Standing Up for the Environment: The Ability of Plaintiffs To Establish Legal Standing To Redress Injuries Caused by Global Warming

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“Standing” Up for the Environment: The Ability of Plaintiffs To Establish Legal Standing To Redress Injuries Caused by Global Warming

I. INTRODUCTION

Corpses floating in the streets; 1 citizens looting the city they had once called home; 2 people wading through inundated neighborhoods, foraging “for the bare necessities of life.” 3 Such grim scenes one might expect to view on the nightly news—another unfortunate account, perhaps, of the misery and disorder plaguing a third-world country. Few hearts were prepared, however, to observe these deplorable scenes occurring in their own country.

The source of this unprecedented disaster was Hurricane Katrina, and it delivered to Gulf Coast residents an indelible lesson of why many refer to such a hurricane as nothing less than a “monster.” 4 Katrina’s pulverizing winds and towering storm surge toppled the concrete floodwalls protecting the city of New Orleans, releasing “a


3. David Ovalle et al., Region Awash in Heartbreak and Heroism, SEATTLE TIMES, Aug. 31, 2005, at Al.

wall of water” that devastated the city and created “the costliest storm in U.S. history.”

In addition to its astronomical costs, Katrina ignited a storm of speculation over the possible link between global warming and the cause of the storm. Robert F. Kennedy Jr. blamed Katrina partly on “President Bush’s reluctance to cap carbon-dioxide emissions.” Former Vice President Al Gore, speaking of lessons learned from Katrina, stated that although terrorism is “extremely serious . . . on a long-term global basis, global warming is the most serious problem we’re facing.”

Not everyone agrees, however, that there is a causal link between global warming and natural disasters such as Katrina. According to President George W. Bush, Katrina was not the consequence of “the malice of evil men,” but rather “the fury of water and wind.” Dr. William Gray, a pioneer in the science of hurricane forecasting, is confident that Katrina was not caused by global warming and that the impact of global warming on hurricanes is being “grossly exaggerated.” The EPA admits that it is still uncertain about the actual character of the risks associated with global warming.


10. U.S. ENVTL. PROT. AGENCY, GLOBAL WARMING, CLIMATE, UNCERTAINTIES, http://yosemite.epa.gov/sar/globalwarming.nsf/content/climateuncertainties.html (last visited Mar. 1, 2006). In upholding the EPA’s denial of a petition to regulate greenhouse gas emissions from motor vehicles, the D.C. Circuit Court noted findings of the National Research Council that a “causal linkage’ between greenhouse gas emissions and global warming ‘cannot be unequivocally established.” Massachusetts v. EPA, 415 F.3d 50, 57 (D.C. Cir. 2005)
The polemic regarding the actual consequences of global warming is now moving from the political and scientific arenas into the courtroom. In the aftermath of Katrina, a New Orleans firm filed a complaint in federal court against oil companies, alleging that these fossil-fuel based businesses constitute the “greatest single source” of global warming and that these companies generated “conditions whereby a storm of the strength and size of Hurricane Katrina would inevitably form and strike the Mississippi Gulf Coast.” Some view these suits as a necessary mechanism to redress injuries resulting from negligent actions of oil companies; others believe that such attorney-led conflicts are merely “a sobering reminder of our litigation-crazed society.”

Regardless of the motivation underlying these claims, one threshold consideration stands between the plaintiffs and any favorable judgment: legal standing. It is “common understanding” that in order for a federal court to assert jurisdiction over a particular matter, the petitioner must prove that she has standing to sue. In other words, the petitioner must prove to the court that her claim is fit for its adjudication. Thus, before a judge can award a favorable verdict to a plaintiff for a defendant’s contributions to global warming, the plaintiff must first satisfy this “threshold jurisdictional question.”

This Comment argues that petitioners seeking redress for injuries that they have suffered from a defendant’s contributions to global warming cannot establish legal standing in a federal court. To develop and support this conclusion, this Comment first argues that

11. Ben Bain & Pattie Waldmeir, Lawyers Aim To Pin Blame for Katrina on Big Business, FIN. TIMES (London), Oct. 22, 2005, at 4; see also Ne’er Sue Wells, INVESTOR’S BUS. DAILY, Oct. 28, 2005, at A12; Hurricane Katrina: Class-Action Lawsuits Blame Oil Companies for Global Warming, Wetland Damage, GREENWIRE, Oct. 20, 2005. The plaintiffs in one lawsuit claim that “‘[d]espite warning from scientists . . . about the adverse effects of their activities on the environment in general and global warming in particular,’ the oil companies ‘have continued to engage in or increase the activities that have increased Global Warming.’” Id.

12. Id. (quoting Dave Gardner, Spokesman, Exxon Mobil Corp., and defendant in one of the global warming lawsuits).


plaintiffs will fail to satisfy the constitutional requirements of standing on three different bases: (1) they will be unable to prove that the global warming resulting from the defendant’s carbon dioxide emissions is the likely cause of their injury; (2) where they allege that the defendant’s actions will cause a future injury, they will be unable to prove that the injury will occur imminently; and (3) they will fail to prove that carbon dioxide emissions of a particular entity caused their injuries. These conclusions stem from the current uncertainty of the science regarding global warming—specifically, the causal link between global warming and natural disasters, and the speculative nature of the climate modeling underlying the science. Second, this Comment argues that until the science becomes more certain, the more probable way for plaintiffs to hold defendants accountable in a court of law for their influence on global warming is to claim a procedural rather than a substantive injury.15

Part II summarizes the facts of the two controlling cases on legal standing in today’s legal environment—*Lujan v. Defenders of Wildlife*16 and *Friends of the Earth v. Laidlaw Environmental Services*17—and highlights the sections of the Court’s reasoning in these cases that are most relevant to how a court should analyze legal standing in global warming suits. Part III considers some global warming basics and accents some of the salient points of contention between proponents and opponents of global warming. Only a few cases treating legal standing for global warming injuries have made their way to federal courts, and the courts in those cases have yet to conduct an exhaustive analysis of all the elements of legal standing. For that reason, Part IV walks through each of the factors that plaintiffs will have to satisfy to meet the standard for legal standing in a federal court and evaluates the probability of proving these elements in global warming cases. Part V discusses the nature of a procedural injury and assesses how alleging such an injury would facilitate plaintiffs’ access to a federal court for adjudication of their global warming injuries. Part VI provides a hypothetical comparison to show the difference in outcomes between alleging a substantive

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15. The scope of this Comment is restricted to global warming plaintiffs’ ability to bring their claims in federal courts. Certainly, plaintiffs may have the option of bringing some of their claims (primarily their state common law claims) in state court, but that is beyond the scope of this Comment.


II. LEGAL STANDING

Although serious arguments may exist over the consequences of global warming, what a petitioner must do to prove standing in a federal court is, by contrast, less disputed. Legal standing refers to a federal court’s duty to limit its jurisdiction to “actual cases or controversies.”18 In other words, the court must assure that the parties before it are genuinely adverse to each other and that they both have “personal stake[s]” in the outcome of the case.19 The court must make this initial determination before it can consider the merits of the case.20

Standing has two components: constitutional standing and prudential standing.21 Constitutional standing evolved from the clause in Article III of the Constitution that limits the jurisdiction of federal courts to cases and controversies.22 Plaintiffs must prove three elements to satisfy constitutional standing: (1) they have suffered an “injury in fact”; (2) their “injury in fact” was caused by the defendant’s actions; and (3) their “injury in fact” will be redressed by a favorable judgment from the court.23 However, even if a plaintiff passes the constitutional standing requirement, the plaintiff may still have to satisfy prudential standing, which consists of an additional number of court-imposed limitations to assure that the particular case or controversy is being brought by the proper party.24 Courts

24. Alpert, supra note 22, at 288. The Supreme Court recognizes the prudential limitations of standing but treats the requirements of constitutional standing as the “core component of standing.” Lujan, 504 U.S. at 560. For this reason, this Comment will address the requirements of prudential standing, but the focus of this Comment will be constitutional standing.
invoke prudential standing where the plaintiff lacks a clear statutory right to bring his cause of action. This implies that the plaintiff may still be denied legal standing—even if he has satisfied constitutional standing—where he brings a common law claim or a statutory claim under a statute that lacks a clear provision authorizing a suit pursuant to its terms. Principal among these prudential limitations is the requirement that the plaintiff’s injured interest falls within the scope of interests Congress intended to protect in enacting the statute pursuant to which the plaintiff files her claim.

To provide context for the analysis of how the courts could apply current case law to determine standing for plaintiffs in global warming suits, this Part will review the foundational cases from which the current standing law in the circuits has evolved. Although many cases have contributed to the current law of standing, this Part will focus on *Lujan* and *Laidlaw* because these are the two principal cases that every circuit relies upon when articulating the standard for proving legal standing.

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28. See generally *Grassroots Recycling Network, Inc. v. EPA*, 429 F.3d 1109, 1111–12 (D.C. Cir. 2005); *Comfort v. Lynn Sch. Comm.*, 418 F.3d 1, 10 (1st Cir. 2005); *Barnes v. Cincinnati*, 401 F.3d 729, 739 (6th Cir. 2005); *Interfaith Cmty. Org. v. Honeywell Int'l, Inc.*, 399 F.3d 248, 254 (3rd Cir. 2005); *O'Sullivan v. Chicago*, 396 F.3d 843, 854 (7th Cir. 2005); *Mulder v. Lundberg*, 154 F.App’x 52, 54 (10th Cir. 2005); *N.Y. Coastal P’ship, Inc. v. U.S. Dep’t of Interior*, 341 F.3d 112, 116 (2d Cir. 2003); *BCCA Appeal Group v. EPA*, 355 F.3d 817, 825 (5th Cir. 2003); *Eddings v. Hot Springs*, 323 F.3d 596, 602 (8th Cir. 2003); *Envtl. Def. Ctr., Inc. v. EPA*, 344 F.3d 832, 863 (9th Cir. 2003); *Friends for Ferrell Parkway v. Stasko*, 282 F.3d 315, 320 (4th Cir. 2002); *Koziraj v. Casselberry*, 392 F.3d 1302, 1304 (11th Cir. 2004). The standard articulated in *Lujan*—injury in fact, causation, and redressability—and subsequently followed in *Laidlaw* refers to the requirements of constitutional standing. As previously mentioned, another aspect of legal standing is prudential standing. However, the Court in *Lujan* and *Laidlaw* did not find there to be a prudential standing issue, probably because the plaintiffs were clearly authorized to bring suit under the citizen suit provisions of the Endangered Species Act and the Clean Water Act. Prudential standing will be discussed later in this Comment. See infra Part IV.D.
A. Lujan v. Defenders of Wildlife

In *Lujan*, the United States Supreme Court held that the plaintiffs lacked legal standing to challenge a regulation enacted by the government pursuant to the Endangered Species Act (ESA). Section 7(a)(2) of the ESA requires that a federal agency “insure that any action authorized, funded, or carried out by such agency” does not threaten any endangered species. In 1978, the Fish and Wildlife Service and the National Marine Fisheries Service issued a regulation on behalf of the Secretary of Interior and the Secretary of Commerce, which required federal agencies to abide by section 7(a)(2)’s provisions for actions taken domestically as well as overseas. Eight years later, the Department of the Interior revised the regulation to narrow the scope of section 7(a)(2) to apply only to “actions taken in the United States or on the high seas.” In response, Defenders of Wildlife filed an action seeking to have the Secretary of Interior restore the initial regulation, making section 7(a)(2)’s requirements equally applicable to domestic and foreign actions.

The Court did not determine the merits of Defenders’ action because the Court held that it had failed to prove standing to challenge the regulation. Defenders relied on the injuries that would allegedly be sustained by two of its members if certain federal overseas projects were not constrained by the consultative procedures of the ESA. One member had previously traveled to Egypt where she had “observed the traditional habitat of the endangered Nile crocodile.” She intended to return to view the crocodile directly and claimed that she would suffer harm from federal participation in a project that would endanger the animal’s

31. *Id.* at 558–59.
32. *Id.*
33. *Id.* at 562.
34. An organization may bring a lawsuit on behalf of its members if three requirements are met: first, the individual members could prove standing if they were acting in their own capacity as plaintiff; second, the interests implicated by the action are consistent with the objectives of the organization; and third, the suit does not require any involvement of the individual members. *See* Friends of the Earth v. Laidlaw Envtl. Servs., 528 U.S. 167, 181 (2000) (quoting *Hut v. Wash. State Apple Adver. Comm’n*, 432 U.S. 333, 343 (1977)).
36. *Id.*
Another member had previously visited Sri Lanka where she had examined the habitat of “endangered species such as the Asian elephant and the leopard.” She alleged that she would suffer harm from federal participation in a project that potentially threatened these species’ habitats, which she intended to visit again.

In evaluating these members’ standing, the Court articulated a standard that has become the touchstone for legal standing. Writing for the majority, Justice Scalia stated that a long history of case law had established “the irreducible constitutional minimum of standing”:

First, the plaintiff must have suffered an “injury in fact”—an invasion of a legally protected interest which is (a) concrete and particularized, and (b) “actual or imminent, not ‘conjectural’ or ‘hypothetical.’” Second, there must be a causal connection between the injury and the conduct complained of—the injury has to be “fairly . . . trace[able] to the challenged action of the defendant, and not . . . the result [of] the independent action of some third party not before the court.” Third, it must be “likely,” as opposed to merely “speculative,” that the injury will be “redressed by a favorable decision.”

The Court’s rationale for denying standing centered on the members’ failure to demonstrate that they would sustain an “imminent injury.” One factor that led the Court to this conclusion was its inability to see how damage to a species so remote in location from the two members would cause them imminent injury. This finding was bolstered by the members’ lack of “concrete plans” to return to the actual locations in the near future. The Court concluded that the members’ professed intent to return “some day” was too open-ended to show that their alleged injuries were “certainly impending.”

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37. *Id.*
38. *Id.*
39. *Id.*
40. *Id.* at 560–61 (citations omitted).
41. *Id.* at 564.
42. *Id.* Showing an “actual” injury was not relevant here because the plaintiffs were not alleging that they already suffered injury due to the foreign projects but that they would suffer injury in the future when they returned to Egypt and Sri Lanka to view the animals.
43. *Id.*
44. *Id.* In his concurrence, Justice Kennedy, joined by Justice Souter, implied that if the two organization members in this case had already purchased plane tickets to visit Egypt and
The Court’s view of geographic remoteness as an impediment to proving imminent injury was reflected in the Court’s rejection of three different “novel” nexus theories of standing proposed by the plaintiffs. For example, the “animal nexus” theory would allow a person living in San Diego, who had a great love for observing the behavior of gorillas, to have standing to sue a party for the harm it does to gorillas in Congo. According to the Court, such theories are “beyond all reason.” Apparently, the Court contemplated that a more reasonable geographic proximity to the allegedly harmful actions would provide better support to a likelihood of sustaining imminent injury.

The Court’s second basis for denying standing was the plaintiffs’ failure to show that a decision in their favor would redress their alleged injuries. The Court doubted whether requiring the Secretary of Interior to promulgate a new regulation would redress their injuries. First, the Court determined that a favorable judgment would not obligate the federal agencies funding the allegedly harmful projects to comply with the Secretary’s action. Second, even if the agencies were required to comply with the new regulation, the contribution of the agencies to the allegedly harmful projects was so minimal that the projects would continue operating with or without them.

Sri Lanka, or at least had a determined date that they could tell the court that they would return to Egypt and Sri Lanka, then they may have satisfactorily proven that they would suffer immediate injury.

45. Id. at 565–67 (majority opinion).
46. See id. at 566. One of the other theories—the “ecosystem nexus” theory—"propose[d] that any person who uses any part of a ‘contiguous ecosystem’ adversely affected by a funded activity has standing even if the activity is located a great distance away.” Id. at 565. The other approach—the “vocation nexus” theory—posited that “anyone with a professional interest in such animals can sue.” Id. at 566. It is unnecessary to treat all three of the theories in the text of the Comment because the Court’s rejection of them is based on the same rationale, namely the attenuated connection of the challenged conduct and the injury caused by the geographic distance.
47. Id. Justice Scalia “categorically reject[ed]” the dissent’s position that the plaintiffs’ distance from the alleged harm was irrelevant. Id. at 567 n.3.
48. Id. at 568. The Court recognized the elements of causation and prudential limitations but did not apply an analysis of these factors to its opinion.
49. Id. at 568–69.
50. Id.
51. Id. at 571. For example, AID, an agency involved in one of the challenged foreign projects, contributed less than ten percent of the financing to the project. Id.
B. Friends of the Earth v. Laidlaw Environmental Services

In *Laidlaw*, the Supreme Court held that the plaintiffs had legal standing to challenge the defendant’s violations of a permit issued pursuant to the Clean Water Act (CWA). The defendant, a hazardous waste facility, possessed a permit pursuant to the CWA to discharge treated water into a river. The facility had breached its permit limits nearly five hundred times over an eight-year period. Friends of the Earth (FOE) filed a suit for the defendant’s permit violations. To support standing, FOE relied on the alleged injuries sustained by some of its members as a result of the permit violations. For example, one member claimed that he lived a half-mile from the facility and the river, and that the river “looked and smelled polluted.” He claimed that he would have liked to engage in recreational activities in and around the river, such as swimming, but his concern about the pollution of the water prevented him from doing so.

The Court was persuaded by such claims and held that FOE had legal standing to bring its cause of action. The Court based its holding on the same standing standard articulated in *Lujan*. Justice Ginsburg, writing for the majority, concluded that the plaintiffs had shown that they had suffered an injury-in-fact from the pollutant discharges. The Court found that the evidence clearly

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53. *Id.* at 174. Mercury was the primary pollutant and subject of this case. *Id.* at 176.
54. *Laidlaw*, 528 U.S. at 175–76. The permit was issued under the Clean Water Act or Federal Water Pollution Control Act, which allowed the defendant to discharge pollutants into the river as long as it did so within the limits set by the permit. *Id.* at 174.
55. *Id.* at 177.
56. *Id.* at 181–83.
57. *Id.* at 181.
58. *See id.* at 181–82.
59. *See id.* at 181–82. Another member alleged a similar complaint, stating that she lived two miles from the source of the pollution, which is where she had previously performed many recreational activities, such as birdwatching and walking; however, her concern for her health, due to the pollution, caused her to stop performing such activities. *Id.* at 182.
60. *Id.* at 180–81; *see also* *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992).
61. *Laidlaw*, 528 U.S. at 183–85. Justice Scalia, joined by Justice Thomas, dissented and accused the Court of analyzing the question of injury to the plaintiffs in “the most casual fashion,” making a “sham” out of the injury-in-fact requirement. *Id.* at 201 (Scalia, J., dissenting). He relied on the lower court’s finding that the discharges did not actually injure
demonstrated that the defendant had discharged pollutants in violation of its permit and that those violations “directly affected” the members’ “recreational, aesthetic, and economic interests.”

Unlike Lujan, where the plaintiffs’ allegations required the Court to speculate as to when their alleged injuries would occur, here the Court could conclude with certainty that FOE’s members had sustained actual, concrete injuries from the defendant’s conduct.

The Court additionally held that FOE possessed standing because a favorable decision from the Court would provide them redress. The defendant argued that “[c]ivil penalties offer no redress to private plaintiffs . . . because they are paid to the government,” not to the individual plaintiffs. The Court disagreed and held that civil penalties can afford redress because they discourage wrongdoers from committing the same offense again. The Court broadly held that any “sanction that effectively abates” a particular conduct “and prevents its recurrence provides a form of redress.”

C. Lujan and Laidlaw: A Comparison

When determining plaintiffs’ legal standing to sue, federal courts are typically unflagging in introducing their analysis by citing to Lujan or Laidlaw. These two cases form an essential backdrop to evaluating how federal courts should determine standing in global warming cases. It is particularly important to understand that the

the environment. Id. at 201. Justice Scalia allows for the possibility that plaintiffs, such as the ones in this case, could allege an injury to their recreational and aesthetic interests if they were more substantive. Id. at 200. For example, where one affiant had alleged that she was injured because she could not go to the river anymore, but she had only visited the river twice in the previous twenty years, her claim did not rise to the level of an injury-in-fact. Id. Scalia characterized such claims as “vague, contradictory, and unsubstantiated allegations of ‘concern’ about the environment.” Id. at 201.

62. Id. at 183–84 (majority opinion). The claims in Laidlaw were not to “be equated with the speculative ‘some day’ intentions to visit endangered species halfway around the world.” Id.

63. Id. at 185–86.
64. Id. at 185.
65. Id.
66. Id. at 185–86. Justice Scalia found the Court’s treatment of redressibility to be just as “cavalier” as its treatment of injury-in-fact. Id. at 202 (Scalia, J., dissenting). He emphasized that the purpose of “remediation” is to extend “relief specifically tailored to the plaintiff’s injury, and not any sort of relief that has some incidental benefit to the plaintiff.” Id. at 204.
holdings of these two cases are entirely consistent with each other; and given the facts, it should be no surprise that the Court came out differently in the two cases.68

It is no surprise that the Court found injury-in-fact in one case and not in the other. In *Lujan*, the plaintiffs claimed that they would suffer injury because federal agencies’ contributions to a project located in a third-world country almost 9000 miles away might cause harm to an animal that they might like to see in the undetermined future.69 In *Laidlaw*, the plaintiffs claimed that they had already suffered injury from a facility’s discharge of a powerful toxin into a river only a few miles away from their homes.70

Making this distinction between these two holdings is relevant to global warming cases. In *Lujan*, it was not the geographic proximity per se that precluded the Court from granting standing, but rather the Court’s determination that the substantial distance between the affected animals and the plaintiffs precluded proof of “certainly impending” injuries.71 The Court acknowledged that a person who works or observes an animal everyday may be able to prove imminent injury, because it is likely that the individual would be planning on viewing the animal shortly after its death, which was caused by the federal project. The court need not speculate as to whether or not the individual will be injured in the imminent future. However, in the case of the individual who lives 9000 miles away from the animal, the court must speculate as to how soon the individual will suffer injury from the animal’s death. For this reason, the Court in *Laidlaw* had no difficulty finding that FOE members’ injury was imminent, given that they lived only a few miles from the polluted river and could be injured by contact with the river, or lack of contact, on any given day.

The foregoing comparison between *Lujan* and *Laidlaw* applies to global warming suits because an obstacle that plaintiffs face is proving that an injury from a defendant’s carbon dioxide emissions, and ultimately global warming, is certainly impending. This Comment argues, however, that the current state of science and the

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68. Clearly, the dissenters in these two cases would not agree with the consistency of these two decisions, but this is the author’s own interpretation.
70. 528 U.S. at 176 (describing mercury as “an extremely toxic pollutant”).
71. 504 U.S. at 565 n.3.
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climate modeling used to predict the future impact of global warming are speculative and contested. Consequently, plaintiffs are unable to prove imminent injury in global warming suits. Global warming plaintiffs are in a position similar to that of the *Lujan* plaintiffs, having claims of imminent injury that amount to nothing more than uncertain, ‘some day’ intentions.

In addition, it is no surprise that the Court found redressability satisfied in *Laidlaw* and not in *Lujan*. In *Lujan*, even if the agencies were completely enjoined from contributing to the foreign projects, these projects would have continued uninterrupted with their normal operations. In *Laidlaw*, civil penalties would have provided a deterrent to future violations of the permit and endangerment to the environment.

These two decisions demonstrate how redressability should be applied in global warming cases. If plaintiffs can show injury-in-fact and causation, a favorable judgment by the court will provide redress. For example, if they can prove that a defendant’s emissions caused a hurricane that damaged their property, legal damages would redress their loss. If they can show that the emissions will cause a hurricane in the imminent future that will injure their property, civil penalties or injunctive relief will deter the defendants from continuing to produce emissions at their current rate, mitigating the influence of global warming and possibly decreasing the chances of future destruction to their property.

III. GLOBAL WARMING

Global warming, a result of the greenhouse effect, “has become the overriding environmental concern since the 1990s.” The driving force of the greenhouse effect is the greenhouse gases—carbon dioxide, water vapor, methane, nitrous oxide, and ozone. The earth absorbs incoming solar radiation in order to fuel its various needs. To prevent overheating, the earth radiates this energy back into space, but greenhouse gases trap a substantial

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72. BJORN LOMBORG, THE SKEPTICAL ENVIRONMENTALIST: MEASURING THE REAL STATE OF THE WORLD 258 (2001). Worldwatch Institute has stated that during this century “the climate battle may assume the kind of strategic importance that wars—both hot and cold—have had during” the prior century. *Id.*

73. *Id.* at 259.

portion of the heat before it entirely dissipates into space, keeping the earth warm.\textsuperscript{75}

As one expert explained, this natural phenomenon is the “ultimate good news/bad news story.”\textsuperscript{76} On one hand, if it were not for the greenhouse effect, “the average temperature on the Earth would be approximately 33°C (59°F) colder and it is unlikely that life as we know it would be able to exist.”\textsuperscript{77} The bad news—at least to some scientists and an ever-increasing portion of the population—is the “anthropogenic greenhouse effect,” or the extra warming to the earth produced by human activities.\textsuperscript{78} Since pre-industrial times, the atmospheric concentration of carbon dioxide has risen by thirty percent.\textsuperscript{79}

The extent of human contributions to global warming, however, remains a hotly-contested issue within the scientific and political communities.\textsuperscript{80} The words penned by Shakespeare in \textit{The Merchant of Venice} seem particularly poignant to this conflict: “The devil can cite Scripture for his purpose.”\textsuperscript{81} This is not to say that either side of the global warming debate has a more morally-grounded, logically sound, or scientifically correct position. Rather, both parties possess an abundance of credible, provocative, and persuasive data to corroborate their respective positions on the issue.

The result of all this conflicting research is a pervasive incertitude within the scientific community with respect to the effects of global warming, which creates an obstacle for courts. According to the standard articulated in \textit{Lujan}, a court is required to determine whether the defendant’s contributions to global warming have inflicted or will inflict an injury to a concrete, particularized interest.

\textsuperscript{75} Id. at 32.  
\textsuperscript{76} Id. at 31.  
\textsuperscript{77} \textit{LOMBORG}, supra note 72, at 260.  
\textsuperscript{78} Id.  
\textsuperscript{79} \textit{MARK MASLING}, \textit{GLOBAL WARMING: A VERY SHORT INTRODUCTION} 10 (2004). About fifty-five percent of the carbon dioxide that is released into the atmosphere is absorbed again by the environment, but the remaining forty-five percent is added to the atmosphere. \textit{LOMBORG}, \textit{supra} note 72, at 260.  
\textsuperscript{81} \textit{WILLIAM SHAKESPEARE}, \textit{THE MERCHANT OF VENICE} act 1, sc. 2.
of the plaintiff and that the injury has occurred or will occur imminently. However, the conflicting science impedes courts from making that determination. If the scientists and academics cannot arrive at a consensus regarding the actual consequences of global warming, how can a court of law conclude that the defendant’s emissions, which contribute to global warming, inflict an injury-in-fact on the plaintiff or that the injury will occur imminently? It cannot, for the science fails to furnish the courts with the reasonable level of certainty required by the law. In order to illustrate the nature of this uncertainty, this Part presents three areas in which the parties to this debate disagree: (1) the validity of the findings of the Intergovernmental Panel on Climate Change (IPCC); (2) the link between global warming and melting ice; and (3) the link between global warming and hurricanes.

A. The Proponents

1. IPCC

Adherents to the position supporting the dangers of global warming attribute substantial credence to the findings and the assessments of the IPCC. In its 1995 report, the IPCC concluded that “evidence suggests a discernible human influence on the global climate.” Its 2001 report stated that “[t]here is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities.” Its 2001 report has been characterized “as the most comprehensive study on the subject to date,” and the head of the U.N. Environment Program stated that

82. The IPCC was established in 1988 in order “to assess on a comprehensive, objective, open and transparent basis the scientific, technical and socio-economic information relevant to understanding the scientific basis of risk of human-induced climate change, its potential impacts and options for adaptation and mitigation.” See IPCC Home, About IPCC, www.ipcc.ch/about/about.htm (last visited Mar. 1, 2006).

83. Andrew Revkin, Ideas & Trends; All That Hot Air Must Be Having an Effect, N.Y. TIMES, Jan. 12, 2003, § 4, at 5. The 1995 assessment predicted that “Earth’s average temperature could rise by as much as 10.4 degrees over the next 100 years.” Philip P. Pan, Scientists Issue Dire Prediction on Warming; Faster Climate Shift Portends Global Calamity This Century, WASH. POST, Jan. 23, 2001, at A1.

the report’s findings “should sound alarm bells in every national capital and in every local community.”

2. Melting ice

Some see the dangers of global warming manifest in the increasing amount of ice melting across the world. In 1980, a large ice sheet in the Arctic called the Ward Hunt Ice Shelf was 150 feet thick, but by 2003, it had dwindled down to less than half of that measurement. NASA has determined that the ice overlaying the Arctic Ocean is disappearing “at an astonishing rate”—about nine percent every decade. Some scientists believe that within the next twenty years, the ice cap on Kenya’s Mount Kilimanjaro will completely melt.

3. Hurricanes

The recent string of hurricanes has led some to attribute the cause of these powerful forces of nature to global warming. The 2005 hurricane season “was the worst since recordkeeping began 151 years ago.” Dr. Greg Holland of the National Center on Atmospheric Research has recently said that although global warming may not be linked to an increase in the number of hurricanes, it is linked to more intense hurricanes. Dr. Kerry Emanuel of MIT recently published a study finding that “the intensity of storms has essentially doubled in the past 30 years.”

B. The Opponents

1. IPCC

Global warming skeptics, however, question the reliability of the IPCC’s conclusions. One study determined that only one-third of the more than 200 “lead authors” of the assessments are actually

86. GELISPAN, supra note 80, at 19–20.
87. Id. at 21.
88. Id. at 22.
90. Id.
91. Id.
climate scientists. 92 Some researchers believe that the analysis upon which the IPCC’s reports rely, which demonstrates that the earth’s last one hundred years have been substantially hotter than past centuries, is replete with “collation errors, unjustifiable truncation or extrapolation of source data, [and] obsolete data,” 93 and fails “to support that the late twentieth-century climate is unusually warm.” 94 Richard Lindzen, MIT professor and coauthor of the IPCC’s 1995 report, criticizes the Summary for Policymakers, a twenty-page summary of a nearly 3000 page report from which most cite, saying that “[t]he summary is written by 14 of the hundreds of scientists that contributed. Is that a consensus? I don’t think so.” 95

2. Melting ice

Some scientists believe that the world’s melting ice is not a result of the reported recent warmer temperatures and that these temperatures are not unusual when considered in the context of the last century of the earth’s history. 96 Some climatologists believe that precipitation is the cause of Mount Kilimanjaro’s vanishing ice—not rising temperatures. 97 Scientists have noted that Africa actually had a much warmer climate 4000 to 11,000 years ago than it has today, “yet Kilimanjaro was much more glaciated because it was also wetter than it is today.” 98 One scientist determined that since 1940, temperatures in the Arctic have been declining. 99

92. MICHAELS, supra note 80, at 22. They concluded that “the ‘consensus’ that these documents achieve is in fact determined by a majority opinion that is not necessarily formally trained in the subject matter.” Id.
95. Fred Guterl, The Truth About Global Warming, NEWSWEEK, July 23, 2001, at 44 (quoting Richard Lindzen). Richard Lindzen wrote that the IPCC’s 1995 assessment “takes great pains to point out that the statement has no implications for the magnitude of the effect, is dependent on the [dubious] assumption that natural variability obtained from [computer] models is the same as that in nature, and, even with these caveats, is largely a subjective matter.” Id.
96. MICHAELS, supra note 80, at 43.
97. See id. at 36.
98. Id.
99. See id. at 45.
3. Hurricanes

Dr. William Gray disagrees with the alleged causal link between global warming and hurricanes. In recent testimony before Congress, Dr. Gray stated his belief that human influence has not caused the recent rash of intense hurricanes.\(^{100}\) He “believes the current era of high activity will eventually end as a result of changes in salinity and currents in the Atlantic.”\(^{101}\) Dr. Patrick J. Michaels says that the storm trend that the Atlantic experienced last year was similar to storm activity in the 1940s and 1950s, which was followed by a period of weaker hurricanes.\(^{102}\) In sum, “there has been no trend in hurricane intensity.”\(^{103}\)

C. Conclusion

The global warming discussion is similarly schismatic regarding the link between global warming and other natural events, such as floods, fires, and disease.\(^{104}\) The objective of this Comment is not to declare which of these two parties is correct. The purpose of this

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100. Bauerlein, supra note 89, at Al. A climatologist from the Georgia Institute of Technology in Atlanta disagrees with Dr. Gray’s research and accuses of him having what she calls “brain fossilization.” Id.

101. Id.

102. Michaels, supra note 6. Dr. Michaels teaches environmental science at the University of Virginia, “is one of the most popular lecturers in the nation on the subject of global warming,” and is a contributing author and reviewer of the IPCC. See Cato Institute, Patrick J. Michaels, http://www.cato.org/people/michaels.html (last visited Mar. 1, 2006).

103. Michaels, supra note 6.

104. The three disputed points with respect to global warming represent a mere sampling of the range of matters upon which the different sides of the global warming debate disagree. See generally Fred Pearce, Drought Bumps Up Global Thermostat, NEW SCIENTIST, Aug. 4, 2005 (arguing recent forest fires and droughts were caused by global warming); Report: Global Warming To Bring Farming Woes, SALT LAKE TRIB., May 28, 2000 (arguing that global warming leads to increased pests and injury to agriculture); Nancy Shute, The Weather Turns Wild: Global Warming Could Cause Droughts, Disease, and Political Upheaval, U.S. NEWS, Feb. 5, 2001, at 44 (arguing that global warming results in floods, disease, forest fires, and rising sea levels). But see Thomas H. Maugh II, The Flip Side of Global Warming Agriculture: An EPA-Commissioned Study Says the Greenhouse Effect Would Actually Boost Overall Farm Production in the U.S., L.A. TIMES, May 17, 1990 (arguing that global warming may produce greater crop yields); Michaels, supra note 80, at 142–46 (arguing that global warming has not resulted in increased forest fires); S. Fred Singer, Global-Warming Theory Steams Ahead Despite Conflicting Evidence, INSIGHT ON THE NEWS, Feb. 26, 2001, at 46 (arguing that global warming has not resulted in warmer temperatures); S. Fred Singer, The Sky Isn’t Falling, and the Ocean Isn’t Rising, WALL ST. J. (Brussels), Nov. 11, 1997, at 10 (arguing that global warming is not resulting in rising sea levels).
Comment, rather, is to show that it is safe to say that the science is not settled on this issue, which poses a substantial obstacle to plaintiffs attempting to prove legal standing in a federal court in order to receive redress for the injuries that they allege are caused by global warming—an obstacle that Lujan, Laidlaw, and subsequent case law will not accommodate.

IV. LEGAL STANDING, GLOBAL WARMING, AND SUBSTANTIVE INJURY

An understanding of the present state of global warming science is important because this science will overlay a court’s analysis as to whether plaintiffs are entitled to a federal court’s resolution of their claim. Global warming plaintiffs will be attempting to prove constitutional and prudential standing for claims of substantive injury brought pursuant to either a federal statute or under the common law. A substantive injury is distinguished from procedural injury in that the latter results solely from a government entity’s failure to comply with requisite procedures, and the former does not. Presently, the principal statute under which plaintiffs have alleged substantive injury from global warming is the Clean Air Act (CAA), and the primary common law theory under which plaintiffs have sought redress is public nuisance. Regardless of whether the

105. Many major environmental statutes contain citizen suit provisions that authorize private parties to stand in the shoes of the government to sue “when it is unable or unwilling to take action.” Cox v. Dallas, 256 F.3d 281, 291 n.18 (5th Cir. 2001); see also Clean Air Act, 42 U.S.C. § 7604 (2000); Clean Water Act, 33 U.S.C. § 1365 (2000); Resource Conservation and Recovery Act, 42 U.S.C. § 6972 (2000).

106. A nuisance theory of recovery “lends itself naturally to combating the harms created by environmental problems.” Cox, 256 F.3d at 291. For plaintiffs to bring a nuisance action against a party, diversity of citizenship must exist in order for a federal court to have jurisdiction. Frey v. EPA, 270 F.3d 1129, 1136–37 (7th Cir. 2001). Moreover, plaintiffs will not be able to bring a nuisance action against the EPA or a different federal government agency. Id.


legal basis for the plaintiffs’ injuries is a statutory or a common law theory, plaintiffs must still prove legal standing to adjudicate their claims in a federal court.\textsuperscript{110}

This Part argues that given the framework of \textit{Lujan} and \textit{Laidlaw}, plaintiffs will fail to prove constitutional standing on two different fronts. First, they will fail to satisfy the injury-in-fact requirement because they cannot conclusively demonstrate that the global warming produced by the defendant’s carbon dioxide emissions creates an actual injury, and they cannot prove that a future injury from such emissions will be imminent. Second, plaintiffs will fail to prove causation because the current state of science does not afford a court the ability to trace the alleged injury to a particular defendant’s emissions with the requisite level of certainty.

\textit{A. Injury-in-Fact}

Global warming has the potential to impact a large segment of the human population, and for that reason, the injury-in-fact requirement seeks to assure courts that the petitioner has an interest distinct from the larger general population.\textsuperscript{111} This prong of the analysis seeks to save the courts from needlessly consuming their resources adjudicating the claims of every “roving environmental ombudsman” who wants to right all the alleged wrongs perpetrated by global warming.\textsuperscript{112}

Applying the \textit{Lujan} standard to global warming cases, the first component of constitutional standing—injury-in-fact—requires the plaintiff to prove two aspects of her injury: the nature of her injury and the timing of her injury. With respect to the nature of the injury,
she must allege an injury that is both “concrete” and “particularized.” With respect to the timing of the injury, she must allege an injury that is either “actual” (an injury that she has already sustained) or an injury that will occur in the “imminent” future. This Part respectively analyzes four components of the injury-in-fact analysis: (1) concrete injury; (2) particularized injury; (3) actual injury; and (4) imminent injury. This Part argues that global warming plaintiffs will have little trouble demonstrating a concrete, particularized injury. However, they will fail to prove that they have suffered an actual or imminent injury from a defendant’s carbon emissions because current science precludes them from proving that global warming has caused or will cause their injury, and that their injury will be suffered imminently.

1. Concrete injury

Plaintiffs will be able to demonstrate a concrete injury. Consistent with the standard enunciated in *Lujan*, a court will grant standing to a global warming plaintiff only if that plaintiff alleges injury to a concrete interest. A concrete interest can consist of an economic, recreational, or aesthetic interest of the plaintiff. It even appears that some courts consider a spiritual interest a concrete interest. In *Defenders of Wildlife v. Environmental Protection Agency*, the plaintiffs liked to watch and take pictures of different animal species, as well as hike and camp in their habitats. The Ninth Circuit determined that they had a sufficient concrete interest because their activities in those habitats brought them “recreational, aesthetic, and spiritual fulfillment,” and the EPA’s failure to abide by the provisions of the Endangered Species Act threatened those interests. (emphasis added).

114. *Id.*
116. *Friends of the Earth v. Laidlaw Envtl. Servs.*, 528 U.S. 167, 184 (2000). It even appears that some courts consider a spiritual interest a concrete interest. In *Defenders of Wildlife v. Environmental Protection Agency*, the plaintiffs liked to watch and take pictures of different animal species, as well as hike and camp in their habitats. The Ninth Circuit determined that they had a sufficient concrete interest because their activities in those habitats brought them “recreational, aesthetic, and spiritual fulfillment,” and the EPA’s failure to abide by the provisions of the Endangered Species Act threatened those interests. (emphasis added).
Residents of the Gulf Coast suffered tremendous losses as a result of Hurricane Katrina. A New Orleans resident who lost her home to the hurricane has suffered an economic injury. A resident who claims he cannot no longer enjoy boating or hunting along the Mississippi River has suffered a recreational injury. A resident (or even a tourist) of New Orleans who cannot fully appreciate the French Quarter or New Orleans’s wildlife preserves has suffered an aesthetic injury. The requirement of showing an injury to a concrete interest will not prove to be a substantial obstacle to global warming plaintiffs.

2. Particularized injury

Global warming plaintiffs will be able to satisfy a court that they have suffered a particularized injury. Lujan requires that the injury not only be concrete but also particularized. In other words, the plaintiff must show that a company or federal agency’s contributions to global warming impacted upon her “in a personal and individual way.” This requirement bars “those with merely generalized grievances from bringing suit to vindicate an interest common to the entire public.” For example, a resident of Alaska who loves polar bears, works with them extensively, and observes them frequently in the zoo, might claim that global warming has caused the sea levels to rise in the Arctic, endangering polar bears. She may claim that she has sustained a particularized injury to her aesthetic interest in observing polar bears in safe, healthy surroundings. Since she could claim that she had directly observed polar bears becoming sick

118. See Sierra Club, 430 F.3d at 1345.

119. Areas such as New Orleans attract a large amount of tourism. A search of tourist websites will show that there are many attractions, such as steamboat tours, that are shut down due to Hurricane Katrina. See, e.g., Trip Advisor, www.tripadvisor.com/Attractions-g60864-Activities-c25-New_Orleans_Louisiana.html (last visited Apr. 4, 2006).


122. See Jane Kay, Polar Bears To Be Considered for Threatened Species List, S.F. CHRON., Feb. 9, 2006, at A5. The U.S. Fish and Wildlife Service is currently studying the status of the polar bear species in light of significant climate changes in the Arctic in order to determine if it should list the polar bear as an endangered species. Id. If such a declaration is made, “it would be the first mammal deemed in danger of extinction because of global warming.” Id.

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and dying from the dangerous conditions caused by global warming, she could claim that she had suffered “in a personal and individual way.”

Some may misconstrue the courts’ refusal to adjudicate a generalized grievance to mean that only the plaintiff can suffer the injury to the exclusion of the general public. However, if that were the case, the widespread or global nature of global warming would largely bar plaintiffs’ claims.

Even if it is “widely shared” by many other people, a plaintiff’s claim of injury may still be justiciable to the extent that the plaintiff can demonstrate that the defendant’s emissions affected her in a personal and individual way. Continuing with the polar bear example mentioned above, the Alaskan resident could plausibly be joined by thousands of other residents who claim a similar injury to their aesthetic interest in polar bears. Nonetheless, the widespread nature of the injury in the Arctic would be irrelevant as long as the plaintiff could prove that the adverse conditions caused by the defendant’s actions injured her in a personal, individual way.

The plaintiffs in Massachusetts v. EPA failed to grasp the importance of particularizing the allegations to themselves rather than simply to the public at large. The plaintiffs wanted the court to require the EPA to regulate carbon dioxide emissions under the

124. See id.


126. Akins, 524 U.S. at 24. The D.C. Circuit Court of Appeals credits the Supreme Court’s decision in Federal Election Commission v. Akins for reversing the tide of precedent from stressing the “widespread (or generalized) nature of an injury” to the concrete, particularized nature of the injury. See Covington v. Jefferson County, 358 F.3d 626, 651–52 (9th Cir. 2004). This requirement that a plaintiff not bring a claim amounting to a generalized grievance is actually a prudential limitation on standing. See Elk Grove Unified Sch. Dist. v. Newdow, 542 U.S. 1, 11 (2004). Although the analysis of this limitation may be appropriately placed in the prudential standing analysis, courts treat this limitation in conjunction with the injury-in-fact analysis of constitutional standing. It seems as though courts have more or less imported this prudential limitation into the injury-in-fact analysis. In Akins, the Supreme Court appears to accept that the generalized grievance limitation can be “styled as a constitutional or prudential limitation on standing.” 524 U.S. at 23.

127. See generally Baur v. Veneman, 352 F.3d 625 (2d Cir. 2004) (upholding plaintiff’s action against USDA to ban the use of “downed livestock” for human consumption).


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Clean Air Act, but the court did not rule in favor of the plaintiffs. In his concurring opinion, Judge Sentelle concluded that the plaintiffs’ global warming claims amounted to an allegation that global warming was “harmful to humanity at large.” Even assuming that global warming is harmful to the general public, such a claim fails because it amounts to a generalized grievance on behalf of the public’s common welfare. It fails to constitute a particularized harm and fails to meet the standards recognized in *Lujan* and *Laidlaw*. Thus, if plaintiffs carefully articulate their injuries from global warming as affecting them personally, it will be immaterial “that legions of other persons” along the Gulf Coast or in the Arctic are similarly injured.

3. **Actual injury and imminent injury**

After the plaintiff has established that the nature of her injury is fit for adjudication—that it is concrete and particularized—she must still prove that her injury falls within the appropriate time frame, meaning that it has already occurred or will occur in the imminent future. Whether the injury is one that the plaintiff has already sustained from a defendant’s emissions (actual injury), or whether the injury is one that she will soon sustain from such emissions

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129. *Id.* at 56.
130. *Id.* at 60.
131. *Id.* at 59–60.
132. Pye v. United States, 269 F.3d 459, 469 (4th Cir. 2001). One way that may significantly enhance the success of lawsuits seeking redress for global warming injuries is to have the state act as plaintiff. It may not be easy to show that a company’s emissions caused a specific hurricane, which then destroyed a particular house, or to show that a company caused the sea level to rise in a certain area, which then damaged the terrain of a particular piece of property. In these circumstances, one could attribute these damages to factors other than global warming. David A. Grossman, *Warming Up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation*, 28 COLUM. J. ENVTL. L. 1, 24–25 (2003). However, if the plaintiff is the state complaining of damaged roads or a lengthy, retreating shoreline, then it is easier to show that these damages are tied to global warming. *Id.* Another reason why having the state act as plaintiff may be effective is that individual plaintiffs lack the resources to litigate successfully against big oil and power companies with deep pockets. The advantage of having the state serve as plaintiff was illustrated in the tobacco litigation in the 1990s. Until the mid-1990s, individual plaintiffs had won two out of some eight-hundred private actions against the tobacco companies. See Arthur B. LaFrance, *Tobacco Litigation: Smoke, Mirrors and Public Policy*, 26 AM. J.L. & MED. 187, 190 (2000). One of the crucial factors to the turn-around of the litigation against the tobacco companies was the involvement of attorneys general in pursuing state reimbursement claims for Medicaid and other health care expenditures, resulting in the tobacco companies incurring a long-term obligation of $240 billion. *Id.* at 191–92.
(imminent injury), is inconsequential. Plaintiffs will fail to prove an actual injury or imminent injury because they cannot prove that the ultimate consequence of the defendant’s emissions—global warming—caused or will cause their injury. This Part examines the inability of courts to hold that a plaintiff has demonstrated an injury-in-fact as a result of the lack of science and the lack of law to sustain such a holding. The analysis that follows regarding the inability of courts to make such a holding applies to actual injury and imminent injury.

It is important not to confuse causation analysis with this part of injury-in-fact analysis. Some may construe the analysis as involving two different causation inquiries: first, whether global warming itself, the by-product of carbon emissions, caused or will cause the injuries alleged by the plaintiff; and second, whether the defendant’s emissions provided the necessary impetus to global warming to create the natural disaster that caused the plaintiff’s alleged injuries. However, courts have narrowed the causation analysis to whether the injury can ultimately be traced to the actions of the specific defendant, as opposed to an independent third party. But before a court can determine if it was specifically the emissions of the named defendant that caused the injury, the court must first determine whether global warming in general, the result of carbon dioxide emissions that ultimately causes the natural event, is likely to have caused, or will imminently cause the alleged injury; the inquiry here concerns the likelihood that the defendant’s actions can cause the harm. If global warming is not the cause of hurricanes, floods, rising sea levels, or other natural events, then it is irrelevant that the defendant’s emissions may contribute to global warming. This initial inquiry falls under the injury-in-fact analysis.

This initial analysis is challenging for the court because there are, in reality, only a few certainties with respect to global warming: (1) the earth’s mean temperature has risen by a little less than one degree Celsius over the last century; (2) the level of atmospheric carbon dioxide has increased over the last two centuries; and (3)

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133. Sierra Club, Lone Star Chapter v. Cedar Point Oil Co., 73 F.3d 546, 556 (5th Cir. 1996).
135. Id.
carbon dioxide has contributed to this warming. Part III established that beyond these facts, there is much uncertainty concerning the effects of global warming. A plaintiff whose house was destroyed by a hurricane cannot yet prove that global warming caused the hurricane. A plaintiff whose trees were damaged by spruce bark beetles cannot conclusively demonstrate that global warming caused an outbreak of the insect. Therefore, science does not yet provide the necessary consensus upon which a court can make a determination that the defendant’s emissions, which contribute to the earth’s warmer temperatures, are likely to contribute to the alleged actual or imminent injury.

The inability and inappropriateness of courts holding that global warming was the cause of a natural disaster is reflected by the failure of legislators to make such a determination. Pursuant to the enactment of major environmental statutes such as the Clean Water Act and the Clean Air Act, congressional committees and federal agencies with expertise in the regulated area have performed a tremendous amount of research and evaluation to determine that certain pollutants, if present above certain thresholds, are toxic and harmful. For example, in Covington v. Jefferson County, in which a municipal landfill emitted CFCs and other ozone-depleting substances into the atmosphere, the court could rely on the acceptable limits for such emissions established by the Clean Air Act to objectively decide that the landfill’s actions were injurious. Judge Gould’s concurring opinion relied on the “conclusive” science that the release of CFCs destroys stratospheric ozone, diminishing that layer of protection that humans have from radiation. It was this conclusive evidence regarding the dangers of CFCs that led


137. Jim Robbins, Beetles Taking a Devastating Toll on Western Forests, N.Y. TIMES, July 13, 2004, at F4. Some scientists are attributing an increase in the spruce bark beetle population to warmer temperatures. Id. In Alaska, this insect has destroyed almost four million acres of white spruce trees. Id. In 2004, the beetle killed almost 600,000 acres of pine. Id.


139. Covington, 358 F.3d at 650.
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Congress to regulate CFCs, and courts should defer to that judgment.¹⁴⁰

However, in the context of greenhouse gas emissions, plaintiffs do not have this type of objective consensus from this country’s legislators. The lack of political consensus poses problems because it results in a lack of legal standards and regulations that can guide a court in deciding whether a defendant’s emissions caused, or will cause, an injury. In most environmental cases, a court looks to a statute like the Clean Air Act or Clean Water Act and can then issue a holding that the defendant’s discharge of emissions of a particular pollutant was clearly harmful. In the context of greenhouse gases, courts have no law to rely on to make such determinations.

The federal government under the Bush administration has not imposed mandatory limits on carbon dioxide.¹⁴¹ In Massachusetts v.

¹⁴⁰ Id. In Covington, the county constructed a waste landfill directly across the street from a couple’s home. Id. at 633. Several inspections revealed that the landfill was being improperly maintained. Id. at 634. The couple filed an action under the RCRA and CAA against the county and inspecting entity, and the court held that the plaintiffs had standing under both statutes. Id. In an article by Bradford Mank, he applied the reasoning of the court in Covington, particularly that of the concurring opinion, to argue that certain plaintiffs should have standing to file global warming suits. Bradford C. Mank, Standing and Global Warming: Is Injury to All Injury to None?, 35 ENVTL. L. 63–64 (2005). However, the facts of Covington are distinguishable from those in a global warming suit. In Covington, the plaintiffs were right across the street from a landfill. 358 F.3d at 638. They were “directly confronted with risks” by the landfill’s violations of the RCRA, such as fires, scavengers, and groundwater contamination. Id. at 639. In terms of causation, there was no doubt that the county’s failure to properly maintain a waste landfill just across the street from the plaintiffs caused “reasonable concern of injury” to the plaintiffs. Id. In its passage of the RCRA, Congress agreed that the improper handling of hazardous waste may indeed cause reasonable concern of injury to another. The alleged harm under the CAA was a result of the release of CFCs. Id. at 640. Unlike greenhouse gases and like carbon dioxide, there has been sufficient consensus on the dangers of CFCs and other ozone depleting substances. In 1990, Congress enacted a new version of the CAA, which placed “stringent guidelines that mandate the phase-out of all ozone-depleting substances.” Nancy D. Adams, Title VI of the 1990 Clean Air Act and State and Local Initiatives To Reverse the Stratospheric Ozone Crisis: An Analysis of Preemption, 19 B.C. ENVTL. AFF. L. REV. 173, 191 (1991). The problem is that the science is not conclusive with respect to global warming, and there is no judgment of Congress on global warming to which a federal court can defer. See infra Part IV.B. This Comment does not agree with Mank’s conclusion that the reasoning in Covington is persuasive in the context of global warming suits. One of the other primary issues that this Comment has with Mank’s article is his acceptance of the growing evidence of global warming and its negative consequences. This Comment, for reasons discussed in Part III, does not agree that the science is adequately conclusive to warrant a court’s determination of causation between greenhouse gas emissions and certain natural events.
EPA, the court determined that the EPA has solid policy reasons not to impose mandatory limits on carbon dioxide, methane, nitrous oxide, and hydrofluorocarbons.\footnote{142} Although this fact may terminate a plaintiff’s chances of succeeding under the Clean Air Act, a plaintiff can still make a claim under public nuisance. Alternatively, a plaintiff may creatively argue that the claim falls within the scope of another statute. In conclusion, regardless of whether a plaintiff is alleging an actual or imminent injury, the courts simply lack the scientific and legal foundation that would allow them to determine that a defendant’s carbon emissions, and ultimately global warming, caused or will cause a hurricane, flood, or some other natural disaster.

In reality, this initial inquiry is contingent on what side the court takes on the global warming issue. In \textit{Friends of the Earth, Inc. v. Watson}, the district court accepted the evidence at face value as proving the adverse consequences of global warming.\footnote{143} On the other hand, in \textit{Massachusetts v. EPA}, the D.C. Circuit Court of Appeals vocalized its position that the science is not conclusive regarding the harm posed by global warming.\footnote{144} Nonetheless, to proceed, this analysis assumes that a court accepts the science supporting the harmful effects of global warming. In this case, the plaintiff must appropriately articulate her injury as one that has already occurred. This showing is fairly straightforward and needs little explanation. A resident of Oklahoma, for example, may allege that the forest fires that took his home and ravaged over 200,000 acres of the state by the end of 2005 were a product of global warming.\footnote{145} Farmers could allege that hotter temperatures in 2005, which caused them a shortfall in their grain production, were a product of global warming.\footnote{146}
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4. Imminent injury

Where the plaintiff alleges a future injury, he will not only fail for the reasons discussed in the previous section, but he will also fail because he will be unable to establish the imminence of the injury. Courts want to be sure that a plaintiff is alleging an injury that is likely to occur. 147 Courts refuse to adjudicate injury claims that are merely “an ingenious academic exercise in the conceivable.” 148 For this reason, courts have placed a restraint on the time frame in which the alleged injury must occur—the “imminent” future. 149 In Lujan, the Supreme Court provided a little more substance to this restraint by describing it to mean “certainly impending.” 150

The global warming plaintiff will not be able to prove imminent injury because any injury alleged to occur in the future as a consequence of global warming is a matter of probability. The D.C.

149. Lujan v. Defenders of Wildlife, 504 U.S. 555, 560–61 (1992). Where a federal court attempts to adjudicate an issue that does not constitute a case or controversy, it may render an advisory opinion. See Phillip M. Kannan, Advisory Opinions by Federal Courts, 32 U. Rich. L. Rev. 769, 771 (1998). Where a plaintiff simply asserts “generalized assertions that they will be ‘adversely affected’” by the defendant’s actions, such that the court is “left to speculate as to the nature of the claim” that the plaintiff is making and is left with nothing more than a hypothetical claim and “abstraction,” the court’s ruling would be nothing more than an advisory opinion. Nat’l Council for Improved Health v. Shalala, 122 F.3d 878, 883–84 (10th Cir. 1997). If global warming plaintiffs meet the requirements of constitutional standing, they will bring a concrete, actual claim that is fit for adjudication that will not result in an advisory opinion. On this particular element of the analysis, however, if the court does not restrict the parties to alleging an injury that “is at least imminent,” then the court may likely engage in unconstitutional conduct by rendering an advisory opinion, “deciding a case in which no injury would have occurred at all.” Fla. Audubon Soc’y v. Bentsen, 94 F.3d 658, 663 (D.C. Cir. 1996) (quoting Lujan, 504 U.S. at 564 n.2). Thus, the “imminent” nature of a claim does not necessarily lead a court to render an advisory opinion, but only when that claim falls in to the category of speculation. The inadequacy of the science and models prevent global warming plaintiffs from keeping their injury claim out of the hypothetical and speculative classification.
150. Lujan, 504 U.S. at 564 n.2.

Although “imminence” is conceded a somewhat elastic concept, it cannot be stretched beyond its purpose, which is to ensure that the alleged injury is not too speculative for Article III purposes—that the injury is “certainly impending.” It has been stretched beyond the breaking point when . . . the plaintiff alleges only an injury at some indefinite future time, and the acts necessary to make the injury happen are at least partly within the plaintiff’s own control.

Id.
Circuit Court of Appeals recently recognized a distinction between injuries that “fit easily within or without the common definition” of “imminent” and those that do not. The Court concluded that “among those that fit least well are purely probabilistic injuries.” Global warming injuries epitomize “probabilistic injuries.” It is true that the Supreme Court has recognized that “threatened injuries can give rise to standing,” however, “‘well-established’ precedent requires that the injury alleged be ‘substantially probable.’” The Supreme Court has ratified this standard of “substantial probability” and has spoken of requiring the plaintiff to “demonstrate a realistic danger of sustaining a direct injury as a result” of the defendant’s action. The entire purpose underlying Lujan’s requirement of showing an imminent injury was to ensure that the claim was “not too speculative for Article III purposes.”

Global warming plaintiffs cannot take their imminent injury claims out of the speculative category, because their claims are based entirely on conjectural, complex systems of climate modeling. Models and various other methods of predicting future atmospheric conditions are central to determining whether a certain event will be produced by global warming.

But how sure can climate scientists be about the projections produced by their models? In a recent paper by an anthropologist who studied several years at the National Center for Atmospheric Research, she admitted that even climate modelers may be uncertain

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152. Id.
155. Id. (quoting Warth v. Seldin, 422 U.S. 490, 504 (1975)).
156. Id. (quoting Babbit v. United Farm Workers Nat’l Union, 422 U.S. 289, 298 (1979)). In Friends of the Earth v. Gaston Copper Recycling Corp., the Fourth Circuit held that the threat of injury alone posed by the defendant’s discharges was sufficient to satisfy standing: “The Supreme Court has consistently recognized that threatened rather than actual injury can satisfy Article III standing requirements.” 204 F.3d 149, 160 (4th Cir. 2000); see also Mountain States Legal Found. v. Glickman, 92 F.3d 1228, 1232–36 (D.C. Cir. 1996) (finding that an increased risk of wildfire from certain logging practices constitutes injury-in-fact).
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about their findings. She actually quoted one climate modeler as stating, “It is easy to get caught up in it; you start to believe that what happens in your model must be what happens in the real world. And often that is not true.” Some scientists argue that the standard climate models upon which plaintiffs’ claims would be based assume that carbon dioxide concentration follows a perfectly linear growth rate of one percent per year, yet studies show the actual growth rate over the last fifteen years to be about 0.58 percent. The use of such an exaggerated figure demonstrates that the models may ignore reality and “run way too fast, predicting warming coming almost twice as fast . . . or predicting much more warming in a given time.” Even some members of Congress are questioning notable data that concludes that there has been a sharp rise in the earth’s temperatures in recent years in comparison with past ages. Moreover, models do not take into account the impact of future legislative or regulatory action that may produce more stringent requirements for efficiency standards, or scientific breakthroughs that may facilitate emission reductions. Models do not adequately account for alternative sources of energy and lower prices in renewable energy, which will likely be substituted for fossil fuels.

In National Resources Defense Council v. EPA, the D.C. Circuit Court of Appeals denied plaintiffs standing because they failed to show an imminent injury-in-fact from the increased emission of

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159. Id.
160. LOMBORG, supra note 72, at 279. The computer simulations used for climate change typically translate the impact from other greenhouse gases into carbon dioxide in order to simplify the data. If one were to look at the actual growth of carbon dioxide alone per year, one would see that its concentration grew by 0.43 percent per year in the 1990s. Id. Also, some scientists claim that the prediction scenarios formulated by the IPCC contemplate a larger reduction in sulfur dioxide than is realistic, which is important “because sulfur aerosols cool the climate” and reduce the impact of warming. Id. at 279–80.
161. Id.
162. Antonio Regalado, Academy to Referee Climate-Change Fight, WALL ST. J., Feb. 10, 2006, at B4. The notable research is a chart called the “hockey stick.” Id. Congress has asked the National Academy of Sciences to assess the accuracy of the representations of the chart. Id.
164. LOMBORG, supra note 72, at 286.
ozone-depleting substances. Similar to what plaintiffs will have to do in global warming cases, the plaintiffs relied on various models predicting the future impact of the harmful emissions on human health and the environment. The court refused to give credence to these models, noting some of the same flaws that exist in the global warming models. For example, the models were based on figures of the United States alone and failed to take into account global contributions to the alleged injuries, the models predicted health outcomes over a 145-year period, and the models assumed a perfectly linear relationship between the harmful substance and the adverse health effects. These modeling flaws are the same flaws that exist in global warming models, and in this case, the court concluded that such flaws prevented it from holding that the alleged adverse effects were imminent.

The science and the models fail to provide the adequate level of certainty that a defendant’s emissions will injure a plaintiff in the imminent future. If the plaintiffs’ allegations are to be construed as meaning nothing more than they will suffer injury “in this lifetime,” a granting of standing will be an abuse of the “elastic concept” of imminence, stretching it “beyond its purpose,” and leading courts to render nothing more than “an advisory opinion in a case in which no injury will . . . occur[ ] at all.”

In sum, global warming plaintiffs will not succeed in proving injury-in-fact. Whether they allege an actual or imminent injury, they cannot show that global warming, the result of the defendant’s emissions, resulted in the natural event causing their alleged injury. Moreover, if plaintiffs allege a future injury, they will face an additional obstacle of proving that their injury will occur in the imminent future, a standard that they will not be able to meet due to the conjectural, uncertain nature of the climate modeling and science.

166. Id. at *12–13.
167. Id. at *13–14.
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B. Causation

Although the Court in Lujan and Laidlaw did not analyze causation for purposes of its holding, the Court made it clear that a plaintiff is required to demonstrate that his concrete, particularized injury, whether actual or imminent, is fairly traceable to the acts of the defendant. 169 Causation demands a link between the plaintiff’s injury and the defendant’s allegedly harmful conduct170—its greenhouse gas emissions. Global warming plaintiffs will fail to prove causation because the causal chain between their injuries and the emissions of a particular defendant is too attenuated by the multiple alternative factors that could be the source of the global warming. 171 As a result, they will not be able to satisfy the necessary legal standard of certainty, which requires the plaintiff to prove with a “substantial likelihood” that her injury resulted from the defendant’s carbon emissions and not some independent factor. 172 In other words, the plaintiff must show there is a substantial likelihood that if a particular entity’s carbon emissions were reduced, or even eliminated entirely, their injury would not have occurred.173

The ultimate problem in global warming suits is that “[t]he climate is a vast, complex and poorly understood system.” 174 The causal chain begins with the defendant emitting greenhouse gases, but “there is considerable uncertainty in current understanding of how the climate system reacts . . . to emissions of greenhouse gases.” 175 Tremendous uncertainty remains with respect to the role of natural variability in comparison to human influence in global warming. 176 There are multiple natural and artificial factors that could be the ultimate cause of the global warming that produced the natural disaster. These factors may act as supervening factors in the

173. Id. at 68.
175. LaRochelle & Spencer, supra note 136, at 5.
176. Id.
chain of causation. It is possible that the defendant’s emissions contributed to warmer temperatures, but it is also possible that the effects of farming on the environment were a more substantial factor in producing the necessary atmospheric conditions that produced the injury. It is possible that the defendant’s emissions influenced temperatures, but it is also feasible that the impact of a city’s pavement and buildings was the significant factor in producing the necessary temperature rise. It is possible that solar activity was the cause of the warmer temperatures. It is plausible that warmer temperatures were not a product of an increase in carbon dioxide, but rather a product of water vapor—“water vapor is a far more powerful greenhouse gas than carbon dioxide.” Chlorofluorocarbons and other greenhouse gases, such as methane, may contribute to global warming. In fact, CFCs “trap over ten thousand . . . times more thermal radiation than does carbon dioxide.” Even if carbon dioxide emissions were the source of the hurricane or forest fire, the source of those emissions may not have

177. This Comment disagrees with a law review piece authored by David Grossman. Grossman argues that “the studies and models of the IPCC relied upon provide a solid basis for arguing that a general causal link exists between greenhouse gas emissions, climate change, and effects such as sea-level rise, thawing permafrost, and melting sea ice.” David A. Grossman, Warming Up to a Not-So-Radical Idea: Tort–Based Climate Change Litigation, 28 COLUM. J. ENVTL. L. 1, 22–23. According to Grossman, the causal chain is not too attenuated to show causation and to show that the companies that produce greenhouse gases do not lack control of the means by which these gases are produced. Id. at 27. This author agrees that Grossman’s argument could hold up if science could conclusively prove that global warming actually caused floods, sea-level rise, or other natural calamities. However, this author does not believe that current science can support such a conclusion. For more discussion of the inadequacies of science in this area, see supra Part III.


179. Id.

180. See LOMBORG, supra note 72, at 276. “[S]olar brightness has increased about 0.4 percent over the past 200–300 years, causing an increase of about 0.4°C . . . and the trend over the last decades is equivalent to another 0.4°C to 2100.” Id.

181. Guterl, supra note 95, at 44 (quoting Richard Lindzen). Lindzen claims that a slight change in the amount of water vapor in the atmosphere “could wipe out, or amplify, the effects of a rise in carbon dioxide.” Id.


183. Woodward, supra note 138, at 211.
been industrial. In 2003, more carbon dioxide was emitted by transportation sources than by industrial sources.\textsuperscript{184}

The science does not permit a court to conclude that a particular defendant’s carbon emissions were the cause of a global warming plaintiff’s injury. History provides poignant examples of people attributing the effect to the wrong cause.\textsuperscript{185} The hurricane or flood that produced the plaintiff’s injury could be the effect of many different sources, one of which may be the defendant’s carbon emissions. But the court certainly cannot conclude that there is a substantial likelihood or a good probability that those emissions were the definitive cause of the environmental disaster. Such a claim is not “ripe for adjudication” because it is “contingent on a number of factors” and is “too speculative.”\textsuperscript{186}

In some environmental pollution cases, especially Clean Water Act cases, courts will treat the plaintiff located in the emission “zone of a polluter” differently from the plaintiff who is so far removed from the polluter that her “injuries cannot fairly be traced to that” polluter.\textsuperscript{187} Such a requirement of geographic proximity is consistent with the finding of the Court in \textit{Lujan}, which rejected the nexus theories\textsuperscript{188} and denied the contention that distance does not prevent an injury.\textsuperscript{189} This requirement would seem to argue against the success of global warming plaintiffs in proving causation because the individual may bring a suit against a defendant’s contribution to global warming, the source of which is located thousands of miles away. For example, one of the plaintiffs in \textit{Watson} alleged that the defendant’s greenhouse emissions caused an outbreak of the spruce

\begin{itemize}
  \item \textsuperscript{184} U.S. ENVT. PROT. AGENCY, U.S. EMISSIONS INVENTORY 2005 (EPA 430-R-5-003) (April 2005), available at \url{http://yosemite.epa.gov/oar/globalwarming.nsf/content/ResourcesCenterPublicationsGHGEmissionsUSEmissionsInventory2005.html}. Industrial sources accounted for twenty-eight percent of carbon dioxide produced from fossil fuel combustion in 2003, but transportation sources produced thirty-two percent. \textit{Id.} The remainder of carbon dioxide emissions was a result of commercial and residential sources. \textit{Id.}
  \item \textsuperscript{185} David Doniger, \textit{Global Warming, Emissions and Kyoto}, WALL ST. J., Jan. 31, 2006, at A15. The author of the article gives several examples of attributing a natural phenomenon to the wrong cause: the nature of electric current to fluid flow, the cause of malaria to bad air, the Black Death to alignment of the planets, and cancer to a virus. \textit{Id.}
  \item \textsuperscript{186} Texas v. United States, 523 U.S. 296, 300–01 (1998).
  \item \textsuperscript{187} Tex. Indep. Producers & Royalty Owners Ass’n v. EPA, 410 F.3d 964, 973 (7th Cir. 2004) (quoting Friends of the Earth v. Gaston Copper Recycling Corp., 204 F.3d 149, 162 (4th Cir. 2000)).
  \item \textsuperscript{188} See supra notes 45–47 and accompanying text.
  \item \textsuperscript{189} Lujan v. Defenders of Wildlife, 584 U.S. 555, 567 n.3 (1992).
\end{itemize}
bark beetle, which had destroyed forests in her home of Anchorage.190 The problem is that the projects that she claimed were contributing to the beetle outbreak were in, among other places, Chad, Venezuela, and Indonesia.191

The zone of the polluter test, however, seems to be inapplicable in global warming suits. Where the polluter is discharging a toxin into a river, only those people within a reasonable range of the original discharge point will be affected by the discharge. A person in New Mexico will not be affected by a discharge of mercury into a river in Georgia. However, it is reasonable to say that a project that emits substantial amounts of carbon dioxide into the atmosphere in Venezuela contributes to the overall warming of the earth’s atmosphere, which may affect a person living in California. In other words, it is arguable that the zone of the polluter of greenhouse gases is global. Moreover, a plaintiff does not need to show that the defendant’s carbon dioxide emissions alone caused the harm.192

While a lack of geographic proximity will not likely impede plaintiffs from filing actions for carbon emissions in distant locations, the science is still not sufficiently determinative to allow courts to decide that it was the actions of a particular party rather than those of an independent third party that are the cause of plaintiffs’ injuries. Neither Congress nor the Supreme Court intended the causation factor to be a rigorous scientific examination, but at the bare minimum, in order to bring suit, the plaintiff must establish that he is “adversely affected” by the defendant’s action.193 Presently, the science is such that a plaintiff cannot demonstrate a “substantial likelihood” that a factory’s carbon emissions, a routine consequence of industrial operations, are adversely affecting (or will adversely affect) a plaintiff’s concrete, particularized interest. No regulation or

192. Pub. Interest Group of N.J., Inc. v. Powell Duffryn Terminals, Inc., 913 F.2d 64, 72 (3d Cir. 1990); see also Gaston Copper, 204 F.3d at 162.
193. Gaston Copper, 204 F.3d at 162. Assuming that a court did determine that plaintiffs had shown that the defendant’s emissions were a cause of the plaintiff’s injuries, it would have an additional burden of establishing how to allocate liability of the multiple sources of the injury. This question of liability is not part of standing analysis and is beyond the scope of this Comment.
legislation has been enacted that allows one to objectively qualify a company’s carbon emissions as harmful, wrongful, or negligent, and there are too many factors in the causal chain to trace the harm back to the defendant’s carbon emissions.

C. Redressability

_Lujan_ and _Laidlaw_ both included redressability as an essential component of the standing analysis. This requirement consists of determining whether a favorable decision by a court would likely redress the plaintiffs’ injuries. 194 Even if a plaintiff proves to the court that the defendant caused or will cause her injury, the court will not expend its resources in adjudicating her claim unless the court can deliver a judgment that would personally benefit her “in a tangible way.” 195 Global warming plaintiffs generally will have no problem showing redressability.

With respect to redressability, this Section assumes that a court has accepted that the injury-in-fact and causation prongs of analysis have been satisfied. Certainly, if a court followed the arguments already proposed by this Comment and refused to find the science sufficiently conclusive as to make a finding of injury-in-fact or causation, then redressability would be a moot issue. Assuming this fact, the plaintiff need only show that it is “likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision.” 196 For example, legal damages would likely redress New Orleans residents who lost their homes, cars, and businesses in Katrina, providing them the value of what they had lost. An injunction would likely redress a New Orleans resident who is alleging that a company’s emissions pose a threat of another hurricane. The injunction would terminate, or at least reduce, the defendant’s emissions, diminishing future contributions to global warming and to the possibility of a future hurricane. This would be especially true in the case of a suit against a number of companies whose emissions comprise a substantial portion of an industry’s emissions. At the bare minimum, an injunction would likely

194. _Lujan_, 504 U.S. at 560.
195. _Warth v. Seldin_, 422 U.S. 490, 508 (1975). A plaintiff must show that “the practical consequence” of a favorable decision would result in “a significant increase in the likelihood that the plaintiff would obtain relief that directly redresses the injury suffered.” _Utah v. Evans_, 536 U.S. 452, 464 (2002).
“materially reduce their reasonable concerns about those endangerments” caused by the company’s greenhouse gas emissions. Civil penalties would likely bring redress as well because the penalties would deter future harmful emissions, reducing its likelihood of contributing to the adverse conditions that lead to the development of a hurricane. According to the broad language of Laidlaw, any “sanction that effectively abates” a particular conduct “and prevents its recurrence provides a form of redress.”\textsuperscript{199} Injunctive or other equitable relief would likely assist in the abatement of future greenhouse gas emissions and consequently global warming.

\textbf{D. Prudential Standing}

Once the plaintiff in a global warming suit has established the foregoing elements—injury-in-fact, causation, and redressability—he has established constitutional standing. While this Comment has argued that the chances of demonstrating constitutional standing are, at best, remote, a global warming plaintiff has yet another standing barrier to overcome before a court will hear his claim: he must prove that he has prudential standing.\textsuperscript{200}

Congress has the authority to confer standing on a party through legislation. Congress has conferred such authority upon environmental plaintiffs through citizen suit provisions found in federal statutes such as the CAA and CWA. The basic idea underlying prudential standing is that “in the exercise of ‘prudence,’ the Court may decline to grant standing to a plaintiff, but if Congress explicitly confers standing on such a plaintiff, then the Court’s ‘prudential’ hesitation is overcome.”\textsuperscript{201} Thus, a court typically invokes prudential standing to determine whether a plaintiff has the right to seek a particular claim “in the absence of a clear

\begin{footnotesize}
199. \textit{Id.} at 185–86. Justice Scalia found the Court’s treatment of redressability to be just as “cavalier” as its treatment of injury-in-fact. \textit{Id.} at 202 (Scalia, J., dissenting). He emphasized that the purpose of “remediation” is to extend “relief specifically tailored to the plaintiff’s injury, and not any sort of relief that has some incidental benefit to the plaintiff.” \textit{Id.} at 204.
200. \textit{Joint Stock Soc’y v. UDV N. Am., Inc.}, 266 F.3d 164, 175 (3d Cir. 2001) (“Constitutional standing is a threshold issue that we should address before examining issues of prudential standing and statutory interpretation.”).
201. Fletcher, \textit{supra} note 25, at 252.
\end{footnotesize}
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statutory directive.” The Supreme Court has never clearly defined the actual dimensions of prudential standing; however, it has explained that this analysis encompasses several limitations. Considering the pattern by federal courts in interpreting one of these specific limitations as part of their prudential standing analysis, this Comment only focuses on whether the plaintiff’s complaint falls within the zone of interests protected by the law invoked. Additionally, it must be noted that the zone-of-interest test does not apply to common law actions, such as nuisance. This prudential inquiry “is an issue of statutory standing” only.

For most courts, the “key inquiry” of prudential standing is whether the plaintiff’s injury is “arguably within the zone of interests to be protected” by the statute, or in the case of common law, the zone of interests designed to be protected by a common law theory under which the plaintiff brings her claim. The plaintiff must show that her injury—an injury from global warming—is the kind of injury that a statute or a common law theory of recovery is intended to address. Prudential standing is not intended to be a rigorous standard for global warming plaintiffs to satisfy. It excludes only those interests that “are so marginally related to or inconsistent with the purposes implicit” in a statute or the common law “that it cannot reasonably be assumed” that the particular law or theory of recovery was “intended to permit the suit.”

202. Id.
204. Steel Co. v. Citizens for a Better Env’t, 523 U.S. 83, 97 (1998). The following statement elaborates upon the inapplicability of the zone-of-interest test with respect to common law claims:

The zone of interests test applies only when a complainant must invoke a statute to protect an injured interest. Common law rights, however, are legal interests that do not require a statute for judicial protection. Complainants seeking redress for an injury to an interest protected at common law need only adequately allege that interest, and a court will know that a protectable interest is involved. Therefore, the zone of interests test has no effect on the courts’ ability to protect common law rights when applied in proper contexts.

Sanford A. Church, A Defense of the “Zone of Interests” Standing Test, 1983 DUKE L.J. 447, 461.
208. Id.
Given that the Clean Air Act regulates the pollution of the earth’s atmosphere, this statute is the most likely candidate for global warming plaintiffs to seek statutory relief for their injuries. Normally, the plaintiff claims harm from a gas that is regulated by the CAA, and in such a case, prudential standing is not an issue because of the citizen suit provision authorizing the action. The problem in the context of global warming suits is that the CAA does not expressly regulate greenhouse gases, and it is not clear that Congress intended to protect interests injured by global warming. In 2003, the EPA’s General Counsel, Robert Fabricant, wrote a memorandum to the EPA Administrator in which Fabricant concluded, after analyzing the CAA and other relevant materials, that the CAA “does not authorize regulation to address global climate change.” In Massachusetts v. EPA, the D.C. Circuit Court of Appeals noted that the EPA Administrator largely adopted Fabricant’s position in denying the petition that was on appeal before the court in that case. The court upheld the ruling of the EPA Administrator.

However, if the court interprets the statute’s zone of interests broadly and adopts a particular side of the global warming debate, then global warming plaintiffs may be granted prudential standing. If the court interprets this test as requiring it “to secure the benefits of” the CAA “for the groups that Congress intended to benefit,” it is possible that the court will grant prudential standing to the plaintiffs. What are the benefits to be secured by the CAA? The overriding purpose of the CAA is to “protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population.” If the court is partial to the science concluding that global warming is adversely affecting the quality of the nation’s air and endangering public welfare, a court may assume that Congress intended to permit

209. See Covington v. Jefferson County, 358 F.3d 626, 638 (9th Cir. 2004) (holding where plaintiff claimed injury from release of CFCs, there was no prudential standing issue because Congress had authorized citizen suits for violations of the CAA).


211. Id.

212. Id.

213. Leaf Tobacco Exporters Ass’n v. Block, 749 F.2d 1106, 1111 (4th Cir. 1984).

the plaintiff’s global warming action because the suit would “advance, rather than hinder,” the stated objectives of the CAA.215

E. The Outcome

Plaintiffs in global warming suits will likely fail to prove that they have legal standing to have a federal court adjudicate their injury claims. First, they will fail to prove injury-in-fact, actual or imminent, because the lack of scientific and legal foundation deprives courts of the ability to conclude that global warming is the likely source of the alleged injury. Second, the inherently speculative nature of climate modeling will not allow plaintiffs to prove there is a substantial probability that a future injury from global warming will occur imminently. Third, the current uncertainty of the science and various factors contributing to global warming preclude plaintiffs from

215. Honeywell Int’l, Inc. v. EPA, 374 F.3d 1363, 1370 (D.C. Cir. 2004). Another judicially-created limitation on the jurisdiction of federal courts is embodied in the political question doctrine. In re African-American Slave Descendants Litig., 375 F. Supp. 2d 721, 754 (N.D. Ill. 2005). The political question doctrine is invoked where a plaintiff brings a matter that is more appropriate for legislative rather than judicial resolution. The history of this limitation reaches all the way back to Marbury v. Madison, in which Chief Justice Marshall declared that questions that are political in nature are not fit for judicial determination. 5 U.S. 137, 170 (1803). The notion is that the presence of a political question should cause a court to “refrain from adjudicating the issue to prevent unwarranted interference with decisions properly made by the Representative Branches of the federal government.” African-American Slave Descendants, 375 F. Supp. 2d at 755. This limitation has particular relevance to global warming suits, which implicate issues touching upon “so many areas of national and international policy.” Connecticut v. Am. Elec. Power Co., No. 04 Civ. 5669(LAP), 2005 U.S. Dist. LEXIS 19964, at *21 (S.D.N.Y. Sept. 15, 2005). In American Electric Power, the plaintiffs brought a public nuisance action against the five largest emitters of carbon dioxide in the United States, alleging that they accounted for approximately one quarter of the U.S. electric power sector’s carbon dioxide emissions. Id. at *7. The federal district judge determined that the plaintiffs’ claims for injuries caused by the defendants’ contributions to global warming did not fall within the “proper domain of judges” and their claims constituted “a non-justiciable political question.” Id. at *5, *17–18. The judge highlighted a number of actions that would be required of the court to grant the relief sought by the plaintiffs: the court would have to determine the maximum amount of carbon dioxide that could be emitted by the defendants, the amount by which the defendants would have to reduce their emissions, the most effective way of implementing the reductions, the availability of alternative sources of energy, and the effect of such changes on the United States’ negotiations with other countries on climate change. Id. at *21–22. Considering that “virtually every sector of the U.S. economy is either directly or indirectly a source of greenhouse gas emissions,” the court determined that a decision on such a policy-laden matter required a “single-voiced statement” by the government. Id. at *24–25, *27. Thus, even if global warming plaintiffs were capable of satisfying the requirements of legal standing, a court could still refuse to adjudicate their claims on the basis that the courtroom is not the appropriate forum for such claims to be resolved.
showing a substantial likelihood that the defendant's emissions can be traced to the injury. Although redressability will not likely pose a problem for plaintiffs, they may fail to satisfy prudential standing where they file a claim pursuant to a federal statute. This will depend on the particular court's interpretation regarding the intended scope of interests to be protected by the statute.

V. LEGAL STANDING, GLOBAL WARMING, AND PROCEDURAL INJURY

Plaintiffs in global warming suits will fail to prove legal standing where they allege that they have suffered a substantive injury from an entity's contributions to global warming; however, they may succeed where they instead allege a procedural injury. A procedural injury occurs where a statute mandates that certain procedures be followed “to ensure that the environmental consequences of a project are adequately evaluated” and where the acting agency fails to comply.216 For example, in *Lujan*, the subject of the action was the Endangered Species Act, which requires agencies to follow a mandated consultative procedure: before a federal agency finances, authorizes, or pursues an action that may endanger a threatened species or its habitat, that agency must first consult with the Secretary of Interior to prevent or mitigate any such damage from occurring.217 Thus, the statute creates a procedural right in private citizens to interagency consultation, authorizing them to bring an action against the government where it fails to perform the requisite consultation.218

Part IV of this Comment reviewed the ability of plaintiffs to prove legal standing in global warming suits where they have alleged a substantive injury, rather than a procedural injury. A substantive injury consists of an injury that is not tied to the consequences of a government entity’s failure to comply with required procedures.219 For example, the plaintiff in *Korsinsky v. EPA* filed an action against

216. Friends of the Earth v. U.S. Navy, 841 F.2d 927, 931 (9th Cir. 1988). A procedural right is “the right to have the Executive observe procedures mandated by law.” Hodges v. Abraham, 300 F.3d 432, 444 (4th Cir. 2002).


the defendants, claiming that their carbon dioxide emissions had caused his mental sickness and enhanced vulnerability to certain diseases—there were no procedural requirements with which the defendants had failed to comply.220

Although the two kinds of injury differ in their character, courts apply the same standing analysis to both. A plaintiff’s allegation of a procedural injury may have more success than that of a substantive injury because of the “special” nature of a procedural injury.221 In Lujan, Justice Scalia articulated in a footnote what has come to be called, at least in the Ninth Circuit, “footnote seven standing.”222 Justice Scalia stated that when a plaintiff is alleging a violation of a procedural right that a statute accords him, he “can assert that right without meeting all the normal standards for redressability and immediacy.”223 In other words, a procedural injury “relaxes” the normal standards of standing.224

One disadvantage of seeking relief for a procedural injury is the resulting limitation in the remedies available. If the plaintiff claims a procedural injury, he will not be able to seek legal damages for his own injuries. Under the National Environmental Policy Act (NEPA), for example, the standard remedy will be to vacate the agency’s uninformed decision to conduct a project without the proper environmental analysis and to enjoin the project until the NEPA requirements are met.225 Plaintiffs can seek harsher penalties against defendants for their procedural violations under substantive environmental statutes. For example, a plaintiff could allege an injury from the defendant’s failure to adhere to the procedural requirements of the Clean Air Act, pursuant to which a court could grant a broad range of civil and criminal penalties for violations of its provisions.226

This Part evaluates what plaintiffs will have to prove in order to satisfy the three elements of constitutional standing—injury-in-fact,

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221. Lujan, 504 U.S. at 572 n.7.
223. Lujan, 504 U.S. at 572 n.7.
224. See Cantrell v. Long Beach, 241 F.3d 674, 682 (9th Cir. 2001).
causation, and redressability—and prudential standing in the context of a procedural injury. This Part argues that the most likely avenue for global warming plaintiffs to have a federal court hear their claims is by alleging a procedural injury, because plaintiffs do not have the burden of proving that a future injury is imminent and the causation standard is relaxed. The most likely procedural statute to be invoked by global warming plaintiffs in these suits is the National Environmental Policy Act (NEPA) because of its universal requirement that a federal agency follow certain mandated procedures before it proceeds with any project that may significantly affect the environment.227 Under NEPA, plaintiffs are likely to allege the “archetypal procedural injury”—an agency’s failure to prepare an environmental impact statement (EIS) before taking action with potentially adverse environmental effects.228

A. Injury-in-Fact

This prong of the analysis is the most important part of the plaintiff’s burden because it is the court’s “normal focus of standing analysis” in procedural rights cases.229 Global warming plaintiffs claiming a procedural injury are more likely to satisfy the injury-in-
fact prong because the relaxed standards of procedural injury remove
the requirement of proving an imminent injury. This Section first
discusses why one obstacle for plaintiffs in procedural injury cases—
proving the harm of global warming—remains an obstacle to
standing. The second half of this Section discusses how the relaxed
nature of the immediacy requirement may facilitate a grant of
standing.

Asserting a procedural injury will not aid plaintiffs with respect to
the first obstacle mentioned in Part IV regarding substantive injuries.
An important burden that plaintiffs have under the injury-in-fact
analysis is to demonstrate the likelihood of harm from the challenged
action.230 The challenged action in these cases is the carbon
emissions, but it is ultimately the result of these emissions, global
warming, that allegedly causes the injury. Thus, a part of the injury-in-fact analysis is showing that the injury or threat of injury has
occurred, or will occur, as a result of global warming.231

If plaintiffs cannot show that global warming caused the
hurricane, or will imminently cause the hurricane, they cannot satisfy
their burden of proving an actual or imminent injury. It does not
matter if the defendant’s emissions contribute to global warming if
global warming itself is not the cause of the natural event. This
Comment has already adequately developed the argument of why
plaintiffs cannot satisfy this burden—the science does not allow it.232

The nature of the claim in the procedural injury context changes in
that the plaintiff is not claiming that the injury resulted directly from
the defendant’s emissions. Rather, the claim is that the injury resulted from the defendant’s uninformed decision making; by
allowing a project to go forward, the defendant created a threat of
imminent injury by contributing to global warming.233 However, the
plaintiff must still show that the lack of environmental analysis
resulted in “an increased risk of actual, threatened, or imminent
environmental harm.”234 The same problem exists as in the
substantive injury context: plaintiffs cannot prove that global
warming caused the hurricane or will imminently cause a hurricane.

231. Id. at 452; see also discussion supra Parts III, IV.A.4.
232. Lucero, 102 F.3d at 452.
233. Id.
234. Id. at 449.
This Comment has highlighted that the first obstacle is largely contingent on which position the particular court takes on the science. The remainder of this analysis will proceed assuming that a court accepts the science arguing that global warming is capable of causing a hurricane or other natural disaster. Some courts, particularly those in the Ninth Circuit, include a “geographic nexus” test as part of their injury-in-fact analysis. Under this test, global warming plaintiffs would be required to show a geographic proximity between their location and the location that was adversely affected by the defendant’s carbon emissions. For the same reason mentioned in Part III regarding the zone of the polluter analysis, this test poses no obstacles for global warming plaintiffs. The unique global nature of global warming will allow a plaintiff to establish a geographic nexus no matter the distance between her and the place suffering injury. A plaintiff in North Carolina can prove the necessary nexus with the defendant’s emissions in Chad because the global warming affects the global atmosphere, which affects the sea level near her home in North Carolina.

The principal way in which the relaxed standards of procedural standing assist global warming plaintiffs is by allowing them to allege an injury that will occur in the future. The court wants to assure itself that it is not adjudicating a claim that will not come to fruition. As a result, the court requires that the plaintiff allege an injury that is likely to occur in the imminent future. This Comment has established that because of the conjectural nature of the science and climate modeling, it will be difficult for plaintiffs to prove that the injury, such as a hurricane, will occur in the imminent future. However, if the plaintiff alleges a procedural injury, “the requirements of immediacy of the threatened harm are relaxed.” Under this relaxed standard, it will not matter if they cannot show that the greenhouse gas emissions from a project permitted to move forward due to a failure to produce the EIS will result in imminent injury. A plaintiff will probably not be able to prove that the emissions of a project in Indonesia will cause the sea level to rise near

235. Ashley Creek Phosphate Co. v. Norton, 420 F.3d 934, 938 (9th Cir. 2005).
236. Id.
238. See discussion supra Part IV.A.4.
239. Laub v. U.S. Dep’t of the Interior, 342 F.3d 1080, 1087 (9th Cir. 2003).
240. See id.
her house in the near future, but that consideration is irrelevant in a procedural injury case. In *Lujan*’s hypothetical scenario, the Court said that the plaintiff would have standing to sue even if the dam would not be finished “for many years.”241 This relaxed standard is helpful to global warming plaintiffs, who will not be able to show whether the hurricane or the threat of a hurricane will occur in a few months, years, decades, or longer.

Therefore, in procedural injury cases, one obstacle for plaintiffs remains, but another is relieved. Even though plaintiffs in these actions are claiming injury from an agency’s failure to adequately assess the environmental consequences of a particular project or practice, they must still show that the uninformed decision making endangers the environment and their concrete interests. The current state of science does not allow them to conclusively make this showing. However, assuming a court does accept the science, the plaintiffs will no longer be burdened by having to show that the alleged injury will occur in the imminent future, because this requirement is relaxed.

**B. Causation**

Assuming a court accepts that the plaintiffs in a procedural injury suit have established that they will suffer a concrete, particularized injury-in-fact from global warming, they must then prove that it was specifically the defendant’s procedural violation that caused their injury. However, the standard to be applied by a court will vary. The courts have adopted two different standards in analyzing causation. This Section evaluates the standard adopted by the D.C. Circuit and Ninth Circuit, respectively. It argues that under the D.C. Circuit standard, plaintiffs will have the same trouble showing causation as in substantive injury cases because the standard is the same. Yet, plaintiffs have a reasonable chance at proving causation under the Ninth Circuit standard because of the relaxed nature of the analysis.

The D.C. Circuit has promulgated one standard of causation that requires plaintiffs to show with a “substantial probability” that the defendant’s procedural violation caused their injury.242 The

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court’s standing analysis under this approach does not change materially from the standard it applies for causation in normal substantive injury cases.\textsuperscript{243} The court is still going to look at the chain of causation between the agency’s procedural omission or deficiency and the plaintiff’s injury.\textsuperscript{244} The problem with global warming, as this Comment has already explained, is that this causal chain is too attenuated by the numerous alternative factors that may cause the injury for a court to grant standing.\textsuperscript{245} The court will look at one end of the chain and see an agency’s contributions to an overseas project for which no EIS was prepared. The court will then have to follow a long chain all the way to the other end to see the plaintiff’s alleged injuries. Between one end of the chain and the other, the court will have to consider the fate of the defendant’s emissions once they enter the atmosphere, “the impact of those emissions that remain in the atmosphere on the radiative properties of the atmosphere,” the influence of solar activity, the role of clouds, the effects of water vapor, and so on.\textsuperscript{246} Ultimately, plaintiffs cannot show that it was the defendant’s particular project, which went forward without the proper environmental assessment, that caused the destructive natural event. The science implicates too many independent factors and forces that can intervene with the chain of causation between the injury and the defendant’s procedural failure. For these reasons, procedural injury plaintiffs most likely will not succeed under this standard in tracing their injury to the procedural violation of the defendant.

In contrast to the D.C. Circuit’s substantial probability standard of causation is the standard promulgated by the Ninth Circuit,\textsuperscript{247} under which the requirements of causation are “relaxed.”\textsuperscript{248} This standard requires the plaintiffs to prove with a “reasonable probability” that the defendant’s procedural violation caused their

\textsuperscript{243} Nuclear Energy Inst., Inc. v. EPA, 373 F.3d 1251, 1265 (D.C. Cir. 2004).
\textsuperscript{244} See Ctr. for Law & Educ. v. Dep’t of Educ., 396 F.3d 1152, 1158–61 (D.C. Cir. 2005).
\textsuperscript{245} See discussion supra Part IV.B.
\textsuperscript{246} See Massachusetts v. EPA, 415 F.3d 50, 57 n.3 (D.C. Cir. 2005) (quoting NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME OF THE KEY QUESTIONS 20 (2001)).
\textsuperscript{247} Citizens for Better Forestry, 341 F.3d at 974. The court noted that the Seventh Circuit follows the Ninth Circuit’s approach. Id. The Tenth Circuit has also adopted the Ninth Circuit’s approach. See Comm. to Save the Rio Hondo v. Lucero, 102 F.3d 445, 451–52 (10th Cir. 1996).
\textsuperscript{248} Laub v. U.S. Dep’t of the Interior, 342 F.3d 1080, 1087 (9th Cir. 2003).
injury.249 Under this standard, the court may find causation while still recognizing that there were independent factors or parties that were necessary for the alleged injury to occur.250 The lower threshold of “reasonable probability” may be sufficient to find causation251 as long as the alleged environmental effect (global warming) has a “reasonably close causal relationship” to the project.252 With respect to procedural injury, the Court in Lujan did not seem worried with causation and redressability.253 Its primary concern was linking the procedural omission to a separate concrete interest of the plaintiffs.254 Hence, the Ninth Circuit’s relaxed causation approach appears to be more consistent with Justice Scalia’s language in footnote seven of Lujan.255

Regardless of the test applied, the causal chain between the agency’s procedural violation and the plaintiff’s injury will be attenuated; nonetheless, a plaintiff is still more likely to succeed under this “lower threshold of causation”256 than under the D.C. Circuit’s more stringent standard. The morass of uncertainty created by all the conflicting science regarding the cause of global warming precludes a court from declaring with “substantial probability” that a defendant’s failure to produce an EIS will lead to carbon emissions producing the necessary impact on global warming that then causes the destructive natural event. Nevertheless, there is concomitantly a tremendous amount of credible evidence upon which the court could at least conclude that there is a “reasonable probability” that the defendant’s emissions will contribute to the alleged disaster. In sum, if the plaintiffs are before a court that applies the relaxed

251. Id.
254. Id.
255. One reason why the Court in Lujan and courts thereafter may have been comfortable with relaxing the requirements for standing in procedural injury cases is the unique nature of the underlying objectives of a procedural right: “A procedural right is created, not because it necessarily yields particular outcomes, but because it structures incentives and creates pressures that Congress has deemed important to effective regulation.” Cass R. Sunstein, What’s Standing After Lujan? Of Citizen Suits, “Injuries,” and Article III, 91 Mich. L. Rev. 163, 226 (1992). Broader leniency in allowing standing for procedural rights would further the objectives of procedural rights in general to provide agencies an incentive to effectively regulate within their respective jurisdictions.
256. Pub. Citizen v. Dep’t of Transp., 316 F.3d 1002, 1017–18 (9th Cir. 2002).
“reasonable probability” standard of causation, the court may hold that they have successfully proved causation.

C. Redressability

Unlike the diverging standards for proving causation outlined above, all federal courts relax the redressability requirement in procedural injury cases.257 As a result, procedural injury plaintiffs will succeed in proving redressability because courts have essentially removed this requirement from the standing analysis. Plaintiffs need not show that a favorable decision from the court will “fully remed[y]” them,258 that an order by the court requiring the defendant to perform the EIS assessing the project’s effects on global warming will benefit them,259 or that any further analysis of the impact of the project on global warming “would result in a different conclusion.”260 The courts’ analysis of the third requirement of constitutional standing in the context of procedural injury cases seems to conclude that this requirement is nearly nonexistent. A procedural injury plaintiff satisfies this requirement by showing that the project’s construction or operation “could be influenced” by a court decision requiring the defendant to evaluate the projects’ potential impact on global warming.261

D. Prudential Standing

Once the procedural injury plaintiff in a global warming suit has established the three requirements of constitutional standing from Lujan, she must also establish that she has prudential standing to bring her claim.262 The nature of this requirement will be the same for plaintiffs whether they are alleging a substantive or procedural injury from a defendant’s contributions to global warming. The

259. See Or. Natural Desert Ass’n v. Dombeck, 172 F.3d 1092, 1094 (9th Cir. 1998).
260. Lau v. U.S. Dep’t of the Interior, 342 F.3d 1080, 1087 (9th Cir. 2003). In footnote seven of Lujan v. Defenders of Wildlife, the Court wrote, “[O]ne living adjacent to the site for proposed construction of a federally licensed dam has standing to challenge the licensing agency’s failure to prepare an environmental impact statement, even though he cannot establish with any certainty that the statement will cause the license to be withheld or altered.” 504 U.S. 555, 572 n.7 (1992).
261. Hall v. Norton, 266 F.3d 969, 977 (9th Cir. 2001).
262. See Sausalito v. O’Neill, 386 F.3d 1186, 1199 (9th Cir. 2004).
plaintiff must show that her injury falls within the “zone of interests” that Congress intended to protect with the enactment of the statute\textsuperscript{263} in order to show the court that she is litigating her own rights and not those of a third party.\textsuperscript{264} This Comment has already established that this analysis is inapplicable to common law claims.\textsuperscript{265}

This Section will briefly examine the zone of interests associated with NEPA, since this is the principal statute under which global warming plaintiffs will probably bring their procedural injury claims. This Section argues that procedural injury plaintiffs will satisfy prudential standing with respect to NEPA as long as they are in part motivated by a desire to protect the environment.\textsuperscript{266}

With the enactment of NEPA, Congress intended to protect environmental interests.\textsuperscript{267} Hence, if a plaintiff wanted to sue an agency for funding a project in Chad that is contributing substantially to global warming, the plaintiff would likely be motivated in part to protect the environment. If her motivation is purely monetary rather than environmental, most courts will hold that her claim does not fall within NEPA’s jurisdiction.\textsuperscript{268} Courts do not want private parties abusing NEPA by using it to further their own personal interests and not those of the environment.\textsuperscript{269} The

\textsuperscript{263} See Sierra Club v. Morton, 405 U.S. 727, 733 (1972); Hodges v. Abraham, 300 F.3d 432, 444 (4th Cir. 2002).

\textsuperscript{264} Dismas Charities, Inc. v. U.S. Dep’t of Justice, 401 F.3d 666, 674 (6th Cir. 2005).

\textsuperscript{265} See discussion supra Part IV.D. Moreover, the prudential standing analysis in the procedural injury analysis is inapplicable to common law claims because the common law does not stipulate procedural requirements.

\textsuperscript{266} The other principal statute under which global warming plaintiffs are likely to claim procedural injury is the Clean Air Act, which does articulate that certain procedures be followed. For example, in \textit{National Parks Conservation Association v. Manson}, the plaintiffs claimed procedural injury under the CAA due to the government’s failure to adequately determine a proposed plant’s impact on air quality in the nearby area. 414 F.3d 1, 5 (D.C. Cir. 2005). However, this Comment has already addressed the prudential standing issues associated with the CAA. See discussion supra Part IV.D.

\textsuperscript{267} Manson, 414 F.3d at 5. “NEPA does not authorize a private right of action,” which means that a plaintiff can obtain judicial review of a NEPA claim only under the Administrative Procedure Act (APA). Sierra Club v. Slater, 120 F.3d 623, 630–31 (6th Cir. 1997). The APA provides that a “person suffering legal wrong because of agency action, or adversely affected or aggrieved by agency action within the meaning of a relevant statute, is entitled to judicial review thereof.” 5 U.S.C. § 702 (2000). The Supreme Court has interpreted this provision of the APA “to impose a prudential standing requirement in addition to the requirements imposed by Article III of the Constitution.” Nat’l Credit Union Admin. v. First Nat’l Bank & Trust Co., 522 U.S. 479, 488 (1998).

\textsuperscript{268} Nev. Land Action Ass’n v. U.S. Forest Serv., 8 F.3d 713, 716 (9th Cir. 1993).

plaintiff may be motivated in part by economic interests, but she must still demonstrate with a “substantial probability” that she has nonmonetary interests that would qualify as a legally protected interest under NEPA. Therefore, prudential standing will not pose an obstacle for global warming plaintiffs in most cases.

E. Outcome

Although procedural injury plaintiffs are not guaranteed success in establishing legal standing in global warming suits, they can be assured that there chances of success are much better than when asserting substantive injuries. They still have a substantial obstacle in trying to prove that the global warming caused by the defendant’s emissions results in their injury. However, where the court accepts the science as sufficient, these plaintiffs are relieved of the difficulty of proving an imminent injury. If the plaintiffs are before a court that adopts the Ninth Circuit standard of causation, they have an improved chance of having the court conclude that there is a reasonable probability that the defendant’s procedural violation caused their injury. Finally, the redressability requirement is essentially nonexistent, and the zone-of-interest test is easily satisfied in most cases. These factors argue that plaintiffs have a reasonable chance, and definitely an improved chance, of success in proving standing where they allege procedural injury.

VI. SUBSTANTIVE INJURY V. PROCEDURAL INJURY: A COMPARISON

This Comment has explained what plaintiffs must do to establish legal standing in suits that seek relief for harm suffered by a defendant’s contributions to global warming. This Part will provide a hypothetical situation to illustrate the relative positions of a plaintiff, comparing when she alleges a substantive injury to when she alleges a procedural injury. The example will illustrate that global warming plaintiffs will fail in proving standing where they allege a substantive injury but have a much improved chance of doing so where they allege a procedural injury.

270. Nat’l Ass’n of Home Builders v. U.S. Army Corps of Eng’rs, 417 F.3d 1272, 1287–88 (D.C. Cir. 2005). Thus, having an economic interest does not “blight” the qualifying interests and as long as there is a “congruence of interests,” monetary as well as environmental, then standing may still be found. Id.
Many view the increasingly dangerous outlook for the future of polar bears in the Arctic to be one of most recent manifestations of global warming.271 Polar bears have adapted to living and hunting on ice sheets;272 however, the ice of the Arctic is retreating more and more every year, causing polar bears to swim long distances into the ocean to find food.273 Since polar bears are more accustomed to swimming shorter distances, they tire and drown.274 This example assumes that the plaintiff is a single female who is a native Alaskan. She studies and works extensively with polar bears. She files an action in federal district court against the three largest oil companies in Alaska, alleging that their carbon dioxide emissions account for roughly a quarter of the oil and gas sector’s carbon dioxide emissions and approximately twelve percent of all carbon dioxide emissions from human activities in the United States. She claims that the defendants have violated the Clean Air Act and that their emissions constitute a public nuisance. She claims the defendants’ emissions will injure her by their adverse effect on polar bears.

B. Substantive Injury

The plaintiff can claim a substantive injury by alleging that the defendants’ carbon emissions are threatening polar bears. *Lujan* requires her to establish the three elements of constitutional standing—injury-in-fact, causation, and redressability.275 She must first demonstrate that she will suffer a concrete injury, which she satisfies by proving that she has a recreational and aesthetic interest in working with and observing polar bears.276 Next, she must show that she will sustain a particularized injury, which she satisfies by proving that she has a distinct position from the public with respect to polar bears based on her experience in working with them.

272. *Id.*
273. *Id.*
274. *Id.*
Moreover, she can allege that her studies will be impeded by the diminished population of polar bears.\textsuperscript{277}

Because her injury is one that will occur in the future, she must show that her injury is certainly impending.\textsuperscript{278} The plaintiff’s first problem is proving that global warming will likely cause her threatened injury. She will fail to carry her burden here because the science is too uncertain with respect to the risks of global warming, with respect to the temperatures in the Arctic, and with respect to the adverse conditions for polar bears.

The plaintiff faces an additional obstacle because she cannot show that global warming will cause the necessary adverse conditions endangering polar bears to be certainly impending.\textsuperscript{279} There are still 20,000 to 25,000 polar bears in the world, and the most recent study concluded that they were not endangered.\textsuperscript{280} The plaintiff’s allegation of the danger to polar bears will be based on a system of climate modeling that is conjectural and does not provide the court with the necessary foundation upon which it can conclude that there is a substantial probability that the injury will occur in the imminent future.

Assuming the court accepts the science attributing the polar bear threat to global warming and that the injury is imminent, the plaintiff will still fail to show causation.\textsuperscript{281} She cannot fairly trace her injury to the carbon emissions of the three defendants. The chain of causation is too attenuated by the many independent factors that could supervene in the ultimate harm to the polar bears.

The plaintiff must then show that a favorable judgment from the court will provide them redress. The plaintiff will either ask for an injunction, or alternatively, civil penalties. Either of these will likely personally benefit her. The standard is not that the injunction or the penalties will result in abating her injury but that they will likely result in that abatement. If the companies are required to reduce their emissions of carbon dioxide by millions of tons, given their substantial contribution to carbon emissions, it is likely that their impact on global warming will be diminished as well as the adverse conditions associated with global warming. Even if it is questionable as to whether the reduced emissions will prevent the adverse

\textsuperscript{277} See discussion supra Part IV.A.2.
\textsuperscript{278} See discussion supra Part IV.A.3.
\textsuperscript{279} See discussion supra Part IV.A.4.
\textsuperscript{280} Carlton, supra note 271, at B1.
\textsuperscript{281} See discussion supra Part IV.B.
conditions from developing, such remedies will likely result in materially reducing the plaintiff’s reasonable concerns about the endangerment of the polar bear due to the company’s greenhouse gas emissions.

Finally, the plaintiff must prove that she has prudential standing. If the court interprets the CAA’s zone of interests narrowly, it may deny her standing based on its holding that the CAA does not have jurisdiction over injuries caused by global warming. However, the court may also interpret the zone more broadly and hold that global warming is a danger to the air and grant standing.

C. Procedural Injury

Instead of filing a claim for a substantive injury or in conjunction with her substantive injury claim, the plaintiff may file a claim under NEPA. She alleges that a federal agency funded several projects in connection with these companies. She alleges that there was no EIS prepared for the project, which went forward, emitting millions of tons of carbon dioxide into the atmosphere. Here, she is alleging a procedural injury.

She must still prove that she has constitutional standing. She is still required to show that she will suffer a concrete, particularized injury, which this analysis has already established that she can do with relative ease. She also still faces the obstacle of proving that global warming will likely cause the danger to the polar bears. Assuming the court accepts the argument, the procedural nature of her injury relieves her of having to show that her injury is imminent. Even though the polar bears may not become endangered or extinct for many years, she may still have standing.

If the plaintiff is in a court that has adopted the D.C. Circuit’s causation standard, she will fail to prove causation, but if she is in a court that has adopted the Ninth Circuit’s relaxed causation standard, she may succeed. Under the latter standard, the court must find a reasonable probability, rather than a substantial probability, that the agency’s procedural omission will cause her injury. Considering the amount of credible science linking global warming to the warmer temperatures in the Arctic that foster the dangerous conditions for polar bears, a court may conclude that it is reasonable

282. See discussion supra Part IV.A.
to find that the failure to produce the EIS partly caused the plaintiff’s injury.283

The plaintiff must still show that a favorable judgment by the court will benefit her personally.284 She will satisfy this burden because a directive from the court telling the agency to conduct the appropriate environmental evaluation will benefit the plaintiff. In a NEPA claim, the claim is principally directed at the uninformed decision making. Thus, if the court orders the environmental evaluation to be conducted, they have provided relief in response to her claim.

The plaintiff must still prove that she has prudential standing to bring the claim under NEPA.285 She easily meets this requirement because her interests in bringing the action are not monetary but are connected to a sincere interest in the habitat and fate of the polar bear.

In sum, the plaintiff fails on her substantive injury claim and may succeed on her procedural injury claim. In first scenario, she cannot prove that global warming may endanger the polar bear, she cannot prove that it will imminently endanger the polar bear, and she cannot trace that alleged injury to the three companies’ carbon emissions. However, in the second scenario, if the court accepts that global warming may endanger the polar bear, she does not have to show the danger is imminent; and if it adopts the Ninth Circuit’s standard of causation, the relaxed analysis may lead it to find causation. In the end, her chances are much better at having standing on her procedural injury claim.

VIII. CONCLUSION

Thomas Gale Moore of the Hoover Institute, a conservative think tank at Stanford University, states, “It is simply hubris to believe that Homo sapiens can significantly affect temperatures, rainfall, and winds . . . . Global change is inevitable—warmer is better, richer is healthier.”286 In contrast, former Secretary of the

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283. See discussion supra Part IV.B.
284. See discussion supra Part IV.C.
285. See discussion supra Part IV.D.
“Standing” Up for the Environment

Navy James Webb believes “we can (and do)” irreversibly alter the environment by our actions or lack thereof.  

The search for certainty regarding the correlation of greenhouse gases and natural events such as hurricanes, forest fires, and floods is far from being resolved. And it is precisely this uncertainty—uncertainty of the science underlying the causes of global warming and uncertainty regarding the climate models’ ability to predict the possible consequences of global warming—that will likely preclude petitioners from establishing standing in federal courts to seek redress for their alleged injuries from global warming.

For now, the most effective means by which plaintiffs can establish standing for their claims is through the “more lenient requirements” of standing for procedural injuries. Although the outcome in these cases is not guaranteed, plaintiffs have a significantly improved chance at proving standing, since the relaxed standards for procedural injuries allow the plaintiffs to overcome obstacles under the injury-in-fact and causation requirements that they normally confront when alleging a substantive injury. Otherwise, global warming plaintiffs will likely fail to establish legal standing in federal court until the science can provide greater support for their claims.

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