting in part).

251. Public Citizen v. Nat'l Highway Traffic Safety Admin., 513 F.3d 234, 241 (D.C. Cir. 2008) (per curiam).

252. *See id.* at 238–41.

253. *See id.* at 238–39.

254. *See id.* at 239–40.

255. *Id.* at 241.

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." *Public Citizen*, 489 F.3d at 1295 (quoting *DaimlerChrysler v. Cuno*, 547 U.S. 332, 126 S. Ct. 1854, 164 L.Ed.2d 589 (2006)). . . .
>
> 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.[256]

Nevertheless, because of the Circuit's precedent allowing standing in cases involving future harm, the *Public Citizen* decision stated that it was still possible for a plaintiff to obtain standing in such a case despite the panel's serious doubts about the constitutionality of such standing. Quoting its initial decision, the court stated: "As we read our decisions in *Mountain States* and *NRDC*, however, 'this Court has not closed the door to all increased-risk-of-harm cases.'"[257] The court suggested that the Circuit should resolve the contentious issue of standing based on future injury in an en banc decision: "In 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."[258] Quoting its initial decision, the court declared that it would apply a stringent standard of proof in cases in which a plaintiff sought standing based upon an increased risk of

256. *Id.* at 242 (Sentelle, J., concurring in the judgment).

257. *Id.* at 241 (quoting Public Citizen v. Nat'l Highway Traffic Safety Admin., 489 F.3d 1279, 1295 (D.C. Cir. 2007)).

258. *Id.* at 241. 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*, *in* INSIDE EPA, Jan. 25, 2008, *available at* 2008 WLNR 1340003.

harm 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."[259] Although the facts of *NRDC* and *Public Citizen* are arguably factually distinguishable, the *Public Citizen* decision was far less receptive to the possibility of recognizing standing based on future risk allegations. Two of the three judges sitting in each case were different; only Judge Randolph sat in both cases.[260]

The D.C. Circuit should reject *Public Citizen*'s hostile approach to cases involving probabilistic injury because many types of serious environmental and health threats are probabilistic in nature since we do not know which individuals they will harm in the future even though it may be likely that they will harm large numbers of people. The *Mountain States* and *NRDC* decisions appropriately allowed standing where there was a significant possibility of future injury. Additionally, the D.C. Circuit should abandon its substantial probability test for standing because it is more stringent than required by *Lujan* and should instead adopt the reasonable probability test used in the Ninth Circuit.[261]

259. *Public Citizen*, 513 F.3d at 241 (quoting *Public Citizen*, 489 F.3d at 1296).

260. The judges in *NRDC* were Randolph, Edwards and Henderson. *See* NRDC v. EPA, 464 F.3d 1 (D.C. Cir. 2007). The judges in *Public Citizen* were Kavanaugh, Randolph and Sentelle. *See* 489 F.3d 1279.

261. *Compare* 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 . . . will suffer demonstrably increased risk," and that it is "substantially probable" that the agency action will cause the demonstrable injury alleged by the plaintiff) *with* Citizens for Better Forestry v. U.S. Dep't of Agric., 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Florida 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.'") (citation omitted); *and* 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); *and* Mank, *Global Warming*, *supra* note 2, at 45–63 (discussing split in circuits about how to apply footnote seven standing test in NEPA cases); *and* Mank, *States Standing*, *supra* note 18, at 1720 (same); *and* Bertagna, *supra* note 18, at 461–64 (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test); *see also* Sakas, *supra* note 171, 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).

F. *Shain* - The Eighth Circuit Rejects a 100 Year Flood Risk

In *Shain v. Veneman*,[262] the Eighth Circuit rejected standing in a case alleging increased risk of harm from a government decision because of the significant possibility that the risk would not occur during the plaintiffs' lifetimes or ownership of the property at issue. The plaintiffs alleged that by financing the building of a sewage-treatment plant on a 100-year flood plain near the property they owned or rented the United States Department of Agriculture (USDA) would violate federal law.[263] The district court dismissed the case for lack of standing because it concluded that the risk of a 100-year flood is not "imminent" and "is by definition speculative and unpredictable."[264] Affirming the district court's decision, the Eighth Circuit agreed that the possibility of a 100-year flood was not an imminent injury:

> If the possibility of a 100-year flood is remote in the abstract, the possibility the flood will occur while [the plaintiffs] own or occupy the land 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.[265]

Characterizing the risk of the flood as "remote and improbable," the court stated, "[t]o 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."[266]

The Eighth Circuit tried to distinguish the Seventh Circuit's arguably contrary decision in *Village of Elk Grove Village v. Evans*,[267] which had found standing where the plaintiffs alleged that the construction of a radio tower on a flood plain would limit the creek's drainage area and increase the risk of flooding.[268] The *Elk Grove Village* decision stated 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

262. 376 F.3d 815 (8th Cir. 2004).
263. *Id.* at 816.
264. *Id.* at 816, 818.
265. *Id.* at 818.
266. *Id.* at 819.
267. 997 F.2d 328 (7th Cir. 1993).
268. *Id.* at 328–32.

relief sought would, if granted, reduce the probability."[269] The Eighth Circuit attempted to distinguish the facts in *Shain* 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.[270]

Because the plaintiffs in *Elk Grove* never quantified the increased risk resulting from the construction of the radio tower, however, it is not clear whether the risk in *Elk Grove* was significantly different from the risk in *Shain*.

The *Shain* decision also sought to distinguish the D.C. Circuit's decision in *Mountain States Legal Found. v. Glickman*,[271] which held that the plaintiffs had standing to sue because the government's actions had increased the risk of serious harm.[272] The Eighth Circuit sought to distinguish *Glickman* by arguing that there was a distinction between direct and intervening factors in determining whether there was sufficient injury to satisfy standing requirements. The Court reasoned:

> 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.[273]

The *Shain* Court's distinction between its case and *Glickman* is

269. *Id.* at 329.
270. *Shain*, 376 F.3d at 819.
271. 92 F.3d 1228 (D.C. Cir. 1996).
272. *Id.* at 1234–35.
273. *Shain*, 376 F.3d at 819.

questionable because the Forest Service plan at issue in *Mountain States* could also be seen as aggravating the "independently occurring natural disaster" of fire by permitting the accumulation of more fuel much as the lagoons in *Shain* increased the harmfulness of the natural disaster of flooding. A possibly better argument in *Shain* would be that the lagoons have such a small and theoretical impact on the risk of flooding that their impact is too hypothetical to warrant standing; it is not clear from the decision how great a risk the lagoons posed.

Although it reached a different result by denying standing, the Eighth Circuit's implication that the harm must occur during the lifetime or ownership of the plaintiffs is arguably consistent with the other court of appeals decisions addressing a plaintiffs' increased risk of disease or harm.[274] For example, in *NRDC*, the D.C. Circuit explicitly focused on lifetime risk.[275] Similarly, the *Baur* decision addressed the risk that the plaintiff would contract mad cow disease during his lifetime.[276] 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 or ownership of the plaintiffs.

The *Shain* decision is consistent with *Laidlaw's* framework that courts should focus on whether there has been an injury to the plaintiff rather than the environment.[277] It is likely that a 100-year flood will occur someday near the property belonging to the plaintiffs in *Shain*. But, as the Eighth Circuit stated, it was uncertain whether a flood would take place while the plaintiffs owned the properties.[278]

Pursuant to the *Shain* decision's reasoning, a private plaintiff cannot sue for risks that will probably occur after her lifetime. The *NRDC* and *Baur* decisions discussed above appeared to assume that a risk must occur during the plaintiff's lifetime.[279] All of these court of appeals decisions involved private persons or non-governmental organizations. In *Massachusetts v. EPA*, however, where the only plaintiff recognized to have standing was the Commonwealth of

274. *Id.* at 818.

275. NRDC v. EPA, 464 F.3d 1, 7 (D.C. Cir. 2006).

276. *See* Baur v. Veneman, 352 F.3d 625, 628–37 (2d Cir. 2003);

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

278. *Shain*, 376 F.3d at 818–19.

279. *See supra* notes 275–76 and accompanying text.

Massachusetts, the Supreme Court announced that it would apply more liberal standing rules to states and considered the impacts of climate change on the Massachusetts' coastline through the year 2100.[280] By considering impacts through the year 2100, the *Massachusetts* Court may have implicitly assumed that a government has a quasi-sovereign right to protect its natural resources for not only its current citizens, but also for its future citizens.[281]

V. SUITS BY NON-GOVERNMENT PARTIES ON BEHALF OF FUTURE GENERATIONS

In procedural rights cases, a plaintiff that has suffered an injury-in-fact may be able to require the government to consider the long-term impacts of a proposed project. In two NEPA decisions, D.C. Circuit held that the government has a duty to consider the reasonably foreseeable future impacts of its projects.[282] More controversially, the D.C. Circuit has held that the government has to evaluate the long-term impacts of nuclear waste disposal at Yucca Mountain for the next million years.[283] It is not clear that this decision is consistent with *Shain.*

A. NEPA Suits

In some circumstances, a NEPA plaintiff may require the government to address the reasonably foreseeable impacts of a project on future generations. If the government has actually proposed to build a project, the CEQ regulations require the government to consider all direct and indirect environmental consequences of the project and any "irreversible and irretrievable commitment of resources."[284] The agency must also consider the cumulative impacts of "reasonably foreseeable future actions."[285]

280. Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct. 1438, 1453–58 & n.20 (2007); *see also id.* at 1467–68 (Roberts, C.J., dissenting) (criticizing Massachusetts use of estimates of sea level rise through 2100).

281. *See Massachusetts.* 549 U.S. at 1453–58 & n.20 (stating that states have a quasi-sovereign interest in their citizens and natural resources and considering long-term impacts of global warming on Massachusetts' coastline through 2100).

282. *See infra* notes 292–312 and accompanying text.

283. *See infra* notes 313–330 and accompanying text.

284. 40 C.F.R. § 1502.16 (2007).

285. 40 C.F.R. § 1508.7 (2007) ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . ."); *see also* 40 C.F.R. § 1508.25(a)(2) (2006)

Furthermore, NEPA explicitly states that "it is the continuing responsibility of the Federal government to use all practicable means, consistent with other essential considerations of national policy, to [ensure] . . . that the Nation may . . . fulfill the responsibilities of each generation as trustee of the environment for succeeding generations . . . ."[286] NEPA also states that the government, in its environmental statements, should address "the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity,"[287] which could include the impacts of present projects on future generations.[288] Moreover, NEPA recognizes "the worldwide and long-range character of environmental problems."[289] Accordingly, NEPA requires agencies to consider a proposed project's reasonably foreseeable future environmental impacts, including its cumulative impacts in conjunction with existing or proposed government projects.[290] Thus, a plaintiff may arguably require the government to assess a project's impacts on future generations as long as the plaintiff in his or her lifetime would

("Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.").

286. 42 U.S.C. § 4331(b)(1) (2000); Allen, *supra* note 9, at 723–24; Just, *supra* note 65, at 616.

287. 42 U.S.C. § 4332(2)(C)(iv) (2000).

288. *See generally* George J. Skelly, Note, *Psychological Effects at NEPA'S Threshold*, 83 COLUM. L. REV. 336, 376 (1983) ("A recurrent theme in NEPA's legislative history is that the potential benefits of preventing long-term harm from environmental actions outweigh the short term price of anticipating that harm.").

289. 42 U.S.C. § 4332(F) (2000); Caldwell, *supra* note 90, at 203–05, 236–39 (arguing NEPA has "orientation towards the future").

290. *See* 42 U.S.C. § 4331(b)(1) ("[i]t is the continuing responsibility of the Federal government to use all practicable means, consistent with other essential considerations of national policy, to [ensure] . . . that the Nation may . . . fulfill the responsibilities of each generation as trustee of the environment for succeeding generations."); 40 C.F.R. § 1500.2(f) (2007) ("[The agency should] [u]se all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment."); 40 C.F.R. § 1502.1 (2007) ("[Agencies] shall provide full and fair discussion of significant environmental impacts . . . "); 40 C.F.R. § 1508.7 (2007) ("Cumulative impact is the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions . . . "); 40 C.F.R. § 1508.25(a)(2) (2007) ("[Agencies must consider c]cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement."); *see also* Lujan v. Defenders of Wildlife, 504 U.S. 555, 572 n.7 (1992) (stating that standing is available in a NEPA action where plaintiff seeks government to address concrete harms that will occur in the future if project is built).

sustain enough concrete injury to meet standing requirements and the impacts on future generations are reasonably foreseeable.

In two NEPA cases, federal courts have recognized that agencies have a duty to consider a proposed project's reasonably foreseeable long-term environmental impacts.[291] Both cases recognized that federal agencies have a duty to examine reasonably foreseeable impacts on future generations. These two decisions are helpful precedent for plaintiffs who are concerned about long-term environmental impacts that could reasonably affect future generations.

1. *Concerned About Trident v. Rumsfeld*

In *Concerned About Trident v. Rumsfeld*,[292] the appellants argued that the Navy, in an Environmental Impact Statement (EIS) addressing the construction of a Trident submarine base at Bangor, failed to consider the impacts of the Trident program beyond the year 1981, which was the target date for the initial operation of the Trident.[293] The court concluded that 1981 was not a reasonable cutoff date because the Navy acknowledged that it could have predicted the impacts of the program for at least some time period beyond 1981.[294] The court determined that the environmental impacts of the program after the Navy finished construction in 1981 might be different from the construction impacts that were the focus of the EIS.[295] The court ordered the Navy to assess the environmental impacts of operating the proposed base after the 1981 EIS cutoff date: "Just as the EIS for a proposed highway may not analyze only the environmental effects of the construction stage of the new road, but must also look to the noise, pollution, etc. which it will bring to the community when it is completed, so too must the Final EIS here examine the impacts generated by the Trident base once it is in operation."[296]

The Court explicitly stated that the Navy had a duty to consider a

291. Timothy Patrick Brady, Comment, *"But Most of it Belongs to Those Yet to be Born:" The Public Trust Doctrine, NEPA, and the Stewardship Ethic*, 17 B.C. ENVTL. AFF. L. REV. 621, 643–44 (1990) (discussing *Concerned About Trident* and *Potomac Alliance* decisions); *see infra* notes 292–312 and accompanying text (same).

292. 555 F.2d 817 (D.C. Cir. 1977).

293. *Id.* at 827, 829.

294. *Id.* at 829–30.

295. *Id.* at 830.

296. *Id.*

longer time period because NEPA requires a federal agency to consider impacts on future generations. The Court stated, "Furthermore, absent an agency's inability to predict any farther into the future, a forecasting of only 7 years of the impacts from such a major facility as the Trident Support Site, fails to ensure that the environment will be preserved and enhanced for the present generation, much less for our descendants."[297] This portion of the opinion is clearly supportive for plaintiffs seeking to require agencies to address the impacts of their proposed projects on future generations.

The *Trident* court acknowledged that the Navy's duty to address future impacts was limited to impacts that it could reasonably foresee, but that it had to a duty to examine all environmental impacts that were reasonably foreseeable. The court stated, "[The Navy] need not, and indeed, may not be able to forecast the effects of Trident after 1981 in the same detail or with the same degree of accuracy as it has done for the period prior to 1981, but it is imperative that it make a reasonable effort to discern what the effects of Trident's future operation will be."[298] The court remanded the case so that the Navy could examine the operation impacts of the program beyond 1981.[299]

Trident is a very strong decision for plaintiffs who seek to require federal agencies to explain whether their projects affect future generations. Pursuant to the arbitrary and capricious standard of review in NEPA cases,[300] a court would probably give a federal agency some deference if the agency argued that it could not reasonably estimate impacts beyond a certain time period. Nevertheless, *Trident* clearly places a burden on an agency to consider any reasonably foreseeable future environmental impacts.

2. *Potomac Alliance v. United States Nuclear Regulatory Commission*

In *Potomac Alliance v. United States Nuclear Regulatory Commission*,[301]

297. *Id.*

298. *Id.*

299. *Id.*

300. Marsh v. Or. Natural Res. Council, 490 U.S. 360, 376 (1989) (holding arbitrary and capricious standard of review is appropriate in NEPA cases); Olmsted Falls v. FAA, 292 F.3d 261, 269 (D.C. Cir. 2002) ("These challenges are reviewed under the Administrative Procedure Act's ("APA") arbitrary and capricious standard. This standard is applied to review compliance with NEPA and to determine the adequacy of an EIS.").

301. 682 F.2d 1030 (D.C. Cir. 1982) (per curiam).

the U.S. Court of Appeals for the District of Columbia Circuit concluded that a Nuclear Regulatory Commission (NRC) order violated NEPA by failing to evaluate the long-range impacts of granting an amendment to a reactor's license.[302] The NRC had amended an operating license to allow Virginia Electric Power Company to increase the capacity of the spent fuel pool at its North Anna Nuclear Power Station.[303] In granting the amendment, the NRC considered environmental impacts only through the year 2011, which is the date of the plant's permanent closing.[304] The petitioner argued that the NRC violated NEPA by "failing to consider, prior to granting the requested amendment, the long-range future effects of permitting the increased storage capacity, including the situation as it will exist on the date of the plant's permanent closing in 2011."[305]

The court observed that in a prior case involving similar facts it found a NEPA violation because the NRC had failed to examine "the dangers presented by the continuing existence of the storage pool after the final closing date of the plant."[306] In response to the prior decision, the NRC initiated a rulemaking proceeding to reassess the long-term safety of nuclear waste disposal methods, but the Commission indicated that it might take a year or more for it to reach a decision on that issue.[307] In light of the NRC's lengthy delays in addressing the disposal issue, the court remanded the case to the Commission with the understanding that the court might revoke the expanded authority in the order if the Commission did not address the long term safety issues by June 30, 1983, about eleven months after the court's decision.[308]

In his concurring opinion, Judge Bazelon observed that the NRC should have assessed whether it was "reasonably foreseeable" that the spent fuel would remain in the North Anna beyond the year 2011 or instead be relocated off-site.[309] He stated that the NRC could "justify truncating its environmental assessment at the year 2011 only if it has found that no reasonably foreseeable

302. *Id.* at 1031.
303. *Id.*
304. *Id.* at 1031, 1033 (Bazelon, J., concurring).
305. *Id.* at 1031.
306. *Id.* (discussing Minnesota v. NRC, 602 F.2d 412 (D.C. Cir. 1979)).
307. *Id.* at 1031–32.
308. *Id.* at 1032.
309. *Id.* at 1035–37 (Bazelon, J., concurring).

contingency exists under which the spent fuel assemblies will remain in the pool beyond that time."[310] He concluded, "Because the agency has not even attempted to make such a showing, we can only conclude that the approval of VEPCO's amendment violated NEPA."[311] He then quoted language in *Trident* that the failure of the agency to consider foreseeable long-term effects "fails to ensure that the environment will be preserved and enhanced for the present generation, much less our descendants."[312]

Because of the long-term risks of nuclear waste, the *Potomac Alliance* court concluded that a study that examined risks for approximately thirty years into the future may have been inadequate. Even more than *Trident*, the *Potomac Alliance* decision suggests that an agency may need to examine the impacts of a decision beyond the current generation. It is supportive precedent for plaintiffs seeking to protect future generations.

B. *Nuclear Energy Institute, Inc. v. EPA*

In *Nuclear Energy Institute, Inc. v. EPA*, the court of appeals for the District of Columbia Circuit held that the EPA's use of a 10,000-year compliance period for predicting the safe storage of high-level radioactive waste at the proposed Yucca Mountain, Nevada repository violated section 801 of the Energy Policy Act (EnPA) because its approach was inconsistent with the findings and recommendations of the National Academy of Sciences, which suggested the need for a protective period on the order of a million years.[313] Section 801 of EnPA requires that the EPA establish site-specific standards for Yucca Mountain, including selecting a compliance period, "based upon and consistent with" the recommendations of the National Academy of Sciences.[314] Subsequently, the EPA promulgated 40 C.F.R. part 197, which set forth health and safety standards requiring the Department of Energy (DOE) to limit radiation releases from the repository for 10,000 years so that "the reasonably maximally exposed individual

310. *Id.* at 1036.

311. *Id.*

312. *Id.* (quoting Concerned About Trident v. Rumsfeld, 555 F.2d 817, 830 (D.C. Cir. 1977)).

313. 373 F.3d 1251, 1257, 1266–73 (D.C. Cir. 2004).

314. *Id.* at 1260, 1262 (citing Pub. L. No. 102-486, § 801, 106 Stat. 2776, 2921–23 (1992) (codified at 42 U.S.C. § 10141 note (2000)).

receives no more than an annual committed effective dose equivalent of 150 microsieverts (15 millirems) from releases from the undisturbed Yucca Mountain disposal system."[315]

The court determined that at least one member of the petitioners had standing.[316] Ed Goedhart stated that he lived and worked in Amargosa Valley, Nevada, eighteen miles from Yucca Mountain.[317] He alleged that "[the] EPA's failure to adopt more stringent radiation-protection standards will permit hazardous radionuclides from the buried waste to contaminate his community's ground-water supplies, causing adverse health effects."[318] The court observed: "These allegations are more than sufficient to give Goedhart standing to sue in his own right. The claimed injury to his ground-water supply is neither hypothetical nor conjectural."[319]

The court concluded that Goedhart had standing to sue even though the radionuclides might not contaminate the community's groundwater for thousands of years. The court found that his allegations met the three-part standing test:

> Although radionuclides escaping from the Yucca repository may not reach Goedhart's community for thousands of years, his injury is "actual or imminent," for he lives adjacent to the land where the Government plans to bury 70,000 metric tons of radioactive waste — a sufficient harm in and of itself. *See La. Envtl. Action Network v. United States EPA*, 335 U.S. App. D.C. 247, 172 F.3d 65, 67–68 (D.C. Cir. 1999) (holding that an environmental group established constitutional standing where its members lived near a landfill into which an EPA regulation allegedly would permit certain hazardous wastes to be deposited). In addition, this harm is "fairly traceable," *Lujan*, 504 U.S. at 560 (internal quotation marks omitted), to EPA's allegedly lax radiation-protection standards, and favorable relief, *i.e.*, requiring EPA to make more stringent each aspect of the rule that petitioners challenge, would likely redress his harm.[320]

Because only one petitioner needs to have standing to decide the

315. *Id.* at 1260, 1262–63 (quoting Public Health and Environmental Radiation Protection Standards for Yucca Mountain, NV, 66 Fed. Reg. 32,074 (June 13, 2001) (codified at 40 C.F.R. pt. 197 (2004))).

316. *Id.* at 1265–66.

317. *Id.* at 1266.

318. *Id.*

319. *Id.*

320. *Id.*

case on the merits, the court did not examine whether the other petitioners, including the State of Nevada, had standing.[321]

The court found that Goedhart would be exposed to sufficient harm from the proposed project to give him standing, although it might have been more accurate for the court to characterize the government's actions as creating a sufficiently serious risk of potential harm.[322] Once it decided that the petitioners had standing, the court examined whether the EPA's 10,000 year plan was sufficiently protective even though none of the petitioners would be harmed by events more than 10,000 years in the future. The court concluded that the EPA's selection of a ten thousand year period was unreasonable and inconsistent with the statute's requirement that the period be "based upon and consistent with" the NAS's recommendations, which were for a far longer one million year protective period.[323] The NAS had found that the greatest risks of radioactive contamination were not likely to take place "until tens to hundreds of thousands of years after disposal."[324] The NAS "found it scientifically possible to predict repository performance for approximately one million years."[325] The NAS explicitly rejected using a 10,000-year time limit for protecting human beings.[326] The court concluded that the EPA's 10,000-year time limit was unreasonable in light of the NAS' contrary findings and was not entitled to deference under the *Chevron* doctrine.[327] "In sum, because EPA's chosen compliance period sharply differs from NAS's findings and recommendations, it represents an unreasonable construction of section 801(a) of the Energy Policy Act."[328]

The court implied that the federal government has a duty to

321. *Id.*

322. *Id.*

323. *Id.* at 1266–73.

324. *Id.* at 1267 (Citing COMM. ON TECHNICAL BASES FOR YUCCA MOUNTAIN STANDARDS, NAT'L RESEARCH COUNCIL, TECHNICAL BASES FOR YUCCA MOUNTAIN STANDARDS 2 (1995)).

325. *Nuclear Energy Institute,* 373 F.3d at 1268 (Citing COMM. ON TECHNICAL BASES FOR YUCCA MOUNTAIN STANDARDS, NAT'L RESEARCH COUNCIL, TECHNICAL BASES FOR YUCCA MOUNTAIN STANDARDS 6 (1995)).

326. *Nuclear Energy Institute,* 373 F.3d at 1271.

327. *Id.* at 1269–73 (concluding that EPA's interpretation was unreasonable and therefore not entitled to deference under the second step of the *Chevron* doctrine); *See* Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837, 843 (stating that if a statute is ambiguous under the first step of its test then courts should determine as a second step of the test whether an agency's interpretation "is based on a permissible construction of the statute.").

328. *Nuclear Energy Institute,* 373 F.3d at 1273.

protect future generations from radioactive harms, but the court did not need to judicially impose such a duty. The NAS had already done so in recommending that the EPA adopt a million-year protective period, and EnPA required the EPA to adopt a period "based upon and consistent with" the NAS' recommendations.[329] The court did not discuss language in the Nuclear Waste Policy Act that explicitly states that "appropriate precautions must be taken to ensure that [high-level radioactive] waste and spent [nuclear] fuel do not adversely affect the public health and safety and the environment for this or future generations."[330]

Some judges might not agree with the standing analysis of the *Nuclear Energy Institute* court. For instance, the judges in the *Shain* decision might have found that the risk was too speculative because it may not occur for thousands of years.[331] Conversely, perhaps the *Shain* court would have found that the risk of living near an enormous amount of high-level radioactive waste was a sufficient injury for standing because the potential harms to Goedhart are far greater than the risk of a 100-year flood. Pursuant to *Laidlaw's* analysis, Goedhart arguably had "reasonable concerns" about living near a nuclear waste depository.[332]

In the *Louisiana Environmental Action Network* decision cited by the *Nuclear Energy Institute* court, the risks posed by the hazardous waste landfill to three plaintiffs who lived near the landfill were uncertain and were contingent in part on which variances the EPA might grant in the future, but a majority of the *Louisiana Environmental Action Network* court found those allegations sufficient for standing because of the risks that similar landfills in Louisiana had posed to the public and the fact that the EPA typically granted some variances to comparable landfills.[333] In a dissenting opinion, Judge Sentelle in *Louisiana Environmental Action Network* argued that it was speculative whether the EPA would grant variances in the future and therefore that the plaintiffs could not meet standing requirements.[334] The radioactive risks in *Nuclear Energy Institute*

329. *Id.* at 1266–73.

330. 42 U.S.C. § 10131(a)(7) (2006).

331. Shain v. Veneman, 376 F.3d 815 (8th Cir. 2004); *supra* notes 262–74, 278 and accompanying text.

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

333. 172 F.3d 65, 67–68 (D.C. Cir. 1999).

334. *Id.* at 71–72 (Sentelle, J., dissenting).

were arguably more certain than those in *Louisiana. Environmental Action Network* because they did not depend on whether the EPA would grant a variance in the future.

Because the standing test requires judges to make difficult judgment calls about whether a risk is concrete or merely speculative, it is difficult to predict how the Supreme Court might have decided the standing issue in *Nuclear Energy Institute.* In his dissenting opinion in *Massachusetts* v. *EPA*, Chief Justice Roberts acknowledged that whether an event is "'fairly' traceable" to an alleged cause or whether the petitioners' alleged harms are "'likely' to be redressed" by judicial action "is subject to some debate."[335] It is possible that the Court might find that the connection between the harms to Goedhart and those living in the distant future are too hypothetical and remote. The *Duke Power* decision, however, concluded that plaintiffs who had standing based on present injuries from proposed nuclear plants could address the possibility of future accidents that might exceed statutory liability limits without proving a specific nexus between their injuries and their constitutional challenge.[336]

The *Nuclear Energy Institute* court concluded that the petitioners' challenge to the DOE's Final Environmental Impact Statement (FEIS) was not ripe for review because "[w]e do not yet know whether or to what extent NRC will adopt DOE's FEIS in support of any decision to authorize construction or license the operation of a repository at Yucca."[337] The NRC had stated that "it may require that DOE supplement the FEIS, or it may itself supplement the FEIS."[338] Because it was uncertain whether the NRC would approve or modify the FEIS, the court concluded that the issue was not yet ripe for judicial review.[339] As a result, we do not know whether NEPA independently requires the agencies to address impacts at Yucca Mountain beyond the 10,000 years examined in the initial decision.

335. Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct. 1438, 1470 (2007) (Roberts, C.J., dissenting).

336. *See supra* notes 143–63 and accompanying text.

337. Nuclear Energy Institute, Inc. v. EPA, 373 F.3d 1251, 1312–13 (2004).

338. *Id.* at 1313.

339. *Id.* at 1313–14.

VI. THE SUPREME COURT'S NEW STANDING TEST FOR STATES

In *Massachusetts*, the Supreme Court for the first time concluded that states have greater standing rights than other litigants pursuant to the *parens patriae* doctrine.[340] Justice Stevens' majority opinion implicitly suggested that states have the authority to protect future generations of their citizens by relying on evidence from computer models that climate change would raise sea levels and harm Massachusetts' coastline through the year 2100, although the court also relied on evidence that global warming was already harming the Commonwealth's coastline.[341] Chief Justice Roberts' dissenting opinion disagreed with the majority's use of the *parens patriae* doctrine to expand the standing rights of states.[342] Additionally, he argued that the computer models projecting future harms to Massachusetts' coastline were too unreliable to give rise to standing.[343] His broader argument was that separation of powers principles forbid courts to recognize standing for social problems that affect all citizens because, as he argues, it is the role of the political branches to address generalized grievances.[344]

A. Justice Stevens' Majority Opinion on Standing

1. Congress May Broadly Define What Constitutes an Injury

Because global warming affects everyone in the world, some judges, including Chief Justice Roberts and three other dissenting justices in *Massachusetts*, and commentators have argued that generalized injuries resulting from climate change are too non-specific to justify individual standing rights and are better addressed through the political process.[345] Justice Stevens in his

340. *Massachusetts*, 127 S. Ct. at 1453–55.

341. *Id.* at 1456–58, n.20 (recognizing present and future injury to Massachusetts' coastline through the year 2100); *see supra* notes 24–25, 280–81, and *infra* notes 376–78 and 488–89 and accompanying text.

342. *Massachusetts*, 127 S. Ct. at 1465–66 (Roberts, C.J., dissenting).

343. *Id.* at 1467–68 (criticizing majority opinion's use of estimates of sea level rise through 2100).

344. *Id.* at 1463–64, 1470–71.

345. *See, e.g., id.* at 1463–71 (2007) (Roberts, C.J., dissenting) (arguing that the plaintiffs lacked standing because global warming causes generalized injuries better suited to resolution by the political branches); Massachusetts v. EPA, 415 F.3d 50, 59–60 (D.C. Cir. 2005) (Sentelle, J., dissenting in part and concurring in judgment) (same), *rev'd*, 549 U.S. 497 (2007); Bertagna, *supra* note 18, at 444–46 (arguing that plaintiffs asserting global

Massachusetts majority opinion, however, implied that Congress has the authority to allow global warming challenges if it carefully provides for such suits in an appropriate statute.[346] He quoted Justice Kennedy's concurring opinion in *Lujan* for the principle that "'Congress has the power to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before'" provided that Congress "'identif[ies] the injury it seeks to vindicate and relate[s] the injury to the class of persons entitled to bring suit.'"[347] Justice Kennedy's deferential approach to congressional intent would arguably allow Congress to confer standing on certain persons to act as representatives of future generations as long as the statute was clear and the plaintiffs had suffered injuries that also threatened future generations.

2. The Special Standing Rights of States

The *Massachusetts* Court used the *parens patriae* doctrine as a justification for giving greater standing rights to states than other litigants.[348] Justice Stevens stated that "the special position and interest of Massachusetts" was important in determining standing.[349] He declared that "[i]t is of considerable relevance that the party seeking review here is a sovereign State and not, as it was in *Lujan*, a private individual."[350] Citing Justice Holmes' 1907 *Tennessee Copper* opinion, which authorized Georgia to sue on behalf of its citizens to protect them from air pollution from outside its borders because of the state's quasi-sovereign interest in the state's natural resources and the health of its citizens, the *Massachusetts* decision observed that the Court had long ago "recognized that States are not normal litigants for the purposes of invoking federal jurisdiction."[351] Justice Stevens concluded, "[j]ust as Georgia's 'independent interest . . . in all the earth and air within its domain' supported federal jurisdiction a century ago, so

warming claims fail to meet standing requirements).

346. *Massachusetts*, 127 S. Ct. at 1453; Mank, *States Standing*, *supra* note 18, at 1725–26.

347. *Massachusetts*, 127 S. Ct. at 1453 (quoting Lujan v. Defenders of Wildlife, 504 U.S. 555, 580 (1992) (Kennedy, J., concurring in part and concurring in judgment)); Mank, *States Standing*, *supra* note 18, at 1726.

348. *Id.* at 1706–08, 1727–29; Stevenson, *supra* note 21, at 5 n.17.

349. *Massachusetts*, 127 S. Ct. at 1453–54; Mank, *States Standing*, *supra* note 18, at 1727.

350. *Massachusetts*, 127 S. Ct. at 1454; Mank, *States Standing*, *supra* note 18, at 1727.

351. *Massachusetts*, 127 S. Ct. at 1454 (citing Georgia v. Tennessee Copper, 206 U.S. 230, 237 (1907)); Mank, *States Standing*, *supra* note 18, at 1727–28.

too does Massachusetts' well-founded desire to preserve its sovereign territory today."[352] Additionally, the Court stated, "[t]hat Massachusetts does in fact own a great deal of the 'territory alleged to be affected' only reinforces the conclusion that its stake in the outcome of this case is sufficiently concrete to warrant the exercise of federal judicial power."[353]

Justice Stevens explained that states had standing to protect their quasi-sovereign interest in the health and welfare of their citizens because they had surrendered three crucial sovereign powers to the federal government: (1) states may no longer use military force; (2) the Constitution prohibits states from negotiating treaties with foreign governments; and (3) federal laws may in some circumstances preempt states laws.[354] The federal government now possesses those sovereign prerogatives.[355] Because states had surrendered these three sovereign powers to the federal government, the Court preserved a role for the states in a federal system of government by recognizing that states can file suit in federal court to protect their quasi-sovereign interest in the health, welfare and natural resources of their citizens.[356] Additionally, the Court stated that Congress had required the EPA to use the federal government's sovereign powers to protect states, among others, from vehicle emissions "which in [the Administrator's] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."[357] Furthermore, Congress has "recognized a concomitant procedural right to challenge the rejection of its rulemaking petition as arbitrary and capricious."[358] Justice Stevens concluded, "[g]iven that procedural

352. *Massachusetts*, 127 S. Ct. at 1454 (quoting *Tennessee Copper*, 206 U.S. at 237); Mank, *States Standing*, *supra* note 18, at 1728.

353. *Massachusetts*, 127 S. Ct. at 1454 (quoting *Tennessee Copper*, 206 U.S. at 237); Mank, *States Standing*, *supra* note 18, at 1728.

354. *Massachusetts*, 127 S. Ct. at 1454 ("Massachusetts cannot invade Rhode Island to force reductions in greenhouse gas emissions, it cannot negotiate an emissions treaty with China or India, and in some circumstances the exercise of its police powers to reduce in-state motor-vehicle emissions might well be pre-empted."); Mank, *States Standing*, *supra* note 18, at 1728; Stevenson, *supra* note 21, at 5–8.

355. *Massachusetts*, 127 S. Ct. at 1454; Mank, *States Standing*, *supra* note 18, at 1728.

356. *Massachusetts*, 127 S. Ct. at 1454; Mank, *States Standing*, *supra* note 18, at 1728–29; *supra* notes 354–55 and accompanying text.

357. *Massachusetts*, 127 S. Ct. at 1454 (quoting 42 U.S.C. § 7521(a)(1)); Mank, *States Standing*, *supra* note 18, at 1729.

358. *Massachusetts*, 127 S. Ct. at 1454 (citing 42 U.S.C. § 7607(b)(1)); Mank, *States Standing*, *supra* note 18, at 1729.

right and Massachusetts' stake in protecting its quasi-sovereign interests, the Commonwealth is entitled to special solicitude in our standing analysis."[359] He implied that the federal government owed states greater standing rights because states had surrendered sovereign powers to the federal government.[360]

3. Massachusetts Meets the Tests for Injury, Causation and Redressability

The Court considered the potential risk of global warming to Massachusetts' coastline in concluding that the Commonwealth had met the Article III standing test. Addressing the injury portion of the standing test, Justice Stevens concluded that "EPA's steadfast refusal to regulate greenhouse gas emissions presents a *risk of harm* to Massachusetts that is both 'actual' and 'imminent.'"[361] The "risk of harm" analysis is arguably comparable to the court of appeals decisions addressing an increased risk of harm as providing a sufficient injury for standing, although the Court also stated that standing was based in part on current injuries to Massachusetts' coastline.[362] The Court cited two "probability of injury" courts of appeals decisions with approval.[363] Regarding redressability, the Court also applied a risk-based approach in determining that there is "a 'substantial likelihood that the judicial relief requested' will prompt EPA to take steps to reduce that *risk*."[364]

As to the injury part of the standing test, the Court addressed both the harm that climate change had already caused to Massachusetts' coastline and the potentially more severe harms that could occur in the future.[365] Rejecting the Chief Justice Roberts'

359. *Massachusetts*, 127 S. Ct. at 1454–55; Mank, *States Standing*, *supra* note 18, at 1729.

360. *Massachusetts*, 127 S. Ct. at 1454; Mank, *States Standing*, *supra* note 18, at 1729.

361. *Massachusetts*, 127 S. Ct. at 1455 (quoting *Lujan*, 504 U.S. at 560) (emphasis added); Mank, *States Standing*, *supra* note 18, at 1730.

362. *See Massachusetts*, 127 S. Ct. at 1455–58; Craig, *supra* note 24, at 195–96.

363. *Massachusetts*, 127 S. Ct. at 1458 n.23 (citing Mountain States Legal Foundation v. Glickman, 92 F.3d 1228, 1234 (D.C. Cir. 1996) ("The more drastic the injury that government action makes more likely, the lesser the increment in probability to establish standing"); Village of Elk Grove Village v. Evans, 997 F.2d 328, 329 (7th Cir. 1993) ("[E]ven 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"); Craig, *supra* note 24, at 195 n.241.

364. *Massachusetts*, 127 S. Ct. at 1455 (quoting Duke Power Co. v. Carolina Environmental Study Group, Inc., 438 U.S. 59, 79 (1978)) (emphasis added); Mank, *States Standing*, *supra* note 18, at 1730.

365. *See Massachusetts*, 127 S. Ct. at 1455–58; Craig, *supra* note 24, at 195–96.

assertion that the risks of global warming were uncertain, the Court concluded that "[t]he harms associated with climate change are serious and well recognized."[366] Rejecting the premise that no one has standing to challenge a generalized grievance,[367] Justice Stevens stated, "[t]hat these climate-change risks are 'widely shared' does not minimize Massachusetts' interest in the outcome of this litigation."[368] The Court found that Massachusetts had already suffered loss of its coastline because of evidence in "petitioners' unchallenged affidavits" that "global sea levels rose somewhere between 10 and 20 centimeters over the 20th century as a result of global warming" and as a consequence "[t]hese rising seas have already begun to swallow Massachusetts' coastal land."[369] Because Massachusetts "'owns a substantial portion of the state's coastal property,'" the majority opinion found that "it has alleged a particularized injury in its capacity as a landowner."[370] Furthermore, the Court found that "[t]he severity of that injury will only increase over the course of the next century" as sea levels continue to rise and that "[r]emediation costs alone, petitioners allege, could run well into the hundreds of millions of dollars."[371] Thus, the Court found that there was both ongoing injury and a strong probability of even more severe injuries in the future: "In sum—at least according to petitioners' uncontested affidavits—the rise in sea levels associated with global warming has already harmed and will continue to harm Massachusetts."[372]

The Court emphasized that the EPA had a duty to reduce future harms to Massachusetts even if it could prevent all such harms: "While it may be true that regulating motor-vehicle emissions will not by itself *reverse* global warming, it by no means follows that we lack jurisdiction to decide whether EPA has a duty to take steps to *slow* or *reduce* it."[373] Rejecting the argument that the EPA's

366. *Massachusetts*, 127 S. Ct. at 1455; Mank, *States Standing*, *supra* note 18, at 1731.

367. *See supra* notes 123, 126–41 and accompanying text.

368. *Massachusetts*, 127 S. Ct. at 1456 (quoting Federal Election Comm'n v. Akins, 524 U.S. 11, 24 (1998) ("[W]here a harm is concrete, though widely shared, the Court has found 'injury-in-fact'")); Mank, *States Standing*, *supra* note 18, at 1731.

369. *Massachusetts*, 127 S. Ct. at 1456; Mank, *States Standing*, *supra* note 18, at 1731.

370. *Massachusetts*, 127 S. Ct. at 1456 (quoting Declaration of Karst R. Hoogeboom, P4); Mank, *States Standing*, *supra* note 18, at 1731.

371. *Massachusetts*, 127 S. Ct. at 1456; Mank, *States Standing*, *supra* note 18, at 1731.

372. *Massachusetts*, 127 S. Ct. at 1458; Craig, *supra* note 25, at 195–96; Mank, *States Standing*, *supra* note 18, at 1733.

373. *Massachusetts*, 127 S. Ct. at 1458; Mank, *States Standing*, *supra* note 18, at 1732.

regulation of GHG emissions from new vehicles would have little impact because of increasing emissions from developing countries such as China and India, the Court stated: "A reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere."[374] Furthermore, the Court suggested that the EPA had a duty to prevent catastrophic harms to future generations: "The risk of catastrophic harm, though remote, is nevertheless real. That risk would be reduced to some extent if petitioners received the relief they seek. We therefore hold that petitioners have standing to challenge the EPA's denial of their rulemaking petition."[375]

Although it considered both ongoing and future risks to Massachusetts' coastline,[376] the *Massachusetts* decision potentially allows states to serve as representatives for future generations. The Court recognized that states are entitled to a more lenient standing test when they act as *parens patriae* to protect the state's quasi-sovereign interest in the health, well-being and natural resources of its citizens.[377] It may be that the Court would still be troubled by a suit in which there are no current injuries but only future harms. For example, a hypothetical suit to force the government to take action to prevent an asteroid from striking the Earth in the year 2200 would only involve future harms. As a practical matter, virtually all cases involving environmental pollution involve both present and future harms. The *Massachusetts* decision considered not only present harms but harms through the year 2100 in determining that the Commonwealth had standing.[378] The

374. *Massachusetts*, 127 S. Ct. at 1458; Mank, *States Standing*, *supra* note 18, at 1732.

375. *Massachusetts*, 127 S. Ct. at 1458; Mank, *States Standing*, *supra* note 18, at 1733.

376. *Massachusetts*, 127 S. Ct. at 1458; Craig, *supra* note 24, at 195–96; Mank, *States Standing*, *supra* note 18, at 1731, 1786.

377. *Massachusetts*, 127 S. Ct. at 1454–55 (holding states are entitled to more lenient standing criteria when they sue as *parens patriae* to protect quasi-sovereign interests of citizens); Alfred L. Snapp & Son, Inc. v. Puerto Rico *ex rel.* Barez, 458 U.S. 592, 600–10 (1982) (reviewing history and rationale for role of states in suing as *parens patriae* to protect quasi-sovereign interests of its citizens); Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907) (recognizing right of state to protect its quasi-sovereign interest in the health and safety of its citizens); Mank, *States Standing*, *supra* note 18, at 1727–28.

378. "The severity of that injury will only increase over the course of the next century: If sea levels continue to rise as predicted, one Massachusetts official believes that a significant fraction of coastal property will be 'either permanently lost through inundation or temporarily lost through periodic storm surge and flooding events.' Remediation costs alone, petitioners allege, could run well into the hundreds of millions of dollars." *Massachusetts*, 127 S. Ct. at 1456 (citation omitted); Mank, *States Standing*, *supra* note 18, at

approach of the *Massachusetts* Court could allow states to bring suit on behalf of future generations whenever there are some present injuries and the threat of future harm is reasonably possible.

B. Chief Justice Roberts' Dissenting Opinion

1. The Future Harms of Global Warming Are Too Speculative

In his dissenting opinion, Chief Justice Roberts took an approach to standing that would make it difficult for states to sue on behalf of future generations. He applied a strict evidentiary approach in arguing that Massachusetts' evidence for future harms was too uncertain. He argued that the petitioners' evidence that rising sea levels was insufficient to establish that the injury is "'actual or imminent, not conjectural or hypothetical'" because the computer modeling program relied upon by the plaintiffs had a significant range of uncertainty.[379] Justice Roberts also argued that even if the models were correct about the loss of coastline, that the injury was not immediate if its full effects would not be felt until 2100.[380] He stated, "accepting a century-long time horizon and a series of compounded estimates renders requirements of imminence and immediacy utterly toothless."[381] Thus, it is likely that he and the other three dissenting justices would likely be skeptical of any case in which a state emphasizes long-term future harms. Because computer models of the future will likely contain some uncertainties, it is questionable whether any such model would satisfy Justice Roberts and the three other dissenting justices in *Massachusetts.*

Additionally, Chief Justice Roberts argued that "[r]edressability is

1731, 1786.

379. *Massachusetts*, 127 S. Ct. at 1467–68 (Roberts, C.J., dissenting) (quoting Lujan v. Defenders of Wildlife, 504 U.S. 555, 560 (1992)); *accord* Bertagna, *supra* note 18, at 444–46 ("Global warming plaintiffs cannot take their imminent injury claims out of the speculative category, because their claims are based entirely on conjectural, complex systems of climate modeling."). *But see* Mank, *States Standing*, *supra* note 18, at 1741. In a footnote, the majority responded that the petitioners did not have to prove the amount of loss with exactitude, but merely had to demonstrate that it was likely that rising sea levels would result in the loss of some of Massachusetts' coastline. *Massachusetts*, 127 S. Ct. at 1456 n.21; Mank, *States Standing*, *supra* note 18, at 1741.

380. *Massachusetts*, 127 S. Ct. at 1468 (Roberts, C.J., dissenting); Adler, *supra* note 21, at 67–68; Mank, *States Standing*, *supra* note 18, at 1741.

381. *Massachusetts*, 127 S. Ct. at 1468 (Roberts, C.J., dissenting); *see* Adler, *supra* note 22, at 67–68; Mank, *States Standing*, *supra* note 18, at 1741.

even more problematic" because of the "tenuous link between petitioners' alleged injury and the indeterminate fractional domestic emissions at issue here" and the additional problem that the "petitioners cannot meaningfully predict what will come of the 80 percent of global greenhouse gas emissions that originate outside the United States."[382] Chief Justice Roberts rejected the majority's conclusion that "*any* decrease in domestic emissions will 'slow the pace of global emissions increases, no matter what happens elsewhere.'"[383] The Chief Justice argued that the Court's reasoning failed to satisfy the three-part standing test's requirement that a court find that it is "*likely*" that a remedy will redress the "particular injury-in-fact" at issue.[384] He complained that "even if regulation *does* reduce emissions — to some indeterminate degree, given events elsewhere in the world — the Court never explains why that makes it *likely* that the injury-in-fact — the loss of land — will be redressed."[385] By contrast, the Court concluded that the petitioners met the redressability and other standing requirements because reducing domestic emissions would reduce or slow the loss of land and the risk of catastrophic harm.[386] Implicitly, Chief Justice Roberts appeared to demand that the petitioners quantify at least to some extent how much land might be saved by the EPA's regulation of emissions from new vehicles and new engines to establish standing. The majority, however, was satisfied that the petitioners had shown that such regulation should reduce the risk to the Massachusetts coastline from rising sea levels resulting from GHGs and higher temperatures, despite the uncertainties about how much land the EPA's regulation of new vehicles would save. In light of Justice Roberts' demand that plaintiffs provide clear and perhaps quantitative evidence specifying how a suit would redress a generalized or future harm, it is doubtful that any suit involving climate change would satisfy his demanding evidentiary standards. Especially for a suit seeking to address harms up to one hundred

382. *Massachusetts*, 127 S. Ct. at 1469 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1742.

383. *Massachusetts*, 127 S. Ct. at 1470 (Roberts, C.J., dissenting) (quoting *id.* at 1458); Mank, *States Standing*, *supra* note 18, at 1742.

384. *Massachusetts*, 127 S. Ct. at 1470 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1742–43.

385. *Massachusetts*, 127 S. Ct. at 1470 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1743.

386. *Massachusetts*, 127 S. Ct. at 1458; Mank, *States Standing*, *supra* note 18, at 1732–33; *supra* notes 373–74 and accompanying text.

years in the future, Justice Roberts is unlikely to be satisfied that plaintiffs alleging such harms have standing.

2. Chief Justice Roberts Accuses the Majority of Intruding Upon the Role of the Political Branches

Even assuming that global warming is a serious problem, Chief Justice Roberts in his dissenting opinion, argued that it was a nonjusticiable general grievance that should be decided by the political branches rather than by the federal courts.[387] Chief Justice Roberts first asserted that the petitioners' injuries from global warming failed to meet *Lujan's* requirement that the alleged injury be "particularized" because they were common to the public at large.[388] Even more importantly, he maintained that the Court's loose application of standing principles in this case failed to consider separation of power principles limiting the judiciary to "concrete cases."[389] He argued that the majority's recognition of standing in a case involving broad policy issues resulted in the Court intruding upon policy decisions appropriately within the purview of the political branches of government.[390] Chief Justice Roberts implied that the right of citizens to elect representatives to Congress and a President was an adequate answer to any sovereign rights that states had lost without expanding the rights of states to have standing in the federal courts.[391]

Justice Roberts' dissenting opinion clearly argued that the political branches should decide issues involving generalized harms such as climate change. Because most issues concerning future generations involve generalized harms, it is likely that he would believe that the political branches should address those issues rather than the courts. An unanswered issue is how Justice Roberts and the three other dissenting justices would have addressed a case where the statute was much clearer in giving citizens or states the

387. *Massachusetts*, 127 S. Ct. at 1463–64 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at.

388. *Massachusetts*, 127 S. Ct. at 1467 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1741.

389. *Massachusetts*, 127 S. Ct. at 1470 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1743.

390. *Massachusetts*, 127 S. Ct. at 1470 (Roberts, C.J., dissenting); Mank, *States Standing*, *supra* note 18, at 1743–46.

391. *See generally Massachusetts*, 127 S. Ct. at 1464–71 (Roberts, C.J., dissenting) (arguing the majority had usurped the authority of political branches by unduly expanding standing rights of states); Mank, *States Standing*, *supra* note 18, at 1744.

right to challenge climate change or some other generalized harms. In that hypothetical case, if Congress had specifically authorized the suit it would be more difficult to argue that the courts were usurping the place of the political branches. Nevertheless, Justice Scalia has argued that congressionally authorized citizen suits can intrude on the President's authority to "take care" that the laws of the United States are faithfully executed.[392]

VII. STATE SUITS ON BEHALF OF FUTURE GENERATIONS

Because both federal and state law recognizes the important role of states in protecting natural resources for future generations, federal courts should apply a liberal approach to standing issues when states bring *parens patriae* or public trust suits to protect those resources for the state's future citizens. Under the *parens patriae* doctrine, states have a quasi-sovereign interest in protecting the health and safety interests of their citizens.[393] There is a good argument that states have a quasi-sovereign interest in not just their current citizens but also their future citizens.[394] Furthermore, the modern public trust doctrine and several state laws recognize that states have a duty to protect natural resources for future generations.[395]

392. Lujan v. Defenders of Wildlife, 504 U.S. 555, 576–77 (1992) (stating that citizen suits can interfere with President's Article II authority, "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 executed,' Art. II, § 3."); Robin Kundis Craig, *Will Separation of Powers Challenges "Take Care" of Environmental Citizen Suits? Article II, Injury-in-Fact, Private "Enforcers," and Lessons from Qui Tam Litigation*, 72 U. COLO. L. REV. 93, 98–99 & *passim* (2001) (arguing citizen suit provisions generally do not violate "Take Care" Clause of Article II); Stephen M. Johnson, *Private Plaintiffs, Public Rights: Article II and Environmental Citizen Suits*, 49 U. KAN. L. REV. 383, 418 & *passim* (2001) (arguing citizen suit provisions generally do not violate "Take Care" Clause of Article II). *See also* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs., Inc., 528 U.S. 167, 197 (2000) (Kennedy, J., concurring) (observing that Article II may limit Congress' authority to authorize citizen suits, but not deciding question because the issue was not raised by the parties to the case).

393. *Massachusetts*, 127 S. Ct. at 1454–55; Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907); Mank, *States Standing*, *supra* note 18, at 1728.

394. *See supra notes* 351–56, 359–60, 376–78 and *infra* notes 398–408 and accompanying text.

395. *See infra* notes 419, 463–69 and accompanying text.

A. *Parens Patriae* Suits for Natural Resources and the Public Interest

The *parens patriae* doctrine originally concerned the authority of the English King to protect incompetent persons including minors, the mentally ill and mentally limited persons.[396] Since the early twentieth century, courts have recognized that states may sue as *parens patriae* to protect their quasi-sovereign interests in the health, welfare and natural resources of their citizens.[397] In its 1901 decision in *Missouri* v. *Illinois*, the Court held that Missouri could request injunctive relief to enjoin Illinois from discharging sewage that polluted the Mississippi River in Missouri.[398] The *Missouri* Court declared that a state could sue to protect the health of its citizens, stating: "It is true that no question of boundary is involved, nor of direct property rights belonging to the complainant state. But it must surely be conceded that, if the health and comfort of the inhabitants of a state are threatened, the state is the proper party to represent and defend them."[399] The *Missouri* Court "relied upon an analogy to independent countries in order to delineate those interests that a State could pursue in federal court as *parens patriae*, apart from its sovereign and proprietary interests."[400] The Court stated:

> If Missouri were an independent and sovereign State all must admit that she could seek a remedy by negotiation, and, that failing, by force. Diplomatic powers and the right to make war having been surrendered to the general government, it was to be expected that upon the latter would be devolved the duty of providing a remedy and that remedy, we think, is found in the constitutional provisions

396. Alfred L. Snapp & Son, Inc. v. Puerto Rico *ex rel.* Barez, 458 U.S. 592, 600 (1982); Hawaii v. Standard Oil Co., 405 U.S. 251, 257 (1972); Estados Unidos Mexicanos v. DeCoster, 229 F.3d 332, 335–36 n.4 (1st Cir. 2000); Mank, *States Standing*, *supra* note 18, at 1756–57.

397. *Massachusetts*, 127 S. Ct. at 1454–55; *Tennessee Copper*, 206 U.S. at 237; Mank, *States Standing*, *supra* note 18, at 1757–59.

398. Missouri v. Illinois, 180 U.S. 208 (1901); Mank, *States Standing*, *supra* note 18, at 1759–60. In a subsequent case, the Court denied Missouri's request for an injunction without prejudice because it was unclear whether the typhoid bacillus in the sewage survived the journey from Illinois to Missouri and there was evidence of possible infection in other sewage sources, including towns in Missouri, but the Court left it open to Missouri to submit additional evidence addressing whether Illinois was the source of the alleged disease. Missouri v. Illinois (Missouri II), 200 U.S. 496, 521–26 (1906).

399. *Missouri*, 180 U.S. at 241; Mank, *States Standing*, *supra* note 18, at 1760.

400. *Snapp*, 458 U.S. at 603; Mank, *States Standing*, *supra* note 18, at 1760.

we are considering.[401]

In *Georgia v. Tennessee Copper*, the Court in a 1907 decision followed *Missouri's* approach of justifying state *parens patriae* suits for quasi-sovereign interests as a substitute for the sovereign interests states surrender when they join the United States.[402] Additionally, *Tennessee Copper* expanded the scope of quasi-sovereign interests protected by *parens patriae* suits from protecting not only the health of their citizens from public nuisances to safeguarding their land, air and natural resources.[403] The *Tennessee Copper* Court stated:

> This is a suit by a State for an injury to it in its capacity of quasi-sovereign. In that capacity the State has an interest independent of and behind the titles of its citizens, in all the earth and air within its domain. It has the last word as to whether its mountains shall be stripped of their forests and its inhabitants shall breathe pure air . . . . When the States by their union made the forcible abatement of outside nuisances impossible to each, they did not thereby agree to submit to whatever might be done. They did not renounce the possibility of making reasonable demands on the ground of their still remaining quasi-sovereign interests; and the alternative to force is a suit in this court.[404]

Thus, even though Georgia owned very little of the affected land, it still had a quasi-sovereign interest in protecting the land and natural resources within its borders, as well as the health of its citizens.[405] The Court stated that the evidence of harm to the

401. *Missouri*, 180 U.S. at 241; Mank, *States Standing*, *supra* note 18, at 1760.

402. *Massachusetts*, 127 S. Ct. at 1454–55; *Snapp*, 458 U.S. at 604; Mank, *States Standing*, *supra* note 18, at 1760.

403. Georgia v. Tennessee Copper Co., 206 U.S. 230, 237 (1907); Ricard Ieyoub & Theodore Eisenberg, *State Attorney General Actions, the Tobacco Litigation, and the Doctrine of* Parens Patriae, 74 TUL. L. REV. 1859, 1867 (2000) ("In *Tennessee Copper*, a state's quasi-sovereign interest was extended beyond the general concepts of the health and comfort of its citizens to specifically include interests in the land on which they reside and in the air that they breathe."); Allan Kanner, *The Public Trust Doctrine,* Parens Patriae, *and the Attorney General as the Guardian of the State's Natural Resources*, 16 DUKE ENVTL. L. & POL'Y F. 57, 107–08 (2005) ("The Supreme Court, observing that the state owned very little of the property alleged to be damaged, recast the state's claim as a suit for injury to resources owned by Georgia in its capacity of 'quasi-sovereign.'"); Mank, *States Standing*, *supra* note 18, at 1761.

404. *Tennessee Copper*, 206 U.S. at 237 (citing *Missouri*, 180 U.S. at 241); Mank, *States Standing*, *supra* note 18, at 1761.

405. *Tennessee Copper*, 206 U.S. at 238–39; Kanner, *supra* note 403, at 107; Mank, *States Standing*, *supra* note 18, at 1761.

state's natural resources alone was sufficient to require injunctive relief to protect the state's quasi-sovereign interests: "we are satisfied, by a preponderance of evidence, that the sulphurous fumes cause and threaten damage on so considerable a scale to the forests and vegetable life, if not to health, within the plaintiff state, as to make out a case within the requirements of *Missouri*."[406] Subsequent federal decisions have recognized that states have a quasi-sovereign interest in protecting their coastline.[407]

A state's *parens patriae* interests arguably include the protection of future generations. In granting injunctive relief, the *Missouri* Court considered not just the actual harms from the sewage, but also the potential risks:

> The health and comfort of the large communities inhabiting those parts of the State situated on the Mississippi River are not alone concerned, but contagious and typhoidal diseases introduced in the river communities may spread themselves throughout the territory of the State. Moreover, substantial impairment of the health and prosperity of the towns and cities of the State situated on the Mississippi River, including its commercial metropolis, would injuriously affect the entire State.[408]

The reasoning in *Missouri* arguably extends to risks that are likely to occur to future generations, such as harms from climate change. Conversely, one might argue that the *Missouri* decision was concerned with only the near-term risk of sewage spreading contagious and typhoidal diseases and not any long-term risks to citizens of Missouri.

An important issue is how states should exercise their *parens patriae* authority. In charitable trust law, the state attorney general as *parens patriae* serves as the protector of the public for whom the

406. *Tennessee Copper*, 206 U.S. at 238–39; Kanner, *supra* note 403, at 107; Mank, *States Standing*, *supra* note 18, at 1761.

407. *See* Maine v. M/V Tamano, 357 F. Supp. 1097, 1100 (D. Maine 1973) (holding state has quasi-sovereign interest in coastal resources); Maryland v. Amerada Hess Corp., 350 F. Supp. 1060, 1065–67 (D. Md. 1972) (allowing state to file parens patriae suit to recover damages to coastal waters from oil spill); State v. Jersey Cent. Power & Light Co., 336 A.2d 750, 758 (N.J. Super. Ct. App. Div. 1975) (allowing state to file *parens patriae* suit to recover damages for fish kill), *rev'd on other grounds*, 351 A.2d 337 (N.J. 1976); Ieyoub & Eisenberg, *supra* note 403, at 1869 & n.56 (discussing quasi-sovereign interest in natural resources, including coastal resources); Kanner, *supra* note 403, at 107–09 (same).

408. Missouri, v. Illinois 180 U.S. 208, 241 (1901); Mank, *States Standing*, *supra* note 18, at 1775–76.

trust was established.[409] By analogy, a public official could represent or appoint a trustee or guardian ad litem to represent future generations in courts.[410] Although charitable trusts are often perpetual in nature, scholars have disagreed as to whether trust law provides an adequate analogy for the complex questions surrounding the protection of future generations.[411]

Most commonly, the state attorney general files suit directly as *parens patriae*.[412] Because state attorneys general are generally elective positions, there is the danger that *parens patriae* suits could be politicized.[413] The elective nature of state attorneys general could hurt future generations because politicians typically focus on short-run issues that affect their ability to win the next election.[414] Nevertheless, there are examples where state attorneys general have cited the protection of future generations as a goal of their litigation.[415]

B. State Law and Future Generations

Under the common law, states had a duty to protect navigational and fishing rights for the public at large, although the common law public trust doctrine was apparently only concerned with the rights

409. Evelyn Brody, *Charitable Endowments and the Democratization of Dynasty*, 39 ARIZ. L. REV. 873, 879–81 (1997); Robert Mahealani M. Seto & Lynne Marie Kohm, *Of Princesses, Charities, Trustees, and Fairytales: A Lesson of the Simple Wishes of Princess Bernice Pauahi Bishop*, 21 U. HAW. L. REV. 393, 394 (1999); Mank, *Future Generations*, *supra* note 3, at 496; Edith Brown Weiss, *The Planetary Trust: Conservation and Intergenerational Equity*, 11 ECOLOGY L.Q. 495, 566 (1984). As a practical matter, however, state attorney generals often lack the resources needed to monitor closely whether charitable trusts are fulfilling their obligations. Evelyn Brody, *The Limits of Charitable Fiduciary Law*, 57 MD. L. REV. 1400, 1500 (1998); Seto & Kohm, *supra*, at 410–11.

410. Mank, *Future Generations*, *supra* note 3, at 496; Weiss, *supra* note 409, at 502–40, 565–66 (proposing intergenerational planetary trust modeled after the common law charitable trust).

411. *Compare* Davidson, *supra* note 3, at 204–08 (arguing that trust law offers relevant analogies and precedent to guide courts in addressing suits involving future generations) *with* Gaba, *supra* note 32, at 282 n.82 (arguing that trust law with its focus on the fulfillment of narrow objectives is inadequate to tackle broad issues affecting future generations).

412. Kanner, *supra* note 403, at 57; Mank, *States Standing*, *supra* note 18, at 1780–81; Stevenson, *supra* note 21, at 37–40.

413. Mank, *States Standing*, *supra* note 18, at 1783–84; Stevenson, *supra* note 22, at 42–50.

414. *See supra* notes 3–5 and accompanying text.

415. Weiss, *supra* note 409 at 565 n.311 (after filing suit to enjoin a government pipeline project, the Iowa Attorney General stated that his aim was "to protect the river for future generations." quoting *Three States Sue U.S. on Missouri River Coal Pipeline Project*, Wash. Post, Aug. 19, 1982, at A4; Bruhl, *supra* note 45, at 431.

of the present generation.[416] In many jurisdictions, by common law, statute or constitutional amendment, the modern public trust doctrine imposes a fiduciary duty on a sovereign state to preserve public navigational and fishing rights to waterways and coastal land and sometimes to preserve other natural resources such as wildlife.[417] The public trust doctrine usually requires states to preserve natural resources for future generations.[418]

The modern *parens patriae* doctrine and the modern public trust doctrine now overlap in authorizing states to protect natural resources for the public good.[419] Historically, the *parens patriae* and public trust doctrines developed separately. The *parens patriae* doctrine originally concerned the protection of minors and the mentally disabled.[420] By contrast, in ancient Roman law and subsequently in the English common law, the public trust doctrine was concerned with the protection of natural resources for the public.[421] Today, however, both doctrines are sometimes invoked

416. Brady, *supra* note 291, at 634 n.104–05.

417. *See infra* notes 442–446, 455–56, 461–69 and accompanying text.

418. *See* Geer v. Connecticut, 161 U.S. 519, 534 (1896) (stating that "the ownership of the sovereign authority is in trust for all the people of the State; and hence, by implication, it is the duty of the legislature to enact such laws as will best preserve the subject of the trust, and secure its beneficial use in the future to the people of the State."), *overruled on other grounds by* Hughes v. Oklahoma, 441 U.S. 322 (1979); Arizona Ctr. for Law in the Pub. Interest v. Hassell, 837 P.2d 158, 169 (Ariz. Ct. App. 1991) ("The beneficiaries of the public trust are not just present generations but those to come. The check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res."); JAN G. LAITOS, SANDRA B. ZELLMER, MARY C. WOOD, & DAN H. COLE, NATURAL RESOURCES LAW 623 (2006) ("The premise of the public trust doctrine is simple: some natural resources are so important to the public's well-being that they should not be destroyed by the present generation, but should instead be retained in 'trust' by the sovereign for the continued welfare of future generations .... The sovereign government has special trustee duties to preserve the natural trust."); Deborah G. Musiker et al., *The Public Trust* Parens Patriae *Doctrines: Protecting Wildlife in Uncertain Political Times*, 16 PUB. LAND L. REV. 87, 96 (1995) ("The state, as trustee, must prevent substantial impairment of the wildlife resource so as to preserve it for the beneficiaries—current and future generations."); *see also id.* at 109 ("The public trust doctrine protects natural resources, and therefore the public, from the failure of legislatures, state agencies, and administrative personnel to recognize the state's duty to protect the corpus of the wildlife trust for future generations."); Mary Christina Wood, Essay, *Nature's Trust: Reclaiming an Environmental Discourse*, 25 VA. ENVTL. L.J. 243, 261–62 (2007) ("The beneficiaries of this [public] trust are all generations of citizens—past, present, and future.").

419. *See* Musiker et al., *supra* note 418, at 107–08.

420. Alfred L. Snapp & Son, Inc. v. Puerto Rico ex rel. Barez, 458 U.S. 592, 600 (1982); Hawaii v. Standard Oil Co., 405 U.S. 251, 257 (1972); Estados Unidos Mexicanos v. DeCoster, 229 F.3d 332, 335–36 n.4 (1st Cir. 2000); Mank, *States Standing*, *supra* note 18, at 1756–57.

421. Brady, *supra* note 291, at 624–26; Kanner, *supra* note 403, at 62–66.

simultaneously when states seek to protect natural resources.[422]

There are still some distinctions between the two doctrines because the public trust doctrine imposes affirmative fiduciary duties on a sovereign state that are probably not part of the more discretionary *parens patriae* doctrine.[423] Pursuant to the public trust doctrine, the state as sovereign holds natural resources in trust for the benefit of the people and has an affirmative duty to protect those resources.[424] While states have broad discretion implementing duties imposed by the public trust, courts treat states as a fiduciary that may not alienate or extinguish the trust.[425]

1. History of the Public Trust Doctrine

The public trust doctrine has its roots in ancient Roman law and perhaps even earlier.[426] The Institutes of Justinian, which codified Roman civil law, recognized that certain types of property were communal property for the benefit of the general public: "The following things are by natural law common to all – the air, running water, the sea, and consequently the sea-shore. No one therefore is forbidden access to the sea-shore."[427] The concept of public trust land was more of an ideal than a reality in Roman law.[428]

In the mid-13th century, the English legal scholar Bracton endorsed the Roman concept of common ownership of certain resources including the shores of the sea, but his views were not immediately adopted by the English courts.[429] Because the public trust doctrine was potentially financially valuable to the English Crown, the English courts eventually adopted the Roman principle of things "common to all" and developed this idea into the

422. In re Steuart Transp. Co., 495 F. Supp. 38 (E.D. Va. 1980); State v. Jersey Cent. Power & Light Co., 308 A.2d 671, 674 (N.J. Super. Ct. Law Div. 1973), *aff'd*, 336 A.2d 750 (N.J. Super. Ct. App. Div. 1975), *rev'd on other grounds*, 351 A.2d 337 (N.J. 1976); Musiker et al., *supra* note 418, at 107–08.

423. Kanner, *supra* note 403, at 75–76; Musiker et al., *supra* note 418, at 89.

424. Kanner, *supra* note 403, at 75–76; Musiker et al., *supra* note 418, at 89.

425. Kanner, *supra* note 403, at 76.

426. Kanner, *supra* note 403, at 62; Brady, *supra* note 291, at 624.

427. Kanner, *supra* note 403, at 62–63 (quoting J. Inst. 35 §2.1.1 (J. B. Moyle trans., 5th ed. 1913)); Richard J. Lazarus, *Changing Conceptions of Property and Sovereignty in Natural Resources: Questioning the Public Trust Doctrine*, 71 IOWA L. REV. 631, 633–34 (1986); Brady, *supra* note 291, at 624–25.

428. Lazarus, *supra* note 427, at 634; Brady, *supra* note 291, at 625.

429. Lazarus, *supra* note 427, at 635; Brady, *supra* note 291, at 625.

doctrine of *jus publicum*, which gave the Crown possession on behalf of the public of the sea, the rivers, and the land underlying the waters seaward of the high water mark.[430] The Crown could convey title to the foreshore to private individuals, but the public retained a trust interest in navigation rights that the Crown had a theoretical duty to maintain.[431] Thus the English common law concept of the public trust was based more on the sovereign rights of the Crown than on the public interest.[432] The English crown also had the authority to designate forest land as "royal forests," where hunting of wild life was restricted to preserve the wildlife, but the hunting restrictions were typically applied in a biased way so that the nobility alone could hunt and the common people were not allowed to hunt.[433]

During the 19th century, American courts recognized the concept of *jus publicum* in determining that the public had certain rights regarding navigable waters and submerged lands crucial to navigation.[434] Because of our federalist system, the United States Supreme Court had to determine the respective roles of the states and federal government over the nation's waters.[435] In *Gibbons v. Ogden*, the Court in 1824 recognized that the Commerce Clause established a "federal navigation servitude" over commerce in interstate waters that takes precedence over state interests in such waters.[436] Nevertheless, states retain an important role in owning or regulating water resources. In 1842, the Court held that the original thirteen independent states that formed the United States inherited from the English crown the ownership and title of submerged lands under tidal waters, as well as the ownership of the beds and banks of "navigable waters."[437] In 1845, the Court held

430. Lazarus, *supra* note 427, at 635; Brady, *supra* note 291, at 625–26.

431. Lazarus, *supra* note 427, at 635; Brady, *supra* note 291, at 626.

432. Lazarus, *supra* note 427, at 635.

433. Kanner, *supra* note 403, at 64–66.

434. Lazarus, *supra* note 427, at 636–40.

435. Lazarus, *supra* note 427, at 636–37.

436. 22 U.S. 1 (1824); Lazarus, *supra* note 427, at 637.

437. Martin v. Waddell, 41 U.S. 367, 416–17 (1842); *see* Shively v. Bowlby, 152 U.S. 1, 57 (1894); Robin Kundis Craig & Sarah Miller, *Ocean Discharge Criteria and Marine Protected Areas: Ocean Water Quality Protection under the Clean Water Act*, 29 B.C. ENVTL. AFF. L. REV. 1, 8 (2001); Joseph D. Kearney & Thomas W. Merrill, *The Origins of the American Public Trust Doctrine: What Really Happened in* Illinois Central, 71 U. CHI. L. REV. 799, 828 (2004); Alexandra B. Klass, *Modern Public Trust Principles: Recognizing Rights and Integrating Standards*, 82 NOTRE DAME L. REV. 699, 703 (2006).

that under the "equal footing" doctrine, states subsequently admitted to the United States were entitled to the same rights to submerged lands under tidal waters and ownership of the beds and banks of "navigable waters" as the original thirteen states.[438]

In 1821, the New Jersey Supreme Court in *Arnold v. Mundy* was the first American court to recognize the public trust doctrine, and held that any grant of submerged land by the former English crown or the state, in this case an oyster bed in a bay, was subject to the right of the people to navigate and fish because government holds such land as a trustee and cannot convey away an absolute right of ownership.[439] In the 1850s, a subsequent decision by the New Jersey courts allowed the legislature to enact inconsistent legislation that effectively overruled the *Arnold* decision until the public trust doctrine was revived by New Jersey in 1972.[440] Nevertheless, the United States Supreme Court would later cite the *Arnold* decision with approval when it adopted the public trust doctrine.[441]

In 1892, the United States Supreme Court in *Illinois Cent. R.R. v. Illinois* adopted the public trust doctrine, citing *Arnold.*[442] The Court held that the Illinois legislature could enact a statute repealing an earlier statute that had granted a large area of submerged shorefront lands in Lake Michigan that covered a significant portion of the waterfront area of the City of Chicago to the Illinois Central Railroad.[443] The Court concluded that the original grant of land was invalid because it violated the state's public trust to preserve navigational, commercial and fishing rights in all submerged lands for the public.[444] The state could convey

438. Pollard v. Hagan, 44 U.S. 212, 229 (1845) (holding that the statehood clause of the U.S. Constitution, Article IV, Section 3, Clause 1, required that new states enter the Union on grounds of full political equality with the other states); Craig & Miller, *supra* note 437, at 8; Klass, *supra* note 437, at 703; *see also* Kearney & Merrill, *supra* note 437, at 823–33 (discussing history of state ownership of lands under tidal and navigable-in-fact waters).

439. 6 N.J.L. 1, 76–78 (1821); Brady, *supra* note 291, at 626–27 (stating that *Arnold v. Mundy* "appears to have been the first American case to consider the public trust doctrine's applicability in the United States.").

440. Gough v. Bell, 22 N.J.L. 441, 458–60, aff'd, 23 N.J.L. 624 (N.J. 1852); Lazarus, *supra* note 427, at 637 n.28; Brady, *supra* note 291, at 627 n.46. In 1972, the New Jersey Supreme Court once again recognized the public trust doctrine. *Neptune City v. Borough of Avon-by-the-Sea*, 294 A.2d 47, 54 (N.J. 1972); Brady, *supra* note 291, at 627 n.46.

441. *See* Illinois Cent. R.R. v. Illinois, 146 U.S. 387, 456 (1892) (citing *Arnold* with approval); *see also Waddell*, 41 U.S. at 417–18 (citing *Arnold*).

442. 146 U.S. 387, 456 (1892).

443. *Id.* at 410–11, 452–55; Kanner, *supra* note 403, at 70; Brady, *supra* note 291, at 628.

444. *Illinois Cent.*, 146 U.S. at 452 (stating that submerged lands subject to a public trust

such land to a private party, but any grant was limited by the state's fiduciary duty to protect the public's right to use the property for those purposes.[445] Numerous state constitutions, statutes and judicial decisions have adopted the public trust rationale in *Illinois Central.*[446]

Subsequent decisions have expanded the public trust doctrine beyond the area of navigable waters and submerged lands. In *Geer v. Connecticut,*[447] the United States Supreme Court in 1896 held that the State of Connecticut did not violate the Commerce Clause in forbidding interstate transportation of wildlife taken within its borders because its export restriction preserved "a valuable food supply" for the state's citizens, who had a common ownership interest in the state's wildlife.[448] The Supreme Court determined that under the common law each state has sovereign ownership of the wildlife within its jurisdiction and exercises a public trust over wildlife for the benefit of all citizens of that state.[449] The *Geer* decision stated:

> While the fundamental principles upon which the common property

are "different in character from that which the state holds in lands intended for sale . . . It is a title held in trust for the people of the State, that they may enjoy the navigation of the waters, carry on commerce over them, and have liberty of fishing therein, freed from the obstruction or interference of private parties."); Kanner, *supra* note 403, at 70; Brady, *supra* note 291, at 628.

445. *Illinois Cent.*, 146 U.S. at 453–54 ("The trust devolving upon the state for the public, and which can only be discharged by the management and control of property in which the public has an interest, cannot be relinquished by a transfer of the property. The control of the state for the purposes of the trust can never be lost, except as to such parcels as are used in promoting the interests of the public therein, or can be disposed of without any substantial impairment of the public interest in the lands and waters remaining . . . So with trusts connected with public property, or property of a special character, like lands under navigable waters; they cannot be placed entirely beyond the direction and control of the state."); Kanner, *supra* note 403, at 71; Brady, *supra* note 291, at 628

446. *See, e.g.*, Alaska Const. art. VIII, § 3; La. Const. art. IX §§1, 7; N.C. Gen. Stat. §§113–133.1 (2007); Cal. Trout, Inc. v. State Water Res. Control Bd., 255 Cal. Rptr. 184, 211–12 (Cal. Ct. App. 1989) (applying public trust doctrine to fish); Wade v. Kramer, 459 N.E. 2d 1025 (Ill. App. Ct. 1984) (applying public trust doctrine to wildlife); Kanner, *supra* note 403, at 71–72; Lazarus, *supra* note 427, at 640.

447. 161 U.S. 519 (1896), *rev'd on other grounds by* Hughes v. Oklahoma, 441 U.S. 322 (1979).

448. *Id.* at 522; Michael C. Blumm & Lucus Ritchie, *The Pioneer Spirit and the Public Trust: The American Rule of Capture and State Ownership of Wildlife*, 35 Envl. L. 673, 699–700 (2005); Kanner, *supra* note 403, at 72.

449. *Geer*, 161 U.S. at 527–30; Blumm & Ritchie, *supra* note 448, at 699–700; Kanner, *supra* note 403, at 72–73; Musiker, *supra* note 418, at 92–93.

> in game rest have undergone no change, the development of free institutions had led to the recognition of the fact that the power or control lodged in the State, resulting from this common ownership, is to be exercised, like all other powers of government, as a trust for the benefit of the people, and not as a prerogative for the advantage of the government as distinct from the people, or for the benefit of private individuals as distinguished from the public good.[450]

In 1979, the Court in *Hughes v. Oklahoma*[451] overruled *Geer*'s commerce clause analysis and held that states could not prohibit the interstate shipment of wildlife taken within its borders.[452] The *Hughes* decision rejected *Geer's* view that states literally "own" wildlife, but recognized their broad sovereign authority to protect wildlife for the benefit of their citizens: "The whole ownership theory, in fact, is . . . but a fiction expressive in legal shorthand of the importance to its people that a State have power to preserve and regulate the exploitation of an important resource."[453] The *Hughes* decision emphasized that "the overruling of *Geer* does not leave the States powerless to protect and conserve wild animal life within their borders"[454] and that "the general rule we adopt in this case makes ample allowance for preserving, in ways not inconsistent with the Commerce Clause, the legitimate state concerns for conservation and protection of wild animals."[455] After *Hughes*, states may still exercise a public trust over wildlife for the benefit of their citizens.[456]

2. The Modern Public Trust Doctrine Protects Future Generations

In an influential 1970 article, Professor Sax argued that the public trust doctrine should be expanded so that states and the

450. *Geer*, 161 U.S. at 529.

451. 441 U.S. 322 (1979).

452. *Id.* at 334; Kanner, *supra* note 403, at 73–74; Musiker, *supra* note 418, at 93.

453. *Geer*, 161 U.S. at 334 (quoting Toomer v. Witsell, 334 U.S. 385, 402 (1948)); Kanner, *supra* note 403, at 73–74; Musiker, *supra* note 418, at 93–94.

454. *Hughes*, 441 U.S. at 338; Blumm & Ritchie, *supra* note 448, at 706.

455. *Hughes*, 441 U.S. at 335–36; Blumm & Ritchie, *supra* note 448, at 706.

456. *See, e.g.*, Clajon Produce Corp. v. Petera, 854 F. Supp. 843, 851 (D. Wyo. 1994) (concluding that, after *Hughes*, the state's role in governing and conserving wildlife remains unchanged); State v. Fertterer, 841 P.2d 467, 470 (Mont. 1992) (holding that state holds wildlife "in its sovereign capacity for the use and benefit of the people generally"), *rev'd on other grounds by* State v. Gatts, 928 P.2d 114 (Mont. 1996); Blumm & Ritchie, *supra* note 448, at 706–08; Kanner, *supra* note 403, at 72; Musiker, *supra* note 418, at 93–94.

federal government have an affirmative duty to protect a wide range of natural resources, not just waterways and public parks.[457] He argued that "public trust problems are found whenever government regulation comes into question, and they occur in a wide range of situations in which diffuse public interests need protection against tightly organized groups with clear and immediate goals."[458] He contended that the public trust doctrine was necessary to protect the public interest from the "insufficiencies of the democratic process."[459] He offered the following test for when courts should intervene to protect natural resources from questionable governmental decisions: "When a state holds a resource which is available for the free use of the general public, a court will look with considerable skepticism upon any governmental conduct which is calculated either to reallocate that resource to more restricted uses or to subject public uses to the self-interest of private parties."[460] Although courts have not fully adopted Professor Sax's views, a number of subsequent state court decisions, statutes and constitutional provisions have adopted an expansive approach to the public trust doctrine.[461] In *Phillips*

457. Joseph L. Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 Mich. L. Rev. 471 (1970); *see also* Kanner, *supra* note 403, at 72 (discussing Sax article); Lazarus, *supra* note 427, at 632 ("Professor Joseph Sax reconstructed how the mostly dormant doctrine had historically functioned in the United States to safeguard public rights in navigable waterways, and he predicted that the doctrine could expand to embrace broader environmental concerns."), 641–43 (discussing Sax article); Carol M. Rose, *Takings, Public Trust, Unhappy Truths, and Helpless Giants: A Review of Professor Joseph Sax's Defense of the Environment Through Academic Scholarship: Joseph Sax and the Idea of the Public Trust*, 25 ECOLOGY L.Q. 351, 351–52 (1998) (arguing Sax's article influenced courts to broaden public trust doctrine beyond waterways to issues involving land resources).

458. Sax, *supra* note 457, at 556; *see also* Kanner, *supra* note 403, at 72 (discussing Sax article).

459. Sax, *supra* note 457, at 521; *see also* Kanner, *supra* note 403, at 77 (discussing Sax article).

460. Sax, *supra* note 457, at 490 (emphasis omitted); *see also* Kanner, *supra* note 403, at 77 (discussing Sax article).

461. *See, e.g.*, Larman v. State, 552 N.W. 2d 158, 161 (Iowa 1996) (stating that the public trust doctrine encompasses recreational uses); Wade v. Kramer, 459 N.E. 2d 1025, 1027–29 (Ill. App. Ct. 1984) (recognizing that wildlife is part of the Illinois public trust); Nat'l Audubon Soc'y v. Superior Court (Mono Lake), 658 P.2d 709, 718 (Cal. 1983) (court applied public trust doctrine to non-navigable waters); Marks v. Whitney, 491 P.2d 374, 380 (Cal. 1971); United Plainsman Ass'n v. N.D. State Water Conservation Comm'n., 247 N.W. 2d 457, 462–63 (N.D. 1976); Borough of Neptune City v. Borough of Avon-by-the-Sea, 294 A.2d 47, 54-55 (N.J. 1972); Gould v. Greylock Reservation Comm'n, 215 N.E. 2d 114, 121 (Mass. 1966) (court held that rural park lands were part of the public trust); Kanner, *supra* note 403, at 74–75 nn.119–20, 80–81 nn.155–61.

Petroleum Co. v. Mississippi, the Supreme Court held that states have the broad authority to define the scope of their public trust doctrine.[462]

The modern public trust doctrine and similar doctrines in several states have evolved to include an interest in protecting natural resources for future generations.[463] In cases involving the public trust doctrine, courts have sometimes implicitly or explicitly referred to a state's interest in protecting natural resources for future generations.[464] The constitutions of Hawaii, Illinois,

462. 484 U.S. 469, 475 (1988) ("But it has been long established that the individual States have the authority to define the limits of the lands held in public trust and to recognize private rights in such lands as they see fit."); Shively v. Bowlby, 152 U.S. 1, 26 (1894); Kanner, *supra* note 403, at 72 n.101.

463. Brooks v. Wright, 971 P.2d 1025, 1032 (Alaska 1999) (concluding state constitution "requires that natural resources be managed for the benefit of all people, under the assumption that both development and preservation may be necessary to provide for future generations, and that income generation is not the sole purpose of the trust relationship."); Arizona Ctr. for Law in the Pub. Interest v. Hassell, 837 P.2d 158, 169 (Ariz. Ct. App. 1991) ("The beneficiaries of the public trust are not just present generations but those to come. The check and balance of judicial review provides a level of protection against improvident dissipation of an irreplaceable res."); *Nat'l Audubon Soc'y*, 658 P.2d at 716 (considering impact of water diversions on Mono Lake for the next fifty to one hundred years); In re Wai'ola O Moloka'i, Inc., 83 P.3d 664, 694 (Haw. 2004); In re Water Use Permit Applications, 9 P.3d 409, 453 (Haw. 2000); Glisson v. City of Marion, 720 N.E.2d 1034, 1045 (Ill. 1999) (denying standing in suit seeking to use public trust doctrine to protect threatened species for future generations, but recognizing duty under state constitution to protect health of future generations); Avenal v. State, 886 So. 2d 1085, 1110–12 & n.3 (La. 2004) (Weimar, J., concurring) (arguing state coastal restoration project that interfered with private oyster leases was not an unconstitutional taking because state was obligated to protect its coastline resources for present and future generations under the state constitution and the public trust doctrine); United Plainsman Ass'n v. N.D. State Water Conservation Comm'n, 247 N.W. 2d 457, 462–63 (N.D. 1976) (stating that state agencies when allocating public water resources must consider future water needs of state); W.J.F. Realty Corp. v. State, 672 N.Y.S.2d 1007, 1011–12 (N.Y. App. Div. 1998) (rejecting takings claim in part because of need to conserve drinking water for future generations); Palmer v. Commonwealth Marine Resources Comm'n, 628 S.E.2d 84, 89–90 (Va. App. 2006) (stating Virginia Marine Resources Commission must ensure the preservation and protection of all current and future uses of the state-owned bottomlands); Brady, *supra* note 291, at 634 n. 104; Robin Kundis Craig, *A Comparative Guide to the Eastern Public Trust Doctrines: Classifications of States, Property Rights, and State Summaries* 68 (2007), at http://works.bepress.com/cgi/viewcontent.cgi?article=1000&context=robin_craig; Klass, *supra* note 437, at 711, 715, 717, 730, 733, 735–36; Musiker et al., *supra* note 418, at 96, 109.

464. Geer v. Connecticut, 161 U.S. 519, 533 (1896) ("it is within the police power of the State . . . to make such laws as will best preserve such game, and secure its beneficial use in the future to the citizens, and to that end it may adopt any reasonable regulations.") (quoting State v. Rodman, 58 Minn. 393, 400 (1894) *rev'd on other grounds by* Hughes v. Oklahoma, 441 U.S. 322 (1979)); Illinois Cent. Railroad Co. v. Illinois, 146 U.S. 387, 455–56 (1892); Musiker, *supra* note 418, at 96, 110, 113.

Montana, and Pennsylvania explicitly declare that the state has a duty to preserve the environment for future generations.[465] Furthermore, several other states, including Connecticut, Indiana, Kentucky, New Hampshire, New York, North Carolina, Ohio, Tennessee, Washington, and West Virginia have statutes that mention the state's duty to preserve natural resources for future generations.[466]

California's public trust doctrine has been used to protect the interests of future generations. In its 1983 decision, *Nat'l Audubon Soc'y v. Super. Ct. of Alpine County* (*Mono Lake*), the California Supreme Court held that an environmental organization and others could challenge the Los Angeles Department of Water and Power's (DWP) diversion of waters from Mono Lake to a city aqueduct and that the state had a public trust duty to insure such diversions did not harm water levels in the lake.[467] In *Mono Lake*,

465. Haw. Const. art. XI, § 1 ("For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii's natural beauty and all natural resources . . . ."); Ill. Const. art. XI, § 1 ("The public policy of the State and the duty of each person is to provide and maintain a healthful environment for the benefit of this and future generations."); Mont. Const. art. IX, § 1 ("The state and each person shall maintain and improve a clean and healthful environment in Montana for present and future generations."); Pa. Const. art. 1, § 27 ("The people have a right to clean air, pure water, and to the preservation of natural, scenic, historic and aesthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come."); Allen, *supra* note 10, at 725 nn. 69–72; Just, *supra* note 65, at 616. Additionally, Alabama's Constitution provides for the acquisition, maintenance, and protection of unique land and water areas "to protect the natural heritage of Alabama for the benefit of present and future generations," and establishes the Forever Wild Trust "with full recognition that this generation is a trustee of the environment for succeeding generations." Alabama Constit. art. XI, § 219.07; Craig, *Public Trust*, *supra* note 463, at 22.

466. Conn. Gen. Stat. Ann. § 22a-1 (West 2007); Ind. Code Ann. § 14-31-1-1 (West 2007); KY. REV. STAT. ANN. § 146.220 (2007); N.H. REV. STAT. ANN. § 481:1 ("[T]he water of New Hampshire whether located above or below ground constitutes a limited and, therefore, precious and invaluable public resource which should be protected, conserved and managed in the interest of present and future generations. The state as trustee of this resource for the public benefit declares that it has the authority and responsibility to provide careful stewardship over all the waters lying within its boundaries."); N.Y. Envtl. Conservation Law § 15-1601 ("All the waters of the state are valuable public natural resources held in trust by this state, and this state has a duty as trustee to manage its waters effectively for the use and enjoyment of present and future residents and for the protection of the environment . . . ."); N.C. Gen. Stat. § 113A-3 (2007); Ohio Rev. Code § 1517.06 (Baldwin 2007); Tenn. Code. Ann. § 11-13-103 (2007); Wash Rev. Code Ann. § 79.70.010 (West 2007); W. VA. CODE § 22-1-1(b); Allen, *supra* note 9, at 725–26 n.75 (listing statutes).

467. *See Nat'l Audubon Soc'y*, 658 P.2d 709, 711–33 (Cal. 1983); Michael C. Blumm & Thea Schwartz, *Mono Lake and the Evolving Public Trust in Western Water*, 37 ARIZ. L. REV. 701, 703–08 (1995) (discussing *Mono Lake* decision).

the court considered conflicting evidence about the impact of the water diversions on the lake for the next fifty to one hundred years.[468] The court suggested that the DWP had a procedural duty under the public trust doctrine to consider the impacts of water diversions on foreseeable future generations, but that the state could decide after such consideration that current water needs justified harm to its trust interest in future preservation.[469] Thus, a California court might someday address the impacts of greenhouse gases on future water conditions in the state, but perhaps not a more speculative suit concerning highly uncertain future events.

3. Who Has Standing to Bring Public Trust Suits?

There is a split among states about when citizens have standing to sue if a state allegedly fails to maintain its public trust duties. In California, any member of the public can sue the state for failing to perform its public trust duties, even if the plaintiff is not personally harmed by such failure.[470] By contrast, the Michigan Supreme Court in 2007 held that citizens can sue to enforce the state's public trust duties only if they suffer personal harm.[471] Because Michigan explicitly follows the United States Supreme Court's standing test for Article III courts,[472] it is likely that federal courts

468. *Nat'l Audubon Soc'y*, 658 P.2d at 715 ("the parties hotly dispute the projected effects of future diversions on the lake itself, as well as the indirect effects of past, present and future diversions on the Mono Basin environment.").

469. "The state has an affirmative duty to take the public trust into account in the planning and allocation of water resources, and to protect public trust uses whenever feasible. Just as the history of this state shows that appropriation may be necessary for efficient use of water despite unavoidable harm to public trust values, it demonstrates that an appropriative water rights system administered without consideration of the public trust may cause unnecessary and unjustified harm to trust interests. . . . As a matter of practical necessity the state may have to approve appropriations despite foreseeable harm to public trust uses. In so doing, however, the state must bear in mind its duty as trustee to consider the effect of the taking on the public trust and to preserve, so far as consistent with the public interest, the uses protected by the trust." *Id.* at 728 (citations and footnote omitted). Because the suit sought injunctive relief for present injuries caused by the DPW diverting water from Mono Lake, it is not clear whether the court would have recognized standing for the plaintiffs to bring suit exclusively on behalf of future generations. *See id.* at 711–12, 714–18.

470. *Id.* at 716 n.11; Marks v. Whitney, 491 P.2d 374, 381–82 (Cal. 1971); Blumm & Schwartz, *supra* note 467, at 712–13 (stating that California courts implicitly grant universal public standing to enforce public trust doctrine).

471. Michigan Citizens for Water Conservation v. Nestle Waters N. Am. Inc., 737 N.W.2d 447, 453–459 (Mich. 2007).

472. *See id.*

would adopt the same approach to standing as the Michigan Supreme Court in public trust cases involving private parties. *Laidlaw* suggests that in federal courts and state courts that follow Article III standing, such as Michigan, a plaintiff could probably sue on behalf of future generations only if that plaintiff had a reasonable probability of suffering a concrete injury from a defendant's activities and those same activities would also harm future generations.[473]

Following *Massachusetts*, *Tennessee Copper*, and numerous state decisions, a state, unlike a private plaintiff, need not demonstrate personal harm when bringing a *parens patriae* suit to protect its quasi-sovereign interest in natural resources or when bringing a public trust suit.[474] The *Tennessee Copper* and *Missouri* suits were essentially public nuisance actions with the state acting as *parens patriae*.[475] The traditional rule in public nuisance cases is that the state has automatic standing as sovereign in its own state courts.[476] Some commentators have argued that states should not have special standing rights in federal courts and should be treated the same as private plaintiffs.[477] The *Tennessee Copper* and *Missouri* decisions, however, implied that states had special rights in federal courts when they sue in a *parens patriae* capacity to protect their quasi-sovereign interest.[478] The *Massachusetts* decision clearly held

473. *See* Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc. (Laidlaw), 528 U.S. 167, 181 (2000) (stating that standing is based to harm to the plaintiff, not harm to the environment).

474. *See* Mank, *States Standing*, *supra* note 18, at 1764–65.

475. Georgia v. Tennessee Copper Co., 206 U.S. 230 (1907) (air pollution); Missouri v. Illinois, 180 U.S. 208, 240–41, 244 (1901) (sewage discharge); Mank, *States Standing*, *supra* note 18, at 1759–61.

476. *See, e.g.*, David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 55 (2003); David Kairys, *The Governmental Handgun Cases and the Elements and Underlying Policies of Public Nuisance Law*, 32 CONN. L. REV. 1175, 1177 n.9 (2000); Mank, *States Standing*, *supra* note 18, at 1764–65; Matthew F. Pawa & Benjamin A. Krass, *Global Warming as a Public Nuisance:* Connecticut v. American Electric Power, 16 FORDHAM ENVTL. L. REV. 407, 469–70 (2005).

477. *See, e.g.*, Thomas W. Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENVTL. L. 293, 300–06 (2005); Ann Woolhandler & Michael G. Collins, *State Standing*, 81 VA. L. REV. 387, 390–97, 432–33, 445–46, 482–86, 502–20 (1995); Kathryn A. Watts & Amy J. Wildermuth, Massachusetts v. EPA*: Breaking New Ground on Issues Other Than Global Warming*, 102 NW. U. L. REV. 1029, 1033–39 (Special Issue 2008) (questioning use of state's quasi-sovereign interests as basis for special standing rights in federal courts, questioning standing analysis in *Massachusetts v. EPA*, but also stating that states should have standing in federal courts to challenge whether a federal law preempts a state law).

478. Mank, *States Standing*, *supra* note 18, at 1759–62, 1764–68; Merrill, *supra* note 477, at 304–06 (acknowledging despite his contrary view that "[t]here is no suggestion from the

that states are entitled to a more lenient standing test in federal courts, at least when they file *parens patriae* suits to protect their quasi-sovereign interests in the health and welfare of their citizens and the state's natural resources.[479]

Although the public trust doctrine is primarily a principle of state law and for state courts, federal courts should recognize state public trust doctrine as defining the scope of a state's interest in protecting its lands and citizens in interstate nuisance actions under federal common law, such as *Tennessee Copper*. Following the rationale of *Tennessee Copper*, a state should be able to protect its public trust lands in an interstate nuisance action by asserting its *parens patriae* interests in both the public welfare of its citizens and its lands, including public trust lands. Additionally, in federal statutory actions, courts should allow states to sue the federal government to force a federal agency to protect its public trust lands. If Massachusetts can sue the EPA to protect its coastal lands, it should also be able to sue to protect tidal and freshwater resources that it has a public trust duty to protect. Accordingly, states should have standing when they sue as *parens patriae* or in a public trust capacity to protect their environment for present and future generations even if private citizens could not sue.

CONCLUSION: *MASSACHUSETTS V. EPA*: A MODEL FOR STATE SUITS TO PROTECT FUTURE GENERATIONS?

Ideally from the perspective of future generations, the Supreme Court should eliminate the "actual and imminent" requirement for Article III standing because it is inherently biased against suits that seek to prevent future harm.[480] The Court likely did not consider the interests of future generations when it established the "actual and imminent" requirement for standing. Nevertheless, the Court is unlikely to change its standing test in the near future since the *Massachusetts* decision employed the three-part standing test

Supreme Court's original jurisdiction cases adjudicating transboundary nuisance disputes—the paradigm for the modern parens patriae action—that the States bringing these suits were required to meet any particular standing burden in order to maintain the action," but also stating that "the issue has never been squarely decided" by the Court as of 2005, before the *Massachusetts* decision in 2007); Woolhandler & Collins, *supra* note 477, at 446–47 (citing *Missouri*, 180 U.S. at 240–41).

479. Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct. at 1454–55; Mank, *States Standing*, *supra* note 18, at 1706–08, 1727–29.

480. Hsu, *supra* note 4, at 466–69.

discussed in Part IV.A, although the Court relaxed the requirements of the test for state litigants.[481] Accordingly, those who seek to protect future generations must find ways to do so within the confines of existing standing doctrine.

In some circumstances, non-government parties can bring procedural suits on behalf of future generations. Pursuant to NEPA, a plaintiff who is harmed by a proposed government project can request a court to order the government to study both the project's likely short-term and long-term impacts.[482] In *Shain*, however, the Eighth Circuit denied standing where the impacts of a proposed government action were likely to occur after the plaintiffs' lifetimes.[483] It is not clear to what extent non-government parties can obtain substantive relief for future harms.

Courts should reject *Public Citizen*'s hostile approach to cases involving probabilistic injury.[484] Several decisions in various courts of appeal have allowed standing where there was a significant possibility of future injury.[485] Additionally, the D.C. Circuit should abandon its substantial probability test for standing because it is more stringent than required by *Lujan* and should instead adopt the reasonable probability test used in the Ninth Circuit.[486]

481. *See Massachusetts*, 127 S. Ct. at 1453–58; Mank, *States Standing*, *supra* note 18, at 1727–34; *supra* notes 113–14 and accompanying text.

482. See *supra* notes 165–81 and accompanying text.

483. See *supra* notes 262–74, 278–79 and accompanying text.

484. See *supra* note 261 and accompanying text. The author will address this issue and related issues in more depth in a forthcoming article, Bradford C. Mank, *Standing and Statistical Persons: Should Large Public Interest Organizations Have Greater Standing Rights than Individuals?*, ECOLOGY L.Q. (forthcoming 2009) [herinafter Mank, *Standing and Statistical Persons*], available at http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1277269.

485. See Mank, *Standing and Statistical Persons*, *supra* note 484; *supra* notes 188–213 and accompanying text.

486. *Compare* Fla. Audubon Soc'y v. Bentsen, 94 F.3d 658, 666–72 (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) *with* Citizens for Better Forestry v. United States Dept. of Agric., 341 F.3d 961, 972–75 (9th Cir. 2003) (rejecting *Florida 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.'" (citation omitted)); Comm. to Save the Rio Hondo v. Lucero (Rio Hondo), 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); Mank, *Global Warming*, *supra* note 2, at 45–63 (discussing split in circuits about how to apply footnote seven

Until the Supreme Court resolves the differences among the courts of appeal about suits involving future injuries, suits by states represent the best opportunity to protect the interests of future generations. The *Massachusetts* decision recognized that states have broader standing rights than private parties and potentially allows states to serve as representatives for future generations.[487] The *Massachusetts* decision considered both ongoing and future risks to Massachusetts' coastline through the year 2100 in determining that the Commonwealth had standing.[488] The *Massachusetts* decision considered computer modeling evidence that sea levels would rise significantly between 2007 and 2100 in concluding that the Commonwealth had standing.[489] The Court did not require Massachusetts to demonstrate that a judicial remedy would solve all future harms, but merely that it lessen those harms.[490] Additionally, the *Missouri* Court's consideration of potential harms from raw sewage supports the *Massachusetts* Court's consideration of the future harms of global warming.[491]

Beyond the *Massachusetts* decision, both common law doctrine and statutory law support giving states a special role in protecting future generations. The common law "public trust" doctrine recognizes that states have a duty to preserve certain natural resources for future generations.[492] The modern *parens patriae*

standing test in NEPA cases); Mank, *States Standing*, *supra* note 18, at 1720 n.91; Bertagna, *supra* note 18, at 461–64 (discussing split between Ninth and District of Columbia Circuits on causation portion of standing test); *see also* Sakas, *supra* note 171, 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).

487. *See supra* notes 24, 280–81, 376–78 and *infra* notes 490–91 and accompanying text.

488. "The severity of that injury will only increase over the course of the next century: If sea levels continue to rise as predicted, one Massachusetts official believes that a significant fraction of coastal property will be 'either permanently lost through inundation or temporarily lost through periodic storm surge and flooding events.'. . .Remediation costs alone, petitioners allege, could run well into the hundreds of millions of dollars." Massachusetts v. EPA, 549 U.S. 497, 127 S. Ct. 1438, 1458 (2007) (citation omitted); Craig, *supra* note 24, at 195–96.

489. *Massachusetts*, 127 S. Ct. at 1456 n.20; *but see id.* at 1467–68 (Roberts, C.J., dissenting) (criticizing Massachusetts use of estimates of sea level rise through 2100); *see* Adler, *supra* note 21, at 65; Mank, *States Standing*, *supra* note 18, at 1731, 1741, 1786.

490. *Massachusetts*, 127 S. Ct. at 1458 ("A reduction in domestic emissions would slow the pace of global emissions increases, no matter what happens elsewhere.").

491. *See* Missouri v. Illinois, 180 U.S. 208, 241 (1901); *supra* note 408 and accompanying text.

492. *See supra* notes 395, 418, 463–69 and accompanying text.

doctrine and the modern public trust doctrine now overlap in giving states the authority to protect natural resources for the public good.[493] The Comprehensive Environmental Compensation Liability Act (CERCLA)[494] and the Oil Pollution Act of 1990[495] both recognize the role of states in acting as trustees for their natural resources. Thus, states have a strong argument for acting as the representative of future generations. Because both federal and state law recognizes the important role of states in protecting natural resources for future generations, federal courts should apply a liberal approach to standing issues when states bring *parens patriae* or public trust suits to protect those resources for the state's future citizens.

The Court may still be troubled by a suit in which there are no current injuries but only future harms, even if a state is the plaintiff. For instance, the Court might balk at standing if a state asserts that its natural resources could be affected in the distant future, but there is no actual harm in the present or near future. Yet the D.C. Circuit in *Nuclear Energy Institute* allowed a private plaintiff to sue concerning the potentially distant harms of the proposed nuclear repository at Yucca Mountain because of the possibility that the site might contaminate the plaintiff's groundwater, although the court did conclude that that the NEPA claim was not yet ripe for judicial decision.[496] The lenient state standing test in *Massachusetts* should allow states to bring suit on behalf of future generations whenever there are some present injuries and the threat of future harm is reasonably possible. Additionally, some cases like *Baur* suggest that a reasonable threat of serious harm is enough for standing, although some D.C. Circuit decisions have required a substantial probability that there will be harm.[497] Accordingly, in many, but not all cases involving serious risks of future harm, states can file suit to protect their future citizens from the likely future harms of climate change and other present environmental pollution that has long-lasting

493. *See* Musiker et al., *supra* note 418, at 107–08; *supra* notes 419–22 and accompanying text.

494. 42 U.S.C. §§ 9607(f)(1), (2)(B) (1986) (defining role of state trustees in protecting natural resources under act).

495. 33 U.S.C. §§ 2706(a)(2), (b)(3), (c)(2) (1990) (defining role of state trustees in protecting natural resources under act).

496. *See supra* notes 313–330 and accompanying text.

497. *See supra* notes 208–61 and accompanying text.

consequences.