
NOTE

CAUSATION IN ENVIRONMENTAL LAW: LESSONS FROM TOXIC TORTS

Causation — the link between an actor’s behavior and subsequent harm to another — is a vital component of a variety of legal doctrines. Requiring that a plaintiff show a causal connection between her injury and the defendant’s action satisfies the instinct that remedies for an injury should come from those who are responsible. Yet as any first-year torts student knows, pinpointing the actor(s) responsible for an injury can be factually and conceptually difficult, if not impossible. To further obfuscate clear analysis, “causation” can refer to many distinct concepts, due to different requirements in different doctrines. The result is that courts may often analyze causation in vastly differing ways, even in cases where the injury and instigating act are remarkably similar. The treatment of causation has been particularly inconsistent in environmental cases. This Note explores the disparate treatment of causation in environmental law and toxic torts. Courts can adapt the distinction between general and specific causation used in toxic tort law to clarify standing analysis and avoid prematurely deciding merits questions in environmental suits.

Environmental and toxic tort suits constitute broad, amorphous, and sometimes overlapping categories. To aid clarity, for the purposes of this Note, “toxic tort suits” refer to personal injury cases that allege a harm, generally a physical injury, due to exposure to a toxic substance.¹ Toxic tort suits can cover a wide variety of toxic exposures, including those from toxic products, toxic materials in a workplace, and toxic discharges into the environment. “Environmental suits,” in contrast, refer to cases that allege an injury to plaintiffs’ interests due to a harm to the environment or a violation of an environmental statute. Environmental suits thus can be further divided into two subcategories: those asserting rights under common law, such as public nuisance, and those asserting rights created by statute.

There are many similarities between toxic tort and environmental cases; indeed, some toxic tort suits are considered environmental suits by scholars and practitioners alike.² First, in the most archetypal ver-

¹ See generally MARGIE SEARCY-ALFORD, A GUIDE TO TOXIC TORTS § 1.01 (LexisNexis) (last visited May 8, 2015). Congress has also passed a number of statutes governing toxic substances, some of which create causes of action for toxic exposures. Because several of the statutes are often considered environmental statutes, to avoid confusion, this Note limits its discussion of toxic torts to suits under common law.

² Examples of toxic tort suits that are treated as environmental cases include *Koehn v. Ayers*, 26 F. Supp. 2d 953, 955 (S.D. Tex. 1998) (granting summary judgment against claims under, inter

sion of both types of suits, the defendants have created, sold in the marketplace, or discharged into the environment an injurious substance, such as a commercial drug with previously unknown negative side effects, chemical waste leaking from a landfill,³ or a “noxious gas” that causes acid rain.⁴ Second, for both types of suits, the injuries or theories of causation alleged are often based on cutting-edge research, and resolving the claims often requires difficult factual or technical determinations, particularly in establishing a causal link between the offending substance and the claimed injury. Finally, even though such complex, fact-intensive determinations might seem better suited to factfinders, in both types of suits, causation is often determined by judges as a matter of law.

Despite these similarities, causation is treated quite differently in environmental suits compared to toxic tort suits, particularly in those suits where a judge finds that causation does not exist as a matter of law. In environmental suits, causation is typically analyzed as a component of Article III standing, a jurisdictional inquiry that precedes any other aspect of the case.⁵ In contrast, in toxic tort cases, causation is rarely addressed under the standing inquiry. Instead, dismissal of a toxic tort case for lack of causation is typically based on whether the plaintiffs have presented sufficient evidence on causation, after standing has been established (or presumed).⁶

alia, nuisance, toxic tort, and various environmental statutes for dumping of oil field wastes), and *Ayers v. Township of Jackson*, 525 A.2d 287, 291 (N.J. 1987) (considering various tort claims based on exposure to landfill-contaminated water). See also Palma J. Strand, Note, *The Inapplicability of Traditional Tort Analysis to Environmental Risks: The Example of Toxic Waste Pollution Victim Compensation*, 35 STAN. L. REV. 575, 575 (1983) (characterizing tort cases regarding toxic waste disposal problems as concerning “environmental risks” (internal quotation marks omitted)).

³ See Arvin Maskin, *Litigating Claims for Punitive Damages: The View from the Front Line*, 31 LOY. L.A. L. REV. 489, 490–91 (1998).

⁴ *Georgia v. Tenn. Copper Co.*, 206 U.S. 230, 236 (1907); see also *id.* at 238 (describing how the gas became sulfuric acid in the atmosphere).

⁵ See *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 88–89 (1998) (noting that the standing inquiry comes before any merits inquiries, *id.*, and that determining whether a cause of action exists under a statute is not jurisdictional, *id.* at 89).

⁶ See, e.g., *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 885–88 (10th Cir. 2005) (affirming summary judgment for defendants due to lack of evidence showing causation); *Redland Soccer Club v. Dep't of the Army*, 55 F.3d 827, 851–52 (3d Cir. 1995) (reversing the lower court's summary judgment finding of no causation); cf. *Earl v. Cryovac*, 772 P.2d 725, 731 (Idaho Ct. App. 1989) (same). There are several possible reasons for the general lack of standing discussion in toxic tort cases. The first is that courts, like some scholars, are equating the concepts of injury and causation in standing with those in substantive tort law. See Jean Macchiaroli Eggen, *Being Small in a Supersized World: Tackling the Problem of Low-Level Exposures in Toxic Tort Actions*, 44 ENVTL. L. REP. 10630, 10632 (2014) (describing a single case — *Lujan v. Defenders of Wildlife*, 504 U.S. 555 (1992) — as support for the standard for injury in both “[c]onstitutional standing and general state tort law”). Another possibility is that, in the majority of toxic tort cases, there is no dispute over whether a case or controversy exists, and judges find it unnecessary to address standing explicitly. Relatedly, courts have historically

This Note argues that causation in environmental law cases has been forced into jurisdictional standing analysis, even where the inquiry is more appropriate for later determination on the merits, which results in a significant and sometimes inappropriate barrier for environmental plaintiffs.⁷ To resolve this issue, courts can adapt toxic tort doctrine's distinction between general and specific causation to distinguish causation questions best suited for standing analysis from causation questions better left to a factfinder. The analysis proceeds in four Parts. Part I describes how the causation inquiry functions under tort law in most states, and how toxic tort inquiries into causation differ from such inquiries in other areas of tort law. Part II discusses the difficulties with the causation prong of Article III standing in the context of environmental suits. Part III explains the similarities and differences of the causation inquiries in both types of cases, and the problems that arise out of conflating causation in standing with causation on the merits. The last Part explores solutions and proposes applying toxic tort law's general/specific causation distinction to environmental causation inquiries. Such an approach could both mitigate the perceived inconsistencies in standing analysis in environmental suits and help ensure that fact-intensive inquiries into causation are addressed only after full discovery.

I. TOXIC TORTS AND CAUSATION

Toxic torts, despite their general limitation to personal injuries, span a wide variety of cases and types of exposure. Some of the more common examples include exposure to asbestos,⁸ pesticides,⁹ dioxins,¹⁰

dismissed tort cases for lack of cognizable injury or proximate cause even before the development of the three-pronged standing test, *see, e.g.*, *Mitchell v. Rochester Ry. Co.*, 45 N.E. 354 (N.Y. 1896), *overruled by* *Battalla v. State*, 176 N.E.2d 729 (N.Y. 1961), and federal courts may have found it unnecessary to incorporate seemingly redundant standing analysis into tort doctrine.

⁷ However, not all environmental cases falter on standing. One notable exception is *United States v. Students Challenging Regulatory Agency Procedures (SCRAP)*, 412 U.S. 669 (1973), which found standing for students challenging railroad rates based on the "attenuated line of causation" that the rate increase would increase use of nonrecyclable over recyclable products, which would result, *inter alia*, in more garbage discarded in national parks, *id.* at 688. *SCRAP* has been limited by subsequent Supreme Court decisions on standing. *See, e.g.*, *Lujan v. Nat'l Wildlife Fed'n*, 497 U.S. 871, 889 (1990) (characterizing *SCRAP* as based on "its particular facts" and noting that its reasoning "has never since been emulated" by the Court).

⁸ *E.g.*, *Thompson v. Johns-Manville Sales Corp.*, 714 F.2d 581 (5th Cir. 1983); *Borel v. Fibreboard Paper Prods. Corp.*, 493 F.2d 1076 (5th Cir. 1973). One report estimates that, as of 2002, at least 700,000 individuals had brought asbestos claims. STEPHEN J. CARROLL ET AL., *RAND INST. FOR CIVIL JUSTICE, ASBESTOS LITIGATION*, at xviii (2005).

⁹ *E.g.*, *Mascarenas v. Miles, Inc.*, 986 F. Supp. 582 (W.D. Mo. 1997); *Dewing v. Orkin Exterminating Co.*, 897 F. Supp. 44 (N.D.N.Y. 1995); *Hue v. Farmboy Spray Co.*, 896 P.2d 682 (Wash. 1995).

¹⁰ *E.g.*, *Herrington v. Leaf River Forest Prods., Inc.*, 733 So. 2d 774 (Miss. 1999); *Leaf River Forest Prods., Inc. v. Ferguson*, 662 So. 2d 648 (Miss. 1995); *see also* William Boyd, Note,

and various pharmaceuticals, such as the miscarriage-prevention drug diethylstilbestrol (DES).¹¹ Because of the nature of the substances generally involved, the harms due to exposure typically are not discovered until long after the exposure occurred.¹² In addition, over that period of time, the injured party may have been exposed to a variety of potentially harmful substances, likely as the result of actions by a variety of different actors.¹³ As a result, identifying any responsible party, much less identifying all responsible parties, can be quite difficult. For toxic torts, these difficulties complicate plaintiffs' ability to prove causation in personal injury claims.¹⁴ The standard of causation in toxic tort law is also quite contentious. Some argue that it is currently too difficult to show causation, preventing worthy victims from being compensated for their injuries.¹⁵ Indeed, causation is arguably the most difficult element to prove in toxic tort cases.¹⁶ Others, however, argue that the causation bar is too low or that relaxing the standard further would encourage frivolous lawsuits or otherwise negatively affect the court system.¹⁷ As an adaptation to those difficulties, courts in many states address causation not only by performing classical factual and proximate cause analysis, but also by separating factual causation into the categories of general and specific cause.¹⁸

A. Factual Causation in Tort Law

Causation in tort law entails two elements: factual causation and proximate causation. For many torts, establishing factual causation depends on showing that the defendant's conduct is a but-for

Controlling Toxic Harms: The Struggle over Dioxin Contamination in the Pulp and Paper Industry, 21 STAN. ENVTL. L.J. 345 (2002). Dioxin can refer to any of a number of chlorinated hydrocarbon compounds that are produced as toxic side products in a range of industrial processes. These compounds are highly carcinogenic, persist for long periods in the environment, and can accumulate up the food chain. *Id.* at 348–50.

¹¹ *E.g.*, *Tidler v. Eli Lilly & Co.*, 851 F.2d 418 (D.C. Cir. 1988).

¹² *See, e.g.*, Daniel A. Farber, *Toxic Causation*, 71 MINN. L. REV. 1219, 1228 (1987).

¹³ Gerald W. Boston, *A Mass-Exposure Model of Toxic Causation: The Content of Scientific Proof and the Regulatory Experience*, 18 COLUM. J. ENVTL. L. 181, 300–01 (1993) (“In reality, an individual will rarely be exposed only to a single toxic substance.” *Id.* at 301.).

¹⁴ *See* Farber, *supra* note 12, at 1226–28.

¹⁵ *See, e.g.*, Margaret A. Berger, Essay, *Eliminating General Causation: Notes Towards a New Theory of Justice and Toxic Torts*, 97 COLUM. L. REV. 2117, 2131–34 (1997).

¹⁶ *See* Danielle Conway-Jones, *Factual Causation in Toxic Tort Litigation: A Philosophical View of Proof and Certainty in Uncertain Disciplines*, 35 U. RICH. L. REV. 875, 878 (2002) (“[T]he only clear observation in toxic tort litigation is the unparalleled dilemma of establishing a cause and effect relationship between a toxin and a plaintiff's injury.”).

¹⁷ *See, e.g.*, Jonathan C. Mosher, *A Pound of Cause for a Penny of Proof: The Failed Economy of an Eroded Causation Standard in Toxic Tort Cases*, 11 N.Y.U. ENVTL. L.J. 531, 594–96 (2003).

¹⁸ *See, e.g.*, *Merrell Dow Pharm., Inc. v. Havner*, 953 S.W.2d 706, 714–15 (Tex. 1997); Conway-Jones, *supra* note 16, at 900.

cause of the plaintiff's injury.¹⁹ An alternative is "substantial factor" causation — that is, the conduct would have been sufficient to be a but-for cause, but there existed another act that also would have been a but-for cause if it had occurred separately.²⁰ In most states, substantial factor causation is sufficient to establish factual causation.²¹

Historically, factual causation was established by showing but-for causation, but this approach ran into practical difficulties. For example, in a situation where two simultaneous actions could each individually suffice to create the harm, neither action is a but-for cause of the injury.²² In other situations, there may be multiple actors, but it is not clear which actor is responsible for the injury.²³ If all the actors have behaved similarly, it may seem unfair that the injured party cannot obtain a remedy from any of the actors simply because each of them could point at the others to prevent any showing of causation. Such situations are not uncommon in toxic tort cases. For example, multiple but-for causes may exist in pesticide cases, where a farmworker is exposed to multiple pesticides that each could have caused the farmworker's injuries.²⁴ Additionally, there may be multiple indistinguishable actors in pharmaceuticals cases, where a patient has taken a drug that is produced by multiple manufacturers and it is unclear which one manufactured the doses actually purchased and used.²⁵

¹⁹ Proximate causation, on the other hand, depends on whether the conduct is sufficiently closely related to the injury. Depending on the jurisdiction, proximate cause may be established by showing that the injury was foreseeable as a result of the defendant's actions, or that the injury was within the "scope of the risk" of the action. The terminology regarding factual and proximate cause has been inconsistent between jurisdictions and highly contested. See RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 29 cmts. a, b (2005).

²⁰ See RESTATEMENT (SECOND) OF TORTS § 432 (1965). The standards for the substantial factor test vary, and the most recent Restatement has abandoned "substantial factor" language, arguing that the phrase creates more confusion than clarity. See RESTATEMENT (THIRD) OF TORTS: LIABILITY FOR PHYSICAL AND EMOTIONAL HARM § 26 cmt. j.

²¹ See SEARCY-ALFORD, *supra* note 1, § 10.01(2)(b). States that still use the but-for causation standard for toxic torts include Arizona, Colorado, Delaware, Michigan, Missouri, and New Mexico. See, e.g., *Benshoof v. Nat'l Gypsum Co.*, 978 F.2d 475, 477 (9th Cir. 1992) (per curiam) (applying Arizona law); A GUIDE TO TOXIC TORTS, *supra* note 1, § 10.01(2)(a).

²² The classic example is of two shooters, both aiming for quail, who each accidentally shoot the same bystander instead. Cf. *Summers v. Tice*, 199 P.2d 1 (Cal. 1948) (en banc).

²³ The fowl-based analogy here is if two shooters fired at a quail and one bullet hit the unfortunate bystander, but no one knows which of the two shooters is responsible.

²⁴ Keith Cunningham-Parmeter, *A Poisoned Field: Farmworkers, Pesticide Exposure, and Tort Recovery in an Era of Regulatory Failure*, 28 N.Y.U. REV. L. & SOC. CHANGE 431, 491 (2004) (noting "it is almost impossible to pinpoint which exposure . . . caused the subsequent illness or injury" (quoting Lisa Peck Lindelef, *California Farmworkers: Legal Remedies for Pesticide Exposure*, 7 STAN. ENVTL. L.J. 72, 102 (1987–1988)) (internal quotation mark omitted)).

²⁵ See, e.g., Glen O. Robinson, *Multiple Causation in Tort Law: Reflections on the DES Cases*, 68 VA. L. REV. 713, 721 (1982) (noting there were approximately 200–300 DES manufacturers, making it "difficult to identify the commercial origin of drugs taken more than a decade earlier").

B. General and Specific Factual Causation

As discussed above, determining factual causation can be a challenge in toxic torts.²⁶ To aid their determinations, courts have identified two categories of factual causation: general and specific causation.²⁷ “[G]eneral causation addresses whether products of the same nature as [the] defendant’s product are capable of causing the type of injuries alleged . . . [, while] specific causation addresses whether [the] defendant’s product more likely than not caused injuries in this particular case.”²⁸ Most, but not all, jurisdictions require showing both aspects — but even where jurisdictions do not require both, evidence in favor of either form of causation can be probative as to establishing factual causation.²⁹

Currently, a toxic tort plaintiff faces difficulties in establishing both general and specific factual causation. For general causation, it may be difficult to establish that a particular substance can cause a particular malady. This uncertainty may be due to ongoing debate among researchers, or simply the time it takes for such studies to be completed. One unfortunate side effect is that the earliest claimants for a particular type of toxic exposure may well find it difficult to establish general causation simply because the medical science has not yet caught up to claimants’ personal experiences.³⁰

For specific causation, as in the multiple-emitter environmental cases described above, it may be impossible in toxic tort cases to determine which specific entity is responsible for the exposure that led to

²⁶ See Mosher, *supra* note 17, at 545.

²⁷ See, e.g., *Goebel v. Denver & Rio Grande W.R.R. Co.*, 346 F.3d 987, 990 (10th Cir. 2003); *In re Hanford Nuclear Reservation Litig.*, 292 F.3d 1124, 1133 (9th Cir. 2002); *In re Meridia Prods. Liab. Litig.*, 328 F. Supp. 2d 791, 798 (N.D. Ohio 2004).

²⁸ *Heller v. Shaw Indus., Inc.*, No. Civ.A. 95-7657, 1997 WL 535163, at *6 (E.D. Pa. Aug. 18, 1997).

²⁹ Michael Axline, *Proof of Causation*, in LOUIS R. FRUMER & MELVIN I. FRIEDMAN, 9 PRODUCTS LIABILITY § 55.03(2) (Matthew Bender rev. ed. 2014), LexisNexis ALMPRD. Compare *Norris v. Baxter Healthcare Corp.*, 397 F.3d 878, 881 (10th Cir. 2005) (requiring both general and specific causation for liability “in silicone breast implant litigation”), and *Ranes v. Adams Labs., Inc.*, 778 N.W.2d 677, 688 (Iowa 2010) (noting that general and specific causation do not form separately required elements in toxic torts, but that it is often helpful to treat them as distinct requirements for evidentiary reasons), with *Earl v. Cryovac*, 772 P.2d 725, 726–27 (Idaho Ct. App. 1989) (declaring that “general” and “particular” evidence are both probative of cause in fact, *id.* at 727), *Kuhn v. Sandoz Pharm. Corp.*, 14 P.3d 1170, 1184 (Kan. 2000) (holding that general causation was not required in the particular case), and *Christian v. Gray*, 65 P.3d 591, 603 (Okla. 2003) (holding that plaintiffs had the “burden of either showing general causation or showing that general causation is not necessary for the admissibility of the expert’s testimony” on causation).

³⁰ Compare *In re “Agent Orange” Prod. Liab. Litig.*, 611 F. Supp. 1223, 1232–34 (E.D.N.Y. 1985) (noting that all studies into Agent Orange’s effects on health “have been negative or inconclusive,” *id.* at 1232), with *Viet. Ass’n for Victims of Agent Orange v. Dow Chem. Co.*, 517 F.3d 104, 112 (2d Cir. 2008) (describing restrictions on the herbicide’s use after toxicity evidence was publicly released).

the plaintiffs' harms.³¹ The difficulty in traceability may be due to the fungibility of the toxin, the length of time between exposure and medical consequences, or other issues. For example, a variety of pharmaceutical companies produced the drug DES as a generic product. DES turned out to cause cancer and other medical complications in the daughters of women who took the drug, so the medical consequences necessarily did not become apparent until decades later.³² In addition, some jurisdictions require showing that exposure to other substances is likely not responsible for the alleged injury,³³ which can be difficult when a plaintiff has been exposed to multiple toxic substances. For example, asbestos is known to increase the risks of, among other things, lung cancer. However, those who have contracted lung cancer subsequent to being exposed to other airborne toxins, such as those found in cigarette smoke, may have trouble establishing that asbestos is a significant contributor, much less that smoking is likely not responsible.³⁴ Even where the responsible toxic substance can be pinpointed, it is often medically unclear how much effect a particular exposure has had on an injury. For example, the medical evidence may still be unsettled, or it may be technically or ethically impossible to quantitate the health effects of a toxin in humans. Courts often rely on expert opinions to aid their determinations of factual questions relating to causation, but that creates additional epistemic problems in determining which experts and what testimony to allow.³⁵

The circumstances of toxic tort cases often create difficult questions of causation, particularly factual causation, which courts often address in their merits inquiry at trial. In contrast, in environmental law cases, similarly complex questions of causation are determined before trial, as discussed below.

II. ENVIRONMENTAL LAW AND STANDING

Modern environmental law cases may arise from common law or from statutory authorizations.³⁶ The earliest environmental suits were

³¹ See, e.g., *Merrell Dow Pharm., Inc. v. Havner*, 953 S.W.2d 706, 715 (Tex. 1997).

³² See *Tidler v. Eli Lilly & Co.*, 851 F.2d 418, 420 (D.C. Cir. 1988).

³³ *Conway-Jones*, *supra* note 16, at 906.

³⁴ See Michelle J. White, *Asbestos and the Future of Mass Torts*, J. ECON. PERSP., Spring 2004, at 183, 183–84.

³⁵ *Conway-Jones*, *supra* note 16, at 920. Such expert opinions can be critical to a judge's decision, see e.g., *id.* at 898, and the standard for determining when an expert opinion is admissible to support factual claims is a complex and controversial subject in its own right, see, e.g., Paul S. Miller & Bert W. Rein, *Whither Daubert? Reliable Resolution of Scientifically-Based Causality Issues in Toxic Tort Cases*, 50 RUTGERS L. REV. 563, 565–67 (1998).

³⁶ Greenhouse gas (GHG) cases are sometimes considered distinguishable from traditional environmental suits, because the non-localized nature of global warming raises greater concerns about injury, causation, and redressability than suits alleging more localized effects. See Mark

based in common law, particularly public nuisance law.³⁷ More recently, common law environmental cases have mostly but not entirely been supplanted by cases arising from environmental statutes and regulations.³⁸ The major statutes governing environmental law were enacted or significantly amended between 1970 and 1980, with subsequent amendments passed in the decades since.³⁹ The broad language of the environmental statutory “canon” created a range of new rights and causes of action based on theories of environmental harm, which appears to have triggered judicial concern over whether Congress overstepped Article III’s limitations on standing.⁴⁰

Courts have derived standing doctrine from Article III’s requirement of a case or controversy.⁴¹ Despite this relatively clear basis for the standing requirement, standing doctrine is a controversial topic and has been criticized as “incoherent” or worse.⁴² Some have argued that Article III standing is merely an excuse for courts to avoid reaching the merits on cases they are unwilling or unable to decide, or that courts will sometimes turn a blind eye to standing when they wish to

Latham et al., *The Intersection of Tort and Environmental Law: Where the Twains Should Meet and Depart*, 80 *FORDHAM L. REV.* 737, 761 (2011). However, courts appear to locate the entirety of causation inquiries within the standing requirement in non-GHG cases as well, and the causation inquiry is typically similarly fact based. See, e.g., *Carolina Env’tl. Study Grp., Inc. v. U.S. Atomic Energy Comm’n*, 431 F. Supp. 203, 205, 210–14, 220–21 (W.D.N.C. 1977) (describing a four-day hearing to address standing and ripeness in a case regarding nuclear power plants and finding standing after exhaustive discussion of, inter alia, expert testimony, statistical likelihoods of accidents, and congressional committee testimonies), *rev’d on other grounds sub nom. Duke Power Co. v. Carolina Env’tl. Study Grp., Inc.*, 438 U.S. 59 (1978). Accordingly, this Note considers both GHG and non-GHG cases in its discussions of causation and standing.

³⁷ See, e.g., *Georgia v. Tenn. Copper Co.*, 206 U.S. 230 (1907).

³⁸ See David A. Westbrook, *Liberal Environmental Jurisprudence*, 27 *U.C. DAVIS L. REV.* 619, 662 (1994) (describing how regulation was required to overcome market failures in “archaic” tort-based environmental law and triggered the rise of “classical” environmental law). Tort claims are sometimes still pursued even where some statutory rights exist. See, e.g., *Int’l Paper Co. v. Ouellette*, 479 U.S. 481, 497 (1987) (noting that despite the Clean Water Act’s preemption of some state law claims against an out-of-state actor, nuisance claims under the law of the source state remain a viable option for plaintiffs); *Native Vill. of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863 (N.D. Cal. 2009), *aff’d*, 696 F.3d 849 (9th Cir. 2012).

³⁹ Todd S. Aagaard, *Environmental Law Outside the Canon*, 89 *IND. L.J.* 1239, 1240 (2014) (categorizing six statutes from this period as members of an environmental “canon”).

⁴⁰ See Antonin Scalia, *The Doctrine of Standing as an Essential Element of the Separation of Powers*, 17 *SUFFOLK U. L. REV.* 881, 884–86 (1983).

⁴¹ See *Valley Forge Christian Coll. v. Ams. United for Separation of Church & State, Inc.*, 454 U.S. 464, 473 (1982) (declaring that standing prevents federal courts from being “merely publicly funded forums for the ventilation of public grievances or the refinement of jurisprudential understanding”); Martin H. Redish & Sopan Joshi, *Litigating Article III Standing: A Proposed Solution to the Serious (But Unrecognized) Separation of Powers Problem*, 162 *U. PA. L. REV.* 1373, 1375–76 (2014) (explaining that standing doctrine is intended to prevent courts from exercising their coercive power over litigants who do not fall within the case-or-controversy requirement).

⁴² William A. Fletcher, *The Structure of Standing*, 98 *YALE L.J.* 221, 221 (1988); see also *Massachusetts v. EPA*, 549 U.S. 497, 548 (2007) (Roberts, C.J., dissenting) (criticizing *SCRAP* for making standing “seem a lawyer’s game”).

reach the merits.⁴³ This section describes the elements of Article III standing, with particular emphasis on the standards for showing causation in environmental suits.

A. Article III Standing

Article III standing comprises three components: injury in fact, causation, and redressability.⁴⁴ The injury must be both “concrete and particularized”⁴⁵ and “actual or imminent.”⁴⁶ An injury may be concrete even if the harm is not physical or economic, such as an injury to one’s interest in viewing endangered animals.⁴⁷

Redressability requires that the court find it likely (and not “merely ‘speculative’”) that the injury would be redressed by a favorable decision.⁴⁸ Redressability often ties in with causation, as a finding of lack of causation typically results in a finding of no redressability as well.⁴⁹ And in “procedural rights” cases — where the claimed injury is an agency’s failure to fulfill a statutorily mandated procedure (such as a rulemaking or an administrative hearing) — the redressability requirement may be fulfilled if the court’s decision for the plaintiff would cause the desired procedure to be performed, even if the outcome of the procedure may go against the plaintiff’s goals.⁵⁰ This has resulted in one of many gray areas in standing doctrine: whether procedural rights are substantially different from other types of rights for the purposes of standing.⁵¹

For the causation prong, courts generally find causation when the injury is “fairly traceable” to the defendant’s conduct.⁵² However, the standard for what is considered fairly traceable is unclear. In some cases, a but-for causal connection has been considered sufficient for

⁴³ See Heather Elliott, *Does the Supreme Court Ignore Standing Problems to Reach the Merits? Evidence (Or Lack Thereof) from the Roberts Court*, 23 WM. & MARY BILL RTS. J. 189, 193–95 (2014).

⁴⁴ E.g., *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992).

⁴⁵ *Id.* at 560.

⁴⁶ *Id.* (quoting *Whitmore v. Arkansas*, 495 U.S. 149, 155 (1990)) (internal quotation mark omitted).

⁴⁷ *Id.* at 562–63. Similarly, aesthetic interests may be recognizable when the plaintiff actually uses the area in which they assert that interest. See *Sierra Club v. Morton*, 405 U.S. 727, 734–35 (1972).

⁴⁸ *Lujan*, 504 U.S. at 561 (quoting *Simon v. E. Ky. Welfare Rights Org.*, 426 U.S. 26, 43 (1976)). But see *Massachusetts v. EPA*, 549 U.S. 497, 525–26 (2007) (finding standing where the remedy could not fully redress climate change on the grounds that the remedy would decrease the harm to some degree).

⁴⁹ See, e.g., Karl S. Coplan, *Refracting the Spectrum of Clean Water Act Standing in Light of Lujan v. Defenders of Wildlife*, 22 COLUM. J. ENVTL. L. 169, 185 (1997).

⁵⁰ See *Massachusetts*, 549 U.S. at 517–18.

⁵¹ See *Wash. Envtl. Council v. Bellon*, 732 F.3d 1131, 1144 (9th Cir. 2013) (distinguishing *Massachusetts* as being related to a procedural right).

⁵² E.g., *Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals, Inc.*, 913 F.2d 64, 71 (3d Cir. 1990).

standing purposes.⁵³ In others, the Court has applied a causal nexus test.⁵⁴ In addition, the unclear role of state sovereignty in standing may extend to the causation prong.⁵⁵

The causation inquiry in Article III standing has been criticized as “uncertain in application and unpredictable in result.”⁵⁶ However, causation generally has been easier to establish when the alleged injury is perceived to be a direct result of the defendant’s action,⁵⁷ while cases that claim a harm based on a defendant’s failure to engage with a third party are more likely to fail on the causation prong.⁵⁸ Additionally, Congress may be able to define new chains of causation that suffice to establish standing,⁵⁹ including by creating procedural rights.⁶⁰

B. Causation in Environmental Standing

In some environmental cases, as in some toxic tort cases, demonstrating but-for causation can be nearly impossible, even when the plaintiff has undoubtedly been injured. In global warming and other similar cases, multiple entities may emit a pollutant with no feasible means to determine whether any individual entity’s emissions created the complained-of injury. This may be true even when a court has accepted that the result of the accumulated emissions has created the injury. In such cases, the Court has considered whether the defendants’ conduct has made a “meaningful contribution” to the pollution.⁶¹ However, the extent of what suffices to show a meaningful contribution remains unclear.⁶²

⁵³ See, e.g., *Duke Power Co. v. Carolina Env’tl. Study Grp., Inc.*, 438 U.S. 59, 74–75 (1978).

⁵⁴ See, e.g., *Allen v. Wright*, 468 U.S. 737, 753 n.19 (1984).

⁵⁵ Cf. Bradford C. Mank, *No Article III Standing for Private Plaintiffs Challenging State Greenhouse Gas Regulations: The Ninth Circuit’s Decision in Washington Environmental Council v. Bellon*, 63 AM. U. L. REV. 1525, 1574–75 (2014) (describing one argument that the analysis of the causation prong in *Massachusetts* does not distinguish between state and private plaintiffs).

⁵⁶ Scott Dodson, *The Complexity of Jurisdictional Clarity*, 97 VA. L. REV. 1, 23 (2011) (criticizing all three elements of standing on this ground).

⁵⁷ See, e.g., *Flast v. Cohen*, 392 U.S. 83, 102–03 (1968) (holding that there was sufficient nexus between a statute’s overreaching of congressional power and a constitutional infringement of a taxpayer plaintiff’s rights).

⁵⁸ See, e.g., *Linda R.S. v. Richard D.*, 410 U.S. 614, 617–18 (1973) (holding that there was insufficient allegation of a nexus between the plaintiff’s injury and the government’s failure to prosecute her ex-husband for not paying child support).

⁵⁹ See *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 580 (1992) (Kennedy, J., concurring in part and concurring in the judgment) (“In my view, Congress has the power to define injuries and articulate chains of causation that will give rise to a case or controversy where none existed before . . .”).

⁶⁰ *Id.* at 572 n.7 (majority opinion) (allowing the possibility of standing to challenge, for example, a “failure to prepare an environmental impact statement, even though [the plaintiff] cannot establish with any certainty that the statement will cause the license to be withheld or altered”).

⁶¹ *Massachusetts v. EPA*, 549 U.S. 497, 525 (2007); see also *Sierra Club v. Cedar Point Oil Co.*, 73 F.3d 546, 558 (5th Cir. 1996).

⁶² See *Amigos Bravos v. U.S. Bureau of Land Mgmt.*, 816 F. Supp. 2d 1118, 1135–36 (D.N.M. 2011) (noting that it “is not clear” what qualifies as meaningful contributions to GHG emissions,

There has been substantial disagreement in the courts and among commentators about the degree of inquiry required in the standing phase of an environmental claim. In particular, it is difficult to determine when adjudication of a factual dispute over causation should occur, in the standing phase or afterwards on the merits, with some scholars arguing that current standing doctrine injects the “merits issues into a supposedly jurisdictional determination.”⁶³ One example of this dispute occurred in *Comer v. Murphy Oil USA*,⁶⁴ in which a class of Mississippi residents and landowners sued under various common law doctrines, including public nuisance, claiming injuries from greenhouse gas (GHG) emissions that exacerbated the effects of Hurricane Katrina.⁶⁵ The Fifth Circuit held that the challenge to jurisdiction involved questions that ought to be resolved at the merits stage,⁶⁶ but the decision was vacated upon en banc review.⁶⁷ Generally, however, courts have incorporated factual inquiries at the standing stage for determining causation.⁶⁸ In fact, in one case relating to the Clean Water Act, the Third Circuit vacated a judgment because the plaintiffs did not contradict a defendant’s expert who testified during the merits phase that the permit violations had no observable impact.⁶⁹

The causation prong of the Article III standing inquiry is heavily fact dependent. In its discussion of causation in *Connecticut v. Ameri-*

id. at 1136, and comparing *Massachusetts’s* “meaningful contribution” test with *Powell Duffryn’s* “substantial likelihood” test in the context of the Clean Water Act, *id.* at 1135). Compare *Connecticut v. Am. Elec. Power Co.*, 582 F.3d 309, 345 (2d Cir. 2009), *rev’d on other grounds*, 131 S. Ct. 2527 (2011), with *Wash. Envtl. Council v. Bellon*, 732 F.3d 1131, 1145–46 (9th Cir. 2013).

⁶³ Daniel A. Farber, *Standing on Hot Air: American Electric Power and the Bankruptcy of Standing Doctrine*, 121 YALE L.J. ONLINE 121, 122 (2011), http://www.yalelawjournal.org/pdf/1003_115a7rfi.pdf [<http://perma.cc/H2MH-SJTA>]; see also Redish & Joshi, *supra* note 41, at 1374 (criticizing *Defenders of Wildlife* for increasing the evidentiary burden of showing Article III standing as litigation proceeds, “[i]n a manner identical to standard treatment of issues on the merits”). Such critiques of how modern standing doctrine burdens plaintiffs extend far beyond the realm of environmental litigation. See, e.g., Abram Chayes, *The Supreme Court, 1981 Term — Foreword: Public Law Litigation and the Burger Court*, 96 HARV. L. REV. 4, 15–16 (1982).

⁶⁴ 585 F.3d 855 (5th Cir. 2009), *vacated and reh’g en banc granted*, 598 F.3d 208 (5th Cir.), and *appeal dismissed*, 607 F.3d 1049 (5th Cir. 2010) (en banc).

⁶⁵ *Id.* at 859–60.

⁶⁶ *Id.* at 864.

⁶⁷ *Comer*, 607 F.3d at 1053. After a series of recusals, the en banc panel consisted of only eight of the sixteen active judges on the bench, who dismissed review because they did not have a quorum, but did so without reinstating the previous opinion. *Id.* at 1053 n.*, 1054. Many thanks to Professor Richard Lazarus for bringing these unusual circumstances to the author’s attention.

⁶⁸ See Coplan, *supra* note 49, at 213–16 (describing how some courts, after *Defenders of Wildlife*, have applied a causation-in-fact analysis at the standing stage in a wide variety of environmental suits).

⁶⁹ See *Pub. Interest Research Grp. of N.J., Inc. v. Magnesium Elektron, Inc.*, 123 F.3d 111, 116–17, 125 (3d Cir. 1997). While the court phrased its analysis in terms of injury, the basis for its decision was “[t]he district court’s conclusion that [the defendant’s] pollution did not affect the . . . ecosystem,” *id.* at 117, language suggesting a close relationship to causation considerations. See Coplan, *supra* note 49, at 214.

*can Electric Power Co.*⁷⁰ (*AEP*), the Second Circuit concluded that the five defendants' emissions sufficiently contributed to the plaintiffs' injuries, noting that they were the largest utility emitters of carbon dioxide in the United States.⁷¹ As a result, the court found that the causation element was fulfilled.⁷² In contrast, in the most recent major case on causation, *Washington Environmental Council v. Bellon*⁷³ (*WEC*), the Ninth Circuit held that environmental group plaintiffs did not have standing to sue to compel state regulation of GHG emissions from oil refineries.⁷⁴ The court found that the causal chain between the state's lack of controls and the claimed injuries "consists of a series of links strung together by conclusory, generalized statements of 'contribution,' without any plausible scientific or other evidentiary basis that the refineries' emissions are the source of their injuries."⁷⁵ The court noted that causation in GHG cases was particularly difficult, due to the global effect of GHG emissions and the localized nature of harms.⁷⁶ Because the plaintiffs had not alleged that the oil refineries had emitted a significant proportion of national or global GHG emissions, the court found that there was insufficient evidence that the emissions were contributing significantly to climate change.⁷⁷ The plaintiffs did argue that the emissions constituted a significant percentage of *state* emissions, but the court noted that this was a far smaller amount than that emitted by the parties at issue in *AEP*.⁷⁸ If the reasoning in *WEC* is followed by other courts, it could preclude nearly all state court suits, which typically involve only a small percentage of national emissions.⁷⁹ The causation analysis in both *AEP* and *WEC* considered the sufficiency of facts to show causation — namely whether the amount of GHG emissions was "enough" to count as causing the plaintiffs' harms.

Factual inquiries into causation at the standing stage are not limited to climate change cases. While recent Supreme Court inquiries in-

⁷⁰ 582 F.3d 309 (2d Cir. 2009), *rev'd on other grounds*, 131 S. Ct. 2527 (2011). Interestingly, the district court had noted in passing that the question of standing in this case was intertwined with the merits and should not be addressed. *See Connecticut v. Am. Elec. Power Co.*, 406 F. Supp. 2d 265, 271 n.6 (S.D.N.Y. 2005), *vacated*, 582 F.3d 309, *rev'd*, 131 S. Ct. 2527.

⁷¹ *AEP*, 582 F.3d at 345.

⁷² *Id.*

⁷³ 732 F.3d 1131 (9th Cir. 2013).

⁷⁴ *See id.* at 1142.

⁷⁵ *Id.* In other cases, courts have found a causal link between a failure to regulate and harms to individual plaintiffs. *See, e.g., Covington v. Jefferson Cnty.*, 358 F.3d 626, 639 (9th Cir. 2004).

⁷⁶ *WEC*, 732 F.3d at 1143.

⁷⁷ *Id.* at 1143–44.

⁷⁸ *Id.* at 1146 & n.8.

⁷⁹ *See Mank, supra* note 55, at 1575–76.

to standing have been predominantly about GHGs, lower courts consistently make factual inquiries in other areas of environmental law.⁸⁰

III. CRITICIZING THE DIFFERENCES IN CAUSATION INQUIRIES

Much scholarship has criticized how standing doctrine is applied, both generally as well as specifically in the context of environmental law. In toxic tort scholarship, there has been vigorous discussion of the standards for causation and the difficulty (or ease) of establishing both factual and legal causation.⁸¹ And others have examined the historical basis of modern environmental law in tort law, as well as how tort law might still apply in modern environmental law, much of which is now governed by statute.⁸² Still, despite similarities in the causation inquiries in these two types of cases, surprisingly little has been written on the disjunction between causation inquiries for the purposes of jurisdiction and for merit determinations in tort law.

A. Comparing Toxic Tort and Environmental Causation Inquiries

Despite being considered at different stages in the two different types of cases, causation in both environmental and toxic tort cases often requires complex factual determinations. Such factual determinations can occur before the merits stage — in jurisdictional hearings resembling trials — and are treated as factual determinations on appellate review,⁸³ even though the findings are used to determine standing, a question of law. There are also many similarities between the technical methods available to support causation findings in both toxic torts and environmental suits. In toxic tort cases, findings of causation typically rely on epidemiological evidence, which relies heavily on statistical analyses and mathematical or computer modeling to make probabilistic determinations of risk and contribution.⁸⁴ Because of the complexity of human health and the great difficulty in showing direct medical causation (rather than correlation), it is typically impossible to demonstrate that an individual's health condition is directly

⁸⁰ See, e.g., *Pub. Interest Research Grp. of N.J., Inc. v. Magnesium Elektron, Inc.*, 123 F.3d 111, 123 (3d Cir. 1997) (reversing a finding of standing in a CWA suit, based on expert testimony during the merits phase at trial that the temperature, salinity, and organic carbon from the defendant's discharges could not cause injury); *S.F. Baykeeper v. W. Bay Sanitary Dist.*, 791 F. Supp. 2d 719, 749 (N.D. Cal. 2011) (upholding standing under the CWA where "[p]laintiff has submitted substantial evidence that [defendant has] 'contributed' to the injuries suffered").

⁸¹ See generally Farber, *supra* note 12.

⁸² See, e.g., Latham et al., *supra* note 36, at 754–57 (proposing a framework for determining when courts should continue to allow tort law remedies for environmental injuries).

⁸³ See Luke Meier, *Using Tort Law to Understand the Causation Prong of Standing*, 80 *FORDHAM L. REV.* 1241, 1276 (2011).

⁸⁴ See Farber, *supra* note 12, at 1220 & n.7.

and solely caused by any particular toxin.⁸⁵ In environmental cases, there are a variety of fields that might be called on to support a causal nexus, depending on the type of claim.⁸⁶ Many of these fields, including meteorology, hydrology, and ecology, also rely heavily on statistical and modeling methods, and these fields also tend to be able to only predict risks based on observed correlations.⁸⁷

Despite these similarities, causation is considered more often and in more detail at the standing phase in environmental suits, but it is reserved primarily for merits determinations in tort suits. There are rationales for this divergence based on doctrinal, structural, or policy arguments, but they ultimately cannot justify the disparity. The first argument is that, while there might appear to be a divergence in practice, there is no actual doctrinal difference in the standards for causation in standing for environmental and toxic tort cases; any difference in outcome is due simply to the nature of environmental law cases. Environmental suits often are rooted in statutes or administrative regulations, which may provide broader bases for claims than are available at common law. Such environmental suits are thus more likely to fail at the first, lower causation requirement during standing, while toxic tort cases typically are clear enough to overcome standing issues without need for discussion. However, even if environmental cases are inherently more likely to fail on standing, there are several signs that this cannot be the sole reason for the difference. Environmental cases that do not arise under statute often fail at the standing stage as well — environmental tort cases, particularly public nuisance cases, also tend to require strong factual support for standing.⁸⁸ Of course, public nuisance is not quite as traditional a tort as other torts, and may raise significant standing problems simply based on the more generalized claims of harm it encompasses. However, the same can be

⁸⁵ There are a few notable exceptions to this rule, such as asbestosis and mesothelioma, which medical research has shown are almost entirely correlated with asbestos exposure. See, e.g., D. Sen, *Working with Asbestos and the Possible Health Risks*, 65 OCCUPATIONAL MED. 6, 10–11 (2015).

⁸⁶ Clifford Fisher, *The Role of Causation in Science as Law and Proposed Changes in the Current Common Law Toxic Tort System*, 9 BUFF. ENVTL. L.J. 35, 40–41 (2001) (noting the need for “deeper erudition about chemical reactions, the function of ecosystems, and the limits to safe exposure,” *id.* at 41, in both environmental and toxic tort cases).

⁸⁷ See, e.g., NICOLE MÖLDERS & GERHARD KRAMM, LECTURES IN METEOROLOGY (2014) (describing the history of air quality models, *id.* at 9, the need for simplifying assumptions in climate modeling, and the lack of an “allover climate theory,” *id.* at 450, among many other models and equations); Mary Fanett Wheeler, *Preface* to ENVIRONMENTAL STUDIES: MATHEMATICAL, COMPUTATIONAL, AND STATISTICAL ANALYSIS, at vii (Mary Fanett Wheeler ed., 1996) (“Mathematical modeling and large-scale data collection and analysis lie at the core of all environmental studies. Examples of such issues are the protection of the ozone layer, climate change, regional and urban pollution, toxic waste disposal, and water pollution.”).

⁸⁸ Steven Sarno, Comment, *In Search of a Cause: Addressing the Confusion in Proving Causation of a Public Nuisance*, 26 PACE ENVTL. L. REV. 225, 226–27 (2009).

said of some toxic tort suits, particularly those claiming injuries attributed to exposure to a toxic discharge. Yet toxic tort claims rarely face the same standing barriers as environmental claims.⁸⁹

The second argument is structural. Article III's case-or-controversy requirement is said to enforce the separation of powers and ensure that there is "proper adversarial presentation" to support effective adjudication.⁹⁰ Standing requirements provide a safeguard against congressional and judicial overreach, both by limiting Congress's power to establish new causes of action and by limiting the courts' authority to adjudicate issues.⁹¹ However, too high a standing barrier also cuts against the structural limits of the Constitution. A court that dismisses claims under too narrow a view of standing unduly limits congressional discretion in defining new injuries and causes of action.⁹² In addition, an overly high bar for standing may prematurely trigger or block detailed technical review that is better left to the merits stage of a trial.⁹³

Finally, judicial policy may be playing a role in decisions to deny standing to environmental suits. Courts may be using standing for a gatekeeping function, out of concern that allowing environmental suits to proceed based on broader views of standing would overwhelm the courts or allow frivolous lawsuits intended to harass or delay others.⁹⁴ But these are prudential considerations. If a court is concerned about these issues, it should analyze them directly rather than treating them as constitutional issues, which cannot be overruled by Congress.

In addition, the highly detailed factual analysis that accompanies some standing inquiries may be inappropriate at such an early stage of trial. There are several problems that arise from overreliance on factual determinations in issues of standing. For example, judges are not equipped to handle highly technical factual issues unaided.⁹⁵ Also, in

⁸⁹ See, e.g., *Gerst v. Marshall*, 549 N.W.2d 810, 813–15 (Iowa 1996) (acknowledging that causation is an element of the standing requirement, *id.* at 814–15, but skipping standing and affirming summary judgment based on an analysis of causation as defined under tort law, *id.* at 815, 818).

⁹⁰ Heather Elliott, *The Functions of Standing*, 61 STAN. L. REV. 459, 471 (2008) (quoting *Massachusetts v. EPA*, 549 U.S. 497, 517 (2007)) (internal quotation mark omitted); see also *id.* at 460.

⁹¹ See *Allen v. Wright*, 468 U.S. 737, 752 (1984).

⁹² See Elliott, *supra* note 90, at 513 ("[S]tanding should not trample on Congress's legislative prerogatives.").

⁹³ For a parallel argument in the (also highly technical) area of pharmaceuticals litigation, see Christopher J. Kochevar, Note, *Reforming Judicial Review of Bioequivalence Determinations*, 87 N.Y.U. L. REV. 2040, 2072 (2012).

⁹⁴ Cf. *Boston*, *supra* note 13, at 190 (arguing that mass torts have applied a rigorous standard of proof, while individualized cases have generally required a less strict standard).

⁹⁵ While most jurors likely also do not have technical backgrounds, our legal system traditionally trusts juries with technical factfinding issues. This trust may be partially a legal fiction, but a panel of jurors is more likely to have a member with some technical knowledge than a single judge, and the committee structure of a jury also allows fuller discussion to reach consensus on

areas of ongoing research, like the effects of various pollutants on human health and welfare, later scientific and technical developments could change the causation analysis. Because such new data or models are rarely universally adopted soon after discovery, but rather only slowly reach scientific consensus, judges and juries would benefit from a full factfinding process, with *Daubert* hearings and other supporting procedures to ensure that the facts presented to the court reflect scientific methods and expertise as accurately as the judicial process allows.

B. *The Problem of Different Causation Inquiries*

If both tort merits-stage and environmental standing causation inquiries are being resolved by judges as questions of law, and resolving both types of inquiries depends on the same judges considering similar technical information, why does it matter that the inquiries happen at different stages of the proceedings? First, requiring the same degree of scrutiny at the standing and merits phases is inconsistent with doctrine. Second, there are a variety of practical considerations that support leaving heavily fact-dependent questions to the merits phase.

Standing is intended to be a threshold inquiry. By considering both general and specific causation for deciding standing for environmental suits but not in similar toxic tort suits, courts have established an inconsistently high barrier for plaintiffs in environmental suits, limiting access to judicial process. Ironically, the federal statutes creating the possibility of environmental citizen suits, which are now heavily scrutinized under Article III standing analysis, were passed in response to the consensus that the common law was insufficiently protective and the tests for liability too strict for plaintiffs.⁹⁶ In fact, passage of the environmental statutes inspired those drafting the Second Restatement of Torts to relax some tort requirements.⁹⁷ The greater burden to show standing for citizen suits under statutes compared to common law thus likely contradicts the intent of the Congresses that passed those statutes. Further, conducting the entire causation inquiry within the standing analysis places an inappropriately high burden on judges to resolve factual questions at an early stage of trial, instead of leaving those determinations to the designated factfinder after a full hearing.

the reliability of each side's experts. Perhaps most importantly, juries do not come to a verdict until after all evidence has been presented, unlike judges making jurisdictional decisions.

⁹⁶ In addition, regulatory statutes also aim to prevent future harms rather than merely to compensate for past harms, which further justifies, at least from a policy standpoint, a lower burden of proof for jurisdiction. See Farber, *supra* note 12, at 1232 (distinguishing prevention from compensation in toxic harm cases).

⁹⁷ For a fascinating examination of that history, see Denise E. Antolini, *Modernizing Public Nuisance: Solving the Paradox of the Special Injury Rule*, 28 *ECOLOGY L.Q.* 755, 836-43 (2001) (describing the debate among delegates regarding whether to incorporate recent changes in standing doctrine into the corresponding aspects of private law, particularly public nuisance).

If determining jurisdiction often requires considering the merits of the case, why should it matter that current standing doctrine sometimes results in court analyses that overinclude factual determinations in standing? Beyond the value of judicial restraint in not unnecessarily restricting Congress's determinations of when to provide remedies not available at common law, there are several non-doctrinal reasons why fact-based determinations should be left to the merits phases as much as possible. While it would be inefficient to leave jurisdictional questions to a jury or other factfinders because doing so would interfere with the gatekeeping function of limited standing, it is also inefficient to require inexpert judges to weigh dueling statements of expert witnesses when the asserted technical information is not necessary to determine whether the parties have standing. There are also broader considerations of fairness, or at least perceived fairness. Given the typically more truncated nature of jurisdictional proceedings, both in terms of the hearing process and the degree of discussion in resulting decisions, jurisdictional proceedings tend to provide a less complete airing of factual disputes. And given the political concerns over many environmental suits, including the perception that standing determinations in environmental suits are often politically motivated,⁹⁸ reserving as much of the factual dispute as possible to the merits phase would incent more detailed examination of the issues at stake, and perhaps allow more environmental suits to proceed to the merits.

IV. INCORPORATING TOXIC TORT CAUSATION INTO ENVIRONMENTAL STANDING

A. *Dividing the Causation Inquiry*

Shifting some of the factual analysis for establishing causation out of standing analysis would help reduce the bias against finding standing in environmental suits. However, the difficulty is in determining which aspects of the causation factfinding can be moved from the standing inquiry of environmental suits to the merits phase, without further muddling standing doctrine.

Toxic tort doctrine may serve as a valuable guide to reforming environmental standing analysis. Courts considering difficult questions of causation may be able to distinguish questions of general and specific causation, requiring proof of only the former at the standing stage. This Note is not the first to argue that aspects of toxic tort law can be used to clarify issues in environmental law; but prior work has

⁹⁸ See, e.g., Richard J. Pierce, Jr., *Is Standing Law or Politics?*, 77 N.C. L. REV. 1741, 1759-60 (1999) (observing that Republican-appointed circuit judges are more likely to deny standing in environmental cases than their Democratic-appointed counterparts).

focused on other aspects of such cases.⁹⁹ The general/specific distinction is readily made by nontechnical decisionmakers and may lead to more coherent doctrine and fairer access to merits review for environmental plaintiffs.

To parallel the terms' use in toxic tort cases, then, this Note defines general causation in environmental cases as showing that the actions of the defendant are capable of causing the plaintiff's alleged injuries, and specific causation as showing whether the defendant's conduct was a substantial contributor to the injuries in the particular case. With general and specific causation defined in this manner, environmental claimants would be able to show the causation prong of standing if they presented sufficient evidence that the defendant's pollution is of a kind capable of creating their alleged injury. For a fisher, it would be sufficient to show that an upstream discharge contains toxins capable of killing fish, reserving for the merits whether the amount of discharge was sufficient to harm the fish in question. For a coastal landowner, it would be sufficient to show that a facility is emitting pollutants capable of contributing to climate change, reserving for the merits whether damage to the landowner's property is due to climate change and whether the amount of the facility's emissions is a significant contribution. And so on. Requiring general causation alone at the standing stage would maintain the basic tripartite structure of standing analysis, and a general causation requirement would be sufficient to exclude a wide variety of problematic cases, including those where there is insufficient scientific evidence that the action is injurious in the way claimed by the plaintiff.

⁹⁹ See, e.g., Lauren Case, Comment, *Climate Change: A New Realm of Tort Litigation, and How to Recover when the Litigation Heats Up*, 51 SANTA CLARA L. REV. 265, 290–95 (2011) (arguing that certain collective liability theories from toxic torts can be applied in the context of climate change). Professor Luke Meier has proposed a different solution. He argues that the confusion in standing's causation analysis can be resolved by treating the causation prong of standing like a proximate cause inquiry, requiring only a showing that the resulting injury was a foreseeable result of the defendant's conduct. Meier, *supra* note 83, at 1279. Meier argues that a judge has "no special expertise or insight into performing the counterfactual inquiry required by cause in fact," *id.* at 1249, and is thus better suited to consider the role of proximate causation over that of factual causation. However, there is no way to entirely avoid factual determinations in proximate causation analyses, nor is there any reason to expect that jurisdictional facts are less difficult or technical an issue than other factual issues. These concerns are especially true given the nature of proximate causation analysis in the context of environmental cases. In many environmental cases, proximate causation requires a determination of the significance of contributions made by intervening actors and fellow polluters. See *Native Vill. of Kivalina v. ExxonMobil Corp.*, 696 F.3d 849, 867 (9th Cir. 2012). This proximate cause requirement is as technical a consideration as a substantial factor factual causation analysis would require, which determines the significance of the defendant's emissions, and the proximate-causation analysis might even use the same methods for determination. Drawing a distinction based on factual and proximate cause in environmental cases, then, would neither clarify the doctrine nor significantly alleviate the factfinding burden on courts.

Addressing only general causation in the causation prong of standing returns that prong to its initial gatekeeping role of ensuring that the courts hear only cases that arise out of a case or controversy. A finding of general causation — that the action *could* create the type of harm suffered by the plaintiff — suggests that there is at least a possibility that the action *did* cause the harm, and thus, whether the action specifically caused the harm is a controversy suitable for adjudication. As with other areas of law, an affirmative finding on general causation alone would not always suffice to reach the merits: the suit must also establish the other prongs of standing.¹⁰⁰ Further, if a court recognizes that a claimant has presented no facts supporting specific causation and cannot establish that the alleged injury resulted from the defendant's actions, the court may still dismiss the case on summary judgment,¹⁰¹ which parallels how this issue is resolved in toxic tort cases.¹⁰² This approach is a more logical way to resolve clear factual outcomes without denying jurisdiction altogether and allows courts to leave more difficult (and thus harder to establish) questions of fact to the factfinding stage.

This solution would not be entirely inconsistent with existing case law. Some decisions already implicitly recognize a distinction between general and specific causation, though they address both forms of causation under standing analysis. In *WEC*, the court appeared to accept the State's argument, supported by expert declaration, that "it is not possible to quantify a causal link" between the GHG emissions of any individual refinery and global climate change.¹⁰³ And even if there were a link between the emissions and environmental harm, the court argued, that would not suffice to show a causal link with the plaintiffs' injuries.¹⁰⁴ While the former argument may be dicta,¹⁰⁵ it suggests that the Ninth Circuit was concerned not only with whether the

¹⁰⁰ One limitation of a general causation test is that it can be overinclusive, by permitting cases where an action might have the possibility of creating the type of harm but could not have caused the specific harm at issue. For example, a suit by a California fisher for discharges into a New York waterway might fulfill general causation. However, such a claim would still likely fail the injury or redressability requirements. In addition, such a clear set of facts may also cause the plaintiff to lose on specific causation on summary judgment.

¹⁰¹ While summary judgment also occurs before full presentation of evidence at trial, the high standard for summary judgment — requiring the court to consider the motion while construing all facts in the light most favorable to the nonmoving party — sets a clearer rule for the judge and for both parties.

¹⁰² There is also an obvious converse argument — that toxic tort cases, particularly those involving mass torts, may benefit from moving the general-causation inquiry into a question of standing, rather than being resolved at summary judgment. However, further exploration of this possibility is left outside the scope of this Note.

¹⁰³ *WEC*, 732 F.3d 1131, 1143 (9th Cir. 2013) (internal quotation mark omitted).

¹⁰⁴ *See id.* at 1144.

¹⁰⁵ Mank, *supra* note 55, at 1570.

plaintiffs had established a specific causal link to the claimed injuries, but also with a general causal link between the emissions and climate change. Moreover, the Third Circuit in *Powell Duffryn* seemed to find general causation sufficient when it explained that, under the Clean Water Act, causation can be established by showing that the defendant discharged more than the permitted amount of pollutant “into a waterway in which the plaintiffs have an interest . . . [and] this pollutant causes or contributes to the *kinds of injuries* alleged by the plaintiffs.”¹⁰⁶

The Supreme Court, too, has sometimes appeared to distinguish between general and specific causation without explicitly identifying that distinction. For example, in *Friends of the Earth, Inc. v. Laidlaw Environmental Services (TOC), Inc.*,¹⁰⁷ the Court’s injury analysis overlapped with the causation inquiry when it found that the plaintiffs had sufficiently alleged cognizable injuries to satisfy that prong of standing for its claim for injunctive relief.¹⁰⁸ The Court observed that “[t]he relevant showing for purposes of Article III standing . . . is not injury to the environment but injury to the plaintiff.”¹⁰⁹ To ultimately prevail on claims based on the latter type of injury, the plaintiffs would need to show that the defendants’ discharges into the river *caused* the plaintiffs’ specific behavior, not merely the more general showing that some discharges could cause some people to stop using the river. The Court noted that Friends of the Earth had provided reasonable support, beyond that of “general averments,” sufficient to support their claims at the jurisdictional stage.¹¹⁰ The Court, however, did not define a more specific standard for the evidentiary requirements to establish standing.

B. Barriers to Adoption

There are several reasons why courts may remain reluctant to leave some aspects of causation for later proceedings in the case. While there are some valid prudential and doctrinal objections to the general/specific distinction described here, these objections ultimately are not persuasive.

One reason may simply be history, both in terms of overt limits in the form of precedent and in the limits of path dependence.¹¹¹ Courts

¹⁰⁶ Pub. Interest Research Grp. of N.J., Inc. v. Powell Duffryn Terminals, 913 F.2d 64, 72 (3d Cir. 1990) (emphasis added).

¹⁰⁷ 528 U.S. 167 (2000).

¹⁰⁸ *Id.* at 183.

¹⁰⁹ *Id.* at 181. *But see id.* at 199 (Scalia, J., dissenting) (arguing that the assertion is better phrased as “harm to the environment is not *enough* to satisfy the injury-in-fact requirement”).

¹¹⁰ *Id.* at 184 (majority opinion) (quoting *Lujan v. Nat’l Wildlife Fed’n*, 497 U.S. 871, 888 (1990)) (internal quotation marks omitted).

¹¹¹ See generally Oona A. Hathaway, *Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System*, 86 IOWA L. REV. 601 (2001).

have long entertained detailed inquiries into causation under Article III standing, starting with early public nuisance law claims, and this practice does not appear to have been widely challenged in courts, even as academics have debated the merits of existing standards for standing. The continued overuse of causation inquiries in environmental cases may be attributable, at least in part, to the reluctance of litigators to raise arguments that might challenge this doctrine.¹¹²

Courts may also be concerned that relaxing the factual inquiry will weaken standing's role as a structural limit on judicial overreach and jeopardize both the separation of powers and the adversary requirements that aid effective adjudication. However, it seems more likely that recognizing when a factual question is better left to the merits would *better* enforce both the separation of powers and the adverse-ness requirement. As noted above, too high a standing barrier also cuts against the separation of powers by allowing courts to limit Congress's power to create new causes of action. And adversarial presentation of difficult questions of fact would be more complete if the parties are given the opportunity to be heard at the merits stage.

Another concern is whether analyzing causation in this way would open the floodgates to massive numbers of environmental suits that are currently resolved on standing grounds. This is particularly relevant to climate change suits, given the extremely large number of facilities that emit GHGs, especially if such claims can continue to be brought under common law.¹¹³ However, just because plaintiffs can show general causation does not mean that they have standing, or that they would prevail at trial. For example, plaintiffs suing a relatively small emitter would still have trouble showing that any harm to their property would be redressed by a favorable court decision.¹¹⁴ The difference is that those nonconstitutional considerations would be more clearly stated as such, allowing Congress to step in if it disagrees.

And even if environmental suits were to flood courts because standing restrictions (including prudential limitations) were relaxed, the caseload may not be entirely unmanageable. Toxic tort cases are

¹¹² Litigators may be reluctant to challenge adverse precedent when there are easier methods by which to bypass the special injury requirement. See Antolini, *supra* note 97, at 879–82.

¹¹³ See Michael B. Gerrard, *What the Law and Lawyers Can and Cannot Do About Global Warming*, 16 SOUTHEASTERN ENVTL. L.J. 33, 42 (2007) (“The climate change cases [brought under common law theories] could ensnare even more defendants (directly or through third-party practice), involve more plaintiffs, and penalize ongoing lawful conduct.”).

¹¹⁴ Also, while prudential limitations on standing have recently been questioned by the Court, see, e.g., *Lexmark Int'l, Inc. v. Static Control Components, Inc.*, 134 S. Ct. 1377, 1388 (2014) (stating that courts “cannot limit a cause of action that Congress has created merely because ‘prudence’ dictates”), they have yet to be formally foreclosed by the Court. See *The Supreme Court, 2013 Term — Leading Cases*, 128 HARV. L. REV. 191, 330 (2014) (conceding that *Lexmark* did not resolve the issue of third-party standing and other less-defined elements of prudential standing, despite its philosophical undermining of those concepts).

widely acknowledged to have produced such a flood, which courts have established procedures to handle. It is not clear why the many toxic tort plaintiffs should have greater access to the courts than environmental plaintiffs, at least where both are requesting similar damages-based remedies.

It may also be true that many of the cases that survive the standing inquiry by establishing only general causation will fail on the merits when they come up short on specific causation. As noted by others, it is extremely difficult to show specific causation — that an individual emitter's emissions created a particular harm.¹¹⁵ Given this difficulty, then, what value is there to extending the trial and burdening courts by moving to merits phases that are (likely) doomed to fail? The first reason is the ideal that those with valid claims are entitled to their day in court. Further, truly hopeless cases may still be dismissed on summary judgment, upon a party's showing that its adversary cannot overcome the burden of proof before any reasonable factfinder. But the relatively high standard required for summary judgment reduces judicial discretion and thus the risk that conscious or unconscious biases will influence a case's dismissal. This, in turn, allows dismissal where the facts clearly dictate a specific result while still granting a full hearing to more borderline cases. This structure parallels how other areas of law resolve cases, including toxic tort law, and may help resolve some of the underlying confusion in environmental standing doctrine.

CONCLUSION

The conflation between causation in standing law and causation as an element of tort law has created a justiciability barrier in environmental law, under which judges find themselves considering the full extent of causation as a part of the standing inquiry. Such an exhaustive examination of causation under an ostensibly jurisdictional consideration places an undue burden both on judges, who must consider factual and technical findings without the benefit of full briefing and argument, and on plaintiffs, who must establish full causation in their initial filings. Given the similarities between toxic tort cases and environmental suits, reserving questions of specific causation for later determination would likely help relieve the burden on both courts and claimants without serious injury to courts' dockets and would result in more consistent and equitable hearings for those pursuing environmental claims.

¹¹⁵ See, e.g., Jody Freeman & David B. Spence, *Old Statutes, New Problems*, 163 U. PA. L. REV. 1, 68 n.295 (2014) ("The burden of linking GHG emissions from, say, a particular oil and gas well to the melting polar ice caps that imperil the polar bear's survival — not to mention the need for appropriate mitigation measures — would be daunting.")