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Massachusetts v. EPA and the Future of Environmental Standing in Climate Change Litigation and Beyond

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MASSACHUSETTS V. EPA AND THE FUTURE OF ENVIRONMENTAL STANDING IN CLIMATE CHANGE LITIGATION AND BEYOND

RANDALL S. ABATE*

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INTRODUCTION

The law of environmental standing has reached an important turning point in its evolution. Climate change litigation—and similar litigation seeking recovery for the impacts of global environmental harms—has presented an opportunity for courts to expand the scope of environmental standing through the concept of risk-based injury.

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Justice Douglas's dissenting opinion in *Sierra Club v. Morton* is widely recognized as laying the foundation for environmental standing.[1] The language and theory that Justice Douglas employed in his dissent provide a valuable lens through which to consider standing for global environmental harms. Although the Court in *Sierra Club* ultimately concluded that the Sierra Club did not have standing to sue the Secretary of the Interior of the United States to prevent construction of a proposed ski resort and recreation area in a national game refuge,[2] Justice Douglas's dissent foreshadowed the beginning of judicial recognition of substantive injury claims in environmental standing.[3] In his dissenting opinion, Justice Douglas concluded that the Court should shift its view on injury to allow others to sue on behalf of an inanimate object that is about to be ruined due to another's actions.[4]

Employing language that is even more relevant today than it was in 1972, Justice Douglas reasoned that

> [t]he critical question of 'standing' would be simplified and also put neatly in focus if we fashioned a federal rule that allowed environmental issues to be litigated before federal agencies or federal courts in the name of the inanimate object about to be despoiled, defaced, or invaded by roads and bulldozers and where injury is the subject of public outrage.[5]

He further clarified the notion of environmental standing by noting that

> [t]he river, for example, is the living symbol of all the life it sustains or nourishes—fish, aquatic insects, . . . otter, . . . deer, elk, bear, and all other animals, including man, who are dependent on it or who enjoy it for its sight, its sound, or its life. The river as plaintiff speaks for the ecological

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[1] 405 U.S. 727, 741-52 (1972) (Douglas, J., dissenting).

[2] *Id.* at 741. The majority concluded by noting that because "the Court of Appeals was correct in its holding that the Sierra Club lacked standing to maintain this action, [it did] not reach any other questions presented in the petition, and . . . intimate[s] no view on the merits of the complaint." *Id.*

[3] *Id.* at 741-51 (Douglas, J., dissenting). Courts have recognized three forms of injury in fact in environmental standing: substantive, procedural, and informational. For a discussion of these categories of injury, see Randall S. Abate & Michael J. Myers, *Broadening the Scope of Environmental Standing: Procedural and Informational Injury-in-Fact After* Lujan v. Defenders of Wildlife, 12 UCLA J. ENVTL. L. & POL'Y 345, 346-47 (1994).

[4] *Sierra Club*, 405 U.S. at 745.

[5] *Id.*

> unit of life that is part of it. Those people who have a meaningful relation to that body of water—whether it be a fisherman, a canoeist, a zoologist, or a logger—must be able to speak for the values which the river represents and which are threatened with destruction.[6]

Justice Douglas compared inanimate environmental objects to other inanimate objects that have legal recognition to sue, such as a ship or a corporation.[7] He noted that these other objects and entities are viewed as people for litigation purposes regardless of whether they represent "proprietary, spiritual, aesthetic, or charitable causes."[8] Justice Douglas concluded that organizations such as the Sierra Club,[9] one of several existing beneficiaries of the environmental resources at issue in the case, should be able to speak on behalf of these resources before these "priceless bits of Americana" are lost forever.[10]

On the coattails of *Sierra Club*, environmental standing enjoyed a boom period throughout most of the 1970s and 1980s, with several major decisions that expanded environmental litigants' access to the courts to sue governmental and private entities for alleged environmental harm.[11]

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[6] *Id.* at 743.

[7] *Id.* at 742-43.

[8] *Id.*

[9] "[O]ne of the principal purposes of the Sierra Club is to protect and conserve the national resources of the Sierra Nevada Mountains. The District Court held that this uncontested allegation made the Sierra Club 'sufficiently aggrieved' to have 'standing' to sue . . . ." *Id.* at 744.

[10] *Sierra Club*, 405 U.S. at 750.

[11] *See generally* JEFFREY G. MILLER, CITIZEN SUITS: PRIVATE ENFORCEMENT OF FEDERAL POLLUTION CONTROL LAWS (Envtl. Law Inst. ed., 1987). Several important cases during that boom period confirm the progress involved in this component of the history of environmental standing. *See, e.g.*, Friends of the Earth v. U.S. Navy, 841 F.2d 927 (9th Cir. 1988), *modified*, 850 F.2d 599 (9th Cir. 1988) (holding that plaintiff organization suffered injury in fact from Navy's failure to follow environmental procedures, which was traceable to the Navy's action of beginning construction before completion of review process, and which was redressable by favorable decision prohibiting the Navy from construction before completing permit review process); Nat'l Wildlife Fed'n v. Hodel, 839 F.2d 694 (D.C. Cir. 1988) (holding that environmental groups had standing to challenge regulations under Surface Mining Control and Reclamation Act because injury to aesthetic or recreational interests supports standing, that being deprived of opportunity to use EIS was constitutionally sufficient injury on which to base standing, and that indirectness of causation was not a barrier to standing); Or. Envtl. Council v. Kunzman, 817 F.2d 484 (9th Cir. 1987) (holding that environmental group's alleged risks of injury that would result if Oregon used chemical insecticides in accordance with EIS was sufficient for standing because actual, threatened, or contingent injury is sufficient to meet the standing requirement);

In the 1990s, however, environmental standing entered a backlash period, spearheaded by Justice Scalia's opinions in *Lujan v. National Wildlife Federation*[12] and *Lujan v. Defenders of Wildlife*.[13] The lower federal courts wrestled with the implications of these decisions throughout the decade, which led to conflicting interpretations of what the *Lujan v. Defenders of Wildlife* decision meant for environmental standing.[14]

In 2000, the Supreme Court's decision in *Friends of the Earth v. Laidlaw Environmental Services* marked the beginning of the pendulum's swing back toward a more liberal interpretation of environmental standing.[15] To the extent that *Laidlaw* may have cracked the door open slightly for a possible broadened scope of environmental standing, environmental litigation for global environmental harms since 2003[16] and, most significantly, the *Massachusetts v. EPA* decision,[17] have thrown that door wide open.

This Article focuses on the future scope of environmental standing after *Massachusetts v. EPA*. Injury in fact has been and remains the most controversial component of the environmental standing test within and outside the context of global environmental harms. The Supreme Court's decision in *Massachusetts v. EPA* is one of the most significant cases in the history of federal environmental litigation. The case could usher in a new era of environmental standing; however, the decision leaves questions

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City of Davis v. Coleman, 521 F.2d 661 (9th Cir. 1975) (holding that agency's failure to prepare an EIS has implied procedural injury component to it that is sufficient injury in fact to support standing, and that plaintiff had sufficient geographical nexus to challenged project such that plaintiff could be expected to suffer any environmental harm resulting from the project).

[12] 497 U.S. 871 (1990).

[13] 504 U.S. 555 (1992).

[14] *See* Lisa M. Bromberg, Lujan v. Defenders of Wildlife*: Where Does the Standing Issue Stand in Environmental Litigation?*, 16 AM. J. TRIAL ADVOC. 761 (1993); James E. McElfish Jr., *Drafting Standing Affidavits After* Defenders*: In the Court's Own Words*, 23 ENVTL. L. REP. 10026 (1993); Patti A. Meeks, *Justice Scalia and the Demise of Environmental Law Standing*, 8 J. LAND USE & ENVTL. L. 343 (1993); Karin P. Sheldon, Lujan v. Defenders of Wildlife*: The Supreme Court's Slash and Burn Approach to Environmental Standing*, 23 ENVTL. L. REP. 10031 (1993).

[15] 528 U.S. 167 (2000).

[16] *See, e.g.*, California v. Gen. Motors Corp., No. C06-05755 MJJ, Slip op. (N.D. Cal. Sept. 17, 2007); NRDC v. EPA, 464 F.3d 1 (D.C. Cir. 2006); Covington v. Jefferson County, 358 F.3d 626 (9th Cir. 2004); Nw. Envtl. Def. Ctr. v. Owens Corning Corp., 434 F. Supp. 2d 957 (D. Or. 2006); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265 (S.D.N.Y. 2005); Friends of the Earth, Inc. v. Mosbacher, 488 F. Supp. 889 (N.D. Cal. 2005); Complaint, Native Vill. of Kivalina v. ExxonMobil Corp., No. C08-01138-SBA (N.D. Cal. Feb. 26, 2008).

[17] 127 S. Ct. 1438 (2007).

as to what degree and under what circumstances it expands the reach of existing environmental standing jurisprudence.

Part I of this Article discusses the background context of environmental standing for global environmental harms and its corresponding origins in procedural and substantive injury claims in cases involving purely domestic environmental harms. Part II examines the landmark decision in *Massachusetts v. EPA* and considers how it confirms and extends standing jurisprudence for global environmental harms, yet fails to resolve some important questions in interpreting the effect of the decision on environmental standing in future cases. Part III examines the potential ramifications of *Massachusetts v. EPA* on the narrower context of pending and future climate change litigation, whereas Part IV analyzes the decision's potential implications on environmental standing more generally in contexts beyond climate change litigation. The Article concludes that environmental standing jurisprudence will continue to play an important part in enabling citizens to identify and seek relief for climate change impacts; however, it must do so in a way that draws on risk assessment methodology to confirm the validity of the risk-based theories that litigants allege to avoid the potential for an unwelcome flood of claims that the courts are not qualified to address.

I. ENVIRONMENTAL STANDING FOR GLOBAL ENVIRONMENTAL HARMS

The elements of both traditional standing[18] and procedural standing, as set forth in *Lujan v. Defenders of Wildlife* in 1992, were confirmed more than a decade later in *Border Power Plant Working Group v. Department of Energy*.[19] To satisfy the three elements of traditional Article III standing, the plaintiff must establish that (1) there exists an "injury in fact," which has been defined as "an invasion of a legally protected interest" that is both (a) concrete and particularized, and (b) actual or imminent, not hypothetical; (2) the injury is fairly traceable to the defendant's challenged action; and (3) it is likely, as opposed to merely possible or speculative, that a favorable decision will rectify the injury.[20] The plaintiff must show that the injury is "certainly impending" in order to satisfy the imminence

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[18] "Traditional standing" refers to claims alleging substantive injury, as distinguished from procedural or informational injuries. *See* Abate & Myers, *supra* note 3, at 346-47.

[19] 260 F. Supp. 2d 997 (S.D. Cal. 2003). These elements and principles remain intact after the U.S. Supreme Court's 2007 decision in *Massachusetts v. EPA*, discussed in Part II, *infra*.

[20] *Border Power Plant*, 260 F. Supp. 2d at 1009.

component of the injury in fact element.[21] This requirement helps to ensure that standing is not conferred on a party to whom no injury would have occurred at all in the absence of judicial action.[22] The plaintiff must have a personal stake in the outcome for the injury to be considered particularized, and the plaintiff must show that it has suffered or is in immediate danger of suffering some direct injury resulting from the "challenged statute or official conduct" for injury to be considered concrete.[23]

Regarding the causation and redressability elements, there must be a causal connection between the injury and the conduct complained of.[24] This requires the injury to be "fairly trace[able] to the challenged action of the defendant," not a result of any independent action.[25] Finally, it must be "likely," not "speculative," that the injury will be "redressed by a favorable decision."[26]

Two basic elements are required for procedural standing: (1) the plaintiff must be a person "accorded a procedural right to protect his concrete interests"; and (2) the plaintiff must have some concrete interest threatened that is the ultimate foundation of his or her standing.[27] In addition, the plaintiff must demonstrate that its interest is within the "zone of interests" that the contested statute is intended to protect.[28] Finally, some courts have required that a plaintiff alleging a procedural injury must have "a sufficient geographical nexus to the site of the challenged project that [it] may be expected to suffer whatever environmental consequences the project may have."[29]

Litigants seeking to challenge agency decisions and projects that cause climate change impacts needed to start small to lay a foundation of judicial acceptance of their theories. This first step came in the form of claims alleging procedural and informational injuries. After courts accepted a procedural injury connection in this context, plaintiffs then were better equipped to shift their focus to the more ambitious theory of substantive injury. In the years leading up to the U.S. Supreme Court's decision in *Massachusetts v. EPA*, courts struggled to determine appropriate limits on

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[21] *Id.*
[22] *Id.*
[23] *Id.*
[24] *See* Lujan v. Defenders of Wildlife, 504 U.S. 555, 560 (1992).
[25] *Id.*
[26] *Id.* at 561.
[27] *Id.* at 573.
[28] *Id.*
[29] *See* Or. Envtl. Council v. Kunzman, 817 F.2d 484, 491 (9th Cir. 1987) (quoting City of Davis v. Coleman, 521 F.2d 661, 671 (9th Cir. 1975)).

substantive injury for global environmental harms under the "increased risk of harm" standard.

A. *Procedural Injury for Increased Risk of Global Environmental Harms*

The informational and procedural focus of the National Environmental Policy Act ("NEPA")[30] served as the basis on which to build an opportunity to confer standing to challenge activities that contribute to global environmental harms. In *Natural Resources Defense Council v. Lujan*, the Natural Resources Defense Council ("NRDC") contended that a legislative impact statement pertaining to the future of the Arctic National Wildlife National Refuge ("the Refuge") was not sufficiently explanatory and could ultimately harm the environment.[31] The court confirmed that a plaintiff must show that he has personally suffered actual or threatened injury due to the putatively illegal conduct of the defendant and that the injury fairly can be traced to the challenged action and is likely to be redressed by a favorable decision.[32] The court further noted, however, that the "procedural and informational thrust of NEPA gives rise to a cognizable injury from denial of its explanatory process, so long as there is a reasonable risk that environmental harm may occur."[33]

Applying this procedural and informational standing standard, the plaintiffs alleged that their members use and enjoy the Refuge and that the inadequacies of the legislative impact statement created a risk that serious environmental impacts to the Refuge would be overlooked.[34] The court noted that recreational use and aesthetic enjoyment are among the interests that NEPA was designed to protect.[35] Therefore, because the NRDC showed that the legislative impact statement created a risk of harm to its members and that NEPA was meant to protect against such harm, the court held that the NRDC had standing to sue.[36]

One year later, the procedural and informational focus of NEPA was applied in the climate change context in *Foundation on Economic*

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[30] National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4370f (2000).
[31] 768 F. Supp. 870, 872 (D.D.C. 1991).
[32] *Id.* at 876-77 (citing Valley Forge Christian Coll. v. Am. United for Separation of Church and State, 454 U.S. 464, 472 (1982)).
[33] *Id.* at 877.
[34] *Id.* at 877-78.
[35] *Id.* at 878.
[36] *NRDC v. Lujan*, 768 F. Supp. at 878 (citing City of Los Angeles v. Nat'l Highway Safety Admin., 912 F.2d 478, 494 (D.C. Cir. 1990)).

Trends v. Watkins.[37] The plaintiff sued to declare unlawful certain actions of the Secretary of Energy, the Secretary of Agriculture, and the Secretary of the Interior in permitting, carrying out, approving, funding, or participating in programs or actions that contribute to global warming without considering the impacts of those contributions pursuant to environmental impact review requirements under NEPA.[38] The plaintiff asserted that the defendants' alleged failure to adequately consider the global warming effects of specific federal actions and programs under their authority harmed the plaintiff's information-distributing activities regarding global warming to the public.[39] The court reasoned that informational injury alone could likely remove any standing requirement in NEPA cases, and that the court no longer regards informational standing alone under NEPA as a sound concept.[40] Since the plaintiff in this case claimed standing based solely on informational injury, the court found that the plaintiff lacked standing.[41]

Fifteen years after *Foundation on Economic Trends*, the United States District Court for the Northern District of California determined in *Friends of the Earth, Inc. v. Mosbacher* that the plaintiff had standing under NEPA in a suit seeking to require federal agency defendants to consider the climate change impacts of their decisions to fund development projects in foreign countries.[42] *Friends of the Earth* is significant in

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[37] 794 F. Supp. 395 (D.D.C. 1992).

[38] *Id.* at 396.

[39] *Id.* at 398.

[40] *Id.* at 398-99.

[41] *Id.* at 399.

[42] No. C 02-4106 JSW, 2005 WL 2035596, at *3 (N.D. Cal. 2005). For a detailed discussion of *Friends of the Earth*, see Kevin T. Haroff & Katherine K. Moore, *Global Climate Change and the National Environmental Policy Act*, 42 U.S.F. L. REV. 155, 169-82 (2007).

Procedural injury analysis is not limited to the NEPA context, however. A plaintiff can enforce procedural rights as long as the questioned procedures are intended to protect a threatened and concrete interest that is his ultimate basis for standing. *See* Ctr. for Biodiversity v. Abraham, 218 F. Supp. 2d 1143, 1163 (N.D. Cal. 2002) (citing Lujan v. Defenders of Wildlife, 504 U.S. 555, 573 n.8 (1992)). In *Abraham*, procedural injury was applied to the air pollution context. The plaintiffs' grounds for procedural standing were first that the air pollution standards in question would affect federal and local fleets in the area of the plaintiffs which would then limit air pollution control in a way that would impact the plaintiffs; and second, that three of the plaintiffs alleged that they missed an opportunity to participate in the rulemaking process. *Id.* The plaintiffs asserted that nearby private and local fleets contribute to plaintiffs' injuries and that these injuries could be remedied by rulemaking. *Id.* The result of rulemaking may not be certain, but when a plaintiff is attempting to enforce a procedural requirement that could impair a separate concrete interest of theirs if it is disregarded, the plaintiff can establish procedural standing without meeting all the normal standards for redressability and immediacy. *Id.*

two important respects. First, it helped catalog the ways in which climate change impacts manifest themselves. This important scientific data has laid a foundation to support assertions regarding the scope and nature of climate change impacts in subsequent climate change litigation and has underscored the need to consider those effects in federal agency decision-making. Second, the case significantly enhanced the likelihood of recovery for future plaintiffs asserting increased risk of substantive injury from the impacts of global environmental harms like climate change and stratospheric ozone depletion.

B. *Substantive Injury for Local Impacts of Global Environmental Harms*

NEPA claims were a necessary first step in securing an avenue of judicial recognition for standing to address global environmental harms. On the coattails of these successes, substantive injury claims for local impacts of global environmental harms could proceed more effectively based on the increased risk of future harm theory. These claims were further buttressed by a strong foundation of substantive injury jurisprudence in the context of domestic environmental harms.

The modern era of substantive injury analysis in environmental standing can be traced to Justice Douglas's dissenting opinion in *Sierra Club v. Morton*.[43] Twenty years later, the Court tailored its view on substantive standing in *Lujan v. Defenders of Wildlife*,[44] which has served as the framework for all substantive and procedural injury claims in environmental law since 1992.

In *Lujan,* the plaintiff challenged the Secretary of the Interior's regulation requiring agencies to confer with him, pursuant to the Endangered Species Act ("ESA"), solely for federally funded projects in the United States and on the high seas.[45] Applying the substantive standing analytical

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[43] 405 U.S. 727, 741-42 (1972) (Douglas, J., dissenting).

[44] 504 U.S. 555 (1992).

[45] *Id.* at 558-559. (Syllabus)

> Section 7(a)(2) of the Endangered Species Act of 1973 divides responsibilities regarding the protection of endangered species between petitioner Secretary of the Interior and the Secretary of Commerce, and requires each federal agency to consult with the relevant Secretary to ensure that any action funded by the agency is not likely to jeopardize the continued existence or habitat of any endangered or threatened species. Both Secretaries initially promulgated a joint regulation extending § 7(a)(2)'s coverage to actions taken in foreign nations, but a subsequent joint

framework, the Court determined that the plaintiff did not have standing to bring its claim.[46] The Court held that although the plaintiff's "desire to use or observe" a species is indeed a cognizable interest for standing purposes, this cognizable interest does not itself rise to the level of injury in fact because the plaintiff is not among those actually injured.[47] Although the plaintiff had established that the endangered species was threatened by funded activities, the organization failed to allege specific facts that at least one of its members was directly threatened in a manner other than a mere "special interest" in the species.[48]

The Court properly concluded on these facts that the nexus between the alleged harmful activity and the alleged impact was insufficient to establish injury in fact. Therefore, *Lujan* effectively illustrates the proposition that "bad facts make bad law." The plaintiff lacked standing to challenge the role of the ESA in foreign countries when no member of its organization alleged concrete plans to visit the sites where U.S. activities were allegedly placing endangered species in peril.[49] The Court reasoned that the plaintiff's members' intentions to return some day to these sites where such members allegedly would be deprived of the opportunity to enjoy these species was insufficient to satisfy the "actual or imminent" standard.[50]

The Court in *Friends of the Earth, Inc. v. Laidlaw Environmental Services, Inc.*[51] put environmental standing back on track. Tangible and local environmental harms made for good environmental standing precedent in this case. More significantly, for purposes of this Article, the case provided the right scenario for a new era of environmental standing based on purely domestic, local sources of harm. Here, the plaintiff's "reasonable fear" of pollution in a local river that the defendant polluted through its Clean Water Act permit violations, causing the organization's members to refrain from use of the river, constituted an injury to the plaintiff's aesthetic and recreational interests in the river.[52] Consequently, the case

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rule limited the section's geographic scope to the United States and the high seas.

Id. at 555.

[46] *Id.* at 562.

[47] *Id.* at 562-63.

[48] *Id.* at 563.

[49] *Defenders of Wildlife*, 504 U.S. at 563-64.

[50] *Id.* at 564.

[51] 528 U.S. 167 (2000).

[52] *See id.* at 181-84.

helped pave the way for substantive injury claims for global environmental harms with corresponding local effects.

Lujan and *Laidlaw* taken together stand for the proposition that the exacting "concrete and particularized . . . actual or imminent, not conjectural or hypothetical" standard from *Lujan* can be met with allegations of injury that are narrowly tailored to focus on the use and enjoyment of local resources as in *Laidlaw*.[53] Therefore, the new challenge for courts in evaluating substantive injury for local impacts of global environmental harms such as climate change and ozone depletion is determining how to develop a standard to govern the degree to which a challenged action must increase the risk of harm that flows from a defendant's action for a plaintiff to be deemed to have suffered an injury.

Mere allegations of possible future injury are not sufficient to satisfy Article III standing requirements.[54] Injury in fact can be met by a threat of future harm or by an act that harms the plaintiff only by increasing the risk of future harm that the plaintiff would not have otherwise faced without the defendant's actions.[55] An increased risk of future injury that is imminent is sufficient to satisfy the injury in fact requirement.[56] In increased risk cases, a plaintiff must assert a "credible threat of harm," but the likelihood of harm that a plaintiff must show to establish a cognizable injury in fact varies with the severity of the likely harm.[57]

Differentiating between a threatened injury, which satisfies the injury in fact requirement, and a speculative/hypothetical injury, which does not, must be considered on a case-by-case basis.[58] Several cases illustrate how courts have wrestled with defining the scope of the increased risk of future harm standard. In *Koch v. Hicks*, the plaintiffs sought relief for alleged groundwater contamination caused by the defendant's use of

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[53] *Defenders of Wildlife*, 504 U.S. at 555 (Blackmun, J., dissenting).

[54] Koch v. Hicks, 457 F. Supp. 2d 298, 304 (S.D.N.Y. 2006).

[55] Pisciotta v. Old Nat'l Bancorp, 499 F.3d 629 (7th Cir. 2007). *See also* Denney v. Deutsche Bank AG, 443 F.3d 253, 264-65 (2d Cir. 2006) (holding that exposure to toxic substances satisfies injury in fact requirement even though mere exposure may not provide sufficient basis for claim under state tort law); Sutton v. St. Jude Med. S.C., Inc., 419 F.3d 568, 574-75 (6th Cir. 2005) (holding that standing is established where defective medical implement presented increased risk of future health problems); Lac Du Flambeau Band of Lake Superior Chippewa Indians v. Norton, 422 F.3d 490, 498 (7th Cir. 2005) (holding that present impact of future harm, even if such harm is uncertain, may be sufficient injury in fact for standing purposes).

[56] *Koch*, 457 F. Supp. 2d at 304-05.

[57] *Id.* at 305.

[58] *Id.*

the gasoline additive, MTBE.[59] The plaintiffs alleged a threat of imminent harm for three reasons: first, neighboring properties tested positive for MTBE—even though the plaintiffs' property had not; second, the residents surrounding the gas station relied on the same aquifer as the gas station for their water needs and this aquifer was contaminated; and third, MTBE is highly soluble, travels fast in water, and can remain in aquifers for decades.[60] The court concluded that the plaintiffs sufficiently established a credible risk of imminent harm, which is all that is required at the pleading stage to establish Article III standing.[61]

The increased risk of harm standard was applied to confer standing for substantive injuries in the Clean Water Act context in *Central Delta Water Agency v. United States*.[62] In this case, the plaintiffs alleged that the defendant's method of operating a reservoir was likely to cause the salinity of the water in the San Joaquin River to exceed the applicable water quality standard at various times.[63] Since the plaintiffs used this water for their crops, they alleged that their ability to grow the crops would be hindered by the highly saline water.[64] Although the alleged injury had yet to occur, the court concluded that the threat of injury from the defendant's use of an operational plan that will likely cause a violation of the water quality standard was sufficient to support standing.[65] The court reasoned that to require actual evidence of environmental harm instead of an increased risk due to violation of the statute would misinterpret the nature of environmental harm and would undermine the policy of the Clean Water Act.[66]

Conversely, allegations regarding global warming were among the six categories[67] of substantive injuries that the court determined to be insufficient to confer standing in *Center for Biological Diversity v. Abraham*.[68]

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[59] *Id.* at 302.
[60] *Id.* at 306-07.
[61] *Id.* at 307.
[62] 306 F.3d 938, 948 (9th Cir. 2002).
[63] *Id.* at 947.
[64] *Id.*
[65] *Id.* at 948.
[66] *Id.*
[67] The six categories of alleged injuries were: (1) concerns about the harmful health effects of smog and air pollution resulting from vehicle emissions; (2) concerns and allegations about global warming; (3) traffic complaints; (4) concerns about the threat oil exploration will have on wildlife areas in the U.S. that are "important" to certain members; (5) aesthetic injuries; and (6) obstruction of an expressed intent to buy an alternative fuel vehicle ("AFV"). Ctr. for Biodiversity v. Abraham, 218 F. Supp. 2d 1143, 1154 (N.D. Cal. 2002).
[68] *Id.* at 1154-55.

The plaintiffs sued to enforce certain provisions of the Energy Policy Act of 1992 relating to alternative fuel vehicles ("AFVs"), which they claimed the defendants had violated.[69] Because the court found the plaintiffs' global warming concerns and assertions to be too abstract and conjectural to be caused by the defendants' failure to comply with certain provisions of the Energy Policy Act, and to be unlikely rectified by the relief requested, the court concluded that the plaintiffs failed to satisfy the injury requirement of Article III standing for these allegations.[70]

Drawing support from the context of standing for domestic environmental harms with local impacts, there has been a corresponding trend toward linking substantive injury to global environmental harms in a line of cases involving ozone depletion. This modern-day expansion of environmental standing can be traced to *Covington v. Jefferson County* in 2004.[71] In *Covington*, the plaintiffs, landowners who lived near a county landfill, brought a Clean Air Act ("CAA") citizen suit against the county and district health department.[72] The plaintiffs claimed that Jefferson County violated the CAA through its failure to follow federal procedures for removal and recapture of many ozone-depleting substances prior to disposal or recycling.[73] The leakage of liquids and gases that the plaintiffs had observed from "white goods," more commonly known as appliances, caused them to fear that this leakage would pollute their property.[74] As such, the plaintiffs' use and enjoyment of their property had been compromised.[75]

The court determined that the plaintiffs' allegations were sufficient to establish injury in fact due to the increased risk of harm to the plaintiffs' property resulting from the defendants' failure to comply with the CAA.[76] The court concluded that a credible risk of harm to the plaintiffs' home yields a loss of enjoyment to their property and this loss of enjoyment is sufficient to establish injury for CAA claims.[77]

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[69] *Id.* at 1148.

[70] *Id.* (citing Allen v. Wright, 468 U.S. 737, 759 (1984); Sierra Club v. Morton, 405 U.S. 727, 734 (1972)).

[71] 358 F.3d 626, 627 (9th Cir. 2004).

[72] *Id.* at 633-34.

[73] *Id.* at 640.

[74] *Id.* at 634-35, 641.

[75] *Id.* at 641.

[76] *Id.* at 641.

[77] *Covington*, 358 F.3d at 638. Similarly, the court also recognized that the plaintiffs live directly across the street from the landfill, and that if the landfill were not operated as the Resource Conservation and Recovery Act ("RCRA") requires, the plaintiffs would be threatened by the risks that RCRA is intended to minimize—"[f]ires, explosions, vectors,

Northwest Environmental Defense Center v. Owens Corning Corporation[78] further expanded plaintiffs' ability to establish substantive injury claims for local impacts of global environmental harms. In *Owens Corning*, the plaintiff alleged that Owens Corning Corporation was constructing a polystyrene foam insulation manufacturing facility that had the potential to emit more than 250 tons per year of various harmful gases.[79] The plaintiff further claimed that Owens Corning did not obtain a required preconstruction permit, which, if proven, is a violation of Section 165(a) of the CAA.[80] The plaintiff further alleged that Owens Corning violated provisions of Oregon's state implementation plan, which requires any facility that will emit more than 100 tons per year of a regulated air pollutant to obtain an Air Contaminant Discharge Permit prior to construction.[81] The plaintiff also asserted its fear that the Owens Corning facility's emissions will heighten the risk that members of its organization will contract certain diseases and that the facility will contribute to global warming, which will in turn harm environmental resources in Oregon that the organization's members use.[82]

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scavengers, and groundwater contamination." *Id.* Violations of RCRA increase the likelihood that the plaintiffs will be directly confronted with these risks, which in turn threaten the plaintiffs' "enjoyment of life and security of home." *Id.* The court stated that because the landfill and the plaintiffs are neighbors, increased risks of such injuries resulting from the defendant's violation of RCRA, and subsequent improper operation of the landfill, are not speculative or hypothetical. *Id.* The plaintiffs presented facts showing fires; excessive animals, insects, and other scavengers that were attracted to the uncovered garbage; and groundwater contamination; all of which the court concluded strongly evidenced "a concrete risk of harm" to the plaintiffs sufficient to satisfy the injury requirement. *Id.* The plaintiffs also presented evidence of RCRA violations adversely affecting the enjoyment of their home and land in that the RCRA violations made them "suffer from watering eyes and burning noses." *Id.* The court noted that even if the plaintiffs had only alleged threats to the aesthetic and recreational enjoyment of their property, the harms caused by the RCRA violations were sufficient on this basis alone to satisfy the injury in fact standard. *Covington*, 358 F.3d at 638.

[78] 434 F. Supp. 2d 957 (D. Or. 2006).

[79] *Id.* at 959-60.

[80] *Id.* at 960; 42 U.S.C. § 7475(a) (2000).

[81] *Owens Corning Corp.*, 434 F. Supp. 2d at 960 (citing OR. ADMIN. RS. 340-216-0020, 340-210-0215, 340-210-0240 (2007)).

[82] *Id.* at 960.

> Plaintiffs cite a report predicting that "global warming will have the following impacts in the Pacific Northwest: increased regional temperatures leading to an increased elevation in the upper tree line, prolonged allergy season, earlier breeding by plants and animals, and an increased fire season; rising sea levels, leading to increased erosion and a loss of

The court relied heavily on *Covington* in concluding that although a plaintiff must still show conclusive injury in fact, he does not have to wait until he has been harmed before seeking relief, especially when "the injuries are of a kind not readily redressed by damages."[83] The court determined that a "concrete risk of harm" to the plaintiff is sufficient to satisfy the injury in fact requirement.[84]

Applying this standard to the *Owens Corning* scenario, the court noted that the plaintiff only alleged "fear" and "concern" about potential injury, as opposed to a more concrete documentation that they "will" sustain harm.[85] Relying on recent environmental standing jurisprudence,[86] the court nevertheless concluded that even these unstable allegations can be enough to satisfy the injury in fact requirement.[87] The court was careful to note, however, that these allegations have limitations. The court distinguished the facts in *Owens Corning* from those in *Lujan v. Defenders of Wildlife*.[88] More specifically, the court looked to the close interrelationship in *Owens Corning* between those claiming to have a threat of harm and the direct impact of the emissions on that locality.[89] In doing so, the court

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> land along the coastline; a decline in snowpack, which will lead to an increase in spring runoff, followed by decreased water levels in streams in the summer and fall; and a change in ocean circulation which will cause increased stress on estuarine species."

Id. at 960 n.1.

[83] *Owens Corning*, 434 F. Supp. 2d at 963 (citing Covington v. Jefferson County, 358 F.3d 626, 638 (9th Cir. 2004)).

[84] *Id.*

[85] *Id.*

[86] Friends of the Earth, Inc. v. Laidlaw Envtl. Servs. (TOC), Inc., 528 U.S. 167 (2000); Covington v. Jefferson County, 358 F.3d 626 (9th Cir. 2004); Cent. Delta Water Agency v. United States, 306 F.3d 938 (9th Cir. 2002).

[87] *Owens Corning Corp.*, 434 F. Supp. 2d at 963-64.

[88] Ultimately, in attempting to establish standing, the plaintiffs in *Defenders of Wildlife* could point to little more than a general concern about global environmental issues, and a belief that loss of any species, even on the other side of the world, diminishes the planet as a whole. Perhaps it is true that "[a]ny man's death diminishes me, because I am involved in Mankind," . . . but something more is required to establish standing in a federal court. . . . The Complaint at issue here avoids those defects.

Id. at 965.

[89] The challenged emissions source is local, not halfway around the globe. Members of the Plaintiff organizations reside, work, and recreate near the partially-completed . . . facility. Assuming the truth of the allegations in the Complaint, as I must on a motion to dismiss, those individuals would suffer some direct impact from emissions entering into the atmosphere from Defendant's facility, as would the local ecosystem with which

concluded that because Oregon, the local ecosystem in which the plaintiffs' members resided, would suffer a direct impact from the adverse effects of the emissions, the plaintiff had established injury in fact.[90]

Most recently, *Natural Resources Defense Council v. EPA*[91] further illustrates the courts' newfound acceptance of injury from risk of impacts caused by ozone depletion. The United States and several other countries entered into the Montreal Protocol, an agreement that required the participating countries to reduce and ultimately eliminate any ozone-depleting chemicals.[92] The United States immediately incorporated these changes into the CAA; however, in 1997, well after the changes were put into action, the Protocol called for a complete ban on the use and consumption of methyl bromide[93] by 2005.[94] The EPA began the process of identifying all critical uses of methyl bromide, and once it proposed these uses, they were highly scrutinized.[95] In 2004, the United States' use of methyl bromide was limited to less than ten thousand metric tons per year for only sixteen accepted categories of critical use of methyl bromide.[96]

After a final decision was made, the EPA created a new proposal pursuant to the new limitations.[97] However, the plaintiff, along with several other parties, submitted a comment on this new proposal, claiming

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> these individuals constantly interact. . . . [T]he adverse effects alleged in Plaintiffs' Complaint would be felt by them here in Oregon, and the source of Defendant's emissions would be in Oregon.

Id.

[90] *Id.*

[91] 464 F.3d 1 (D.C. Cir. 2006), *reh'g denied*, 2007 U.S. App. LEXIS 3965 (Feb. 21, 2007).

[92] *Id.* at 2-3.

[93] "Methyl bromide is a naturally occurring gas produced by oceans, grass and forest fires, and volcanoes." *Id.* at 4 (citing U.S. Dept. of Agric., Agric. Research Serv., Soil Physics & Pesticide Research: Methyl Bromide 1 (2005), *available at* http://www.ars.usda.gov/Research/docs.htm?docid=10408). "Methyl bromide is typically injected into soil as a fumigant before several types of crops are planted. The United States regulates methyl bromide as a 'class I' ozone-depleting substance." *Id.* It has an "ozone depletion potential" ("ODP") of 0.38-0.60, which places it

> in the middle range of substances scheduled for elimination under the Protocol. It is not nearly as destructive as chlorofluorocarbons and most other class I substances, almost all of which were phased out in 2000. Nevertheless, it is significantly more destructive than "class II" substances, which are to be phased out in 2030.

Id.

[94] *Id.* at 3-4.

[95] *NRDC*, 464 F.3d at 4.

[96] *Id.* at 5.

[97] *Id.*

that the amount of methyl bromide proposed was not the "technically and economically feasible minimum."[98]

The D.C. Circuit evaluated whether at least one of the NRDC's members had standing to sue under the CAA.[99] In evaluating the injury in fact requirement, the court addressed whether there was a "substantial probability" that the NRDC's members would be injured from the use of methyl bromide.[100] The court looked to the expert testimony that over the members' lifetime, they would experience a cumulative risk of harm from methyl bromide.[101] The court ultimately concluded that NRDC's members suffered injury in fact due to their cumulative lifetime risk of harm from methyl bromide.[102]

These modern-day expansions from the ozone depletion context regarding what constitutes injury in fact helped lay the foundation for the United States Supreme Court's analysis in *Massachusetts v. EPA*. The focus in *Massachusetts v. EPA* shifted from ozone depletion to climate change, but the context of the atmosphere as the source of threatened harm remained constant.[103]

II. *MASSACHUSETTS V. EPA*

Since the turn of the twenty-first century, concerns about climate change impacts have consumed citizens, lawmakers, and the private sector in the United States at an ever-increasing pace. This heightened attention fueled a firestorm of climate change litigation in the United States as a way to goad the recalcitrant Bush administration to devise and implement a

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[98] *Id.*

[99] *Id.* at 5-6.

[100] *Id.* at 6.

[101] *NRDC*, 464 F.3d at 6-7.

> NRDC's expert quantified the increased risk posed by EPA's rule in an affidavit stating that "it is reasonable to expect more than 10 deaths, more than 2,000 nonfatal skin cancer cases, and more than 700 cataract cases to result from the 16.8 million pounds of new production and consumption allowed by the 2005 exemption rule.

Id.

[102] *Id.* at 7. For a more detailed discussion of the implications of *NRDC v. EPA*, see *infra* Part IV.C.

[103] *See Massachusetts v. EPA*, 127 S. Ct. 1438 (2007); *see also* Hall v. Norton, 266 F.3d 969, 976 (9th Cir. 2001) (holding that a showing of a plausible threat to the plaintiff's physical well-being from airborne pollutants is within the range of injuries that are recognized to confer standing).

mandatory federal legislative response to address this important issue.[104] Though not the first case in this explosion of climate change disputes in the courts, and certainly not the last, *Massachusetts v. EPA* is the most widely publicized and, arguably, most significant in this line of cases because of its potential to shape the future of environmental standing to address environmental harms within and outside the climate change context.[105]

A. *The D.C. Circuit Court's Decision*

In *Massachusetts v. EPA*, the D.C. Circuit reviewed and dismissed petitions appealing the EPA's conclusion that it did not have statutory authority to regulate greenhouse gas emissions from new motor vehicles and that, even if it did, it would not exercise this authority at that time.[106] Before evaluating the authority of the EPA, the court addressed the petitioners' standing to sue.[107] The EPA claimed that the petitioners had not shown that their alleged injuries were caused by EPA's decision not to

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[104] *See* Randall S. Abate, *Kyoto or Not, Here We Come: The Promise and Perils of the Piecemeal Approach to Climate Change Regulation in the United States*, 15 CORNELL J.L. & PUB. POL'Y 369, 392-97 (2006).

[105] *See infra* Part III.B for a discussion of significant pending climate change litigation.

[106] 415 F.3d 53 (D.C. Cir. 2005). In 1999, a group of private environmental organizations petitioned the Environmental Protection Agency ("EPA") to regulate emissions of such greenhouse gases as methane, nitrous oxide, hydrofluorocarbons and, most notably, carbon dioxide from motor vehicles pursuant to Section 202(a)(1) of the CAA. R. Bruce Barze Jr. & Thomas L. Casey, *The future of greenhouse gas emissions regulation:* Massachusetts v. Environmental Protection Agency, 74 DEF. COUNS. J. 269, 269-71 (2007). Section 202(a)(1) requires the EPA to regulate the emissions of air pollutants from new motor vehicles that, in its evaluation and conclusion, contribute to air pollution that may endanger public health or welfare. *Id.* at 270-71; *see* 42 U.S.C. § 7521(a)(1) (2000).

The EPA ultimately denied the group's petition on the merits, concluding that it lacked authority under the CAA to promulgate regulations to address global climate change. *Mass. v. EPA*, 415 F.3d at 58-59. The EPA went a step further to conclude that even if it did have the authority to regulate such emissions, there was no established link between these greenhouse gases and the harms caused by them. *Id.* at 57. In making its decision, the EPA relied on the National Research Council's ("NRC's") "objective and independent assessment of the relevant science." *Id.* Generally, the NRC noted that an increase in carbon dioxide levels is not always accompanied by a corresponding rise in global temperatures and thus concluded that "there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases." *Id.* Relying on the NRC's assessment, the EPA concluded that it was not able to exercise any authority at that time. *Id.* As a result, the group sought the D.C. Circuit's review of the EPA's decision to refrain from regulating greenhouse gas emissions. *Id.* at 50.

[107] *Mass. v. EPA*, 415 F.3d at 53-54.

regulate emissions of greenhouse gases from mobile sources.[108] In addition, the EPA claimed that the petitioners had not shown that their injuries could be "redressed by a decision in their favor" by the court.[109]

The court evaluated two declarations the petitioners prepared in anticipation of the EPA's standing argument.[110] One declaration from a climatologist stated that reductions in carbon dioxide and other greenhouse gases from vehicles in the United States alone would "delay and moderate many of the adverse impacts of global warming."[111] The climatologist further estimated that other countries would follow in the EPA's footsteps if the EPA attempted to reduce such emissions.[112] The other declaration from a mechanical engineer stated that there was "no doubt that establishing emissions standards for pollutants that contribute to global warming would lead to investment in developing improved technologies to reduce those emissions from motor vehicles, and that successful technologies would gradually be mandated by other countries around the world."[113]

In considering these declarations, the court noted that at the final stage of litigation there is a difference between supporting an allegation and proving an allegation[114] and that the evidence plaintiff presented at summary judgment must be "supported adequately by the evidence adduced at trial."[115] The court then noted that as an appellate court, its job was not to scrutinize the evidence presented to find the truth.[116] Instead, the court decided to confirm the EPA's finding that the causation of harm from motor vehicle emissions was unclear and to uphold the EPA's conclusion to refrain from regulating such emissions at that time.[117]

Although the court sided with the EPA in its determination that the causes of harm were unclear, it concluded that a determination of standing and merits "often overlap"[118] and that it would follow previous

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[108] *Id.* at 54.
[109] *Id.*
[110] *Id.*
[111] *Id.*
[112] *Id.*
[113] *Mass. v. EPA*, 415 F.3d at 55.
[114] *Id.* (quoting *Lujan*'s holding that "when a plaintiff's standing is challenged in a motion for summary judgment, the plaintiff must 'set forth' by affidavit or other evidence 'specific facts,' . . . which for purposes of the summary judgment motion will be taken as true.") *Id.*
[115] *Id.*
[116] *Id.*
[117] *Id.* at 55-56.
[118] *Mass. v. EPA*, 415 F.3d at 56 (quoting Steel Co. v. Citizens for a Better Env't, 523 U.S. 83, 97 n.2 (1988)).

statutory standing cases and assume that the EPA had statutory authority to regulate greenhouse gases from new motor vehicles.[119]

To address whether the EPA was correct in abstaining from regulating new motor vehicle emissions, the court reviewed the information provided by the NRC study and used by the EPA in its initial assessment of its authority.[120] The court noted that in requiring the EPA Administrator to make a threshold judgment about whether to regulate, Section 202(a)(1) gives the Administrator considerable discretion.[121] Policy judgments, such as the ones Congress makes when deciding whether to enact legislation regulating an area, also may be taken into account.[122]

The court examined the EPA Administrator's scientific and political evaluation and concluded that both scientific and political evidence was presented in favor of abstaining from current EPA regulation of new motor vehicle emissions.[123] For example, the EPA argued that new motor vehicle emissions are but one avenue for greenhouse gas emissions[124] and that creating regulations for new motor vehicles would "result in an inefficient, piecemeal approach to the climate change issue."[125] Additionally, the EPA emphasized policy concerns for global market motivations, stating that if it regulated these new motor vehicle emissions, many other countries may not be as motivated to continue their regulations or to create new regulations.[126] Furthermore, the EPA noted that it already had private entity incentives in place to control their individual emissions.[127]

The court concluded that the EPA properly used both scientific analysis and policy judgments in its refusal to regulate the greenhouse gas emissions and denied all petitions for review.[128] The petitioners appealed to the United States Supreme Court.

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[119] *Id.* at 56.
[120] *Id.* at 57.
[121] *Id.* at 58 (citing Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir. 1976) (en banc)).
[122] *Id.* at 58.
[123] *Id.*
[124] *Mass. v. EPA*, 415 F.3d at 58.
[125] *Id.*
[126] *Id.*
[127] *Id.* "Ongoing research into scientific uncertainties and the Administration's programs to address climate change—including voluntary emission reduction programs and initiatives with private entities to develop new technology—also played a role in the Administrator's decision not to regulate." *Id.*
[128] *Id.* at 58-59.

B. The United States Supreme Court's Decision

In granting certiorari, the Supreme Court faced the issues of whether petitioners, including Massachusetts as an intervening party, had standing to sue and could petition for review of the District of Columbia Circuit's decision and, if so, whether the EPA properly denied regulating new motor vehicle emissions.[129] As to its capacity to review the case, the Court noted that because it was called upon to interpret the proper construction of a congressional statute, a job reserved for the federal court system, it was able to make a legal determination about the case and controversy.[130]

In its standing analysis, the Court noted that Congress has the rare power "to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before,"[131] but cautioned that there must be a causal link between the injury Congress intends to justify and the harm caused to persons claiming a need for vindication.[132]

There was considerable administrative confusion in interpreting this necessary link. The EPA claimed that because greenhouse gas emissions from new motor vehicles cause "widespread harm," any standing claim would be immensely confusing and would potentially overwhelm the Court.[133] The Court disagreed, and concluded that a determination of standing hinges upon whether one has a "personal stake in the outcome of the controversy as to assure that concrete adverseness which sharpens the presentation of issues upon which the court so largely depends for illumination."[134]

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[129] *See* Massachusetts v. EPA, 127 S. Ct. 1438 (2007).

[130] *See id.* at 1452-53.

[131] *Id.* at 1453 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 580 (1992)).

[132] *Id.*

[133] *Id.*

[134] *Mass. v. EPA*, 127 S. Ct. at 1453 (citing Baker v. Carr, 369 U.S. 186, 204 (1962)). Justice Kennedy elaborated on this point in *Lujan*, stating that

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

Lujan, 504 U.S. at 581.

To guarantee that standing is properly established, *Lujan v. Defenders of Wildlife* requires a plaintiff to show that it suffered a concrete and particularized injury that is either actual or imminent, that the injury is reasonably traceable to the defendant, and that the injury is likely to be redressed by a favorable decision.[135] However, when Congress gives a procedural right to a litigant to protect that litigant's concrete interests, the litigant can assert that right even though the litigant has not met the normal redressability and immediacy standards.[136] When a litigant is vested with a procedural right, that litigant has standing if some possibility exists that the relief requested will trigger the injury-causing party to re-evaluate and reconsider the allegedly harmful decision.[137]

In the present case, Congress ordered the EPA to protect Massachusetts and its citizens by specifying appropriate standards to be applied to the "emission of any air pollutant from any class or classes of new motor vehicle engines which in [the Administrator's] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare."[138] Congress also granted Massachusetts a related procedural right to dispute the EPA's rejection of its rulemaking petition as "arbitrary and capricious."[139] Given Massachusetts's interest in protecting its "quasi-sovereign" objectives, and its concern that its vested procedural right was wrongfully withheld, the Court concluded that the petitioners satisfied "the most demanding standards of the adversarial process."[140]

In addressing the petitioners' injury, the Court focused on present factors, as well as the possibility of future harm.[141] As examples of present harm, the Court referred to the NRC report, which the EPA relied on in concluding that it lacked authority to regulate new motor vehicle emissions.[142] The Court noted that there are a number of already identified harms, such as the global retreat of mountain glaciers, reduction in snow-cover extent, the earlier spring melting of rivers and lakes,

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[135] *Mass. v. EPA*, 127 S. Ct. at 1453.
[136] *Id.*
[137] *Id.*
[138] *Id.* at 1454 (citing 42 U.S.C. § 7521(a)(1) (2000)).
[139] *Id.* (citing 42 U.S.C. § 7607(b)(1)).
[140] *Id.* at 1454-55.
[141] *Mass. v. EPA*, 127 S. Ct. at 1455-56.
[142] *Id.* at 1455 (citing Control of Emissions from New Highway Vehicles and Engines, 68 Fed. Reg. 52,930 (Sept. 8, 2003)).

and the accelerated rate of the rise of sea levels during the twentieth century relative to the past few thousand years.[143]

The Court also considered the future harms that the petitioners referenced.[144] For example, climate change scientists have come to a "strong consensus" that

> [G]lobal warming threatens many negative environmental changes, such as a precipitate rise in sea levels by the end of the century, severe and irreversible changes to natural ecosystems, a significant reduction in water storage in winter snowpack in mountainous regions with direct and important economic consequences, an increase in the spread of disease, and rising ocean temperatures that may contribute to the ferocity of hurricanes.[145]

The Court stressed that simply because Massachusetts shares these present and future harms with other states, and quite possibly even with other countries, it should not be barred from bringing a claim and should be considered "injured" for purposes of the injury element of standing.[146]

The Court then referred to specific facts relating to the effects of global warming on Massachusetts.[147] Specifically, the continuing rise of global sea levels as a result of global warming has "already begun to swallow Massachusetts' coastal land."[148] Because Massachusetts "owns a substantial portion of the state's coastal property," it has alleged a particularized injury in its capacity as a landowner.[149] The Court agreed with the petitioners that "the severity of that injury will only increase over the course of the next century, [and that] if sea levels continue to rise as predicted, . . . a significant fraction of coastal property could be 'either permanently lost through inundation or temporarily lost through periodic

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[143] *Id.*

[144] *Id.* "Petitioners allege that this only hints at the environmental damage yet to come." *Id.*

[145] *Id.* at 1455-56.

[146] *Id.* at 1456. "That these . . . change[s] are . . . 'widely shared' does not minimize Massachusetts' interest in the outcome of this litigation." *Mass. v. EPA*, 415 F.3d at 1456 (citing Fed. Election Comm'n v. Akins, 524 U.S. 11, 24 (1998)).

[147] *Id.* at 1456.

[148] *Id.*

[149] *Id.*

storm surge and flooding events.'"[150] Therefore, the Court concluded that Massachusetts demonstrated sufficient present and future injury.[151]

The Court had little to address in regards to causation primarily because of the EPA's failure to assert any real motive to support its inaction.[152] The EPA admitted that there is a causal connection between man-made greenhouse gas emissions and global warming, but nonetheless argued that from a global standpoint, even if it did regulate these emissions, its effort would be in vain due to the minimal effect any regulation would have.[153] However, the Court disagreed with the EPA's pessimistic view of its ability to bring about change and encourage other countries to follow suit.[154] Instead, the Court noted that even though EPA's regulation of new motor vehicle emissions may not render substantial change immediately, the administrative process will likely develop in time and adjust "to meet particular, unforeseeable situations."[155] The Court concluded that just because "a first step might be tentative does not by itself support the notion that federal courts lack jurisdiction to determine whether that step conforms to law."[156]

Furthermore, the Court opposed the EPA's view that regulating new motor vehicle emissions is a tentative step.[157] The Court noted that because the United States' motor vehicle emissions make a meaningful contribution to greenhouse gas concentrations, they also contribute significantly to global warming.[158] In support of this conclusion, the Court observed that the emissions from the transportation sector represent approximately one-third of this country's total carbon dioxide emissions.[159] The

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[150] *Id.*
[151] *Id.* at 1458.
[152] *Mass. v. EPA*, 127 S. Ct. at 1457. "EPA does not dispute the existence of a causal connection between man-made greenhouse gas emissions and global warming. At a minimum, therefore, EPA's refusal to regulate such emissions 'contributes' to Massachusetts' injuries." *Id.*
[153] *Id.* EPA concluded that it "does not believe that any realistic possibility exists that the relief petitioners seek would mitigate global climate change and remedy their injuries." *Id.* EPA contended that its efforts would not have any positive impact on global warming as a whole, especially because "predicted increases in greenhouse gas emissions from developing nations, particularly China and India, are likely to offset any marginal domestic decrease." *Id.*
[154] *See id.*
[155] *Mass. v. EPA*, 415 F.3d at 1457 (quoting SEC v. Chenery Corp., 332 U.S. 194, 202 (1947)).
[156] *Id.* at 1457.
[157] *Id.*
[158] *Id.*
[159] *Id.*

Court also observed that even with the emission regulations at issue in this case, the United States "would still rank as the third-largest emitter of carbon dioxide in the world, outpaced only by the European Union and China."[160] Thus, when looked at from any angle, the regulation of new motor vehicle emissions makes a contribution to the causation of global warming.[161]

Finally, with respect to redressability, the Court stated that although global warming itself cannot be reversed, the Court nonetheless retains jurisdiction to decide whether the EPA should regulate emissions with the intent to reduce or slow down the global warming process.[162] Moreover, the Court noted that the time it takes to bring about such changes is irrelevant; the consequences of refusing to regulate outweigh the time hindrances involved in regulation.[163] The Court concluded by adding that the risk of global warming would be reduced to some extent if the petitioners received the relief they sought.[164] Therefore, the Court concluded that the petitioners had standing to sue.[165]

The Court in *Massachusetts v. EPA* adopted a long-overdue, risk-based approach to its environmental standing jurisprudence. The EPA's refusal to regulate greenhouse gas emissions was deemed to present a risk of harm to Massachusetts that is both actual and imminent. Here, there was a mix of harm that already happened and harm that was yet to occur—strong facts on which to blaze this new trail as the next step forward in the evolution of environmental standing. Sea level rise had already caused harm to the Massachusetts coast and yet that harm was but a preview of future climate change impacts to the affected areas.

III. IMPLICATIONS FOR STANDING IN CLIMATE CHANGE LITIGATION

In the wake of *Massachusetts v. EPA*, courts have struggled to determine the extent to which the Court's analysis may be applied to contexts involving domestic and global environmental harms. This part of the Article considers questions that remain in interpreting *Massachusetts*

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[160] *Id.*

[161] *Mass. v. EPA*, 415 F.3d at 1457-58.

[162] *Id.* at 1458.

[163] *Id.*; *see also* Vill. of Elk Grove v. Evans, 997 F.2d 328, 328 (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.").

[164] *Mass. v. EPA*, 415 F.3d at 1458.

[165] *Id.*

v. EPA and its impact on standing in climate change litigation.[166] It first explores the extent to which the analysis in *Massachusetts v. EPA* is limited to suits brought by states in their quasi-sovereign capacity. It then considers theories that have been presented in pending climate change cases that raise important policy questions in evaluating the future of this new area of environmental standing jurisprudence.

A. *Special Solicitude of States*

In considering Massachusetts's capacity to sue, the Court in *Massachusetts v. EPA* concluded that this issue was resolved long ago in its decision in *Georgia v. Tennessee Copper Company*.[167] In *Tennessee Copper*, Georgia sought to protect its citizens from incoming pollutants that originated outside of the state's borders.[168] Georgia argued that the suit was based on Georgia's capacity of "*quasi*-sovereign," and that because of this capacity, it had an "interest independent of and behind the titles of its citizens, in all the earth and air within its domain."[169] Georgia eloquently articulated its position, noting that "[i]t has the last word as to whether its mountains shall be stripped of their forests and its inhabitants shall breathe pure air."[170]

The Court analogized the *Tennessee Copper* case to *Massachusetts v. EPA*, using the century-old rationale to show that Massachusetts had the same desire as Georgia—the desire to preserve its sovereign territory.[171] Moreover, the Court noted that sovereign powers are now vested in the federal government and, as such, the EPA has a duty to protect Massachusetts through its ability to formulate regulations that protect the public health and welfare.[172] Hence, because of the *Tennessee Copper* decision, the Court concluded that Massachusetts was able to "retain the dignity" of authority to sue.[173] The Court's language in the majority opinion seems to suggest

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[166] For additional scholarly commentary on this topic, see F. Andrew Hessick, *Standing, Injury in Fact, and Private Rights*, 93 CORNELL L. REV. 275 (2008); Christopher L. Muehlberger, *One Man's Conjecture is Another Man's Concrete: Applying the "Injury-in-Fact" Standing Requirement to Global Warming*, 76 UMKC L. REV. 177 (2007); Jonathan R. Nash, *Standing and the Precautionary Principle*, 108 COLUM. L. REV. 494 (2008).

[167] 206 U.S. 230 (1907).

[168] *Id.* at 236.

[169] *Id.* at 237 (emphasis in original).

[170] *Id.*

[171] *Mass. v. EPA*, 127 S. Ct. at 1454.

[172] *Id.*

[173] *Id.* (citing Alden v. Maine, 527 U.S. 706, 715 (1999) (observing that in the federal system, the states "are not relegated to the role of mere provinces or political corpo-

that Massachusetts's stake in protecting its quasi-sovereign interests entitles it to special solicitude in the standing analysis—*i.e.*, the standing requirements are relaxed for Massachusetts because of its role as a quasi-sovereign.[174]

In his dissenting opinion, Chief Justice Roberts stated that just because Massachusetts is a state alleging an injury, there is no basis or support for relaxing the requirements of Article III standing in this context.[175] He further noted that there is no support in the majority opinion for a state's "special solicitude" and that the applicable provision of the CAA that the Court cites, 42 U.S.C. § 7607(b)(1), does not grant the states any special rights or status.[176] The Court stated that through this statutory provision, Congress ordered the EPA to protect Massachusetts and that Congress "has . . . recognized a concomitant procedural right to challenge the rejection of its rulemaking petition as arbitrary and capricious."[177]

Justice Roberts acknowledged that with this phrasing, one might assume that Congress had included express language regarding the rights of states in that provision of the statute. He carefully noted, however, that in the provision that the petitioners rely on, "Congress treated public and private litigants exactly the same."[178] Justice Roberts also stated that the case law that the majority cited does not offer any support for the idea that Article III treats public and private litigants differently.[179] According to Roberts, while the Court in *Tennessee Copper* made a distinction between a State and private litigants, this distinction was only drawn with respect to available remedies, and had nothing to do with standing.[180]

Justice Roberts also determined that there is nothing about a State's ability to sue in the capacity of quasi-sovereign that reduces the requirements of injury, causation, and redressability necessary to satisfy Article III standing.[181] Moreover, Massachusetts's status as a state cannot make up for a petitioner's inability to adequately show injury in fact, causation and redressability.[182] Justice Roberts further noted that the majority decision eliminated what has always been regarded as a neces-

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rations, but retain the dignity, though not the full authority, of sovereignty.").

[174] *Id.* at 1454-55.

[175] *Mass. v. EPA*, 127 S. Ct. at 1464 (Roberts, C.J., dissenting).

[176] *Id.*

[177] *Id.*

[178] *Id.* at 1464-65.

[179] *Id.* at 1465.

[180] *Id.*

[181] *Mass. v. EPA*, 127 S. Ct. at 1466 n.1.

[182] *Id.* at 1466-67.

sary condition for *parens patriae* standing—a quasi-sovereign interest—and transformed it into a sufficient condition for Article III standing.[183]

Most importantly for purposes of this Article, Justice Roberts stated that the future applicability of the relaxed standing requirements in *Massachusetts v. EPA* will be limited because of the Court's recognition of the "special solicitude" status for Massachusetts.[184] He noted that the Court's "self-professed relaxation of those Article III requirements has caused us to transgress 'the proper—and properly limited—role of the courts in a democratic society.'"[185] In other words, Roberts believes that the special solicitude logic is flawed and to the extent that it is now the rule of law on this topic, it must be limited to the majority's unusual reasoning regarding states as plaintiffs and should not be extended beyond that context.

In the first opportunity to consider the applicability of the special solicitude aspect of the standing analysis in *Massachusetts v. EPA*, Justice Roberts's understanding of the limited applicability of the Court's holding prevailed. In *Canadian Lumber Trade Alliance v. United States*, the plaintiff, a Canadian trade organization, sued the U.S. in the Court of International Trade alleging that (1) the U.S. Customs and Border Protection's distribution of duties from imported Canadian goods was an illegal agency action within the meaning of the Administrative Procedure Act, and (2) the Continued Dumping and Subsidy Offset Act ("CDSOA") must be interpreted in light of Section 408 of the NAFTA Implementation Act ("NIA") to not apply to goods from NAFTA countries because it does not specifically provide that it does apply to NAFTA countries.[186]

The U.S. entered the North American Free Trade Agreement ("NAFTA") with Canada and Mexico in 1992.[187] In 2000, Congress enacted the CDSOA, which changed the trade laws by requiring that "antidumping and countervailing duties assessed on imported goods—which had previously been placed into the general fund of the [U.S.] Treasury—would instead be 'distributed on an annual basis . . . to the affected domestic producers for qualifying expenditures.'"[188] Consequently, the U.S. Customs and Border Protection ("Customs") started distributing duties assessed on

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[183] *Id.* at 1466.
[184] *Id.* at 1471.
[185] *Id.* (citing Allen v. Wright, 468 U. S. 737, 750 (1984) (internal quotation marks omitted)).
[186] 517 F.3d 1319, 1328 (Fed. Cir. 2008).
[187] *Id.* at 1325.
[188] *Id.* at 1324.

imported goods to domestic producers, including those on goods imported from NAFTA countries like Canada and Mexico.[189] Customs had to give the antidumping duties it collected to domestic producers harmed by the anti-competitive conduct instead of keeping the money within the government.

The Court of International Trade held that the Canadian producers had standing, but the Canadian Government did not because it had prevailed on the merits in this matter in a World Trade Organization ("WTO") proceeding on this matter.[190] The court issued a declaratory judgment that the CDSOA did not apply to Canada or Mexico and granted an injunction to stop Customs from further distributing the duties collected on soft-wood lumber, magnesium, and hard red spring wheat from Canada.[191] The U.S. Government and domestic producers appealed, and the Canadian Government cross-appealed the judgment against it and dismissal of its claims for lack of standing.[192]

On appeal, the U.S. and domestic producers claimed that the Canadian producers did not establish a concrete and particularized, imminent injury in fact because they did not provide an empirical analysis that linked certain CDSOA distributions to specific economic harms.[193] The Appellate Court disagreed and concluded that a plaintiff can show injury in fact "in the same way as any other matter on which the plaintiff bears the burden of proof."[194] The Canadian producers only had to show that it was more probable than not that they would be injured by the CDSOA distributions they challenged, which could be done by using simple economic logic, even if an empirical analysis might have provided more certainty.[195]

The U.S. and domestic producers also contended that since the North Dakota Wheat Commission had not yet spent the money distributed to them, that any injury to the Canadian producers is not imminent as required by Article III.[196] Again, the appellate court disagreed and stated that the U.S. cannot rely on the pendency of the lawsuit to argue that the threatened harm is not imminent.[197] Customs' distribution of

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[189] *Id.*
[190] Canadian Lumber Trade Alliance v. United States, 425 F. Supp. 2d 1321, 1349, 1352 (Ct. Int'l Trade 2006).
[191] *Canadian Lumber*, 517 F.3d at 1325.
[192] *Id.*
[193] *Id.* at 1332.
[194] *Id.* at 1333.
[195] *Id.*
[196] *Id.* at 1334.
[197] *Canadian Lumber*, 517 F.3d at 1334.

money to the North Dakota Wheat Commission under the CDSOA was likely to cause an economic injury to the Canadian producers, and because this injury is preventable through a declaratory judgment and injunction against distribution, the Court of International Trade was correct to hold that the Canadian producers had standing.[198]

While the Court of International Trade concluded that the Canadian Government did not have standing because it decided to challenge the CDSOA in the WTO and was successful in that forum, the Appellate Court reached the same conclusion (no standing) but for different reasons.[199] The Canadian Government asserted three theories of standing, but the appellate court deemed all three insufficient under Article III.[200]

First, the Canadian Government asserted that it suffered injury from the denial of its statutorily granted rights under Section 408 of the NIA. Canada relied on *Massachusetts v. EPA* to assert that Congress enacted an analogous procedural right in 28 U.S.C. § 1581(i)(4), under which Canada has standing to enforce Section 408 of the NIA.[201] In *Massachusetts v. EPA*, however, the Supreme Court explained that states are not normal litigants for the purpose of invoking federal jurisdiction and that the result depended greatly on the special status and position of Massachusetts in its quasi-sovereign capacity.[202] The Government of Canada is not fairly analogous to a state and has not surrendered any sovereign prerogatives. Therefore, the court concluded that the Government of Canada was not entitled to the quasi-sovereign "special solicitude" that Massachusetts was deemed to possess in *Massachusetts v. EPA*.[203]

The Canadian Government's second theory involved analogizing itself to a Native American tribe. It argued that it had standing because it is a sovereign trying to protect its sovereign interests.[204] But whatever special solicitude Native American tribes are entitled to regarding standing, the court held that the Canadian Government failed to establish that it is similarly situated.[205]

Finally, the Canadian Government argued that even if its sovereignty does not grant it special status for standing, Canada has still been

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[198] *Id.*
[199] *Id.* at 1335.
[200] *Id.* at 1336.
[201] *Id.*
[202] *Id.* at 1337.
[203] *Canadian Lumber*, 517 F.3d at 1337.
[204] *Id.*
[205] *Id.*

denied the benefit of Section 408 and is "as entitled as an individual or corporation to challenge regulatory action that interferes with enjoyment of bargained-for benefits."[206] The problem with this theory is that the Canadian Government did not specify what benefit it has been deprived of; it failed to explain what injury it has suffered.[207] Since the Canadian Government did not show an injury in fact independent of injury to the Canadian producers, and it is not entitled to special solicitude that would mitigate the injury in fact requirement, the court concluded that the Canadian Government lacked Article III standing to challenge Customs' interpretation of the CDSOA.[208]

Therefore, Justice Roberts's view prevailed in that *Massachusetts v. EPA* was construed very narrowly in the *Canadian Lumber* case.[209] The notion of "state" solicitude was not extended to another type of sovereign entity—the Canadian Government. It remains unsettled, however, as to whether courts will refuse to extend the majority's special solicitude standing analysis in *Massachusetts v. EPA* to provide a more expansive interpretation of risk-based standing for individuals in the climate change litigation context. Roberts maintained that there is no difference between state standing and private individuals' standing under Article III. Drawing on that logic, the majority decision's "flawed" logic in finding standing for Massachusetts on those facts could be extended to private litigants in future cases. In Roberts's view, this would be a case of "two wrongs don't make a right," but as long as the majority opinion remains good law, such an outcome would be a fair reading of the current state of environmental standing jurisprudence for climate change litigation.

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[206] *Id.*

[207] *Id.*

[208] *Id.* at 1338.

[209] The D.C. Circuit, in *Public Citizen, Inc. v. NHTSA*, reached the same conclusion in a case that involved a private plaintiff, but did not address the climate change context. *See* 489 F.3d 1279, 1294 n.2 (D.C. Cir. 2007). *See also* Amy J. Wildermuth, *Why State Standing in* Massachusetts v. EPA *Matters*, 27 J. LAND, RESOURCES & ENVTL. L. 273, 294 (2007) (arguing that Massachusetts's sovereign status is essential to understanding the scope of the Court's standing analysis in *Massachusetts v. EPA*). For additional commentary on the scope and meaning of the special solicitude of states analysis in *Massachusetts v. EPA*, see 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 (2008); Dru Stevenson, *Special Solicitude for State Standing:* Massachusetts v. EPA, 112 PENN ST. L. REV. 1 (2007); Sara Zdeb, Note, *From* Georgia v. Tennessee Copper *to* Massachusetts v. EPA*:* Parens Patriae *Standing for State Global-Warming Plaintiffs*, 96 GEO. L.J. 1059 (2008).

B. *New Directions in Recent Climate Change Litigation*

Two pending climate change disputes illustrate a potentially expansive and a potentially restrictive view, respectively, of standing analysis in climate change litigation in the wake of *Massachusetts v. EPA*. In *Native Village of Kivalina v. ExxonMobil Corporation*, the plaintiffs sued to recover damages from global warming impacts caused by defendants' actions.[210] The plaintiff residents of the village, the Inupiat Eskimos, alleged that global warming is destroying their village through the melting of Arctic sea ice that previously protected the village from winter storms.[211]

The plaintiffs filed this public nuisance[212] action under federal common law, and alternatively under state common law, seeking damages for defendants' contributions to global warming, the effects of which are causing severe harms to the village.[213] The plaintiffs alleged that the defendants, several major petroleum companies, are responsible for emitting large quantities of greenhouse gases that trap heat and directly contribute to global warming, and that they have done so for many years.[214] The resulting global warming is causing the Arctic Sea ice to melt, which previously protected the village from winter storms. As a result, storm damage has increased and has resulted in massive erosion.[215] This erosion has caused the houses and buildings in the village to be in immediate danger of falling into the sea and, if the entire village is not relocated soon, the imminent threat of permanent destruction will become real.[216]

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[210] Complaint, Native Village of Kivalina v. ExxonMobil Corp., No. C08-01138-SBA, at 1 (N.D. Cal. Feb. 26, 2008).

[211] *Id.*

[212] To date, courts have been unreceptive to public nuisance theories seeking recovery for climate change impacts; however, appeals are pending. *See, e.g.*, California v. Gen. Motors Corp., No. C06-05755MJJ, 2007 WL 2726871 (N.D. Cal. Sept. 17, 2007) (public nuisance suit against several major automobile manufacturers); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265 (S.D.N.Y. 2005) (public nuisance suit against several major power plants). For further examination of the viability of public nuisance suits for climate change impacts, see Randall S. Abate, *Automobile Emissions and Climate Change Impacts: Employing Public Nuisance Doctrine as Part of a "Global Warming Solution" in California*, 40 CONN. L. REV. 591 (2008); Ken Alex, *A Period of Consequences: Global Warming as Public Nuisance*, 26A STAN. ENVTL. L.J. 77 (2007).

[213] Complaint, *supra* note 210, at 1.

[214] *Id.*

[215] *Id.* at 1-2.

[216] *Id.* at 2.

The plaintiffs claimed that they suffer special injuries that differ in severity and type from injuries suffered by the general public.[217] The thickness, extent, and duration of sea ice that forms along Kivalina's coast is affected by the rising temperatures caused by global warming.[218] Kivalina's coast is more vulnerable to waves, storm surges, and erosion due to the loss of sea ice.[219] The plaintiffs have contributed little or nothing to global warming and the impact of global warming on the plaintiffs is "more certain and severe than on others in the general population."[220]

The plaintiffs asserted that by contributing to global warming, the defendants' carbon dioxide and other greenhouse gas emissions constitute a "substantial and unreasonable interference with public rights, including, *inter alia*, the rights to use and enjoy public and private property in Kivalina."[221] Moreover, the plaintiffs have suffered special injuries from the defendants' emissions in that global warming will lessen or destroy the plaintiffs' public and private real property.[222] The plaintiffs' entire village has to be relocated as a result of this public nuisance, which will cost millions of dollars.[223] The defendants' emissions are a "direct and proximate contributing cause of global warming" and of the plaintiffs' injuries and threatened injuries.[224] The plaintiffs claimed that the defendants knew or should have known that their emissions would contribute to global warming—and consequently to injuries incurred by the general public and special injuries by Plaintiffs—but either "[i]ntentionally or negligently . . . created, contributed to, and/or maintained the public nuisance."[225] The plaintiffs have been injured and will continue to be injured by global warming, but do not have the economic ability to avoid or prevent the harm.[226]

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[217] *Id.* at 45.
[218] *Id.*
[219] Complaint, *supra* note 210, at 1.
[220] *Id.* at 46.
[221] *Id.* at 62.
[222] *Id.*
[223] *Id.* at 63.
[224] *Id.*
[225] Complaint, *supra* note 210, at 63.
[226] *Id.* A similar theory of relief failed in *Comer v. Murphy Oil USA, Inc.*, No. 1:05-CV-436-LG-RHW, slip op. (S.D. Miss. Aug. 30, 2007). Several Mississippi property owners sued various insurers, oil companies, chemical companies, and coal companies for their greenhouse emissions. The plaintiffs alleged that the defendants' emissions contributed to global warming, which in turn increased the water temperature in the Gulf of Mexico, and consequently increased the severity and frequency of hurricanes, including Katrina. The defendants filed a motion to dismiss the claims, alleging that the plaintiffs lacked standing. The district court's standing analysis focused on the difficulty of establishing

At the opposite end of the spectrum of recent developments in climate change litigation is an effort by the Pacific Legal Foundation ("PLF") to reel in the potentially extreme effects of enhanced procedural standing available from the recent listing of the polar bear as threatened under the ESA.[227] On May 15, 2008, the U.S. Fish and Wildlife Service ("FWS") listed the polar bear as threatened under the ESA.[228] This listing makes the polar bear the first species given ESA protection due to global warming. PLF opposes the FWS's listing decision because it was based on predictions about future trends in global warming and is likely to lead to destructive economic impacts, such as severe restrictions on land use, job creation, and economic activity in Alaska as well as the lower forty-eight states.[229]

Because the PLF believes the listing of the polar bear falls short of the ESA and Administrative Procedure Act standards, it has submitted a 60-day notice of intent to sue to the FWS.[230] Major points of the 60-day notice include: the claim of "threatened" status is not supported by sea ice models; threatened status is not supported by current polar bear demographics; the government impermissibly relies on anecdotal evidence in supporting its listing decision; and the listing is arbitrary because the government admits the polar bear is already protected.[231]

The citizen suit provision of the ESA authorizes citizens to sue private individuals and government agencies for alleged violations of the Act.[232] Therefore, PLF fears that environmentalists would, for example, be able to sue the EPA to compel it to "issue regulations substantially restricting car emissions, on the theory that those emissions contribute to

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that the property damage that the plaintiffs suffered was traceable to the defendants' conduct. The court held that although the defendants' emissions contributed to climate change, the plaintiffs lacked standing because their losses could be attributed to a group larger than that comprised of the defendants. The court dismissed the plaintiffs' claims on several grounds, including standing. An appeal is pending. *Id.*, *appeal docketed*, No. 07-60756 (5th Cir. 2007).

[227] *See* M. David Stirling, *Polar Bears and Melting Ice*, WASH. TIMES, Mar. 7, 2008.

[228] Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout Its Range, 73 Fed. Reg. 28,212 (May 15, 2008) (to be codified 50 C.F.R. pt. 17).

[229] *See* Stirling, *supra* note 227.

[230] Pacific Legal Foundation, 60-Day Notice of Intent to Sue for Violations of Section 4 of the Endangered Species Act in Connection with: Determination of Threatened Status for the Polar Bear (Ursus maritimus) Throughout its Range: Final Rule, 73 Fed. Reg. 28,212 (May 15, 2008) (filed July 23, 2008), *available at* http://community.pacificlegal.org/NETCOMMUNITY/Document.Doc?id=138.

[231] *See id.*

[232] 16 U.S.C. § 1540(g) (2000).

climate change and reduce the polar bear's habitat."[233] This scenario would place the courts in a familiar but dangerous position—being called upon to step into the shoes of the legislative and executive branches "to decide whether man-made greenhouse gases cause global warming."[234] In *Massachusetts v. EPA*, even though the Supreme Court ruled that Massachusetts could bring such a suit, the Court also cautioned that it lacked the expertise and authority to engage in policy decisions that are better addressed by the political branches, particularly by the EPA.[235]

Taken together, the *Kivalina* and PLF cases underscore an essential and recurring policy consideration in this new era of environmental standing jurisprudence: the need to ensure that Article III standing requirements do not become diluted such that the court will be flooded with matters that are better addressed by the legislative or executive branches. The PLF case is a valuable reminder that an expansive view of environmental standing, even when promoting seemingly laudable objectives, can have devastating effects on the economy, and even on other environmental resources, at the expense of the resource in question. ESA litigation has demonstrated that the effect of a species listing under the Act can be akin to a trump card over other societal interests, including major federal projects[236] and private business interests.[237] An expansive view of environmental standing in the wake of *Massachusetts v. EPA* could give environmental organizations too much authority to command government and private sector actors to elevate the interests of the polar bear over other important economic and environmental interests.

Although climate change science remains less than certain, there has been a rising tide of clarity about the links between human-caused carbon dioxide emissions and the climate change impacts felt by vulnerable sectors of our society, such as polar bears and indigenous peoples. Cases like *Kivalina* are important to ensure that climate change impacts on vulnerable populations are detected and addressed. The problem with responding to

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[233] *See* Damien Schiff, *'Endangered' Polar Bear Is Trotted Out As the Extremists' Latest Trojan Horse*, INVESTOR'S BUS. DAILY, Feb. 25, 2008.

[234] *Id.*

[235] *Id.*

[236] *See* Tenn. Valley Auth. v. Hill, 437 U.S. 153, 213-15 (1973).

[237] *See* N. Spotted Owl v. Hodel, 716 F. Supp. 479, 483 (W.D. Wash. 1988) (ordering a remand to FWS until its decision to declare the Northern Spotted Owl an endangered species was not arbitrary or capricious); N. Spotted Owl v. Lujan 758 F. Supp. 621, 629-30 (W.D. Wash. 1991) (ordering another remand); Endangered and Threatened Wildlife and Plants; Determination of Critical Habitat for the Northern Spotted Owl, 57 Fed. Reg. 1796 (Jan. 15, 1992) (creating the final rule in the manner ordered by the court).

the plight of the polar bears and indigenous peoples through the court system, however, is that it often leads to a race to find deep-pocket scapegoats to hold accountable for the environmental perils at issue, which is not a viable long-term solution to any problem. Until the *Massachusetts v. EPA* decision is implemented, however, these opportunities to use the courts for publicity about these concerns—and as a mechanism to apply pressure to goad appropriate action from the legislative and executive branches—is a valuable step in the right direction.

IV. IMPLICATIONS FOR ENVIRONMENTAL STANDING GENERALLY

The principal issues that have been the focus of the lower federal courts' decisions interpreting the environmental standing implications of *Massachusetts v. EPA* are how to determine the appropriate scope and applicability of both the procedural injury and the increased risk of future harm standards for environmental standing. This part of the Article evaluates recent developments in these areas and considers the application of risk assessment principles to address the gaps and concerns in these two areas.

A. Procedural Injury

After the EPA implements the *Massachusetts v. EPA* mandate, procedural injury will be a more significant mechanism through which future litigants may assert standing to challenge climate change impacts under the CAA. The geographical nexus component of the procedural injury test adds a dimension of substantive injury flavor to the procedural injury framework. Plaintiffs must assert a narrowly tailored localized harm that is fairly traceable to the government action or inaction for which the court can provide a remedy. For example, residents of New Jersey cannot successfully assert a procedural injury claim against a defendant whose failure to obtain a CAA permit for a stationary source has increased the risk of harm from increased air pollution to residents of a town in Idaho that live near the source.

A series of recent cases illustrate the current state and possible future of procedural injury analysis in environmental standing cases. For example, in *South Carolina Wildlife Federation v. South Carolina Department of Transportation*, the defendants planned construction of a highway connector to link two towns in South Carolina.[238] The connector

[238] 485 F. Supp. 2d 661, 667 (D.S.C. 2007).

included "three mile-long bridges through the Upper Santee Swamp."[239] The plaintiffs claimed that the "connector will have significant negative effects on the environmental[ly sensitive area] surrounding the Swamp," which is home to significant wildlife habitat.[240]

The plaintiffs alleged that the defendants failed to correct problems that were detected in its draft environmental impact statement under NEPA.[241] Such problems included "an impermissibly narrow purpose and need statement, a failure to [sufficiently] consider alternatives, and a failure to adequately" evaluate the environmental impacts resulting from the project.[242]

In evaluating the plaintiffs' standing, the court noted that a plaintiff cannot show injury in fact simply by showing an agency's failure to follow a procedural statute; plaintiffs must show that "they would be personally injured in some individualized and particularized way by the defendant's actions."[243] "The injury in fact requirement includes harm to 'aesthetic, conservational, recreational,' as well as economic values."[244] In the present case, the plaintiffs successfully demonstrated injury in fact by showing "that construction of the connector will harm the educational, scientific, recreational, and aesthetic benefits their members enjoy when using the . . . Swamp," which are recognized interests for standing purposes.[245] Moreover, each plaintiff organization presented information to show "that at least one of its members currently uses and enjoys the area where the connector would be constructed."[246]

Regarding the traceability element, the court held that the plaintiffs adequately demonstrated that the proposed construction of the connector "would cause injury to their members' interest in enjoying the surrounding environment."[247] The plaintiffs asserted that the connector would result in destruction and fragmentation of natural habitat, increased traffic and traffic noise from vehicles traveling on the connector, "degradation of water quality, . . . land use changes," damage to the "natural landscape," and disruption of "bird activity in the area."[248] In addition, to satisfy this

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[239] *Id.*
[240] *Id.*
[241] *Id.* at 668.
[242] *Id.*
[243] *Id.* at 669.
[244] *S.C. Wildlife Federation*, 485 F. Supp. 2d at 669.
[245] *Id.*
[246] *Id.*
[247] *Id.* at 670.
[248] *Id.*

element, the "plaintiffs' injuries must flow from some action taken by the defendants, and not some 'absent third party.'"[249] Here, the plaintiffs properly alleged that the "defendants' involvement in the project . . . contributed to their potential injuries."[250]

On the redressability element, the "plaintiffs must show that their injuries can be redressed by obtaining relief against the state agency and its executive director."[251] "The Supreme Court has stated that when Congress grants a procedural right to protect concrete interests, a litigant asserting that procedural right does not have to meet all of the 'normal standards' for redressability and immediacy."[252] The plaintiffs must only "prove that 'there is some possibility that the requested relief will prompt the injury-causing party to reconsider the decision.'"[253] The South Carolina Department of Transportation will have an important role in correcting any deficiencies in the NEPA process.[254] The plaintiffs have met the redressability standard from *Massachusetts v. EPA* because requiring the defendants to re-evaluate the environmental impacts of the project and to reconsider more environmentally friendly alternatives could likely encourage the defendants to alter or forego the decision to build the connector.[255] Therefore, the court concluded that the plaintiffs met all three elements to properly establish standing.[256]

The geographical nexus component of procedural injury analysis remains a viable consideration in post-*Massachusetts v. EPA* procedural injury cases. In *Sierra Club v. Department of Transportation*, the court considered "whether [the Department of Transportation] (DOT) was required to perform an environmental assessment (EA) under . . . the Hawaii Environmental Policy Act (HEPA) before approving various harbor improvements and permits associated with the Hawaii Superferry project."[257] In its proposal to develop and operate a new high speed ferry service, Hawaii Superferry, Inc. determined that it needed to make several improvements to the Kahului Harbor "to accommodate the Superferry project."[258] HEPA

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[249] *Id.*
[250] *S.C. Wildlife Federation*, 485 F. Supp. 2d at 670.
[251] *Id.*
[252] *Id.* (quoting Massachusetts v. EPA., 127 S. Ct. 1438, 1453 (2007)).
[253] *Id.*
[254] *Id.* at 671.
[255] *Id.*
[256] *S.C. Wildlife Federation*, 485 F. Supp. 2d at 669-71.
[257] 167 P.3d 292, 297 (Haw. 2007).
[258] *Id.* at 298.

requires that environmental impact review be undertaken for development projects meeting certain criteria.[259]

The plaintiffs claimed to have standing on two grounds: traditional standing and procedural standing.[260] To satisfy the injury prong of the standing analysis, the plaintiff must assert a judicially recognized injury to some legally protected interest. The court has recognized a variety of interests which injured, can form the basis for standing.[261] "In environmental cases, . . . recreational and aesthetic interests have been acknowledged as forming the basis for . . . standing."[262] Although "plaintiffs must show that some environment-related interest was injured, the ultimate inquiry depends on injury to the plaintiffs themselves [and] not the environment.[263]

In addressing procedural injury, the court noted that the procedural standing doctrine was recently reaffirmed in *Massachusetts v. EPA*.[264] Several tests have been developed "to determine whether a plaintiff has established standing based on a procedural injury."[265] While these tests modify the way in which the traditional three-part standing test is met, they still require the plaintiff to show an injury which is fairly traceable to the defendant's actions and which is likely to be remedied by court action.[266]

The three important features of procedural standing doctrine are that it is based on a specific characterization of a plaintiff's injury, such as the denial of some procedures required by law; that the plaintiff has been given a procedural right, which focuses on the statutory framework in question; and that there needs to be a nexus between the plaintiff's procedural right and an underlying concrete interest.[267] These features may be demonstrated by showing a "geographical nexus" to the site at issue and"that the procedural violation increases the risk of harm to the plaintiff's concrete interests."[268]

In the present case, the plaintiffs claimed that DOT violated HEPA by approving an exemption from the requirement to prepare an environmental assessment and caused injury to the plaintiffs' interests in several ways: potential adverse impacts to endangered species caused by high-

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[259] *Id.* at 299.
[260] *Id.* at 311.
[261] *Id.* at 314.
[262] *Id.*
[263] *Sierra Club*, 167 P.3d 292 at 315.
[264] *Id.*
[265] *Id.*
[266] *Id.* at 315-16.
[267] *Id.* at 318.
[268] *Id.* at 322.

speed ferries; threatened increase in the introduction of foreign species through the execution of the Superferry project; adverse impacts to recreational interests of members who use the harbor for surfing, diving, and canoeing; and adverse traffic impacts caused by the Superferry project.[269]

Under the traditional injury in fact test, a threatened injury may be demonstrated based on direct personal interests in the site of a project coupled with concerns of actual injury if the project were to proceed without sufficient environmental review.[270] The plaintiffs' concrete interests were threatened by the decision to exempt the harbor improvements from the environmental review process.[271] The plaintiffs established that members of their groups have concrete interests in the Kahului Harbor area and the Superferry's operation there and that if the project were allowed to proceed without an EA, the risk of harm to those interests would increase.[272] Here, there also can be procedural standing for members of the public under HEPA because it is a procedural statute that accords procedural rights to parties who wish to challenge nonconformity with its requirements.[273]

The causation and redressability elements are more easily satisfied. The causation element is established if a plaintiff can "show its increased risk is fairly traceable to the defendant's failure to comply with HEPA."[274] Here, the plaintiffs established causation because the injuries they alleged are traceable to DOT exempting Superferry from preparing an EA. Regarding the redressability prong, a plaintiff who asserts the inadequacy of a government's environmental studies does not need to show that further analysis by the government would result in a different conclusion.[275] When a litigant is vested with a procedural right, that litigant can satisfy the redressability element if there is some possibility that the requested relief will encourage the injury-causing party to reconsider the decision that allegedly harmed the litigant.[276] Redressability was established in this case because the threat of increased risk of harm is redressable by preparing an EA, which would permit the plaintiffs' threatened injuries to be addressed and possibly mitigated or avoided.[277]

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[269] *Sierra Club*, 167 P.3d 292 at 321-22.
[270] *Id.* at 322.
[271] *Id.* at 323.
[272] *Id.*
[273] *Id.*
[274] *Id.* at 324.
[275] *Sierra Club*, 167 P.3d 292 at 324.
[276] *Id.* (quoting Massachusetts v. EPA, 127 S. Ct. 1438, 1453 (2007)).
[277] *Id.*

The role of statutorily authorized public participation is critical in considering procedural standing. *Center for Biological Diversity v. Brennan* involved a procedural injury challenge to the Global Change Research Act ("GCRA").[278] Enacted in 1990, the GCRA initiated a ten-year research program for global climate issues, instructed the President to set up a research program to improve people's understanding of global change, and required the preparation of evaluations every four years that scrutinize current trends in global change.[279] The GCRA was enacted "to provide for development and coordination of a comprehensive and integrated United States research program which will assist the Nation and the world to understand, assess, predict, and respond to human-induced and natural processes of global change."[280]

To fulfill this objective, the GCRA requires a National Global Change Research Plan ("Research Plan"), which must include recommendations for objectives and priorities for federal global change research that would most successfully develop scientific understanding of global change and provide usable information on which policy decisions regarding global change may be based, and a Scientific Assessment analyzing global climate change effects.[281] The initial Research Plan was to be submitted to Congress within one year of the GCRA's enactment, with a revised Research Plan to be submitted at least once every three years thereafter.[282]

In this case, the defendants did not prepare a new Research Plan or Scientific Assessment within the time frame set by the GCRA.[283] The plaintiffs sued to declare the defendants in violation of the GCRA and compel the defendants to issue the Research Plan and Scientific Assessment as directed by the statute.[284] The defendants asserted that they had already commenced the process to produce the revised Research Plan and Scientific Assessment and that, "regardless of whether they have acted in a timely manner, . . . the plaintiffs lacked standing to sue for enforcement of the GCRA or to compel the production of the Research Plan and Scientific Assessment."[285] The defendants contended that "because the

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[278] No. C 06-7062 SBA, 2007 U.S. Dist. LEXIS 65456, at *2-3 (N.D. Cal. Aug. 21, 2007).
[279] *Id.* at **2-3.
[280] *Id.* at *3 (quoting 15 U.S.C. § 2931(b) (1990)).
[281] *Id.* at *3.
[282] *Id.* at *4.
[283] *Id.*
[284] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at *6.
[285] *Id.* at *7.

GCRA does not contain 'a citizen suit' provision, the Act does not allow third-party, private organizations" like the plaintiffs to enforce it.[286]

The plaintiffs alleged both procedural injury, due to the lack of public participation and comment on the development of the Research Plan and the Scientific Assessment, as well as informational injury, resulting from the defendants' failure to disseminate these reports.[287] To satisfy the injury in fact element, a plaintiff asserting a procedural injury must show that the questioned procedures are made to protect some threatened concrete interest and the reasonable likelihood that the challenged action is a threat to his or her concrete interest.[288] If the defendants do not develop a Research Plan within the time allotted by the GCRA, then the plaintiffs suffer the loss of consultation and public comment.[289] This procedural injury would cause a corresponding loss of feedback regarding the results of the program, which makes it hard "to ensure that such results are useful in developing national and international policy responses to global change."[290]

The defendants maintained that because the public involvement in the Research Plan is less extensive than in other statutes, the plaintiffs are not entitled to the Research Plan.[291] The court, however, rejected this argument.[292] The defendants further asserted that public participation is only required if and when "the defendants produce a Research Plan."[293] The court also found this argument unpersuasive because this reasoning suggests that if the defendants never produce a Research Plan, the plaintiffs never have a right to partake in consultation or public comment and therefore never suffer a procedural injury.[294] The GCRA imposes an affirmative duty for the defendants to produce the Research Plan periodically; therefore, public participation is not a contingency that can be deferred for an indefinite period.[295] The court concluded that the plaintiffs demonstrated a procedural injury for standing purposes with respect to the Research Plan.[296]

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[286] *Id.* at **7-8.
[287] *Id.* at *9.
[288] *Id.* at **9-10.
[289] *Id.* at *12.
[290] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at **12-13.
[291] *Id.* at *13.
[292] *Id.* at **13-14.
[293] *Id.* at *14.
[294] *Id.* at **14-15.
[295] *Id.* at *15.
[296] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at *15.

The court also concluded that the plaintiffs established a procedural injury with respect to the Scientific Assessment. The Scientific Assessment is supposed to "integrate, evaluate, and interpret the findings of the Program," which is implemented by the Research Plan.[297] The Research Plan provides for public participation, so if there is no consultation or comment period while developing the Research Plan, the Scientific Assessment will not integrate, evaluate and interpret the findings of the Program as required.[298] Consequently, an indirect opportunity for public participation exists in the preparation of the Scientific Assessment and therefore a procedural injury results from the lack of this participation.[299]

The defendants asserted that the connection between the Research Plan and the Assessment is too remote to support standing.[300] They maintained that any connection between the "[p]laintiffs' alleged injury resulting from their lack of opportunity to comment on a revised Research Plan and the allegedly delayed submission of the Scientific Assessment to Congress is too attenuated to support standing."[301] The defendants further contended that because Congress does not have to fully adopt the recommendations of the Research Plan and is able to set its own priorities in funding research, there is really no concrete injury to the plaintiffs.[302] However, there is nothing in the statute that guarantees that any comments will be ultimately adopted as policy. The statute only guarantees that the public has a right to "participate in the process."[303] Even if the plaintiffs' comments are ultimately rejected, the GCRA considers the fact that public participation will at least inform the two end products of the Act: the Research Plan and the Scientific Assessment.[304] Therefore, the court concluded that plaintiffs have sufficiently asserted a procedural injury with regards to the Scientific Assessment.[305]

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[297] *Id.*
[298] *Id.* at **15-16.
[299] *Id.* at *16.
[300] *Id.* at *19.
[301] *Id.*
[302] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at **19-20.
[303] *Id.* at *20.
[304] *Id.*
[305] *Id.* at *20. The plaintiffs also asserted an informational injury as another premise upon which to base their standing to sue under the GCRA. *Id.* Courts recognize that a plaintiff may suffer injury as a result of a denial of information to which they are entitled by statute. *Id.* The defendants contended that there is a difference between statutes ordering certain information to be made available to the public in general and those requiring only reporting to Congress, which are not subject to judicial review. *Id. Brennan*, 2007

To establish standing by asserting procedural harm, the plaintiffs only have to show "that they have a procedural right that, if exercised, could protect their concrete interests, and that those interests fall within the zone of those interests being protected by the statute at issue."[306] The zone of interests test is usually satisfied unless the plaintiffs' interests are so vaguely related to or inconsistent with the purposes implied in the statute that it cannot be reasonably assumed that Congress meant to allow the suit.[307] Here, the plaintiffs are three environmental groups whose members are concerned about the effects of human activity on global warming, and the consequences of global warming on the environment.[308] The plaintiffs asserted that their injuries resulted from their concerns that global warming will detrimentally affect the environment and the health and well-being of its members, and that poorly informed agency decisions will further contribute to global warming or insufficiently react to its challenges.[309] The plaintiffs also claimed that the defendants' failure to prepare the required reports interferes with the plaintiffs' members' research and observation of species that are affected by climate change.[310] A threatened recreational interest in a certain place, animal, or plant

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U.S. Dist. LEXIS 65456, at *21. The Research Plan requires the publication of a summary and the chance for public comments, which is more than merely reporting to Congress. *Id.* The purpose of publishing this summary is to invite substantive public comments and recommendations, and for this information to be considered when drafting the final version of the Research Plan. *Id.* at *22. The plaintiffs have a statutory right to a summary of the plan under review and a chance to offer comments on the substance of that anticipated plan. *Id.* If no summary of the plan is published, then the plaintiffs have suffered an informational injury. *Id.*

With respect to the Scientific Assessment, there does not appear to be a similar informational injury, as it contains no provision for public disclosure. *Id.* However, "the plaintiffs insisted the Scientific Assessment is required to be made public and to be subject to public comment under the Climate Change Science Program's 2003 Research Plan and Guidelines." *Id.* While this may be true, "the court does not have the authority to enforce these guidelines [because they do not] have the force and effect of law," as they were not promulgated in accordance with the notice and comment rulemaking procedures of the Administrative Procedure Act. *Id.* at **24-25. Because these guidelines do not have the force of law, the defendants' noncompliance with them does not trigger a legally recognized informational injury. *Id.* at *26. Therefore, the court concluded that "the plaintiffs [established] both a procedural injury and informational injury with respect to the Research Plan," and a procedural but not informational injury for the Scientific Assessment. *Id.* at **26-27.

[306] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at *27.

[307] *Id.* at **27-28.

[308] *Brennan*, 2007 U.S. Dist. LEXIS 65456, *28.

[309] *Id.*

[310] *Id.* at **28-29.

species has been shown to satisfy the injury element of standing; consequently, the desire to use or observe a species for research purposes is also a legally recognized interest for standing purposes.[311]

Congress enacted the GCRA to provide for development and coordination of a comprehensive and integrated U.S. research program that will help the nation and the world understand, evaluate, predict, and respond to the human caused and natural processes of global change.[312] Therefore, the plaintiffs' interests are connected to the purposes of the GCRA.[313] The plaintiffs also have a procedural right to participate in development of a research plan regarding global climate change.[314] "That right, if exercised, could protect their concrete interests[, which] fall within the zone of interests protected by the GCRA."[315]

Regarding the traceability and redressability elements of standing, a plaintiff asserting inadequacy of a government agency's environmental studies does not need to show that more analysis by the government would permit them to reach a different conclusion; rather, it is sufficient "that the agency's decision could be influenced by the environmental considerations that the related statute requires an agency to consider or evaluate."[316] In the present case, issuing a Research Plan could result in a decision favorable to the plaintiffs' interests; the defendants' failure to produce the required reports undermines the plaintiffs' participation in the process and the possibility of influencing environmental policy.[317] Therefore, the plaintiffs' procedural injuries can be directly connected to the defendants' failure to produce a revised Research Plan and Scientific Assessment, and injunctive relief would remedy these injuries.[318] Consequently, the plaintiffs have sufficiently established Article III standing to pursue their claims dealing with these reports.[319]

Procedural injury claims have been and will continue to be closely intertwined with substantive injury claims. In *Association of Irritated Residents v. C & R Vanderham Dairy*, the plaintiff organization's members asserted physical, aesthetic and procedural harms, all of which can

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[311] *Id.* at **30-31.
[312] *Id.* at **31-32.
[313] *Id.* at *32.
[314] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at *32.
[315] *Id.*
[316] *Id.* at *33.
[317] *Id.* at **33-34.
[318] *Brennan*, 2007 U.S. Dist. LEXIS 65456, at *34.
[319] *Id.*

satisfy the injury in fact requirement.[320] The defendant's facility emitted VOC, which reacts with oxides of nitrogen emissions to form ozone in the air basin where the president of the organization resides.[321] The organization's president breathed the air that contained the ozone, which harmed him, and he suffered from breathing difficulties that were worsened by the ozone pollution.[322] Furthermore, ozone pollution harms the president's aesthetic interest because it interferes with his view of the mountains, which he has enjoyed since childhood.[323] The defendant's failure to get a pre-construction permit has also deprived the organization's president and its members of procedural rights, which is an independent basis for standing.[324] Since the organization's president also demonstrated a concrete interest at stake—ozone-polluted air, these procedural failures also establish injury in fact.[325]

The physical, aesthetic, and procedural harms are linked to the defendant's illegal conduct in failing to obtain a pre-construction permit and comply with pollution control requirements.[326] A favorable order by the court will redress the injuries because it will force defendant to get a permit, reduce the air pollution, and buy offsets which will ultimately reduce the ozone-producing VOC in the valley.[327]

The potentially most significant development in this line of post-*Massachusetts v. EPA* procedural standing cases occurred in *Earth Island Institute v. Ruthenbeck*.[328] Prior to 1992, the defendant U.S. Forest Service offered a "post-decision administrative appeals process for agency decisions documented in a decision memo, decision notice or record of decision."[329] In March 1992, however, the Forest Service proposed a new regulation to replace the post-decision administrative appeals for every decision—except decisions approving forest plans, or amendments or revisions to forest plans—with pre-decision notice and comment procedures for proposed projects on which the Forest Service had conducted environmental

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[320] Ass'n of Irritated Residents v. C & R Vanderham Dairy, No. 1:05-CV-01593, 2007 U.S. Dist. LEXIS 70890, at *35 (E.D. Cal. Sept. 2007).
[321] *Id.* at *36.
[322] *Id.*
[323] *Id.* at **36-37.
[324] *Id.* at *37.
[325] *Id.*
[326] *Irritated Residents*, 2007 U.S. Dist. LEXIS 70890, at *38.
[327] *Id.* at *39.
[328] Earth Island Inst. v. Ruthenbeck, 490 F.3d 687 (9th Cir. 2007), *cert. granted sub. nom.*, Summers v. Earth Island Inst., 77 U.S.L.W. 3027 (July 15, 2008) (No. 07-463).
[329] *Id.* at 691.

impact review in accordance with NEPA.[330] Projects that the Forest Service considered environmentally insignificant would be exempt from notice, comment, and appeal pursuant to this proposed regulation.[331]

After considering concerns from environmental groups contesting the loss of administrative review, the Forest Service published"a final rule revising the notice, comment, and appeal procedures for 'projects and activities' implementing land and resource management plans on National Forest System lands," and "the final implementing procedures for National Environmental Policy Act Documentation Needed for Fire Management Activities."[332] The latter established two new categorical exclusions—fire rehabilitation on areas less than 4200 acres and salvage timber sales of 250 acres or less, that could be omitted from NEPA analysis and excused from "notice, comment and appeal under the challenged regulations."[333]

On September 8, 2003, the Forest Service released its Burnt Ridge Project decision memo approving the logging and sale of timber from 238 acres of forest that had been burned in a 2002 fire.[334] This decision memo applied one of the categorical exclusions and expressly stated that the "project is not subject to appeal because it involves projects or activities which are categorically excluded from documentation in an environmental impact statement or environmental assessment."[335]

The plaintiff Earth Island Institute sued to challenge the 2003 Rule as it applied to the Burnt Ridge Project.[336] The Forest Service claimed that the memo was released under provisions that categorically excluded the project from NEPA documentation and from administrative notice, comment, and appeal.[337]

While the Forest Service maintained that the plaintiff has no legally recognized injury in fact with respect to the challenged statute because the regulations have not been applied yet, Earth Island contended that "their aesthetic interests in the national forests are harmed by the regulations," and "their procedural interests in participating in the administrative notice, comment, and appeal process are harmed."[338]

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[330] *Id.*
[331] *Id.*
[332] *Id.* at 692.
[333] *Id.*
[334] *Ruthenbeck*, 490 F.3d at 692.
[335] *Id.*
[336] *Id.*
[337] *Id.*
[338] *Id.* at 693.

While legally recognized injury in fact generally includes both aesthetic and environmental interests, the injury in fact requirement also insists that "the party seeking review must be himself among the injured."[339] Moreover, an affiant's "intentions to return to an area that will be affected by a project do not support a finding of actual or imminent injury unless the affiant has specific plans to return to the area."[340]

In this case, a member of the plaintiff's organization whose affidavit plaintiff relied on to establish standing was prevented from participating in the appeals process, which may cause recreational enjoyment of the national forests to be reduced.[341] The organization also successfully asserted procedural injury because the Appeals Reform Act ("ARA") is a procedural statute that gives rise to a procedural injury within the zone of interests that Congress intended to protect. The ARA only governs the process that provides opportunity for public comment and does not address any substantive Forest Service program.[342] "The procedural injury implicit in agency failure to prepare an EIS is the creation of a risk that serious environmental impacts will be overlooked is itself a sufficient 'injury in fact' to support standing . . . ."[343] Since NEPA is a procedural statute whose purpose is to guarantee that environmental issues receive appropriate consideration during the decision making process, injury resulting from violations of this procedural right will confer standing.[344]

In this case, the court held that Earth Island Institute's lost right of administrative appeal through the Forest Service's application of its regulation is a sufficient procedural injury in fact to support standing for it to challenge the regulation.[345] The ARA is wholly procedural and Congress anticipated public involvement in the administrative notice, comment, and appeal process. Since the plaintiff and its members are prevented from appealing decisions like the Burnt Ridge Project, they are injured in the way that Congress anticipated and therefore meet the injury in fact requirement of standing.[346] The plaintiffs have also satisfied the remaining elements of traceability and redressability.[347] "The deprivation of the

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[339] *Id.* (quoting Sierra Club v. Morton, 405 U.S. 727, 735-36 (1972)).
[340] *Ruthenbeck*, 490 F.3d at 693 (citing Lujan v. Defenders of Wildlife, 504 U.S. 555, 564 (1992)).
[341] *Id.*
[342] *Id.*
[343] *Id.* (quoting City of Davis v. Coleman, 521 F.2d 661, 671 (9th Cir. 1975)).
[344] *Id.*
[345] *Id.* at 694.
[346] *Ruthenbeck*, 490 F.3d at 694.
[347] *Id.*

procedural right of administrative notice, comment and appeal is fairly traceable to the Forest Service's regulations," and "a favorable decision invalidating the regulation would redress Earth Island's injury."[348] Consequently, the court concluded that Earth Island successfully established standing on the basis of both personal and procedural injury.[349]

After the EPA implements the *Massachusetts v. EPA* mandate to promulgate regulations addressing carbon dioxide as a criteria air pollutant,[350] procedural standing under the Clean Air Act's citizen suit provision will be a viable mechanism through which future litigants may challenge climate change impacts in their respective regions. On July 15, 2008, the Supreme Court granted certiorari in the Earth Island Institute case,[351] which will allow the Court to address procedural injury and the risk of future harm standard to clarify some of the questions about environmental standing that linger in the wake of *Massachusetts v. EPA*.

B. Increased Risk of Future Harm

The increased risk of future harm standard is directly related to the concept of procedural injury; however, the doctrines evolved independently. Procedural injury traces its origins to statutes with procedural mandates like NEPA and the ESA, whereas the increased risk of harm future standard emerged in the context of substantive injury in evaluating what it means for a harm to be imminent. Both doctrines are particularly relevant in considering standing for climate change litigation.

A recent case from the D.C. Circuit, *Public Citizen, Inc. v. National Highway Traffic Safety Administration*,[352] illustrates the current status

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[348] *Id.*

[349] *Id.*

[350] As of this writing, the EPA has not implemented the *Massachusetts v. EPA* decision. In fact, on April 2, 2008, several states and environmental groups sued the EPA for its failure to respond to the *Massachusetts v. EPA* decision. *See U.S. EPA Sued for Ignoring Supreme Court Greenhouse Gas Ruling*, ENVT'L NEWS SERV., *available at* http://www.ens-newswire.com/ens/apr2008/2008-04-02-01.asp.

[351] Earth Island Inst. v. Ruthenbeck, 490 F.3d 687 (9th Cir. 2007), *cert. granted sub. nom.*, Summers v. Earth Island Inst., 77 U.S.L.W. 3027 (July 15, 2008) (No. 07-463). For a helpful discussion of recent case law addressing the increased risk of future harm standard, see Robin Kundis Craig, *Removing "The Cloak of a Standing Inquiry": Pollution Regulation, Public Health, and Private Risk in the Injury-in-Fact Analysis*, 29 CARDOZO L. REV. 149, 188-96 (2007).

[352] Public Citizen, Inc. v. Nat'l Highway Traffic Safety Admin., 489 F.3d 1279 (D.C. Cir. 2007).

of the increased risk of future harm standard and its possible relevance for climate change cases and environmental standing generally. To combat the dangerous consequences of under-inflated auto tires, Congress enacted the Transportation Recall Enhancement, Accountability, and Documentation Act ("TREAD Act").[353] Acting through the National Highway Transportation Safety Administration ("NHTSA"), the Secretary of Transportation adopted Federal Motor Vehicle Safety Standard 138, which required automakers to include an automatic tire pressure monitoring system that signals a warning when tire pressure falls below a pre-determined level.[354]

The 130,000-member organization, Public Citizen, along with several tire manufacturers and a tire industry trade association, challenged NHTSA's Standard 138 on the ground that it does not satisfy safety requirements.[355] Public Citizen alleged an increased risk of future harm to its members as its injury in fact.[356] The organization asserted that under Standard 138 some of its members will experience car accidents in the future that could otherwise have been avoided if NHTSA had adopted Public Citizen's recommendations.[357]

Public Citizen asserted that its injury is concrete because injuries from car accidents—death, physical injury, and property damage—"are . . . concrete harms under the Supreme Court's precedent."[358] Injuries from car accidents are also particularized because each person in an accident is harmed personally and distinctly. Moreover, "standing will not be denied just because many people suffer the same injury."[359] The district court concluded that Public Citizen had sufficiently shown a concrete and particularized injury, but it questioned whether Public Citizen's alleged injury was actual or imminent because Public Citizen only raised remote and speculative claims of possible future harm to its members.[360] The court concluded that standing exists when there is at least both a substantially increased risk of harm *and* a substantial probability of harm with that increase considered.[361]

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[353] *Id.* at 1283.
[354] *Id.* at 1283-84.
[355] Public Citizen, Inc. v. Nat'l Highway Traffic Safety Admin., 513 F.3d 234, 236-237 (D.C. Cir. 2008).
[356] *Id.* at 237.
[357] *Id.*
[358] *Public Citizen*, 489 F.3d at 1292.
[359] *Id.* at 1293 (quoting Massachusetts v. EPA, 127 S. Ct. 1438, 1459 (2007)).
[360] *Public Citizen*, 513 F.3d at 237.
[361] *Id.*

The district court ordered supplemental information from the parties to address whether Standard 138, as adopted, creates a more substantial increase in the risk of death, physical injury, or property loss versus the version of Standard 138 that Public Citizen has proposed, and whether the ultimate risk of harm that Public Citizen's members are exposed to is substantial and sufficient to make it not hypothetical.[362] Public Citizen challenged how the warning system works for replacement tires, the possible twenty-minute time lapse between tire under-inflation and the onset of the warning light, and the standard for what constitutes significant under-inflation.[363] Public Citizen contended that Standard 138 is inconsistent with the TREAD Act because it does not require that the system's pressure monitor be compatible with replacement tires.[364] The group showed its statistician's estimate of the difference in risk of injury between a standard requiring the compatibility of tire pressure monitors with all replacement tires and Standard 138, which is estimated to be incompatible with between one and ten percent of replacement tires.[365]

However, Public Citizen's submissions ignored the fact that Public Citizen actually proposed that NHTSA adopt either of two acceptable alternatives regarding replacement tires.[366] Public Citizen is not injured for standing purposes if Standard 138 threatens no greater risk of injury than one of Public Citizen's proposed options. The organization made no attempt to show that its proposal that auto manufacturers publish a list of compatible tires in the owner's manual would substantially lessen the risk of death, injury, or property loss to its members when compared with Standard 138.[367] Consequently, the D.C. Circuit held that it would be difficult for Public Citizen to establish standing because its asserted injury results from the government's allegedly unlawful regulation of someone else.[368]

C. *Risk Assessment*

Alleging injury for local impacts of global environmental harms is highly scientific. Enhanced certainty regarding the scientific data in this

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[362] *Id.* at 238.
[363] *Id.*
[364] *Id.*
[365] *Id.*
[366] *Public Citizen*, 513 F.3d at 238.
[367] *Id.* at 239.
[368] *Id.* at 237.

context has made injury and causation determinations easier, but challenges remain. Risk assessment can fill those gaps to keep environmental standing moving forward.

Natural Resources Defense Council v. EPA[369] is an illustrative example of the struggles a court must overcome in determining whether private citizens have suffered an injury in fact.[370] Here, had it not been for the necessary evaluation of applicable risk assessment analysis to identify an injury, the case would not have been able to proceed because of lack of standing.

In the mid 1970s, scientists discovered that certain man-made chemicals were able to thin and ultimately destroy the ozone layer. As the ozone thins, it is unable to absorb as much radiation and, in turn, humans absorb more ultraviolet radiation, which can lead to skin cancer and cataracts.[371] Due to this alarming evidence, several countries, including the United States, entered into the Montreal Protocol treaty regime which required the signatory nations to reduce and ultimately eliminate ozone-depleting chemicals on a strict timetable.[372] The United States immediately incorporated these changes into the CAA Amendments of 1990 (the "1990 Amendments").[373] However, in 1997, well after the 1990 Amendments were implemented, the Montreal Protocol called for a phase-out on the use and consumption of methyl bromide by 2005.[374] Again, the EPA was required to change its rules and terminate all production, importation, and consumption of methyl bromide.[375]

However, the Montreal Protocol recognized that methyl bromide is heavily used and had no viable substitutes as a pesticide.[376] Therefore, EPA allowed exemptions to the general prohibition only to the extent that such use was critical.[377] In turn, the EPA began the process of identifying

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[369] 464 F.3d 1 (D.C. Cir. 2006), *reh'g denied*, 2007 U.S. App. LEXIS 3965 (Feb. 21, 2007).
[370] *See id.* The court devoted the majority of its time in the opinion to evaluating NRDC's standing. *Id.*
[371] *Id.* at 3.
[372] *Id.*
[373] *Id.*
[374] *Id.* at 3-4.
[375] *NRDC*, 464 F.3d at 3-4.
[376] *Declaration on Methyl Bromide*, *in* OZONE SECRETARIAT—UNITED NATIONS ENVIRONMENT PROGRAMME, HANDBOOK FOR THE MONTREAL PROTOCOL ON SUBSTANCES THAT DEPLETE THE OZONE LAYER (7th ed. 2006), *available at* http://ozone.unep.org/Publications/MP_Handbook/Section_3.8_Annexes_Declarations/Declaration_on_MeBr.shtml.
[377] *NRDC*, 464 F.3d at 4.

all the critical uses of methyl bromide, and concluded that a total of ten thousand metric tons of methyl bromide representing sixteen different "critical" uses would be exempt.[378] Once the EPA crafted its proposal of the appropriate use of methyl bromide for critical uses only, the proposal moved to the international level, where it was highly scrutinized.[379] Finally, in 2004, the parties agreed to the initial sixteen proposed categories of appropriate use, but lowered the United States' amount of permissible usage to slightly less than ten thousand metric tons of methyl bromide.[380]

With the final decision in hand, the EPA implemented these new limitations into a new proposal for the critical use exemption.[381] The NRDC was one of several parties to submit a comment on this new proposal.[382] The NRDC claimed that the amount of methyl bromide proposed was not the "technically and economically feasible minimum."[383] In essence, this argument put the EPA and NRDC at odds as to the legal consequences of this proposal.[384]

Before the matter could go any further, the court had to determine whether the NRDC even had standing to bring its petition for review of the EPA's final rule.[385] The court struggled with the analysis of whether at least one of NRDC's members had standing to sue in his own right.[386] The NRDC claimed that its members faced potential health risks from methyl bromide, but the court was not sure that this claim would suffice as an injury in fact.[387] The sufficient showing of injury in fact is that of actual or imminent injury to the claimant—injury cannot be conjectural or hypothetical.[388] However, the court appeared to try to find a possible loophole in the rule that the injury must be imminent. In carving this small exception, the court noted that increases in risk at times can suffice as injuries in fact.[389] On one hand, the court supported this loophole,

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[378] *Id.* To implement the process by 2005, the EPA began its research process in 2002, three years before any action would go into effect. *See id.*

[379] *Id.*

[380] *Id.* at 5.

[381] *Id.*

[382] *Id.*

[383] *NRDC*, 464 F.3d at 5.

[384] *Id.*

[385] *Id.* at 5-6.

[386] *Id.*

[387] *Id.* at 6.

[388] *Id.*

[389] *NRDC*, 464 F.3d at 6 (citing Mountain States Legal Found. v. Glickman, 92 F.3d 1228, 1234-35 (D.C.Cir. 1996)).

finding that environmental and health injuries rely on probability.[390] However, in the same breath, the court cautioned that this slight loophole in the requirement of actual injury may be "too expansive."[391]

The court attempted to strike a compromise by requiring that claimants demonstrate a "substantial probability" that they will be injured.[392] Accordingly, the NRDC presented evidence from its expert that demonstrated an increased risk, which the court accepted and, therefore, concluded that the NRDC suffered an injury in fact.[393] Perhaps the most critical aspect of the problem of risk assessment is presented at the end of the court's injury in fact analysis. When reviewing the scientific evidence, the court cited the EPA's expert who described the problem that poses a challenge for the role of risk assessment to this day. The expert cautioned that expressing risk to the NRDC in annualized terms is not practical and "it is more appropriate to express the risk as a population's cumulative or lifetime risk."[394]

However, as indicated by the court's struggle with the issue of standing, injury must be analyzed and its probability must be presented at the moment litigation ensues. The lifetime risk of a pollutant to an individual's health, albeit of overall importance, is an impossible hurdle to overcome at the outset of litigation. After all, one cannot determine the lifetime risk of a pollutant until he or she is dead. By that time, any effective remedy is moot. Therefore, there needs to be a balance between the lifetime risk and present injury examinations in applying risk assessment methodologies when evaluating standing under the increased risk of future harm standard.

CONCLUSION

It likely will be a bumpy road ahead for courts and litigants in evaluating standing for domestic and global environmental harms as the courthouse door will alternate between swinging open and slamming shut

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[390] *Id.*

[391] *Id.* "[W]ere all purely speculative 'increased risks' deemed injurious, the entire requirement of 'actual or imminent injury' would be rendered moot, because all hypothesized, nonimminent 'injuries' could be dressed up as 'increased risk of future injury.'" *Id.* (quoting Ctr. for Law & Educ. v. Dep't of Educ., 396 F.3d 1152, 1161 (D.C. Cir. 2005)).

[392] *Id. See also* Sierra Club v. EPA, 292 F.3d 895, 898-99 (D.C. Cir. 2002); La. Envtl. Action Network v. EPA, 172 F.3d 65, 68 (D.C. Cir. 1999).

[393] *NRDC*, 464 F.3d at 6-7.

[394] *Id.* at 7.

in assessing the applicability of the standing analysis in *Massachusetts v. EPA*. Nevertheless, the courts will remain an indispensable vehicle for progress in combating climate change in the immediate future, and *Massachusetts v. EPA* may help enhance access to the courts enabling potential victories in these suits. A potentially significant limitation on the scope of *Massachusetts v. EPA's* applicability, however, is that it could be interpreted to be limited to actions brought by states.

Massachusetts v. EPA stands for much more than enhanced access to the courts; however, the required federal regulations to implement the *Massachusetts v. EPA* decision and to regulate carbon dioxide emissions under the CAA have yet to be implemented by EPA as of this writing. The fact that the case has yet to be implemented also has implications for the effect of the Court's standing analysis. Once *Massachusetts v. EPA* is implemented, the role of procedural injury claims under the CAA's citizen suit provision will take on increased significance as the most viable mechanism for environmental standing for local impacts of global atmospheric harms. Such a statutory "right" can be subject to abuse, however, as the Pacific Legal Foundation's case cautions with respect to the listing of the polar bear as threatened under the ESA.

The doctrines of procedural injury and increased risk of future harm overlap in the context of standing for global environmental harms. The line of cases in the ozone depletion context finding traditional standing for plaintiffs affected by local impacts of those environmental threats is well reasoned and yielded sensible outcomes. There is a gray area in the context of how far procedural injury and increased risk of future harm analysis can be inserted into these contexts for future cases, however. These two doctrines have been exclusively applied in the domestic context to date. Nevertheless, the science supporting local impacts of global environmental harms is much clearer now than it was even a few years ago. Therefore, a new line of cases applying these standards to climate change and related global harm contexts is on the horizon.

In moving forward, several considerations are important. First, environmental standing jurisprudence must not stray from its foundational cases. The "actual or imminent" and "concrete and particularized" standard from *Lujan* and the need to allege an interest in and/or use of resources in one's locality as in *Laidlaw* must always be a starting point. The geographical nexus component of procedural injury helps ensures this grounding for procedural injury claims to prevent the courts from becoming a forum for grievances that are better addressed by the political branches.

Second, these cautions notwithstanding, it is nonetheless important to err on the side of ensuring that environmental standing continues to evolve in a way that affords meaningful access to the courts during this era of global environmental crisis in which we live. Instances of abuse of the court system in environmental litigation are rare and are only likely in times of desperation, as we have seen in the U.S. for the past several years while the nation waits for a long-overdue mandatory federal legislative response to the climate change issue. The implementation of the *Massachusetts v. EPA* case is the first step on that path. Nevertheless, there will be a continuing need for litigants to seek the courts as an avenue for well-deserved remedies for climate change impacts even after the federal legislative regime is in place, as is evident in the *Kivalina* case.

Third, a workable version of risk assessment methodology must be fully embraced if the *NRDC v. EPA* "substantial probability" standard is to govern increased risk of future harm cases. Toxic tort litigation and other highly scientific areas of the law routinely rely on risk assessment analysis. Climate change science is still uncertain, though becoming less so, risk assessment methodology, therefore, will be critical as a measuring stick to evaluate the viability of plaintiffs' alleged imminence and increased risk of future harm claims at issue in these cases.