

An Empirical Assessment of Climate Change in the Courts: A New Jurisprudence or Business as Usual?

DAVID MARKELL^{*} & J.B. RUHL[†]

ABSTRACT

While legal scholarship seeking to assess the impact of litigation on the direction of climate change policy is abundant and growing in leaps and bounds, to date it has relied on and examined only small, isolated pieces of the vast litigation landscape. Without a complete picture of what has and has not been within the sweep of climate change litigation, it is difficult to offer a robust evaluation of the past, present, and future of climate change jurisprudence. Based on a comprehensive empirical study of the status of all (201) climate change litigation matters filed through 2010, this Article is the first to fill those gaps and assess the state of play of climate change in the courts. We conclude that the story of climate change in the courts has not been one of courts forging a new jurisprudence, but rather of judicial business as usual.

Part I of the Article outlines the scope of climate change litigation, explaining what qualifies as climate change litigation in our study, our methodology for identifying and coding case attributes, and our typology of the claims that have been or likely will be made as climate change moves relentlessly forward. Part II of the Article then presents and assesses the major theme revealed from our empirical study and largely missing from commentary on climate change litigation—that a siege-like battle between “pro” and “anti” regulation interests has led to an increasingly robust and complex litigation landscape but with mixed results for both sides.

Drawing from those findings, Part III of the Article takes on a set of empirical and normative questions designed to summarize and assess the climate change litigation experience and its impacts on the content and institutions of climate policy. It is evident at all levels of inquiry that courts have taken a business as usual approach to climate change, resisting litigants’ attempts to make courts a locus of direct policy making, but the courts nevertheless have influenced the policy content and its institutional contours dramatically. We extract these themes from the full experience of climate change litigation and suggest fruitful paths of research to develop a better understanding of the role and impact of the courts in the climate change policy arena.

In Part IV of the Article we stretch a bit from the confines of our empirical study and findings to speculate about the future of climate change litigation.

^{*} Steven M. Goldstein Professor, The Florida State University College of Law, Tallahassee, Florida.

[†] Matthews & Hawkins Professor of Property, The Florida State University College of Law, Tallahassee, Florida. We are thankful to William Boyd, Ann Carlson, Robin Craig, Brigham Daniels, Tara Grove, Alex Klass, Sarah Krakoff, Doug Kysar, Jim Salzman, and Mark Squillace for input on the project, to participants in workshops at Florida State, Colorado, UC-Berkeley, and Texas Wesleyan, for their helpful comments, to our research assistants Christian Cutillo, Abigail Dean, Gina Iacona, Pete Matthews, Angelina Perez, and Xiaolin Zhao, and to the FSU College of Law for financial and other support. Please direct any questions or comments to dmarkell@law.fsu.edu or jbruhl@fsu.edu.

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INTRODUCTION

It is a truism by now that climate change is one of the central public policy issues of our time.¹ Yet while legal scholarship seeking to assess the impact of climate change litigation on the direction of policy in this important arena is abundant and growing in leaps and bounds,² to date it has relied on and examined only small, isolated pieces of the vast litigation landscape. With few exceptions, for the most part legal scholars have focused on the obvious, such as the Supreme Court's decision in *Massachusetts v. EPA*,³ and the sexy, such as the small handful

¹ See, e.g., John M. Broder, *Title, but Unclear Power, For a New Climate Czar*, N.Y. TIMES, Dec. 12, 2008, at A28, available at <http://www.nytimes.com/2008/12/12/us/politics/12climate.html> (quoting White House coordinator of energy and climate policy Carol Browner describing climate change as "the greatest challenge ever faced"); BarackObama.com, Obama Statement on Climate Change Negotiations in Bali, Dec. 10, 2007, http://www.barackobama.com/2007/12/10/obama_statement_on_climate_cha.php (last visited Nov. 20, 2009) (describing climate change as "one of the greatest challenges of this generation.").

² Westlaw searches conducted on Feb. 15, 2011 in the Journals and Law Reviews (JLR) library for "climate change" w/s litigation" and using different date restrictions yielded a list of 5 articles through 2000, 34 articles through 2005, 615 articles through 2010, and 635 articles through the search date. [we will update this for the search date prior to publication]

³ 549 U.S. 497 (2007). A majority of the Court found that the Environmental Protection Agency (EPA) had erred in denying a citizen rulemaking petition to regulate greenhouse gas emissions from motor vehicles under the Clean Air Act. The opinion opens with the pronouncement that "[a] well-documented rise in global temperatures has coincided with a significant increase in the concentration of carbon dioxide in the atmosphere. Respected scientists believe the two trends are related." *Id.* at 504-05. Although as a matter of judicial restraint the Court was silent on whether and how EPA might go about regulating emissions, the opinion seems to have been crafted to nudge the agency toward regulation, or at least make not regulating more difficult. See *infra* note __; see also Jonathan Z. Cannon, *The Significance of Massachusetts v. EPA*, 93 VA. L. REV. IN BRIEF 51, 57 (2007) ("The Court's opinion seems to leave EPA little room in dealing with climate change."); Arnold W. Reitze Jr., *Controlling Greenhouse Gas Emissions From Mobile Sources – Massachusetts v. EPA*, 37 ENVTL. L. REP. (Envtl. Law Inst.) 10535, 10538 ("[T]he Court's opinion pushes EPA to find that GHGs need to be regulated."). Indeed, the EPA has since promulgated a series of regulations doing so. See *Endangerment and Cause or Contribute Findings for Greenhouse Gases under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66,496 (Dec. 15, 2009); *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards*, 75 Fed. Reg. 25,324 (May 7, 2010); *Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs*, 75 Fed. Reg. 17,004 (Apr. 2, 2010); *Prevention of Significant Deterioration and Title VI Greenhouse Gas Tailoring Rule*, 75 Fed. Reg. 31,514, Att. A (June 3, 2010); see generally U.S. EPA, *Climate Change – Regulatory Initiatives*, <http://www.epa.gov/climatechange/initiatives/index.html> (last visited Feb. 2, 2010); Robert Meltz, *Federal Agency Actions Following the Supreme Court's Climate Change Decision: A Chronology*, CRS Report for Congress R41103 (Dec. 23, 2010), available at <http://www.fas.org/sfp/crs/misc/R41103.pdf>. Commentators generally regard *Massachusetts v. EPA* as a watershed event in climate change litigation, if not also for environmental law generally. See Cannon, *supra*, at 59, ("the broader cultural or symbolic significance of the decision [is that] [t]he Court has accepted – indeed has seemed to internalize – the beliefs, assumptions, and values that animate the environmentalists' views on climate change."); Richard Lazarus, *A Breathtaking Result for Greens*, ENVTL. F., May-June 2007, at 12, 12. ("describing the case as "[a] breathtaking result for environmentalists. The first time that

of high profile cases alleging sources of greenhouse gas (GHG) emissions are liable under common law public nuisance and other common law doctrines.⁴ Surely these are important legal developments worthy of attention in legal scholarship and media coverage, but we believed there has to be more to climate change litigation than that.

Indeed, what animated this project was our intuition that how the courts approach the broad array of types of climate change litigation might hold important insights, not only for how climate change policy is likely to evolve (and who is likely to shape it), but more generally for the role of the courts in public policy governance. What is largely missing from the scholarly assessment in this regard are the dozens upon dozens of cases of climate change litigation matters that may seem mundane taken individually, but which can inform scholarly evaluation when considered cumulatively. The scholarship has equally failed to identify and broadly assess what has *not* been the subject of climate change litigation. Without a complete picture of what has and has not been within the sweep of climate change litigation, it is difficult to offer a robust evaluation of the past, present, and future of climate change jurisprudence. This Article is the first to fill those gaps comprehensively for assessing the state of play of climate change in the courts.⁵

environmentalists have both persuaded the Supreme Court to grant review over the federal government's opposition and then won on the merits.”).

⁴ See *Comer v. Murphy Oil*, U.S.A 585 F.3d 855 (5th Cir. 2009) (reversing lower court's granting of motion to dismiss), *panel opinion vacated*, 607 F.3d 1049 (2010) (restoring trial court's dismissal); *Connecticut v. American Electric Power*, 582 F.3d 309 (2d. Cir. 2009) (reversing lower court's granting of motion to dismiss), *cert. granted*, 131 S. Ct 813 (U.S. Dec. 6, 2010) (No. 10-174); *Native Village of Kivalina v. ExxonMobil Corp.*, 663 F. Supp. 2d 863 (N.D. Cal. 2009) (granting motion to dismiss); *California v. Gen. Motors Corp.*, No. C06-05755, 2007 WL 2726871 (N.D. Cal. Sept. 17, 2007) (granting motion to dismiss); Notwithstanding that no such case has yet resulted in success on the merits, legal scholarship on just the idea of this form of litigation is already legion. See Douglas Kysar, *What Climate Change Can Do About Tort Law*, __ ENVTL. L. __ (forthcoming), Yale Law School, Public Law Working Paper No. 215, at 2, n.1 (July 20, 2010) (collecting articles and arguing the cases are unlikely to succeed), available at SSRN: <http://ssrn.com/abstract=1645871>. Legal practitioners have cast the line of cases as portending a major new thrust of common law liability. See, e.g., Robert A. Wyman et al., *Significant Climate Issues Likely to Be Raised in the Federal Courts*, 39 Env'tl. L. Rep. (Env'tl. L. Inst.) 10925, 10926 (Oct. 2009) (suggesting that judicial decisions “may have a powerful impact on public policy” in the climate change arena and that “[a]ny private entity with significant . . . GHG emissions could be identified in the next climate change lawsuit”). Media coverage also has predicted sweeping impacts. See, e.g., *The New Climate Litigation*, WALL ST. J., Dec. 28, 2009, at A 16 (the “climate-change lobby is already shifting to Plan B. . . . Meet the carbon tort.”); Richard Ingham, *Billions of Dollars at Stake in Climate Litigation—Law's Last Frontier*, VANCOUVER SUN, Jan. 24, 2011, available at <http://www.vancouversun.com/technology/technology/4154473/story.html> (“climate-change litigation is fast emerging as a new frontier of law where some believe hundreds of billions of dollars are at stake”); John Schwartz, *Courts Emerging as Battlefield for Fights Over Climate Change*, N.Y. TIMES, Jan. 27, 2010, at 1A (reporting that Swiss Re, an insurance giant, compared these suits to those that led dozens of companies in asbestos industries to file for bankruptcy and predicted that “climate change-related liability will develop more quickly than asbestos-related claims.”).

⁵ For examples of other work providing a broader overview than is typically found in legal scholarship, see Justin R. Pidot, *Global Warming in the Courts: An Overview of Current Litigation and Common Legal Issues* (Georgetown Env'tl. L. & Pol'y Inst. 2006); Robert Meltz,

In order to attempt this broader description and evaluation of the role of the courts in climate change litigation, we designed a comprehensive empirical study to provide a knowledge base that is not available from existing legal scholarship and commentary. Our study collected pleadings and decisions from all active and resolved climate change litigation matters⁶ and coded each file for a wide variety of attributes. Having elsewhere provided a brief initial description of the data based on the status of 139 cases filed through 2009,⁷ we have refined and updated the study through 2010 to cover 201 discrete litigation matters and now turn in this Article to a much deeper assessment of the climate change litigation experience thus far.⁸

We did not enter this project with preconceived notions about what we would learn from review of this significant body of case law, but we inevitably brought certain assumptions, explicit and implicit, to the project. In particular, several empirical and normatively oriented questions about the place of courts in climate change policy animated our study. At a conceptual level, the imprimatur of the courts confers considerable legitimacy on the operation of the administrative state.⁹ In addition, courts have considerable latitude to develop law on their own.¹⁰ Further, courts sometimes perform a “signaling” function, in which they “prod” other government institutions to act.¹¹ But, on the other hand, overly aggressive judicial review has the potential to engender administrative ossification – agency paralysis – among other phenomena that many commentators view as counterproductive.¹² There are constraints on unilateral judicial policy-making

Climate Change Litigation: A Survey, CRS Report for Congress R40984 (May 14, 2009); Alice Kaswan, *The Domestic Response to Global Climate Change: What Role for Federal, State, and Litigation Initiatives?*, 42 U.S.F. L. REV. 39 (2007).

⁶ Our definition of climate change litigation as well as other study parameters and methods are explained *infra* in Part I.A.

⁷ See David Markell & J.B. Ruhl, *An Empirical Survey of Climate Change Litigation In the United States*, 40 Env'tl. L. Rep. (Env'tl. L. Inst.) 10644 (2010).

⁸ The database and coding method for our study are publicly available at [\[redacted\]](#). [to be posted on a publicly available URL]

⁹ See Richard B. Stewart, *Administrative Law in the Twenty-First Century*, 78 N.Y.U. L. REV. 437, 438 (2003); Martin Flaherty, *The Most Dangerous Branch*, 105 Yale L.J. 1725, 1810 (1996); Michael Asimow and Ronald M. Levin, *STATE AND FEDERAL ADMINISTRATIVE LAW* 11 (3d ed. West Publishing 2008).

¹⁰ See e.g., *Georgia v. Tenn. Copper Co.*, 206 U.S. 230 (1907); *International Paper v. Ouellette*, 479 U.S. 481 (1987); *Weinberger v. Romero-Barcelo*, 456 U.S. 305, 313 (1982) (discussing a court's equitable jurisdiction when applying a statute).

¹¹ Douglas A. Kysar & Benjamin Ewing, *Climate Change, Courts, and the Common Law* (available at ssrn.com/abstract=1749398).

¹² Thomas O. McGarity, *Some Thoughts on “Deossifying” the Rulemaking Process*, 41 DUKE L.J. 1385, 1386-87 (1992) (explaining the “ossification” phenomenon in agency rulemaking); Mark Seidenfeld, *Why Agencies Act: A Reassessment of the Ossification Critique of Judicial Review*, 70 OHIO ST. L. J. 251, 254 (2009) (asserting that judicial review should not be blamed for inappropriate agency inaction and that it is important to look at the context in which an agency's decision to act arises); Jason Webb Yackee & Susan Webb Yackee, *Testing the Ossification Thesis: An Empirical Examination of Federal Regulatory Volume and Speed, 1950-1990* (available at <http://ssrn.com/abstract=1699878>) (claiming that their empirical study found that judicial oversight, along with White House and Congressional oversight, has “probably not unduly harmed rule-making in the aggregate.”)

within our tripartite form of government as well.¹³ Thus, one of our overarching interests was to explore how courts are doing in performing their “legitimizing” and “signaling” functions; and, similarly, how ready they seem to be to proceed on their own in this complex policy arena.

More specifically, we were interested in learning first about the following three largely empirical questions:

1. *How much action is there in the court system?* Our perception that there was far more to climate change litigation than the small number of cases discussed in legal scholarship led to this study and its central question whether the legal system is a frequently or rarely-used tool for addressing climate change-related issues? Our findings indicate a rapidly building wave of litigation.

2. *Where is the litigation action hot and cold?* Climate change is paradigmatically a cross-cutting arena involving a host of policy arenas and actors. Given this, we wanted to find out where the judicial action is – which policy spheres and which institutions are receiving the litigation spotlight (and which have largely avoided it)? As we describe, litigation is concentrated in two specific arenas, leaving some gaping holes in what could be additional fronts of action.

3. *Who are the players and what is their game?* Here we are focused on which actors are primarily seeking to use the courts and what they are trying to accomplish by doing so? Are plaintiffs trying to get the courts to set climate change policy to their benefit? Or are plaintiffs seeking to use the courts to leverage action by the other branches of government? Or are parties seeking to use the courts to prevent action by other branches? Our findings tell a not surprising story of environmental nongovernmental organizations (NGO) frequently suing federal and state governments, though litigation by companies and industry NGOs is rising fast and intergovernmental litigation was also a significant presence.

Beyond these three empirical aspects, we hoped to learn more about what the courts are doing with the claims that have been brought to advance understanding about a series of important normative questions concerning the operation of our regulatory state and the role of the courts in it. These break down into four separate but related inquiries:

1. *How have courts responded as agencies address (or decline to address) climate change through discrete regulatory initiatives and adjudicatory decisions?* *Massachusetts v. EPA* was about whether an agency must initiate a regulatory response to climate change under its statutory mandate. Since then, however, EPA and other state and local agencies have put climate change law on the books through regulations, permit issuances and denials, and other discrete decisions.¹⁴

¹³ *TVA v. Hill*, 437 U.S. 153, 194 (1978); *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984); *Milwaukee v. Illinois*, 451 U.S. 304 (1981) (*Milwaukee II*) (holding that the federal common law was preempted by the Clean Water Act).

¹⁴ See *supra* note 3 and *infra* Part I.C.1.

Litigation over such decisions requires courts to weigh a substantive or procedural outcome against specific statutory provisions. Have courts tended to side with either pro- or anti-regulation interests as specific regulations and adjudicatory decisions wind their way through the administrative state, and why? Our study suggests a mixed bag with no clear favored position in most such contexts.

2. *To what extent have courts crafted a distinct climate change jurisprudence?* Courts can direct agencies to carry out statutory mandates and review agency decisions without establishing new jurisprudential ground.¹⁵ Because climate change presents so many new and different policy challenges, however, litigants may ask courts to chart policy directions and establish new doctrine more overtly, and one might expect this to be more evident when legislatures and agencies are inert. An obvious focus of ours in this respect was on the common law nuisance cases.¹⁶ How receptive would the courts be to nuisance as a medium for climate change policy? If plaintiffs found an opening initially (in terms of issues such as justiciability, for example), how would they fare in establishing standing, prevailing on liability, and securing relief? The answer, thus far, is we don't know, as there have been few such cases and none has progressed to the merits. But we can also ask this question in the context of regulatory litigation, where litigants may present courts with novel interpretations of statutes and regulation. Have courts resisted being pulled into these new jurisprudential waters, or have they willingly taken the dive? Our study reveals strong indications of judicial restraint in this regard—climate change in the courts has been business as usual.

3. *To what extent have the courts prompted or forced legislative or regulatory attention to climate change policy?* The so-called “fire alarm” theory and other institutional models explore the roles of different institutions in galvanizing the regulatory state to act.¹⁷ Our question here involved the extent to which the courts are serving this role – to what extent does the climate change litigation experience

¹⁵ See generally William N. Eskridge, Jr. & Lauren E. Baer, *The Continuum of Deference: Supreme Court Treatment of Agency Statutory Interpretations From Chevron to Hamdan*, 96 GEO. L.J. 1083 (2008).

¹⁶ See *supra* note 4.

¹⁷ See Daryl L. Levinson, *Parchment and Politics: The Positive Puzzle of Constitutional Commitment*, 124 HARV. L. REV. 657, 739 (2011) (“To the extent constitutional law is supposed to help solve the agency problem of representative government by ‘guard[ing] the society against the oppression of its rulers,’ courts might play the valuable supplemental role of authoritatively identifying and publicizing constitutional violations and thus facilitating coordinated retaliation by the public at large. Since the public would benefit from judicial monitoring of government officials, it would have an incentive to resist any attempt by self-serving officials to interfere with the Court or undermine its authority. This ‘fire alarm’ account of the judiciary’s role in protecting popular sovereignty against untrustworthy government agents resonates with modern empirical evidence that the Court’s decisions are no less—and possibly more—consistent with public opinion than are those of the political branches.” (quoting THE FEDERALIST NO. 51, at 320 (James Madison)(Clinton Rossiter ed., 2003))). See Mathew D. McCubbins & Thomas Schwartz, *Congressional Oversight Overlooked: Police Patrols Versus Fire Alarms*, 28 AM. J. POL. SCI. 165, 166 (1984) (noting that a “fire alarm” mechanism empowers citizens to monitor government performance); David Markell, *The Role of Spotlighting Procedures in Promoting Citizen Participation, Transparency, and Accountability*, 45 WAKE FOREST L. REV. 425, 430 (2010).

reveal a strategy by parties, and possibly courts, to nudge or push legislatures and agencies into making decisions? We anticipated that a likely focus of climate change litigation would be to motivate the other branches to take action, either on their own initiative or because of pressure from business and environmental interest groups that would prefer regulatory action to judicial. The seminal case in the climate change arena, *Massachusetts v. EPA*, fits this description,¹⁸ but is this effect a more widespread phenomenon of climate change litigation? Our study shows that plaintiffs often mount this style of litigation, but that success rates are low.

4. *What has been the overall impact of climate change litigation on the institutional structures of the administrative state?* Perhaps the most abstract question, or set of questions, involved our conception of the regulatory state as comprised of many pieces and actors. We hoped that our data might provide insights that would help to unpack this messy system of actors and institutions. One of the roles of the courts is to test the strength or cohesiveness of the state in terms of how well the pieces fit together.¹⁹ We considered three features of our system that we thought might be particularly susceptible to judicial intervention and direction. First, courts are called upon to review the legitimacy of legislative or regulatory action based on conformance to constitutional requirements.²⁰ It is the job of courts to identify significant gaps or fissures between legislative or agency action and the constitution.²¹ In addition, courts frequently are asked to adjudicate the legitimacy of agency action based on conformance to legislative direction.²² Again, if courts find such gaps or fissures, and courts find they are unreasonable, it is up to the courts to require the agency involved to reconsider its approach.²³ Third, at least in the world of environmental law, many of the major federal laws have embraced a “cooperative federalism” structure that has EPA and the states share authority so long as states are interested in doing so and, in EPA’s judgment,

¹⁸ See *supra* note 3.

¹⁹ *Climate Change: Observations on Federal Efforts to Adapt to a Changing Climate: Before the Subcomm. on Energy and Environment, Comm. on Energy and Commerce*, 111th Cong. (2009) (statement of John Stephenson, Director, Natural Resources and Environment) (available at <http://www.gao.gov/new.items/d09534t.pdf>).

²⁰ See e.g., *Whitman v. American Trucking Ass’n, Inc.*, 531 U.S. 457 (2001) (reviewing an EPA regulation under the Delegation Doctrine).

²¹ Courts sometimes invoke the canon that courts should avoid constitutional questions when possible in performing this responsibility. See e.g., *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers*, 531 U.S. 159 (2001); Kenneth A. Bamberger, *Normative Canons in the Review of Administrative Policymaking*, 118 YALE L.J. 64, 66 (2008).

²² Courts exercise different levels of review depending on the type and character of agency action they are reviewing. See e.g., *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984); *United States v. Mead Corp.*, 533 U.S. 218, 226-27 (2001).

²³ Again, courts sometimes use canons that legitimize seeming gaps or fissures of this sort. Manning & Stephenson, *LEGISLATION AND REGULATION* 85-101 (Foundation Press 2010); George F. Allen & Marlo Lewis, *Finding the Proper Forum for Regulation of U.S. Greenhouse Gas Emissions: The Legal and Economic Implications of Massachusetts v. EPA*, 44 U. RICH. L. REV. 919, 931 (discussing EPA’s attempt to invoke the doctrine of absurd results to justify the Tailoring Rule).

have the requisite will, resources, and authorities.²⁴ Ultimately, the courts may become involved if the relationship becomes frayed in one way or another.²⁵ These seemed like three of the major possible fissures in administrative governance that might have special salience in the climate change arena; hence, we sought to explore the extent to which the case law tests them and how these challenges have come out. Our assessment is that climate change has thus far not presented exceptional results in any of these respects.²⁶

To be sure, these are not all the questions that could be asked about climate change litigation, nor do we purport to have complete answers even to this subset. Hence we hope that our list will be useful in at least three ways: 1) it will facilitate discovery of any underlying assumptions we may have brought to the design of our survey and our analysis of survey results; 2) it will provide context about the survey data and thereby facilitate review of the data and our description and analysis of the results; and 3) it will stimulate future use and expansion of our data set by motivating readers to identify and pursue additional questions for which the survey data and methodology may help to yield answers, or at least insights that we have not focused on in this Article.

To open the dialogue on these empirical and normative inquiries, Part I of the Article outlines the scope of climate change litigation. We explain what qualifies as climate change litigation in our study and our methodology for identifying and coding case attributes, including our typology of the claims that have been or likely will be made as climate change moves relentlessly forward. Part I closes with a description of representative cases comprising the two dominant forms climate change litigation has taken thus far in terms of number of cases (rather than number of headlines): litigation over whether government agencies must or must not impose tougher restrictions on greenhouse gas emission sources in rules and in permits, and fights over whether government approval of new greenhouse gas emission sources has adequately followed environmental impact assessment procedures.

Part II of the Article then presents and assesses the major findings from our empirical study about the state of climate change jurisprudence. The vast majority of the climate change cases to date involve courts applying conventional rules of statutory construction to determine the extent to which climate change must be taken into account in agency decision making under existing substantive and procedural laws. Most of the cases have been filed by environmental groups seeking judicial interpretations that would require an agency to regulate industry or impose liability more stringently to limit greenhouse gas emissions or respond to the effects of climate change. We call these the “pro” regulation cases. While they dominate the landscape, they are by no means always successful and they are

²⁴ See William W. Buzbee, *Asymmetrical Regulation: Risk, Preemption, and the Floor/Ceiling Distinction*, 82 N.Y.U. L. REV. 1547, 1565 (2007); David L. Markell, *The Role of Deterrence-Based Enforcement in a “Reinvented” State/Federal Relationship: The Divide Between Theory and Reality*, 24 HARV. ENVTL. L. REV. 1, 32 (2000); Ann E. Carlson, *Iterative Federalism and Climate Change*, 103 NW. U. L. REV. 1097, 1107-08 (2009).

²⁵ See e.g., *Harmon Industries, Inc. v. Browner*, 191 F.3d 894 *8th Cir. 1999).

²⁶ Signs of possible regulatory state dysfunction may manifest themselves in other respects as well, such as the failure to take action. See e.g., Kysar & Ewing, *supra* note 11.

increasingly being challenged by the “anti” cases, in which industry and other interests use litigation in an effort to suppress climate change as a factor in regulation and liability decision making. The climate change litigation experience, therefore, has for the most part been a story of courts deciding whether and how administrative agencies must take climate change into account in decision making under existing statutes. As most of the statutes involved have been on the books for decades and have a substantial pre-existing jurisprudence, little room is available for the courts to depart from precedent to forge new law for climate change in this litigation context, even if they were so inclined. The result has been that so much litigation has led to little more than incremental development of law through the courts.

Part III of the Article then takes what has been learned from the discussion in Parts I and II to circle back to the empirical and normative questions outlined above. The empirical story reveals a universe of litigation that is far more diverse, complex, and robust than has been outlined in previous legal scholarship, but which is also somewhat muddled in many respects. We outline the few strong themes that can be extracted and then move to our normative questions. There the story becomes clearer, as it is evident at all levels of inquiry that courts have generally resisted litigants’ attempts to make courts a locus of direct policy making. Nevertheless, the imprint of the courts on climate policy is substantial, as courts have by now engaged and decided many important questions. Some decisions have opened doors to policy making by other institutions, and others have slammed them shut. Courts may not have established climate change policy directly, but they have influenced its content and institutional contours dramatically even as climate change remains in its infancy. We suggest paths of research to gain a better understanding of this impact.

In Part IV of the Article we stretch a bit from the confines of our empirical study and findings to speculate about the future of climate change litigation. Our study identified trends in climate change litigation that seem poised for rapid acceleration, as well as gaps in the scope of litigation that are likely to be filled in the not too distant future. We also expose gaps in legal scholarship on climate change litigation and opportunities for opening up new paths of research.

I. THE SCOPE OF CLIMATE CHANGE LITIGATION

A. Defining, Identifying, and Coding Climate Change Litigation

The threshold step for our study was to define what qualifies as climate change litigation. A broad view might include any litigation motivated by a concern about climate change or climate change policy, whether that means stopping a coal-fired power plant because of its anticipated greenhouse gas emissions or blocking state regulation of emission sources because of economic impacts. We concluded, however, that this is too broad a conception of climate change litigation for purposes of an empirical legal study. For one thing, it would require that we identify motives for litigation, which would in many cases require us to make uninformed judgments about a litigant’s mental state. Moreover, many cases motivated by concern over climate change might not involve issues of fact or law that bear directly on relevant questions of climate change law and policy.

Opposition to a coal-fired power plant, for example, might be driven largely by concerns about climate change, but the subject matter of the actual litigation claims might not have any connection with greenhouse gas emissions or climate change impacts. The plaintiff's claim might be that the environmental impact analysis did not adequately examine the effects of mercury deposition, or that the permit hearing was procedurally defective. Such a case, to the extent it might succeed in preventing the facility from being constructed and operating, might be thought of as influencing the law and policy of climate change in the broadest sense, but it would not be contributing to any discrete body of law bearing a direct connection to climate change issues.

We decided, therefore, to define climate change litigation as any piece of federal, state, tribal, or local administrative or judicial litigation in which the party filings or tribunal decisions directly and expressly raise an issue of fact or law regarding the substance or policy of climate change causes and impacts. So, in the power plant example, if the claim were that the environmental impact assessment failed to take into account the effects of greenhouse gas emissions, or that the permit hearing was defective because the tribunal refused to allow evidence of greenhouse emissions, that would qualify the case as climate change litigation.²⁷

We recognize that this approach has some limiting effects on the pool of cases included in the study. For example, without reading every docket entry in a piece of litigation, we cannot be sure mention of climate change issues of fact or law did not occur at some point in a case. Given time and resource constraints, we focused on reviewing complaints, where we could obtain them, and on intermediate and final judicial decisions to detect whether our criteria were met. Also, in some instances, particularly cases in which power plants were opposed, we suspected that climate change concerns were a motivating factor behind the litigation, but excluded the case from our study because the filings failed to meet our criteria. Lastly, we did not include any matter that had not actually been filed as active administrative or judicial litigation in a tribunal, thus excluding non-adjudicatory events such as the filing of a petition for rulemaking or pre-litigation events such as issuance of a notice of intent to file suit.

Having developed our general criteria for climate change litigation, the next step was to identify qualifying cases. As an initial source of candidate cases, we benefitted greatly from a climate change litigation inventory system Michael Gerrard and Cullen Howe have developed and kept updated on a dedicated website maintained by the law firm of Arnold & Porter.²⁸ We reviewed all of the materials Gerrard and Howe identified for each case and also made an effort to obtain the current status of each matter identified in their inventory through traditional legal search engines, web browser searches, and reasonably available additional methods such as consulting online dockets or contacting court clerks. Moreover, independent of the Gerrard and Howe inventory, we searched for climate change litigation cases through standard legal research methods and updated any

²⁷ Our approach is consistent with the criteria Meltz used in his 2009 survey of climate change litigation. See Meltz, *supra* note 5, at 2, n.2.

²⁸ See Michael B. Gerrard & J. Cullen Howe, *Climate Change Litigation in the U.S.*, <http://www.climatecasechart.com/>. Other useful litigation tracking sites are found at The Howry Law Firm, *Global Climate Law*, www.globalclimatelaw.com/articles/climate-change-litigation/; and *Warming Law*, <http://theusconstitution.org/blog.warming/>.

qualifying cases identified. We cut off our search and update efforts on December 31, 2010, at which point, after selecting the cases that met our criteria and accounting for consolidated litigation,²⁹ we had identified 201 discrete climate change litigation matters in various stages of progress or finality.³⁰

Building on and expanding Gerrard and Howe's litigation inventory organization system, we developed a coding system in order to help us gain a better understanding of important features of the identified climate change cases. At the top level, we sought ten categories of information, as follows: (1) the type of plaintiff; (2) the type of defendant; (3) the type of tribunal; (4) the year of filing and of most recent tribunal action; (5) the type of claim being brought; (6) the general objective of the litigation; (7) the statutes and other legal sources supporting the claims; (8) the jurisdictional mechanism the plaintiffs used to bring an action; (9) the status and outcome of the case; and (10) the contribution any tribunal decision made to developments in the law. We developed finer categorizations for many of these top-level attributes, such as which common law or constitutional doctrines plaintiffs relied on for their claims, the grounds for dismissal of a case, the type of relief awarded, and so on.

As we reviewed the cases, it became clear that we would need to make some judgment calls in coding. One of the dilemmas in empirical work is striking the right balance between detail and aggregation. Some cases presented attributes that did not obviously and neatly fit into one of our coding categories, or which arguably fit into more than one. In some such instances, we developed a new category, whereas in others we fit the case into the closest existing category. Several of these judgment calls were more problematic to resolve. First, in some instances, evaluating the threshold question of whether a matter truly qualified as climate change litigation was not straightforward. Generally, we tried to be as inclusive as possible within the scope of our criteria.³¹ Next, in terms of coding the

²⁹ We counted consolidated cases as one discrete litigation matter if all the plaintiffs in the consolidated suits sought the same relief on the same grounds, or as two discrete matters if various suits sought opposing grounds for relief. For example, if all suits in a consolidated action sought to invalidate an agency rule promulgation on the ground that it was too restrictive of greenhouse gas emissions, we counted that as one matter; however, if some of the suits in the consolidated action sought to invalidate an agency rule promulgation on the ground that it did not go far enough in restricting emissions, we counted them as a separate matter. This approach avoided overcounting litigation matters that had been consolidated but allowed us more accurately to capture the thrust of the litigation and outcomes.

³⁰ This number is lower than the number of cases on the Gerrard and Howe inventory. Some of the cases in their inventory, such as many challenges to coal fired power plants, did not meet our criteria for climate change litigation because the matter involved no issue related to greenhouse gas emissions or climate change impacts. Also, their inventory includes petitions for rulemakings and other pre-litigation actions. Our study also adjusted for consolidated suits, as explained *supra* note 29. Assessments based on the Gerrard and Howe inventory thus report a higher number of climate change litigation matters and a different overall profile of climate change litigation. *See, e.g.*, DB Climate Change Advisors, Growth of U.S. Climate Change Litigation: Trends & Consequences (Nov. 3, 2010), *available at* http://www.dbcca.com/dbcca/EN/investment-research/investment_research_2357.jsp. (reporting 340 litigation matters including multiple suits that have been consolidated, suits involving no climate change claims under our criteria, and petitions for rulemakings).

³¹ For example, the majority of the cases we excluded involved challenges to new power plants that were based on prevention of significant deterioration (PSD) or other Clean Air Act (CAA)

case outcome, we decided to focus only on the climate change portion of a case in situations involving multiple claims. For example, we coded a case as a win for the defendant if the plaintiff lost on the climate change ground, even if the plaintiff prevailed on a different count in the complaint and ultimately succeeded in, say, having a power plant permit revoked. Our rationale was that it is more important for our purposes to assess the outcome of the climate change law component of the case than to focus on the holistic litigation outcome. This approach was especially relevant to claims involving numerous alleged defects in an environmental impact assessment required for an agency action, where plaintiffs sometimes lost on the claim that greenhouse gas emissions were not adequately considered but prevailed on some other claim that another impact, such as habitat loss, had not been properly assessed. Our study, therefore, is narrowly focused on the climate change component of each litigation matter. Finally, if all the relevant claims in a case were advanced to the next level of review and resolved before the cutoff date—for example, a trial court opinion was reversed on appeal—we coded the case outcome based on the higher level tribunal’s decision. If, however, the matter was pending on appeal at the time of the cutoff date, we coded for the lower level tribunal’s decision and noted that the case was on appeal as of the study cutoff date.

B. A Typology of Climate Change Litigation Claims

To help add details to our general definition of climate change litigation matters, we also conducted pre-survey literature reviews and brainstorming sessions to develop a typology of different claims that might be expected to arise in the climate change litigation world, as shown in Table 1 at the end of this section. The typology includes claims that are actively being litigated in numerous cases, such as claims that a species should be listed under the ESA because of threats stemming from climate change, as well as claims that we thought were unlikely yet to have been the subject of litigation but which could arise as climate change litigation matures, such as claims that a property owner failed to take adequate adaptation measures to respond to sea-level rise. We organized the typology first around several broad categories of claims and then identified the nature and thrust of the plaintiffs’ claims in each category. This approach proved robust, accounting for all but a few of the cases we ultimately deemed to qualify as climate change litigation (the exceptions are counted in the “other” category). Because we depend heavily on the typology in our assessment of climate change litigation in the

claims and involved solely pollutants other than greenhouse gases. *See infra* Part I.C.1 (explaining the CAA PSD program cases). We readily acknowledge that the plaintiffs in such cases may have been motivated, at least in part, by a desire to reduce greenhouse gas emissions. However, because at the time of the study cutoff date EPA had not subjected any greenhouse gas to regulation for purposes of the PSD or other CAA programs involved in these cases—the various regulations did not take effect until January 2011—and because the claims in the excluded cases involved other pollutants, we excluded the cases as not meeting our criteria for climate change litigation. *See* U.S. EPA, Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17004 (Apr. 2, 2010) (explaining the timing of greenhouse gas emission regulation and why it does not commence until January 2011). On the other hand, if the plaintiff raised any claim involving carbon dioxide or other GHG emissions, notwithstanding they were not subject to regulation at the time, we included the matter in our study.

courts, some elaboration on the category descriptions and divisions is appropriate here.

1. Substantive Mitigation Regulation

As the underlying context of *Massachusetts v. EPA* suggests, a major thrust of climate change litigation will likely fall into the broad category of litigation over what is referred to as climate change mitigation—the scope, demands, and enforcement of substantive regulation of greenhouse gas emission sources.³² This scope of litigation includes, for example, a claim to prevent or limit a legislative or agency decision to carry out, fund, or authorize a direct or indirect source of greenhouse gas emissions, such as to stop a state government from building, funding, or permitting a coal power plant. It also includes actions to require a legislature or agency to promulgate a statute, rule, or policy establishing new or more stringent limits on GHG emissions by regulating direct or indirect sources, such as to force EPA to regulate GHG emissions or to force local government to impose green building requirements. Enforcement of emissions limits already in place, whether in permits or in regulations, also fits this category. And of course actions to prevent or reverse emissions limits in permits or regulations must also be accounted for in this category. Not surprisingly, many cases in our study fell into this set of claims, and because of their volume and variety we provide a more in-depth analysis of their content and outcomes following the description of the basic typology.

2. Substantive Adaptation Regulation

Although climate change mitigation had dominated the policy scene until recently,³³ it is now widely agreed that no plausible mitigation policy will prevent climate change from occurring—climate change is happening already and more will come for decades as “committed warming” is locked in based on past emissions regardless of mitigation policy.³⁴ Hence, climate change adaptation will

³² Climate change mitigation “refers to options for limiting climate change by, for example, reducing heat-trapping emissions such as carbon dioxide, methane, nitrous oxide, and halocarbons, or removing some of the heat-trapping gases from the atmosphere.” U.S. GLOBAL CHANGE RESEARCH PROGRAM, GLOBAL CLIMATE CHANGE IMPACTS IN THE UNITED STATES 10–11 (2009), available at <http://downloads.globalchange.gov/usimpacts/pdfs/climate-impacts-report.pdf>; see also INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2001: MITIGATION app. at 716 (Bert Metz et al. eds., 2001), available at http://www.grida.no/climate/ipcc_tar/wg3/pdf/app.pdf (mitigation strategies involve “an anthropogenic intervention to reduce the sources or enhance the sinks of greenhouse gases”).

³³ See J.B. Ruhl, *Climate Change Adaptation and the Structural Transformation of Environmental Law*, 40 ENVTL. L. 363, 365–71 (2010) (recounting the history of policy attention to mitigation).

³⁴ See INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, SUMMARY FOR POLICYMAKERS, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY, CONTRIBUTION OF WORKING GROUP II TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 19 (2007), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-spm.pdf> (“Past emissions are estimated to involve some unavoidable warming . . . even if atmospheric greenhouse gas concentrations remain at 2000 levels”); V.

be necessary,³⁵ making “mitigation and adaptation...both essential parts of a comprehensive climate change response strategy.”³⁶ All recent legal scholarship and policy dialogue now recognizes that formulating and implementing climate change adaptation strategies must be a significant component of our domestic climate change law and policy.³⁷ The federal government and a few states have only just begun to formulate adaptation policy,³⁸ but to the extent adaptation

Ramanathan & Y. Feng, *On Avoiding Dangerous Anthropogenic Interference with the Climate System: Formidable Challenges Ahead*, 105 PROCEEDINGS OF THE NAT’L ACADEMY OF SCIENCES 14251 (2008) (estimating committed warming of 2.4°C even if greenhouse gas concentrations are held to 2005 levels); Susan Solomon et al., *Irreversible Climate Change Due to Carbon Dioxide Emissions*, 106 PROC. OF THE NAT’L ACAD. OF SCI. 1704 (2009) (estimating a 1000-year committed warming effect).

³⁵ Climate change adaptation “refers to changes made to better respond to present or future climatic and other environmental conditions, thereby reducing harm or taking advantage of opportunity. Effective mitigation measures reduce the need for adaptation.” U.S. GLOBAL CHANGE RESEARCH PROGRAM, *supra* note 32, at 11; *see also* INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: IMPACTS, ADAPTATION AND VULNERABILITY app. at 869 (M.L. Perry et al. eds., 2007) (“Adjustment in natural or *human systems* in response to actual or expected climatic stimuli or their effects, which moderates harm or exploits beneficial opportunities.”), available at <http://www.ipcc.ch/pdf/assessment-report/ar4/wg2/ar4-wg2-app.pdf>.

³⁶ U.S. GLOBAL CHANGE RESEARCH PROGRAM, *supra* note 32, at 11. For summaries of the legal and policy issues likely to come with climate change, including reviews and syntheses of science and law literature on the topic, see Alejandro Camacho, *Adapting Governance to Climate Change: Managing Uncertainty through a Learning Infrastructure*, 59 EMORY L.J. 1 (2009), Robin Kundis Craig, “Stationarity is Dead”—Long Live Transformation: Five Principles for Climate Change Adaptation Law, 34 HARV. ENVTL. L. REV. 9 (2010); Holly Doremus, *Adapting to Climate Change Through Law that Bends Without Breaking*, __ SAN DIEGO L. REV. __ (forthcoming), available at SSRN: <http://ssrn.com/abstract=1628255>; Robert L. Glicksman, *Ecosystem Resilience to Disruptions Linked to Global Climate Change: An Adaptive Approach to Federal Land Management*, 87 KAN. L. REV. 833 (2009); Ruhl, *supra* note 33.

³⁷ *See, e.g.*, Katherine M. Baldwin, *NEPA and CEQA: Effective Legal Frameworks for Compelling Consideration of Adaptation to Climate Change*, 82 S. CAL. L. REV. 769, 775 (2009) (“adaptation measures must still be employed to combat the impacts of climate change that will inevitably occur, despite the institution of heroic mitigation efforts”); Camacho, *supra* note 36, at 14 (“Unfortunately, legislators and regulators in the United States and elsewhere have only begun to consider the role of adaptation in combating climate change.”); Craig, *supra* note 36, at 14 (“American environmental law and policy are not keeping up with climate change impacts and the need for adaptation”); Daniel A. Farber, *Adapting to Climate Change: Who Should Pay?*, 23 J. LAND USE & ENVTL. L. 1, 1 (2007) (“Adaptation has been a neglected topic....In my view, this is a mistake.”); Peter Hayes, *Resilience as Emergent Behavior*, 15 HASTINGS W-NW. J. ENVTL. L. & POL’Y 175, 175 (2009) (“the main game now is adaptation which renders mitigation no less urgent, but shifts the political equation in dramatic ways that cannot be ignored any longer”); Thomas Lovejoy, *Mitigation and Adaptation for Ecosystem Protection*, 39 Env’tl. L. Rep. (Env’tl. L. Inst.) 10072, 10073 (2009) (“The adaptation part of the climate change agenda is only just beginning to get attention, and needs much more right away.”); Ileana M. Porras, *The City and International Law: In Pursuit of Sustainable Development*, 36 FORDHAM URB. L.J. 537, 593 (2009) (“Most climate change experts and policy-makers recognize that adaptation and mitigation are not mutually exclusive strategies but must, on the contrary be employed in tandem.”).

³⁸ The Government Accountability Office concluded a comprehensive review of federal adaptation policy in 2009 with the finding that “[w]hile federal agencies are beginning to

measures begin to come on line through proactive or reactive responses to climate change, it stands to reason that the courts will get involved sooner or later in sorting out the scope and demands of any substantive adaptation regulation requirements.

So, as with the mitigation regulation claims, one can reasonably foresee actions being filed to require legislative or agency action on a statute, rule, policy, or permit to require new or more extensive climate change adaptation measures, such as to require a coastal development permittee to retain wetlands as a buffer against sea level rise. Actions to enforce such requirements, as well as to prevent or reverse the promulgation of such requirements, also fit into this set of claims. As shown below in Table 1, however, our study found no cases fitting this category. We discuss the implications of this finding in later sections.

3. *Procedural Monitoring, Impact Assessment, and Information Reporting*

The first two typology categories focus on actions leveraging substantive statutory requirements relating to climate change mitigation or adaptation, such as facility siting restrictions and emissions limits. One can also envision claims leveraging procedural requirements through actions to impose on public or private entities a new or more extensive monitoring, impact assessment, or information disclosure requirement focused on emissions, impacts of climate change, or means and success of climate change adaptation, such as a demand that publicly traded companies disclose their greenhouse gas emissions. Indeed, the Securities Exchange Commission issued a 2010 guidance covering disclosures related to

recognize the need to adapt to climate change, there is a general lack of strategic coordination across agencies, and most efforts to adapt to potential climate change impacts are preliminary.” GOV’T ACCOUNTABILITY OFFICE, CLIMATE CHANGE ADAPTATION: STRATEGIC FEDERAL PLANNING COULD HELP GOVERNMENT OFFICIALS MAKE MORE INFORMED DECISIONS 15 (2009), available at <http://www.gao.gov/new.items/d10113.pdf>. A significant step forward came in President Obama’s October 2009 Executive Order 13,514, which among other things endorsed an interagency Climate Change Adaptation Task Force “already engaged in developing the domestic and international dimensions of a U.S. strategy for adaptation to climate change.” See Exec. Order No. 13,514, 74 Fed. Reg. 52,117, 52,124 (Oct. 8, 2009). A November 2010 survey of federal agency actions concluded that federal agencies have since then begun to develop more coherent adaptation policies. See PEW CENTER, CLIMATE CHANGE ADAPTATION: WHAT FEDERAL AGENCIES ARE DOING (Nov. 2010), available at <http://www.pewclimate.org/publications/report/climate-change-adaptation-what-federal-agencies-are-doing>. To follow the work of the Task Force, see Council on Env’tl. Quality, Climate Change Adaptation Task Force, <http://www.whitehouse.gov/administration/eop/ceq/initiatives/adaptation> (last visited Feb. 7, 2011). Up to date information about state mitigation and adaptation strategies can be found through an interactive map tool maintained by the Center for Climate Strategies, U.S. Climate Policy Action, <http://www.climatestrategies.us> (last visited Feb 7, 2011). California has established the most detailed state adaptation strategy. SEE CAL. NATURAL RES. AGENCY, CALIFORNIA CLIMATE ADAPTATION STRATEGY (2009), available at <http://www.energy.ca.gov/2009publications/CNRA-1000-2009-027/CNRA-1000-2009-027-F.PDF>. At the local level, New York City offers an example of a local jurisdiction taking proactive steps toward developing a climate change adaptation policy. See Edna Sussman et al., *Climate Change Adaptation: Fostering Progress Through Law and Regulation*, 18 N.Y.U. ENVTL. L.J. 55 (2010) (discussing various city initiatives).

climate change,³⁹ and Congress recently required EPA to promulgate a rule “to require mandatory reporting of greenhouse gas emissions above appropriate thresholds in all sectors of the economy of the United States,”⁴⁰ which EPA did in 2009.⁴¹ Most of the cases falling in this category, however, arise under impact assessment statutes that are more general in scope and do not explicitly mention greenhouse gas emissions or climate change, the issue being whether these general requirements should integrate greenhouse gas emissions and climate change impacts within their scope. While the plaintiffs’ objectives in using such procedural requirements may be to prevent approval of a facility, the underlying legal context is sufficiently distinct from the substantive mitigation category as to warrant separate treatment. Indeed, we identified many cases fitting this category—it is the largest single category of cases—and because of their volume and variety we provide a more in-depth analysis of their content and outcomes below after describing the basic typology.

4. Rights and Liabilities

We designed the first three categories outlined above to capture litigation focused directly on greenhouse gas emission sources and climate change adaptation measures and for the most part fueled by existing or new statutory programs. Climate change, however, is likely also to unsettle human relations governed by broader constitutional, statutory, and common law rights and liabilities. We envisioned three types of claims that could fall into this broad rights and liabilities category. The first includes actions to extend the scope of human rights, property rights, or civil rights to provide protection of individuals or the public against effects of or responses to climate change, such as a claim that an emissions source violates civil rights or that immigration policy for climate refugees violates human rights. Another type includes action to impose statutory, tort, nuisance, or other property damage or personal injury liability on emissions sources or for inadequate climate change mitigation or adaptation measures, such as a public nuisance action against emission sources or a private nuisance claim for destruction of coastal dunes. The third type of action involves claims to impose contract, insurance, securities, fraud, failure to disclose, or other business or economic injury liability on an emissions source or for inadequate climate change mitigation or adaptation measures, such as an insurance recovery claim for effects of sea-level rise or a contract dispute over a carbon credit market transaction. Like the adaptation category of cases, however, the rights and liabilities category of claims focuses on litigation over the effects of climate change rather than ways to prevent those effects, and thus is unlikely to be an active field of litigation at this

³⁹ See Commission Guidance Regarding Disclosure Related to Climate Change, 75 Fed. Reg. 6290 (Feb. 8, 2010); see generally Scott D. Detherage, *The SEC Enters the Fray on Climate Risk Disclosure*, NAT. RESOURCES & ENV’T, Winter 2011, at 35.

⁴⁰ Consolidated Appropriations Act, 2008, Public Law 110–161, 121 Stat. 1844, 2128 (2008).

⁴¹ See 74 Fed. Reg. 56260 (Oct. 30, 2009) (provisions to be codified at various parts of 40 C.F.R.)

time.⁴² Indeed, Table 1 shows that very few cases fall in this category, the implications of which we discuss in later sections.

5. Identification of Climate-Threatened Resources

A somewhat specialized field of climate change litigation that was well underway when we conducted our study involves claims that agencies responsible for implementing the Endangered Species Act (ESA) should or should not use the species “listing” procedures of the statute to identify species threatened by the effects of climate change.⁴³ Other existing or new conservation statutes conceivably could impose similar duties on agencies to identify “climate-threatened” resources such as habitat, water sources, wetlands, and so on. We concluded such claims are sufficiently distinct from the other categories, and sufficiently important, as to warrant a separate category. These threatened resource identification programs are not directly regulatory or particularly oriented toward mitigation or adaptation, and yet they are not merely monitoring or reporting programs. They also differ from impact evaluation programs in that there is no particular proposed action being assessed; rather, the agency assesses the condition of a species or other resource based on a wide variety of threats, including climate change, and designates it for some special status. No rights or liabilities are imposed directly in connection with the resource identification step, though some could follow under the other statutory provisions once the resource is identified. At bottom, moreover, we felt that the potential for widespread litigation in this category was significant, particularly under the ESA, and thus did not want to lose its distinct focus by fitting it into another category.

⁴² For example, one insurance industry observer noted that “[i]t is somewhat surprising that there are not more lawsuits which can be found where the existence of insurance coverage for global warming claims is at issue. This is likely due to the fact that global warming litigation is in its infancy.” Robert Redfearn, Jr., *Global Warming Litigation Just Getting Started; Costs Will Be Significant*, INSURANCE JOURNAL, Mar. 4, 2010, available at <http://www.insurancejournal.com/news/national/2010/03/04/107854.htm>.

⁴³ Section 4(a)(1) of the ESA requires the agencies to:
determine whether any species is an endangered species or a threatened species because of any of the following factors:
(A) the present or threatened destruction, modification, or curtailment of its habitat or range;
(B) overutilization for commercial, recreational, scientific, or educational purposes;
(C) disease or predation;
(D) the inadequacy of existing regulatory mechanisms;
(E) other natural or manmade factors affecting its continued existence.

16 U.S.C. § 1533(a)(1). There could hardly be a more definitive mandate to consider the effects of greenhouse gas emissions and climate change on species. Greenhouse gas emissions are unquestionably a “manmade factor,” and if as abundant evidence suggests they are contributing to climate change, they are potentially “affecting . . . [the] continued existence” of climate-threatened species. Regardless of their causal agents, atmospheric warming, sea level rise, and other primary ecological effects of climate change involve “the destruction, modification, or curtailment of . . . [species’] habitat or range,” and impacts on species and their habitats could exacerbate “disease or predation.” See generally J.B. Ruhl, *Climate Change and the Endangered Species Act*, 88 B.U. L. REV. 1, 32-35 (2008).

In summary, Table 1 shows the full typology of cases and the number of cases in our study fitting each category and subtype:

Category	Claim Type	Cases # (%)
Substantive Mitigation Regulation and Enforcement	1. Substantive law claim to prevent or limit a legislative or agency decision to carry out, fund, or authorize a direct or indirect emissions source	28 (14.0%)
	2. Substantive law claim challenging a legislative or agency decision to reject or place limits on proposals to carry out, fund, or authorize a direct or indirect emissions	4 (2%)
	3. Substantive law claim to require a legislature or agency to promulgate a statute, rule, or policy establishing new or more stringent limits on emissions	22 (11%)
	4. Substantive law claim challenging legislative or agency promulgation of statute, rule, or policy establishing new or more stringent limits on emissions	29 (14.5%)
	5. Government enforcement claim against direct or indirect emissions source alleging violation of regulatory or permit limits.	0
	6. Citizen enforcement claim against direct or indirect emissions source alleging violation of regulatory or permit limits.	1 (0.5%)
Substantive Adaptation Regulation and Enforcement	7. Substantive law claim to require legislative or agency action on statute, rule, policy, or permit to require new or more extensive climate change adaptation actions	0
	8. Substantive law claim to prevent legislative or agency action on statute, rule, policy, or permit that proposes to require new or more extensive climate change adaptation actions	0
	9. Government enforcement claim against public or private entity alleging violation of regulatory or permit condition related to climate change adaptation	0
	10. Citizen enforcement claim against public or private entity alleging violation of regulatory or permit condition related to climate change adaptation	0

Procedural Monitoring, Impact Assessment, and Information Reporting	11. Claim to impose on public or private entities a new or more extensive monitoring, impact assessment, or information disclosure requirement focused on emissions, impacts of climate change, or means and success of climate change adaptation	86 (43%)
	12. Claim to prevent imposition on public or private entities a new or more extensive monitoring, impact assessment, or information disclosure requirement focused on GHG emissions, impacts of climate change, or means and success of climate change adaptation	1 (0.5%)
Rights & Liabilities	13. Claim to extend scope of human rights, property rights, or civil rights to provide protection of individual or public against effects of or responses to climate change	1 (0.5%)
	14. Claim to impose statutory, tort, nuisance, or other property damage or personal injury liability on source of emissions or for inadequate climate change mitigation or adaptation measures	8 (4%)
	15. Claim to impose contract, insurance, securities, fraud, failure to disclose, or other business or economic injury liability on source of emissions or for inadequate climate change mitigation or adaptation measures	3 (1.5%)
Identification of Climate-Threatened Resources	16. Claim to force agency to identify species or other resource as climate-threatened	11 (5.5%)
	17. Claim to prevent or reverse decision by agency to identify species or other resource as climate-threatened	2 (1%)
Other	18. Other—not defined by other categories	5 (2.5%)

As noted above, some of the claim types had no matching cases.⁴⁴ This is a significant finding in that it shows that some forms of likely climate change litigation remain latent. For example, no case involved a claim regarding substantive climate change adaptation regulation or enforcement (case types 7 through 10), whereas 42% of the cases focused on the adequacy or legality of substantive mitigation regulation measures in agency permits and rules (case types 1 through 6). The other major category, accounting for 43% of the cases, involved claims that causes or effects of climate change had not adequately been incorporated into monitoring, impact assessment, or disclosure procedures (category 11). The remaining cases account for only 15% of the total and involve a

⁴⁴ Two cases contained claims that fell into two or more different categories. We coded them as separate matters for each claim type in order to track the characteristics and outcome of each claim. As these were the only such instance, we did not consider this coding method to skew the statistical analyses in any meaningful sense.

range of claims including litigation over whether a species should be protected under the ESA and tort and contract liability litigation. Given the strong predominance of the substantive mitigation regulation claims and the monitoring, assessment, and disclosure claims, the next section delves into more detail about their respective content and litigation experiences.

C. The Dominant Litigation Prototypes

As the foregoing shows, the overwhelming majority of climate change litigation matters are concentrated in claims involving substantive challenges to agency permits and rules and in claims challenging agency environmental impact assessments. This regulatory context for climate change litigation—what one observer has likened to “siege warfare with large armies that battle for decades”⁴⁵—far overwhelms public nuisance and other forms of litigation in terms of volume and scope. This section thus provides a more complete account of the context and experience of these two dominant forms of climate litigation.

1. Climate Change in Agency Permits and Rules

One variant of climate change litigation involves substantive challenges to legislative action, or to agency rules and permits, which are based on the claim that climate change concerns require a different response. As Table 1 reflects, we identified ten possible types of such substantive challenges in our survey.⁴⁶ Six involve what we term “substantive *mitigation* regulation,” and the other four involve “substantive *adaptation* measures.”

What does the world of climate change substantive litigation look like in the context of this typology? Table 1 shows that virtually all of the action to date qualifies as substantive *mitigation* regulation. Eighty-four cases to date fit into this category, or a total of 42% of the total of 201 climate change cases in our data base. By contrast, no cases qualify as substantive *adaptation* cases.⁴⁷

⁴⁵ Alejandro De Los Rios, *Public Nuisance Cases ‘Like a Knife Fight in a Dark Alley’*, LEGALNEWSLINE.COM, Feb. 14, 2011, <http://www.legalnewsline.com/news/231095-public-nuisance-cases-like-a-knife-fight-in-a-dark-alley>. “Where environmental law cases brought under regulatory actions are like ‘siege warfare with large armies that battle for decades,’ public nuisance claims are ‘like a knife fight in a dark alley,’ Sweeney said.”

⁴⁶ Table 1, *supra*. As we note above, *see supra* Part I.A., defining the concept of climate change litigation requires judgment calls. We have probably drawn the concept in narrower terms than some other commentators. As one commentator points out, EPA is using various “indirect” ways to “reduce the nation’s climate change footprint” beyond direct carbon regulation. Margaret Kriz Hobson, *As the Clean Air Act turns 40*, the Environmental Forum 8 (Nov./Dec. 2010). For example, EPA regulations intended to control coal ash, hazardous chemicals, and other pollutants are likely to lead utilities to shut down some coal-fired power plants that emit large amounts of carbon dioxide and other greenhouse gases. *Id.*

⁴⁷ We have defined “adaptation” claims for purposes of this article to include only those claims that base the theory of liability on the defendant’s climate change adaptation behavior—e.g., a government regulation requiring adaptation measures, or a private actor’s failure to adapt according to regulatory or common law standards. As noted, there were no such cases filed through 2010. Some claims have been filed seeking money damages to allow the plaintiff to adapt to climate change, but the theory of liability has been based on failure of the defendant to

Of substantive mitigation cases, most of the action to date (more than 90%) has been in three types of: 1) case or facility-specific cases intended to prevent approval for a direct or indirect source of GHG emissions – e.g., actions to prevent permitting of a coal-fired power plant (33% of the mitigation cases and 14% of the total number of cases); 2) cases to require a legislature or agency to promulgate a statute, rule, or policy that establishes more stringent GHG emission limits – e.g., a petition to EPA to force it to regulate GHG emissions, or a suit to force a local government to impose more stringent green building requirements (26% of substantive mitigation cases and 11% of the total caseload); and 3) cases that challenge statutes or agency rules that establish more stringent limits on GHG emissions – e.g., suits that seek to prevent EPA from regulating GHG emissions (35% of the mitigation cases and 14% of the total number of cases).⁴⁸

What should we make of these numbers? The world of regulatory development and implementation includes at least three key stages.⁴⁹ First, legislation and regulation often sets general norms or substantive requirements. Further, these general norms are frequently applied specifically to particular parties through issuance of permits or licenses. Finally, once permits are in place (or are supposed to be), the regulatory state shifts into compliance evaluation and enforcement as needed.

Litigation is a mechanism for challenging activity (or inactivity) at each of these stages.⁵⁰ We reviewed the cases to learn whether the litigation so far is concentrated in any particular stage and, if so, which one. Thus, we identified cases that focus on rules that set different types of norms or requirements. In a sense, these cases occur on the *ex ante* end of the regulatory continuum in the sense that their aim is to derail legislative and regulatory efforts, either because they are too stringent or not stringent enough, or to spur regulatory activity. Second, we identified cases at the opposite end of the regulatory spectrum, at the *ex post* end of the regulatory continuum, notably enforcement cases in which a party that emits GHG emissions is being pursued for alleged violation of regulatory or permit limits. We further divided this set of cases into two categories

mitigate GHG emissions. *See supra* note 4 (discussing public nuisance cases). As our typology is based on the alleged basis for liability, we coded these cases as type 14.

⁴⁸ We did not identify any Type 5 cases – i.e., cases involving a government enforcement action against a direct or indirect GHG emissions source that alleges violation of regulatory or permit limits. We did, however, identify one Type 6 case, that is, a citizen enforcement action against a direct or indirect GHG emissions source alleging violation of regulatory or permit limits. This case, *Northwest Environmental Defense Center v. Owens Corning*, 434 F. Supp.2d 957 (D. Ore. 2006), produced a successful substantive outcome for the plaintiffs through settlement. The plaintiffs claimed that the defendant was constructing a manufacturing facility with the potential to emit more than 250 tons/year of a greenhouse gas without a required preconstruction permit. While the defendant denied the allegations, it agreed to make contributions totaling \$300,000 to various projects, including a new “Solar Classroom Project” and a new High Performance Classroom” and to reimburse the plaintiffs for \$250,000 for its attorneys’ fees and costs. *See* Stipulated Order of Dimissal, Civil No. 04-CV-1727 (Dated June 8, 2006), (D. Ore. 2006).

⁴⁹ As is the case with most typologies, this one oversimplifies but for our purposes helps to describe key stages in the regulatory state.

⁵⁰ In some circumstances judicial review of agency action (or inaction) is not available. *See e.g.*, *Heckler v. Chaney*, 470 U.S. 821 (1985).

– government enforcement cases and citizen enforcement actions.⁵¹ Finally, we identified cases situated at more of a mid-point of the regulatory process, notably cases that involve the application of general norms to individual circumstances. Actions that challenge issuance of a permit that establishes GHG emission limitations are an example of this type of case.

Applying this typology, a significant majority of the substantive mitigation cases fit into the *ex ante* category – 51 out of 84, or 61%. Of these, there is a rough equivalence between cases seeking to overturn regulations because they are too stringent (22 thus far) and cases seeking to overturn regulations because they are too lax or to prompt new regulation for the same reason (29 to date).⁵² The best known of the latter genre, of course, is *Massachusetts v. EPA*,⁵³ which we review in some depth later. Only one case so far is what we would characterize as an *ex post* case – that is, a case that alleges violations of regulatory or permit conditions. In that case the plaintiffs, an NGO, had success on the merits and also recovered its attorneys’ fees.⁵⁴ Thirty-two cases (38% of the substantive mitigation cases) fit into the middle category. These cases involve the application of general norms to individual circumstances. As we note above, actions that challenge issuance (or denial) of a permit fit into this category.

As we discuss in more detail below, at least intuitively it is not surprising that litigation at the beginning of a regulatory regime would focus primarily on the legitimacy of the regime itself rather than on its implementation.⁵⁵ It is reasonable to expect that the case load distribution will change over time as rules are promulgated, permits are issued, and operations subject to those permits begin.⁵⁶

a. permit challenges

With this 40,000 foot frame in mind for reviewing the substantive mitigation cases, we now turn to a more detailed review of some of the prototype cases that have been brought beginning with our Type 1 cases—challenges to individual permit decisions, such as actions to prevent a coal power plant.⁵⁷ Of the 28 cases filed to date, seven (25%) are pending with no significant action. Of those challenges that have had significant action of one sort or another, the vast majority have been unsuccessful. Thus, the initial regulatory decision seems to have stuck in a significant majority of cases.⁵⁸

⁵¹ Congress includes citizen suit provisions in many of the environmental laws, in part because of the widespread belief that citizen enforcers can help to bolster government enforcement capabilities. See *Gwaltney v. Chesapeake Bay Found.*, 484 U.S. 49 (1987).

⁵² As we note elsewhere, many more cases that fit into these categories have been filed, but we generally treat consolidated cases as a single case. See *e.g.*, *infra* at note 29.

⁵³ *Supra* note 3.

⁵⁴ *Nw. Env’tl. Def. Ctr. v. Owens Corning Corp.*, 434 F. Supp.2d 957 (D. Ore. 2006); See Stipulated Order of Dismissal, Civil No. 04-CV-1727 (Dated June 8, 2006), (D. Ore. 2006).

⁵⁵ In drawing this distinction we recognize that challenges during implementation (e.g., permit challenges or challenges in enforcement cases, sometimes focus on the legality of the underlying regulatory scheme).

⁵⁶ See *infra* note ____.

⁵⁷ We have focused in the summaries below on matters or cases that have received a decision.

⁵⁸ Some of these cases are initial agency permit decisions.

Within this type of claim, there has been a significant slug of cases that involved whether proposed new facilities or facilities that undertook major modifications are subject to the CAA's Prevention of Significant Deterioration (PSD) program and its Best Available Control Technology (BACT) requirements.⁵⁹ The PSD program is a preconstruction review and permitting program that applies to new major stationary sources and to major modifications at existing major stationary sources in order to maintain air quality in regions of the country that are in attainment with National Ambient Air Quality Standards (NAAQS).⁶⁰ It does so in part by requiring covered sources to apply BACT in order to limit their emissions.⁶¹ Under the CAA's PSD program, only pollutants that are "subject to regulation" under the Act must be controlled by potentially expensive BACT requirements.⁶²

In a series of permit challenges and other proceedings,⁶³ NGOs and others claimed that EPA's imposition of various reporting requirements on the emission of GHGs was enough to make such emissions "subject to regulation" and thereby trigger PSD and BACT requirements. Regulatory bodies and reviewing courts alike generally found this argument for extending PSD and BACT requirements to GHG emissions unpersuasive.⁶⁴ Instead, the judicial and administrative precedent to date has declined to impose BACT emission limits on new sources of GHG emissions by defining the concept of "subject to regulation" in 42 U.S.C. § 7479(3) narrowly so that regulation does not include monitoring and reporting requirements; instead, it only covers regulations that impose actual emission limitations.⁶⁵

This stream of cases comprised a relatively significant volume of litigation during the time period we studied, but it seems to have come to an end for two reasons. First, EPA issued a rule in April 2010 in which the agency concludes that the phrase "subject to regulation" only includes regulation of pollutants for which EPA requires "actual control of emissions," and does not include pollutants for

⁵⁹ See e.g., *Sierra Club v. Air Quality Board*, 226 P.3d 719, 729-30 (Utah 2009) (upholding as reasonable the administrative board's interpretation that CO₂ emissions are not subject to regulation); *In the Matter of Louisville Gas and Electric Company*, Petition No. IV-2008-3 (2009) (rejecting petitioner's request that EPA object to the permit on the basis that the permit fails to include requirements for addressing greenhouse gases); *Appalachian Voices v. State Air Pollution Control Board*, 2010 Va. App. LEXIS 215 (2010) (holding that no provision of the CAA or Virginia law controlled or limited carbon dioxide emissions, therefore, carbon dioxide was not a pollutant subject to regulation by the Board); *In re Desert Rock Energy Co. LLC*, PSD Appeal Nos. 08-03, 08-04, 08-05 & 08-06, slip op. at 76 (Env'tl. Prot. Agency Env'tl. Appeals Bd. 2009); *In re Deseret Power Electric Coop.*, PSD Appeal No. 07-03, slip op. (Env'tl. Prot. Agency Env'tl. Appeals Bd. 2008) (remanded the permit to reconsider whether to impose a CO₂ BACT limit); *Powder River Basin Res. Council v. Wyo. Dep't of Env'tl. Quality*, 226 P.3d 809, 826 (Wyo. 2010) (holding that carbon dioxide emissions were not subject to BACT analysis and control).

⁶⁰ 42 U.S.C. § 7475; 75 Fed. Reg. 31,520, 31,521 (providing a brief overview of the requirements of the PSD program as well as the Title V program).

⁶¹ *Id.*

⁶² 42 U.S.C. § 7475.

⁶³ See *supra* note ____.

⁶⁴ See *supra* note ____.

⁶⁵ See *supra* note ____.

which EPA regulations “only require monitoring or reporting. . . .”⁶⁶ EPA’s Environmental Appeals Board (EAB) had identified the value of such a nationwide determination in its review of particular permit decisions, noting that the issue was one of “national scope.”⁶⁷ Second, EPA has now issued a rule in which it subjects CO₂ emissions to regulation, notably new motor vehicle standards, as of January 2, 2011.⁶⁸ These regulations trigger the PSD program and BACT requirements for covered sources that emit GHGs.⁶⁹

In addition to the “subject to regulation” cases, two other cases involving challenges to specific projects based on their contribution of GHG emissions are worth mention because each offers insights concerning judicial willingness to overturn agency permitting decisions because of climate change and GHG emissions. *Citizens Action Coalition of Indiana, Inc., et al. v. PSI Energy, Inc., et al.*⁷⁰ involved a challenge by various environmental groups to a permit for construction of a new power plant on the ground that the permitting authority (the Indiana Utility Regulatory Commission) had failed adequately to consider future carbon regulations in approving the construction of the plant. The parties had presented extensive evidence to the Commission about various issues associated with future carbon regulations (e.g., the options for future regulation, carbon capture, evidence concerning costs associated with compliance with carbon regulations, etc.). The NGOs had argued that “the facility should be delayed until future carbon regulations are known.”⁷¹ The court rejected the challenge and approved the permit for the new plant. It “recognized that uncertainties exist regarding carbon capture and sequestration and ordered [the applicant] to ‘continue

⁶⁶ Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs, 75 Fed. Reg. 17,004 (Apr. 2, 2010) (citing EPA’s Interpretation of Regulations that Determine Pollutants Covered By Federal Prevention of Significant Deterioration (PSD) Permit Program, Memorandum from Stephen L. Johnson, Administrator, EPA, to Regional Administrators, p. 1 (Dec. 18, 2008) (Johnson Memorandum)). On December 31, 2008, EPA issued an interpretive memorandum that the Agency stated contains EPA’s “definitive interpretation” of regulated NSR pollutant to include pollutants that are subject to an EPA regulation that requires their actual control, but not pollutants that are only subject to regulations that require monitoring or reporting. Clean Air Act Prevention of Significant Deterioration (PSD) Construction Permit Program; Interpretation of Regulations That Determine Pollutants Covered by the Federal PSD Permit Program, 73 Fed. Reg. 80,300 (Dec. 31, 2008). In a letter to an NGO lawyer in February 2009, the new EPA Administrator agreed to reconsider the interpretation of “regulated pollutant” and explained that EPA’s formal interpretation “does not bind States issuing permits under their own [SIP]” and that “other PSD permitting authorities should not assume that the [interpretation] is the final word on the appropriate interpretation of Clean Air Act requirements.” But the Administrator did not stay implementation of the interpretation contained in the December 2008 Memorandum. Letter from Lisa P. Jackson, Administrator, EPA, to Mr. David Bookbinder, Chief Climate Counsel, Sierra Club (Feb. 17, 2009).

⁶⁷ *In re Deseret Power Electric Coop.*, PSD Appeal No. 07-03, slip op. at 5 (Env’tl. Prot. Agency Env’tl. Appeals Bd. 2008).

⁶⁸ 75 Fed. Reg. 25,324; Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514, 31,516, 31,522 (Jun. 3, 2010).

⁶⁹ *Id.* at 31,520, 31,522. This rule has been challenged. *See, e.g., Coalition for Responsible Regulation v. EPA* (D.C. Cir.), No. 09-1322 (and consolidated cases).

⁷⁰ 894 N.E.2d 1055 (Ind. Ct. App. 2008).

⁷¹ *Id.*

its efforts to prepare for a future in which carbon is regulated”⁷² but declined to substitute its judgment for that of the Commission, concluding that the record showed that the Commission had carefully considered the issue, including considering alternative, renewable sources of energy but found that the proposed plant was reasonable because of its greater reliability.⁷³

An even more forceful example of judicial restraint is found in *In the Matter of Otter Tail Power Company*.⁷⁴ NGOs intervened in a permit proceeding for a new coal-fired energy conversion facility, asserting that CO₂ emissions would contribute to global warming and opposing the permit on that basis. The South Dakota Public Utilities Commission (PUC) approved the facility on the ground that not only are CO₂ emissions not currently regulated by the U.S. or South Dakota, but also because the CO₂ emissions from the proposed plant would not cause serious injury to the environment. The Commission found that emissions from the proposed facility “would only increase the national amount of emissions by seven hundredths of one percent.”⁷⁵ In upholding issuance of the permit, the South Dakota Supreme Court characterized its task to be to decide the “narrow question of whether the PUC’s conclusion that [the plant] will not pose a threat of serious injury to the environment [a statutory test] was clearly erroneous . . .”⁷⁶ In upholding the PUC’s decision to grant the permit, the Court focused extensively on the institutional challenge of climate change litigation for the courts:

While global warming and CO₂ emissions are considered harmful by the scientific community, what will pose a threat of *serious* injury to the environment [under the governing State statute] is a judgment call initially vested with the PUC by the Legislature. Nothing in [the state statute] so restricts the PUC as to require it to prohibit facilities posing any threat of injury to the environment. Rather, it is a question of the acceptability of a possible threat. Resolving what is acceptable for the people of South Dakota is not for this Court. The Legislature and Congress must balance the competing interests of economic development and protection of our environment. . . . [T]he PUC’s decision [that the plant should be approved because of a variety of factors, such as reliability concerns, availability of alternative sources of power, and the volume of emissions from the plant compared to nationwide emission levels] was not clearly erroneous.⁷⁷

In these decisions, like many others, the courts acknowledge the importance of the climate change issue and the need for attention to it. But they have proved reluctant to second guess agency decision makers charged in the first instance with deciding the “jurisdictional boundaries” question of whether the CAA applies to

⁷² *Id.* at 1066.

⁷³ *Id.*

⁷⁴ 744 N.W.2d 594 (S.D.2008).

⁷⁵ *Id.* at 602 (noting that the Commission concluded that the plant “will not pose a threat of serious injury to the environment or to the social and economic conditions of the inhabitants or expected inhabitants in the siting area.”)

⁷⁶ *Id.* at 603.

⁷⁷ *Id.* at 604.

GHG emissions and the question of how the risks that such emissions pose should be balanced with other policy concerns if jurisdiction attaches.

In contrast to *Citizen Action Coalition of Indiana* and *Otter Tail*, in a handful of cases applications for new plants that would emit GHGs have been denied because of issues related to GHG emissions. In these cases the permitting agency based its denial on factors beyond simply the risk that GHG emissions pose. For example, in *In re Petition for determination of need for Glades Power Park Units 1 and 2*,⁷⁸ the Florida Public Service Commission (PSC) used its broad discretion under the governing statute to deny an applicant's petition for an affirmative determination of need for two new proposed pulverized coal generating units. The PSC noted that Florida law identifies several factors for the PSC to consider in making need determinations and does not "assign the weight that the Commission is to give to each of these factors. . . ."⁷⁹ These factors include cost of electricity, cost-effectiveness of the proposed plant compared to other alternatives, conservation measures that might mitigate need, and other matters.⁸⁰ The applicant, FPL, had acknowledged in its application that "various scenarios of future carbon allowance costs" could have a significant effect on the cost-effectiveness of the project.⁸¹ The PSC justified its decision to deny the determination of need fairly generally, based on the "uncertainty associated with . . . emerging energy policy decisions at the state and federal level" among a variety of other factors.⁸² It appears that the Commission declined to find that there was a need for the plant, despite finding that the plant would bolster fuel diversity, at least in part because of the uncertainty associated with "regulatory factors" and the cost-effectiveness of the proposed plant in light of this uncertainty.⁸³

The actions to prevent authorization of a particular GHG emitting project that have had some resolution generally have not gone well for parties seeking to prevent approval because of the GHG emissions.⁸⁴ The proceedings based on the

⁷⁸ 260 P.U.R.4th 158 (Fla. P.S.C. 2007).

⁷⁹ *Id.* at 160.

⁸⁰ *Id.*

⁸¹ *Id.*

⁸² *Id.* at 161.

⁸³ *Id.* See also *In Re: Application of Wisconsin Power and Light Company*, No. 070098-EI, 2008 WL 5273417, (Wis. P.S.C. 2008) (The Public Service Commission of Wisconsin similarly denied a Wisconsin Power and Light plan to build a new 300 megawatt coal-fired facility because of concerns that the plant would be too costly when compared to alternatives, noting in its November, 11, 2008 press release that "uncertainty over the costs of complying with future possible carbon dioxide regulations were all contributing factors to the denial."). In the Matter of Application No. 2006-01, Energy Northwest Pacific Mountain Energy Center Power Project, Adjudicative Order No. 2 Council Order No. 833 (Wa. EFSEC 2007) denied an application to certify a site in Washington State for use as a combined cycle gasification facility because the application lacked an adequate carbon sequestration plan, despite the applicant's claims that compliance with the statute would be futile because it was impossible at present to develop a plan of the sort the statute contemplated because of the "technological and economical infeasibility of geological sequestration." *Id.* at 2. The Council indicated that even if the applicant were right about the futility of compliance, the Council "[would] not interpret the statute to disregard the plain meaning of the legislature." *Id.* at 5.

⁸⁴ Aside from the limited number of decisions to date, it is likely that opposition to certain projects because of GHG emissions has been successful for different reasons and in different ways. Our study is limited to the decisions in our data base.

claim that monitoring and reporting requirements for GHGs subjected GHG emissions to regulation foundered at the project-specific level, and ultimately at the national level. While many decision-making bodies, administrative and judicial, have acknowledged the risks associated with GHG emissions, this concern has rarely led to rejection of projects. Courts in particular have been reluctant to second guess permitting bodies as those bodies have wrestled with how to incorporate GHG emissions and the risks they pose into permitting decision-making processes.

One interesting contrast to date involves the decisions in Indiana and Florida, with the Indiana Regulatory Commission allowing a project to go forward despite future regulatory uncertainty (and the reviewing court upholding that judgment), and the Florida PSC's deciding that the applicant had failed to establish the need for new coal generating units because of "uncertainty associated with . . . emerging energy policy decisions at the state and federal level. . . ."⁸⁵ A statutory initiative that imposed new obligations on applicants, in the form of sequestration efforts, proved dispositive in one case in which the State decision-making Council declined to be influenced by an "impossibility of compliance" argument by the applicant and instead applied the statutory language according to its terms.⁸⁶ During the stage of climate change litigation through December 2010, in short, an important lesson seems to be that the regulatory requirements pertaining to emission of GHGs (or in many cases the lack thereof) has had a significant effect on the outcome of permit proceedings and the reasoning of the decision-makers. As requirements are put in place, the permitting litigation landscape will inevitably evolve as well.

b. rule challenges

Claims involving agency rules have also been fertile ground for climate change litigation. There have been 22 Type 3 cases to date (e.g., actions to force EPA to regulate GHG emissions, to force local government to impose green building requirements, etc.). These cases fit into the *ex ante* category of litigation under the framework we describe above. Eight are pending with no significant action to date (36%). The Supreme Court's 2007 decision in *Massachusetts v. EPA*,⁸⁷ involving a challenge to EPA's 2003 denial of a petition asking EPA to regulate GHG emissions under the CAA,⁸⁸ is undoubtedly the most prominent case of this type.

Prior to the Court's decision in *Massachusetts v. EPA*, EPA had declined to regulate GHG emissions directly under the CAA.⁸⁹ EPA concluded in part that the CAA does not authorize EPA to issue mandatory regulations to address climate

⁸⁵ PSI Energy, Inc., 894 N.E.2d at 1066; Glades Power Park Units 1 and 2, 260 P.U.R.4th at 161.

⁸⁶ Energy Nw. Pac. Mountain Energy Ctr. Power Project, Application No. 2006-01, Adjudicative Order No. 2 Council Order No. 833, at 5 (EFSEC 2007).

⁸⁷ *Mass. V. EPA*, 547 U.S. 497 (2007).

⁸⁸ Petition for Rulemaking and Collateral Relief Seeking the Regulation of Greenhouse Gas Emissions From New Motor Vehicles Under § 202 of the Clean Air Act, available at <http://www.icta.org/doc/ghgpet2.pdf> (last visited Jan. 30, 2011). 68 Fed. Reg. 52,922.

⁸⁹ Notice of Denial of Petition for Rulemaking, 68 Fed. Reg. 52,922 (Sept. 8, 2003).

change, including regulations that cover greenhouse gas emissions, because Congress did not intend that carbon dioxide be treated as an “air pollutant.”⁹⁰ The petitioners claimed that EPA was obligated to regulate GHG emissions from new motor vehicles sources under CAA § 202(a)(1) because: 1) GHG emissions qualify as “air pollutants” and 2) such emissions from new motor vehicles cause or contribute to air pollution that endangers public health or welfare.⁹¹ While the United States Court of Appeals for the D.C. Circuit denied the petition for review, holding that “the EPA Administrator properly exercised his discretion under § 202(a)(1) in denying the petition for rulemaking,”⁹² the Supreme Court disagreed.

The Court framed the issues as “whether EPA has the statutory authority to regulate greenhouse gas emissions from new motor vehicles; and if so, whether its stated reasons for refusing to do so are consistent with the statute.”⁹³ Applying CAA § 202(a)(1), the Court held that carbon dioxide and other greenhouse gases easily fit within the Clean Air Act’s “capacious definition” of “air pollutant. . . .”⁹⁴ Further, the Court held that GHG emissions are a form of “air pollution which may reasonably be anticipated to endanger public health or welfare.”⁹⁵ The Court concluded that EPA “can avoid taking further action [*i.e.* the agency can decline to regulate GHG emissions under § 202(a)(1)] only if it determines that greenhouse

⁹⁰ As has been well-chronicled, EPA’s legal views evolved over the years concerning whether the CAA empowered the agency to regulate GHG emissions. In a 1998 memo, then General Counsel Jonathan Cannon concluded that EPA possessed such authority, while in 2003, the General Counsel at that time, Robert Fabricant, reached the opposite conclusion. Memorandum from Jonathan Z. Cannon, EPA General Counsel, to Carol M. Browner, EPA Administrator, EPA’s Authority to Regulate Pollutants Emitted by Electric Power Generation Sources (April 10, 1998); Memorandum from Robert Fabricant, EPA General Counsel, to Marianne Horinko, EPA Acting Administrator, EPA’s Authority to Impose Mandatory Controls to Address Global Climate Change under the Clean Air Act (Aug. 28, 2003).

⁹¹ Petition for Rulemaking and Collateral Relief Seeking the Regulation of Greenhouse Gas Emissions from New Motor Vehicles Under § 202 of the Clean Air Act (Oct. 20, 1999).

⁹² *Mass. v. EPA*, 415 F.3d 50, 58 (D.C. Cir. 2005). The appellate panel issued three separate opinions. Judge Randolph authored the language quoted in the text. Judge Sentelle concurred in this reasoning, although he also dissented in the case on the ground that petitioners lacked standing.

⁹³ *Mass. v. EPA*, 549 U.S. 497, 505 (2007). Before reaching the merits, the Court held that at least the State of Massachusetts had standing to challenge EPA’s petition denial. *Id.* While the Court’s standing analysis obviously has the possibility of influencing future litigation, we focus in the text on the Court’s treatment of the merits of the case. For reviews of the Court’s treatment of standing, see e.g., Kevin M. Davis, *The Road to Clean Air is Paved with Many Obstacles: The U.S. Environmental Protection Agency Should Grant a Waiver for California to Regulate Automobile Greenhouse Gas Emissions via Assembly Bill 1493*, 19 *Fordham Env’tl. L. Rev.* 39 (2009); Amy Wildermuth, *Why State Standing in Massachusetts v. EPA Matters*, 27 *J. LAND RESOURCES & ENVTL. L.* 273 (2007).

⁹⁴ The Court held that the “sweeping definition” of “air pollutant” in the CAA includes greenhouse gas emissions because each of the greenhouse gases at issue in the petition is “without a doubt” a “physical [and] chemical . . . substance or matter which is emitted into . . . the ambient air.” *Id.* at 556. The definitional section of the CAA defines “air pollutant” to include “any air pollution agent. . . , including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air.” 42 U.S.C. § 7602(g). It defines “welfare” to include “effects on . . . weather . . . and climate” 42 U.S.C. § 7602(h).

⁹⁵ 549 U.S. at 506.

gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.”⁹⁶

Since the Court’s opinion, EPA has initiated, and completed, several rulemakings. Directly responding to the Court, EPA issued its Endangerment Finding with respect to emissions of GHG air pollutants from new motor vehicles in December 2009.⁹⁷ The Agency observed that § 202(a) of the Clean Air Act establishes a two-part test for making such a finding: first, that an air pollutant must endanger public welfare; and, second, that emissions of such pollutants from particular sources cause or contribute to this endangerment.⁹⁸ In its rule, EPA referred to this second finding as the “cause or contribute” finding.⁹⁹ EPA determined that emissions of GHGs provide the basis for a finding of endangerment to public welfare for a variety of reasons, including “risk to food production and agriculture, forestry, water resources, sea level rise and coastal areas, energy, infrastructure, and settlements, and ecosystems and wildlife.”¹⁰⁰ Further, EPA found that the emission of GHG air pollutants emitted from motor vehicles “cause or contribute to this air pollution.”¹⁰¹

Seventeen petitioners challenged EPA’s Endangerment Finding in the U.S. Court of Appeals for the D.C. Circuit, ranging from states, to proponents of small government, to the U.S. Chamber of Commerce and the National Association of Manufacturers.¹⁰² The Court of Appeals consolidated these challenges in February 2010, under the name *Coalition for Responsible Regulation v. U.S. Environmental Protection Agency* (CRR v. EPA, D.C. Cir. 09-1322).¹⁰³ In addition to the seventeen petitions filed in the Court of Appeals for the District of Columbia Circuit seeking review of the Endangerment Finding (Endangerment Rule), ten petitions were filed with EPA asking the Agency to reconsider its Endangerment Finding.¹⁰⁴ In August 2010, EPA denied the petitions that it reconsider its Endangerment Finding.¹⁰⁵ Several parties challenged this EPA denial and the Court of Appeals consolidated these challenges with the pending challenges to the Endangerment Finding.¹⁰⁶

⁹⁶ *Id.* at 533. While EPA had provided several reasons for its decision not to regulate GHG emissions, the Court found the Agency’s reasoning unpersuasive because, in the Court’s view, the agency’s reasoning was not based on the framework in CAA § 202(a)(1).

⁹⁷ 74 Fed. Reg. 66496 (Dec. 15, 2009).

⁹⁸ CAA § 202(a); 74 Fed. Reg. 66496, 66536.

⁹⁹ 74 Fed. Reg. 66496, 66536.

¹⁰⁰ *Id.* at 66534.

¹⁰¹ *Id.* at 66536.

¹⁰² *Coalition for Responsible Regulation v. EPA* (D.C. Cir. Index No. 09-1322).

¹⁰³ *Id.*

¹⁰⁴ *See e.g.*, Petition for Reconsideration of Endangerment and Cause or Contribute Finding for Greenhouse Gases Under Section 202(a) of the Clean Air Act by the Commonwealth of Virginia, ex rel., Kenneth T. Cuccinelli, II, Attorney General of Virginia, Docket No. EPA-HQ-OAR 2009-0171 (Feb. 16, 2010).

¹⁰⁵ 75 Fed. Reg. 49,556, 49,557 (Aug. 13, 2010).

¹⁰⁶ One observer suggests that the Endangerment Finding is “least vulnerable to attack” of EPA’s rules concerning GHG emission restrictions and is “swaddled in at least three layers of Kevlar-like legal protections.” Daniel Farber, *Litigating Clean Air Endangerment*, THE ENVIRONMENTAL FORUM, Nov/Dec. 2010, at 12.

While EPA's Endangerment Finding did not impose requirements on emitters of GHGs, the Finding was a prerequisite for finalizing regulations that do impose such requirements. EPA has been extremely active in promulgating such regulations. The agency launched a cascade of agency rulemaking initiatives and it has finalized a series of regulations that will limit GHG emissions from a wide variety of mobile and stationary sources and impose monitoring and reporting obligations on GHG emitters as well. Some participants in the litigation challenging these EPA rules have characterized the rules as posing "perhaps the most significant set of administrative law challenges this Court [the Court of Appeals for the District of Columbia Circuit] has ever confronted."¹⁰⁷ The rules, in the view of one opponent, "achieve a stark result – the imposition of controls on carbon dioxide and other greenhouse gas ("GHG") emissions on the national economy."¹⁰⁸

These rules include EPA's Tailpipe rule,¹⁰⁹ its Timing or Triggering rule,¹¹⁰ and its Tailoring rule.¹¹¹ This suite of rules is currently subject to a broad array of challenges in the United States Court of Appeals for the D.C. Circuit. As one recent article puts it, "[o]ne striking fact about these suits is the pure number of claims: over 80 distinct claims" have been filed by 35 different petitioners to four EPA rules (including the challenges to EPA's Endangerment Finding referenced above).¹¹² To many close observers, the level of legal activity is not surprising. In addition to the stakes involved, some have suggested that efforts to regulate GHG emissions from stationary sources especially under the CAA have a square peg, round hole character. Ann Klee, former EPA General Counsel, noted during an Environmental Law Institute (ELI) forum that "the agency is trying to do everything that it can with a statute that is clearly not intended to deal with the very complex world of major climate change."¹¹³

EPA's May 2010 "tailpipe rule," which EPA issued jointly with the National Highway Traffic Safety Administration (NHTSA),¹¹⁴ follows up on EPA's endangerment finding (which found that GHG emissions from mobile sources

¹⁰⁷ Motion for Coordination of Related Cases at 1 (2010) (D.C. Cir. No. 10-1131).

¹⁰⁸ *Id.* The parties to the Motion cite an OMB memo for the proposition that "[m]aking the decision to regulate CO₂ under the CAA for the first time is likely to have serious economic consequences for regulated entities throughout the U.S. economy, including small businesses and small communities." *Id.* at 3 n.† (citing OMB Memorandum at 2, posted to EPA-HQ-OAR-2009-0171-0124 (posted April 22, 2009), available at <http://www.regulations.gov/search/Regs/home.html#documentDetail?R=0900006480965abd>.)

¹⁰⁹ 75 Fed. Reg. 25,324.

¹¹⁰ 75 Fed. Reg. 17,004.

¹¹¹ 75 Fed. Reg. 31,514.

¹¹² Gregory E. Wannier, EPA's Impending Greenhouse Gas Regulations: Digging through the Morass of Litigation, White Paper: Columbia Law School Center for Climate Change Law (Nov. 23, 2010). A Deutsche Bank report indicates that 82 of the 108 lawsuits begun in 2010 fit into this category. DB Climate Change Advisors, Growth of U.S. Climate Change Litigation: Trends and Consequences (Nov. 3, 2010).

¹¹³ EPA: ELI Panel discusses agency's priorities, state of current law (10/21/2010), WWW.EENEWS.NET/TV/TRANSCRIPT/1226 (10/25/2010).

¹¹⁴ 75 Fed. Reg. 25,324, 25,371. President Obama announced on May 19, 2009, that EPA and the NHTSA would work together on a rule that would integrate CAFE standards (NHTSA's function) with national GHG standards (EPA's job).

contribute to endangering public health and welfare) by establishing GHG emission standards for “light duty vehicles” for model years 2012-2106.¹¹⁵ EPA finalized greenhouse gas emissions standards under the CAA, while NHTSA finalized corporate average fuel economy (CAFE) standards under the Energy Policy and Conservation Act.¹¹⁶ Seventeen petitions for review of the “tailpipe rule” have been filed with the U.S. Court of Appeals for the District of Columbia Circuit, all of which have been consolidated.¹¹⁷

EPA determined in a third rulemaking, known as the “timing” or the “triggering” rule,” or the “reconsideration decision,”¹¹⁸ that on January 2, 2011 – i.e., the first day of the first model year in which manufacturers would be required to meet the new motor vehicle standards EPA promulgated in May 2010 – those mobile source emission control standards would trigger PSD controls on GHG emissions from stationary sources.¹¹⁹ In this rulemaking, EPA upheld an earlier agency interpretation that the PSD permit requirements apply only to pollutants that are subject to actual control of emissions under either a statutory or regulatory provision, and do not apply to pollutants that are merely subject to monitoring or reporting requirements but not to actual controls.¹²⁰ EPA further determined that

¹¹⁵ 75 Fed. Reg. 25324 (May 7, 2010). According to the agencies, the rules “will achieve substantial reductions of GHG emissions . . . from the light-duty vehicle part of the transportation sector, based on technology that is already being commercially applied in most cases and that can be incorporated at a reasonable cost.” 25326. EPA summarizes as follows the contribution of the mobile sources targeted in this rule as follows:

[M]obile sources “emitted 31 percent of all U.S. GHGs in 2007 (transportation sources, which do not include certain off-highway sources, account for 28 percent) and have been the fastest-growing source of U.S. GHGs since 1990. Mobile sources addressed in the recent endangerment and contribution findings under CAA section 202(a) – light-duty vehicles, heavy-duty trucks, buses, and motorcycles – accounted for 23 percent of all U.S. GHG in 2007. Light-duty vehicles . . . are responsible for nearly 60 percent of all mobile source GHGs and over 70 percent of Section 202(a) mobile source GHGs.

Id. at 25326.

¹¹⁶ 75 Fed. Reg. 25324.

¹¹⁷ *Coalition for Responsible Regulation v. EPA* (D.C. Cir. Index No. 10-1092). There were several challenges to the tailpipe rule. On July 23, 2010, EPA filed a motion to consolidate the cases and on August 5, 2010, the court granted the motion to consolidate. This is not the only administrative action concerning mobile sources that may see a court room. EPA and NHTSA are currently developing another rule to establish standards for model years 2017-2025. A November 2, 2010 Congressional Research Service report indicates that EPA has received ten petitions asking the Agency to regulate GHG emissions from other mobile sources, with all but one focused on mobile sources such as aircraft, ocean-going ships, locomotives, nonroad vehicles, and their fuels. James E. McCarthy, *Cars, Trucks, and Climate: EPA Regulations of Greenhouse Gases from Mobile Sources* (Congressional Research Service R40506 Nov. 2, 2010), at 5-6. EPA’s response to these petitions may well trigger more litigation – e.g., litigation challenging EPA’s denial of any petitions and litigation challenging any rules EPA issues. Thus, the nature of the litigation that is likely to ensue is likely to depend on the nature and extent of EPA’s regulatory treatment of mobile sources.

¹¹⁸ 75 Fed. Reg. 17004 (April 2, 2010).

¹¹⁹ *Id.* EPA Fact Sheet, *Reconsideration of Interpretation of Regulations that Determine Pollutants Covered by Clean Air Act Permitting Programs* (undated). 75 Fed. Reg. 17,004 (April 2, 2010)

¹²⁰ *See supra* note ____.

the PSD permitting requirements will apply to GHGs upon the date that the anticipated tailpipe standards for light-duty vehicles . . . take effect. Based on the proposed . . . , those standards will take effect when the 2012 model year begins, which is no earlier than January 2, 2011.”¹²¹

Eighteen petitioners have sought review of this rule in the U.S. Court of Appeals for the D.C. Circuit, including a mix of states, nonprofits, and industry groups.¹²² The court has consolidated these challenges and also has consolidated challenges to this rule with challenges to EPA’s “tailoring rule,” discussed next.¹²³

Finally, on June 3, 2010 EPA issued its “tailoring rule,” which limits GHG emissions from stationary sources.¹²⁴ EPA characterizes the “tailoring rule” as a “common sense approach” to regulating GHG emissions from stationary sources under the CAA permitting program.¹²⁵ EPA claims that this tailoring approach is legally supportable based on three legal doctrines: 1) the “absurd results” doctrine, which “authorizes agencies to apply statutory requirements differently than a literal reading would indicate as necessary to effectuate congressional intent and avoid absurd results,” 2) the “administrative necessity” doctrine, which “authorizes agencies to apply statutory requirements in a way that avoids impossible administrative burdens,” and 3) the “one-step-at-a-time” doctrine, which “authorizes agencies to implement statutory requirements a step at a time.”¹²⁶ Not surprisingly, the rule and its underlying tailoring rationales have been challenged.¹²⁷ The litigants are seeking to hoist EPA on the legal foundation it has constructed, notably that EPA should be able to deviate from the emission level requirements in the CAA under the PSD and Title V programs because adherence to those requirements for GHG emissions would produce “absurd results.” At this writing, the outcomes of these legal challenges to this suite of four EPA rules remain uncertain. Their fate in the courts, and perhaps in Congress as well, will have a significant effect on the approaches the country takes to addressing GHG emissions.¹²⁸ In addition to these relatively broad-scale

¹²¹ 75 Fed. Reg. 17007. Further, EPA is deferring applying the PSD and Title V provisions for sources that are major based only on emissions of GHGs until a date that extends beyond January 2, 2011. 75 Fed. Reg. 17004, 17007.

¹²² Coalition for Responsible Regulation v. EPA (D.C. Cir. No. 10-1073); www.eenews.net/greenwire/2010/11/17/archive/7.

¹²³ *Id.* On November 16, 2010, the U.S. Court of Appeals for the District of Columbia Circuit acceded to an EPA request that the timing rule and tailoring rule should be addressed together.

¹²⁴ 75 Fed. Reg. 31,514.

¹²⁵ U.S. EPA, Final Rule: Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule Fact Sheet.

¹²⁶ 75 Fed. Reg. 31516.

¹²⁷ In September all 26 cases were consolidated under *Southeastern Legal Foundation v. EPA* (D.C. Cir. No. 10-1131).

¹²⁸ See e.g., *21st Century Problems, 20th Century Laws*, THE ENVIRONMENTAL FORUM, Jan.-Feb. 2011, 42, 44 (quoting former EPA General Counsel Ann Klee as stating that “[w]hether the Tailoring Rule survives or not is critical to the success of the rest of EPA’s regulations. Without the Tailoring Rule, the [CAA] simply cannot manage the regulatory burdens that will be imposed if the agency uses it to address [GHG] emissions.”); EPA: House GOP ponders blocking funds for emissions regs, www.eenews.net/EEDaily/print/2011/02/09/3 (Feb. 9, 2011) (noting that there has been discussion in Congress about limiting funding for enforcement of EPA’s GHG emission regulations); EPA’s Greenhouse Gas, Boiler Rules Top Regulatory Complaints in Letters to Issa (news.bna.com/chln/display/batch_print_display.adp) (Chem. Reg.

rulemaking initiatives, EPA has engaged in other, more targeted rulemaking in order to reduce climate change emissions, and these have attracted litigation as well.¹²⁹ There also has been a variety of rules-related litigation matters involving state laws and regulations.¹³⁰

Federalism issues were often wrapped into the rules challenges cases. For example, two *Texas v. EPA* cases¹³¹ involve a Texas challenge to an EPA interim rule, which EPA issued in December 2010, in which the agency partially disapproved Texas's PSD program on the ground that Texas did not address the program's application to GHG emissions that would become subject to the

Rep. BNA Feb. 11, 2011) (noting that “[e]nvironmental rules governing greenhouse gases . . . got top billing by dozens of industry groups asked . . . to provide examples of overly burdensome regulations. . . .”)

¹²⁹ For example, in the new source review context, in November 2010 cement manufacturers and environmental groups filed 19 lawsuits to challenge an EPA rule that established new source performance standards (NSPS) and national emissions standards for hazardous air pollutants (NESHAPS) for cement kilns. *Portland Cement Assoc. v. EPA*, No. 10-1363 (DC Cir.). EPA also has recently entered into settlements with NGOs that filed suit to require EPA to set GHG emission standards for the petroleum and electric generating unit industries. 75 Fed. Reg. 82390; 75 Fed. Reg. 82392. In some cases this more targeted litigation has yielded commitments by the agency to promulgate emission standards for GHGs by some date certain, though the precise standards remain in question. In other cases EPA or another federal agency has agreed to decide whether to issue standards by a date certain. We view this latter category of cases to be “deadline suits” in that they seek a court order obligating an agency to take action by a date certain based on a non-discretionary duty.

¹³⁰ See e.g., *Citizens for Environmental Inquiry v. DEQ*, 2010 Mich. App. LEXIS 295 (Mich. C of A, Feb. 9, 2010) (involved an unsuccessful effort by citizens first to persuade the State environmental agency, the Department of Environmental Quality (DEQ), to promulgate a rule regulating CO2 emissions and, then, to persuade the Michigan courts to require DEQ to do so. The court held that the plaintiffs had failed to establish that they “have a clear legal right to the promulgating of specific rules regarding CO2 emissions” because the plaintiffs had failed to alleged a specific injury that warranted the mandamus relief they were seeking. The court also held that the plaintiffs could not bring a claim alleging that the Michigan Environmental Protection Act (MEPA) imposes a legal duty on the DEQ to determine the impacts of CO2 emissions on the environment as part of the air permitting process because the MEPA only authorizes private actions “against regulated or regulable actors who are specifically engaged in ‘wrongful conduct’ that harms the environment,” not against the DEQ for its determinations of permit eligibility. . . .”); *Leavell v. NMEIB*, Docket No. 32,396 (N. Mex. 2010), involved an environmental group’s request that the New Mexico Board promulgate regulations to control GHG emissions, the Board’s deciding to conduct a rulemaking proceeding, and a challenge to the Board’s authority to regulate GHG emissions until the State first established a NAAQS for GHGs. In allowing the Board to continue its administrative process without judicial intervention, the Court reasoned that it “should not intervene to halt administrative hearings before rules or regulations are adopted.” The court invoked “prudential considerations” in determining that “[j]udicial action that disrupts the administrative process before it has run its course intrudes on the power of another branch of government.” See also *In the Matter of Quantification of Environmental Costs Pursuant to the Laws of Minnesota 1993*, 578 N.W. 2d 794 (Minn. C. of A. 1998) (upholding the Minnesota Public Utilities Commission’s (PUC) implementation of a Minnesota statute that required the PUC to set “environmental cost values” for different methods of electricity generation on the ground that the PUC had the expertise to determine environmental cost values, and that its decisions were defensible that CO2 negatively affects the environment and on the values it set.)

¹³¹ *Texas v. EPA* (D.C. Cir., Docket No. 10-142); *Texas v. EPA* (5th Cir., Docket No. 10-60961).

program in early 2011.¹³² As EPA and others grapple with how best to apply the CAA regulatory framework to limit GHG emissions from stationary sources, it is not unlikely that there will be considerable tension between EPA and the states as they work through the sources to be covered, the approaches to be taken, and the division of responsibilities for the work that needs to be done.¹³³

Several rule challenge cases have addressed another aspect of our federal system's effort to limit GHG emissions, notably preemption. In *Association of Taxicab Operators USA v. City of Dallas*,¹³⁴ the City of Dallas adopted an ordinance that gave a preference to taxis that run on compressed natural gas to move to the front of the line in tax queues at Dallas Love Field Airport. The Taxicab Operators Association claimed that the ordinance was preempted by the Clean Air Act because it established an emissions standard. The court denied the request for a Preliminary Injunction, allowing the ordinance to stand, because it was not persuaded that the plaintiffs would prevail on the merits.¹³⁵

In contrast, *Metropolitan Taxicab Board of Trade, et al. v. City of New York*¹³⁶ is a successful preemption claim involving a local ordinance. New York City's Taxicab & Limousine Commission (TLC) had amended its lease rates for taxicabs in order to increase incentives for fleet owners to use hybrid-engine and fuel-efficient vehicles. The City's rules increased the "lease caps" for these vehicles and reduced the lease caps for non-hybrid, non-clean diesel vehicles.¹³⁷ The District Court had granted the taxicab board's request for a preliminary injunction, finding that the new lease caps were sufficiently likely to be preempted by the EPCA and CAA. The EPCA preemption clause provides:

[A] State or a political subdivision of a State may not adopt or enforce a law or regulation related to fuel economy standards or average fuel economy standard for automobiles covered by an average fuel economy standard under this chapter.¹³⁸

The Second Circuit affirmed, holding that the City's rules, which were "based expressly on the fuel economy of a leased vehicle, plainly fall within the scope of the EPCA preemption provision. The plaintiffs, therefore, have demonstrated . . . a certainty. . . of success on the merits."¹³⁹

¹³² *Id.*

¹³³ Beyond the Texas situation discussed above, EPA has had to issue several "friendly FIPS" because some states are not yet prepared to integrate GHG emissions controls into their PSD programs. 75 Fed. Reg. 82246.

¹³⁴ Case No. 3:2010cv00769 (N.D. Tex. Aug. 30, 2010).

¹³⁵ *Id.*

¹³⁶ 2010 U.S. App. LEXIS 15303 (2nd Cir. 2010).

¹³⁷ *Id.* at 2.

¹³⁸ 49 U.S.C. § 32919(a).

¹³⁹ *Metropolitan Taxicab Board of Trade*, 2010 U.S. App. LEXIS 15303 at 15. See also *Lincoln-Dodge, Inc. v. Sullivan*, 588 F.Supp.2d 224 (D.R.I. 2008) (dismissing on claim preclusion grounds a preemption case brought by some automobile plaintiffs challenging Rhode Island GHG emission standards for new automobiles but allowing the case to continue for other plaintiffs); *Green Mountain Chrysler Plymouth Dodge Jeep, et al. v. Crombie*, 508 F.Supp.2d 295 (D.Vt. 2007) (dismissing various auto interests' challenge on preemption grounds to Vermont regulations that adopted the California motor vehicle emission standards and, in doing

A challenge to regulatory action that would establish new or more stringent limits on GHG emissions was successful in *The Air Conditioning, Heating and Refrigeration Institute v. City of Albuquerque*.¹⁴⁰ That case involves a challenge on federal preemption grounds to an Albuquerque City Council Energy Conservation Code which “regulate[s] the design and construction of buildings for the effective use of energy.” The court agreed for some of the challenged provisions of the Code, but not all, citing the broad preemption language in the National Appliance Energy Conservation Act¹⁴¹ and the legislative history, which noted, among other things, that Congress recognized that “the [Act] preempts state law under most circumstances.”¹⁴²

2. Climate Change in Agency Impact Assessments

Just as litigants have battled over the extent to which climate change issues must or must not be integrated into substantive decision making under existing environmental laws, so too has the litigation front reached environmental law’s extensive array of procedural requirements, particularly those requiring assessment of the environmental impacts of proposed actions. Most prominently, 34 cases—one-sixth of all climate change litigation matters—involved claims brought under the National Environmental Policy Act (NEPA), which requires all federal agencies to “include in every recommendation or report on proposals for legislation and other major Federal actions significantly affecting the quality of the human environment, a detailed statement by the responsible official on—(i) the environmental impact of the proposed action [and] (ii) any adverse environmental effects which cannot be avoided should the proposal be implemented.”¹⁴³ The Council on Environmental Quality (CEQ), through regulations implementing this “environmental impact statement” (EIS) procedure for federal agencies, requires agencies to consider the impacts of direct effects, indirect effects, and cumulative impacts.¹⁴⁴ It does not take much imagination to envision the NEPA-climate connection and how a claimant would argue that an agency must include in its NEPA analysis an evaluation of how the proposed action, such as approval of an

so, explaining that it viewed its task to be to evaluate the legitimacy of Vermont’s regulations based on whether they conformed to Congress’s wishes, and that the significant technical, political, and moral issues associated with the challenge of climate change were for the other branches).

¹⁴⁰ Case No. CIV-08-633 MV/RLP, 2008 U.S. Dist. LEXIS 106706 (D.N.M. 2008).

¹⁴¹ *Id.* at 3.

¹⁴² *Id.* at 3.

¹⁴³ 42 U.S.C. § 4332(2)(C). This provision also requires statements on alternative actions, short- and long-term implications, and “any irreversible and irretrievable commitments of resources.” *Id.* at § 4332(2)(C)(iii)-(v).

¹⁴⁴ The CEQ has defined *direct effects* as effects “which are caused by the action and occur at the same time and place,” 40 C.F.R. § 1508.8(a), *indirect effects* as effects “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable,” 40 C.F.R. § 1508.8(b), and *cumulative impacts* as “the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” *Id.* § 1508.7.

industrial source of greenhouse gas emissions, may contribute to climate change as a direct, indirect, or cumulative effect.¹⁴⁵ Indeed, NEPA provided the medium for the earliest of statute-based climate change litigation.¹⁴⁶

Cases addressing NEPA compliance in the climate change context fell into three categories. First, over a dozen cases involved claims alleging that an agency improperly omitted *any* discussion of emissions and impacts from its NEPA assessment process. Another set of cases involved instances in which an agency had considered emissions or impacts, but concluded their effects were not sufficient to reach the “significantly affecting” threshold and thus did not warrant preparation of a full EIS,¹⁴⁷ the claim being that the agency should have prepared a full EIS. Lastly, a number of cases involved claims that the discussion of emissions or impacts in an EIS, while present, was insufficient to satisfy NEPA. These kinds of claims are typical of NEPA litigation,¹⁴⁸ so there is nothing unusual about climate change NEPA litigation in this sense.

The issue in the first set of cases—whether greenhouse gas emissions and climate change impacts need to be considered at all under NEPA—is an important threshold determination for any new kind of impact. For climate change in particular, the extended causal chain from emissions to impacts and the lack of certainty in predictive impact models could plausibly support the argument that climate change is just too speculative for agencies to need to worry about, particularly for small-scale projects. Indeed, some courts have so ruled. For example, the Ninth Circuit recently held that the Forest Service did not have to consider climate change in connection with a decision to thin portions of a national forest to control fire and pests.¹⁴⁹ The court agreed with that agency that because the project involved a small amount of land and only thinning of some trees, its climate impacts were “meaningless” and thus not required to be mentioned at all in the NEPA analysis.¹⁵⁰ Similarly, in a rather terse dismissal of a claim that federal agencies improperly omitted consideration of impacts of GHG emissions from vehicles using a proposed new highway, a federal district court emphasized the complete lack of evidence that the agency had considered the emissions but ruled that “the plaintiffs have not, however, pointed to any law or regulation showing that defendants’ failure to consider greenhouse gas emissions makes the FIES inadequate, or makes the decision...arbitrary or capricious.”¹⁵¹

In some cases, though, courts have ruled that GHG emissions and climate change impacts are squarely within the scope of NEPA, the question being how to incorporate them into the assessment process. An example is *Border Power Plant*

¹⁴⁵ See generally Madeline June Kass, *A NEPA-Climate Paradox: Taking Greenhouse Gases into Account in Threshold Significance Determinations*, 42 IND. L. REV. 47 (2009).

¹⁴⁶ See *City of Los Angeles v. National Highway Traffic Safety Admin.*, 912 F.3d 478 (D.C. Cir. 1990) (finding that the city had standing to challenge the agency’s EIS for inadequate discussion of climate change, but ruling against the city on the merits).

¹⁴⁷ In such instances the agency issues a “finding of no significant impact,” or FONSI, based on a more truncated impact analysis known as an environmental assessment (EA). See 40 C.F.R. § 1501.4.

¹⁴⁸ See generally THE NEPA LITIGATION GUIDE (Karin P. Sheldon & Mark Squillace eds., 1999).

¹⁴⁹ See *Hapner v. Tidwell*, 621 F.3d 1239 (9th. Cir. 2010).

¹⁵⁰ *Id.* at 1245.

¹⁵¹ *Sierra Club v. Federal Hwy. Admin.*, 715 F.Supp.2d 721, 741 (S.D. Tex. 2010).

Working Group v. Department of Energy,¹⁵² in which the court held that the agency's NEPA analysis for a proposed power transmission line in the United States should have considered the effects of GHG emissions from power plants in Mexico delivering power through the line. The court rejected the agency's arguments that the effects were too speculative and that because GHG emissions are unregulated, they are not within NEPA's scope.¹⁵³ Rather, "because these emissions have potential environmental impacts and were indicated in the record...failure to disclose and analyze their significance is counter to NEPA."¹⁵⁴

This gateway issue of whether NEPA requires climate change analysis may be an example of agency action eclipsing or at least influencing the judicial approach. Although the CEQ issued draft guidance in 1997 suggesting that NEPA "provides an excellent mechanism for consideration of ideas related to global climate change,"¹⁵⁵ that idea went dormant and remained so well after the climate change litigation wave geared up. In a 2010 draft guidance, however, CEQ reprised the theme by proposing "to advise Federal agencies to consider, in scoping their NEPA analyses, whether analysis of the direct and indirect GHG emissions from their proposed actions may provide meaningful information to decision makers and the public."¹⁵⁶ CEQ also proposed to advise agencies to consider "the effects of climate change on the design of a proposed action and alternatives."¹⁵⁷ Although the draft guidance recognizes that low emission levels usually do not warrant extensive analysis and that effects of climate change are difficult to predict,¹⁵⁸ the gist of the guidance is that agencies should at least put emissions and impacts into play in their NEPA work. Courts might view this guidance as a strong signal from NEPA's chief agency that the real issue for NEPA and climate change is not whether emissions and impacts must be considered by agencies, but rather whether the agencies have prepared adequate assessments. At the very least, CEQ's guidance is likely to prompt agencies to include emissions and impacts at some

¹⁵² 260 F. Supp 2d 997 (S.D. Cal. 2003).

¹⁵³ *See id.* at 1028-29.

¹⁵⁴ *Id.* at 1029.

¹⁵⁵ Draft Memorandum from Kathleen A. McGinty to Heads of Federal Agencies, Guidance Regarding Consideration of Global Climatic Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act 1 (Oct. 8, 1997), *available at* <http://www.mms.gov/eppd/compliance/reports/ceqmemo.pdf>. As CEQ explained:

The available scientific evidence . . . indicates that climate change is "reasonably foreseeable" impacts [sic] of emissions of greenhouse gases, as that phrase is understood in the context of NEPA and CEQ regulations . . .

Specifically, federal agencies must determine whether and to what extent their actions affect greenhouse gases. Further, federal agencies must consider whether the actions they take, e.g., the planning and design of federal projects, may be affected by changes in the environment which might be caused by global climatic change.

Id. at 4.

¹⁵⁶ Memorandum from Nancy H. Sutley to Heads of Federal Departments and Agencies, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 1 (Feb. 18, 2010), *available at* http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FINAL_02182010.pdf

¹⁵⁷ *Id.* at 2.

¹⁵⁸ *See id.* at 2-8.

level of discussion in their NEPA assessments, even if to say merely that they were considered and rejected from effects for further analysis. This approach would push most NEPA climate change litigation past the threshold omission issue to one of the two questions of adequacy—whether an EIS should have been prepared or, if one was prepared, whether the analysis is sufficiently thorough.

On those two fronts there is nothing unusual about the outcomes of the climate change NEPA cases compared to NEPA litigation involving other alleged effects a proposed action could have, such as habitat loss or water pollution. NEPA is a highly context specific statute, making it difficult to draw hard and fast rules about what must be considered for a proposed action and at what depth of analysis.¹⁵⁹ So, while some courts have found that an agency improperly declined to prepare a full EIS,¹⁶⁰ several of the decided cases have found the agency's decision not to do so acceptable.¹⁶¹ Even more telling, the courts have yet to find that an agency's analysis of emissions or impacts in a full EIS was inadequate. In other words, if an agency prepared a full EIS and put some analysis of emissions or impacts into it, the courts have been satisfied in every instance. This strong trend may reflect that courts appreciate the uncertain nature of climate change impact prediction. For example, one court rejected a claim that the EIS for a highway project inadequately assessed the GHG emission effects, agreeing with the agency that it was reasonable not to quantify emissions and calculate their impacts "because any determination of...impact on overall global climate change would have been highly speculative and thus not useful."¹⁶²

The CEQ guidance, which recognizes the difficulty of predicting climate impacts but encourages agencies to try, may nonetheless over time lead to more rigorous agency analysis and thus possibly more contested litigation and deeper judicial review. Thus far, however, NEPA has simply not provided fertile ground for plaintiffs seeking to force agencies to do more with their climate change assessments. As Table 2 shows, of the 19 NEPA climate change matters that have reached some final judicial disposition, plaintiffs have prevailed in only three and lost on procedural grounds or on the merits in the others.¹⁶³

¹⁵⁹ This is a dominant theme of CEQ's 2010 draft guidance, *see id.*, and is true of NEPA impacts analysis in general. *See generally* John F. Shepherd, *Range of Proposals Covered by NEPA*, in THE NEPA LITIGATION GUIDE, *supra* note 148, at 20, 34-38.

¹⁶⁰ *See, e.g.*, Center for Biological Diversity v National Highway Transportation Safety Bd., 508 F.3d 508 (9th Cir. 2007) (rejecting the agency's rationale for not preparing an EIS to analyze GHG emission impacts of proposed fuel economy standards). This is the opposite outcome from that reached by the D.C. Circuit on the agency's set of fuel economy standard promulgated over 15 years earlier. *See City of Los Angeles v. National Highway Traffic Safety Admin.*, 912 F.3d 478 (D.C. Cir. 1990) (finding that the city had standing to challenge the agency's EIS for inadequate discussion of climate change, but ruling against the city on the merits).

¹⁶¹ *See, e.g.*, North Slope Borough v. Minerals Management Serv., No. 3:07-cv-0045-RBB, 2008 U.S. Dist. LEXIS 1503 (D. Alaska Jan. 8, 2008) (approving of agency's decision not to prepare a supplemental EIS to analyze effects of GHG emissions from oil and gas leasing).

¹⁶² North Carolina Alliance for Transportation Reform, Inc., v. U.S. Dept. Transportation, 713 F.Supp.2d 491, 517 (M.D. N.C. 2010).

¹⁶³ One case recorded in the "other" category was settled on terms clearly favorable to the plaintiff. Our focus in this particular tabulation of NEPA claim outcomes, however, is on judicial treatment of the NEPA claims.

Table 2. Status of NEPA Climate Change Litigation Matters

NEPA Claim	Total	Successful	Unsuccessful	Other	Pending
improperly omitted	14	2	4	3	5
failure to prepare EIS	4	1	3	0	0
inadequate EIS analysis	16	0	9	3	4

A more plaintiff friendly story can be told of the cases arising under California's state version of NEPA, the California Environmental Quality Act (CEQA),¹⁶⁴ which imposes a similar regime for preparation of environmental impact review (EIR) assessments. California courts have generally made it clear that greenhouse gas emissions and climate change impacts are in the CEQA mix of effects that matter,¹⁶⁵ and the state has adopted regulatory guidelines much like those CEQ proposed to guide agency analysis of emission and impact effects.¹⁶⁶ From there, much like NEPA, the context of each proposed action has driven how far and deep the courts demand the agencies run with the assessment of emissions and impacts. Overall, however, the CEQA plaintiff win/loss rates thus are tilted more toward the win side than under NEPA. Of the 33 CEQA climate change litigation matters—like NEPA, one-sixth of the total matters in our study—plaintiffs have prevailed on the merits in nine and were unsuccessful in six; five cases were resolved through settlement or other means, two on terms clearly favorable to the plaintiff; and the remaining were pending as of the close of our study period.

Claims challenging agency impact assessments under other state impact assessment statutes have been filed in only a few other states. Plaintiffs are zero for three in Minnesota, where the courts have, like the federal courts, generally deferred to agency effects analyses as adequate.¹⁶⁷ Matters in other states have been resolved off the merits or are pending.

Other than NEPA and its state counterparts, the Endangered Species Act (ESA) includes an impact assessment requirement that is ripe for climate change litigation. Section 7(a)(2) of the ESA provides that federal agencies must consult with the U.S. Fish and Wildlife Service (FWS) or National Marine Fisheries Service (NMFS), depending on the species, to “insure that any action authorized, funded, or carried out by such agency...is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined

¹⁶⁴ Cal. Pub. Resources Code § 21000 et seq.

¹⁶⁵ See, e.g., *Communities for a Better Env't. v. City of Richmond*, 2010 WL 1645906 (Cal. App. 1 Dist. Apr. 26, 2010) (concluding that state legislation and policy acknowledge that GHGs have a significant environmental impact and requiring their consideration in CEQA analysis for a proposed refinery).

¹⁶⁶ Cal. Code Regs. tit. 14, § 15064.4 (2010). See generally Cal. Nat. Resources Agency, *CEQA Guidelines*, <http://ceres.ca.gov/ceqa/guidelines> (last visited Jan. 28, 2010).

¹⁶⁷ See, e.g., *Minn. Ctr. for Env'tl. Advocacy v. Holsten*, No. A08-2171, 2009 Minn. App. Unpub. LEXIS 1078, *7-17 (Minn. Ct. App. Sept. 22, 2009).

... to be critical ...¹⁶⁸ The statute builds an elaborate procedure for carrying out these consultations under which the agency proposing the action must carry out a series of steps designed to predict the impact of the action on listed species, with the ultimate product in some instances being a “biological opinion” from the consulting agency “detailing how the agency action affects the species or its critical habitat.”¹⁶⁹

One recent judicial opinion makes it clear that the assessment must at least address the effects of climate change on the species that are the subject of the consultation. In *Natural Resources Defense Council v. Kempthorne*,¹⁷⁰ the FWS had prepared its consultation report regarding the effects of the Central Valley Project-State Water Project (CVP-SWP) in California on a small fish, the Delta smelt.¹⁷¹ The biological opinion conclusions were based in part on the assumption that the hydrology of the water bodies affected by the project would follow historical patterns for the next 20 years.¹⁷² Undercutting this assumption, a number of environmental groups directed the agency’s attention to several studies on the potential effects of climate change on water supply reliability, urging that the issue be considered in the assessment.¹⁷³ The FWS attempted to defend its failure to consider climate change at all by appealing to what it described as inconclusive science, but the court evidenced little tolerance for the agency’s failure to address these issues openly in the consultation documents. The court found that “the climate change issue was not meaningfully discussed in the biological opinion, making it impossible to determine whether the information was rationally discounted because of its inconclusive nature, or arbitrarily ignored,” and hence “FWS acted arbitrarily and capriciously by failing to address the issue of climate change in the BiOp.”¹⁷⁴ As did the majority in *Massachusetts v. EPA*, however, the *Kempthorne* court made it clear that at this stage of the litigation “[t]here is no basis to determine what weight FWS should ultimately give the climate change issue in its analysis.”¹⁷⁵ The agency’s error, in other words, was in not addressing climate change *at all*.¹⁷⁶

Overall, however, climate change litigation brought pursuant to statutory monitoring, impact assessment, and disclosure requirements has been dominated by NEPA and CEQA claims—they make up 67 of the 87 cases in the category.¹⁷⁷ As Figure 1 shows, plaintiffs have prevailed in just over a quarter of the total cases in the category and lost in a third of the cases, with 30% of all matters still pending at the time our study period closed. All indications are that this category of

¹⁶⁸ 16 U.S.C. 1536(a)(2) (2000).

¹⁶⁹ 16 U.S.C. 1536(b)(3)(A).

¹⁷⁰ 506 F. Supp. 2d 322 (E.D. Cal. 2007).

¹⁷¹ *Id.* at 328.

¹⁷² *Id.* at 367.

¹⁷³ *Id.* at 367-68.

¹⁷⁴ *Id.* at 369-70.

¹⁷⁵ *Id.* at 370 n.28.

¹⁷⁶ See also *South Yuba River Citizens League v. Nat. Marine Fisheries Serv.*, 723 F.Supp.2d 1247 (E.D. Cal. 2010) (biological opinion for operation of two dams inadequate because, among other defects, it did not consider the effects of global warming on river water temperature).

¹⁷⁷ Other cases involved state impact assessment statutes other than CEQA, the ESA, or federal and state government and private and public information disclosure statutes.

litigation will remain active, as the trend line of annual filed cases shown in Figure 2 strongly suggests.

Figure 1. Status of Monitoring, Impact Assessment, and Reporting Litigation (Case Types 11-12)

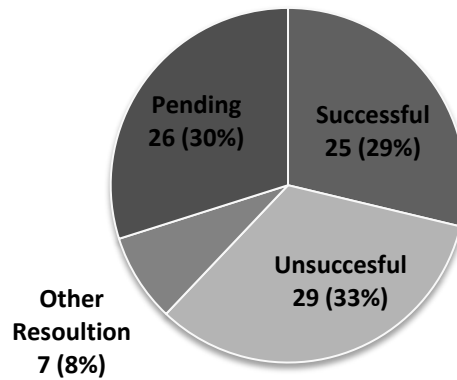
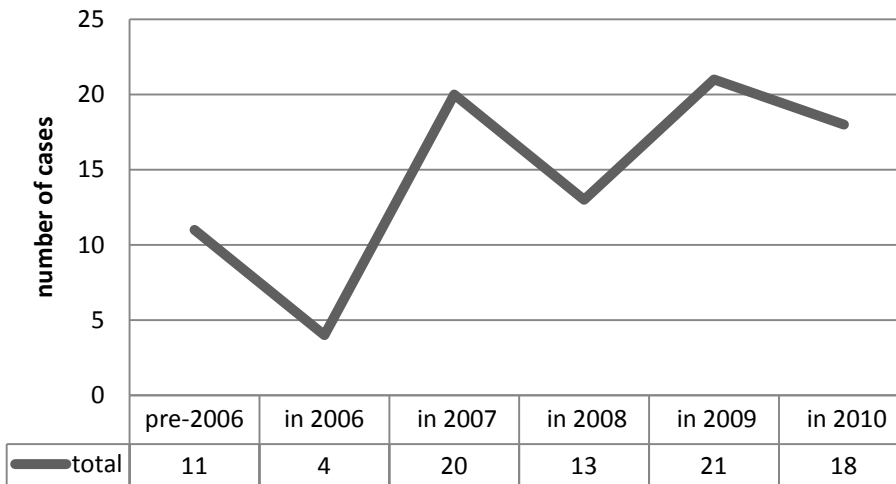


Figure 2. Monitoring, Impact Assessment, and Disclosure Claims Filed



II. SIEGE WARFARE IN “PRO” VERSUS “ANTI” CLIMATE CHANGE LITIGATION

Unlike the Gerrard and Howe inventory, our typology of climate change litigation allowed us to differentiate claims based not only on the plaintiff’s litigation objectives (e.g., stop government issuance of a permit), but also on the effect a suit’s success would have on climate change law and regulation (e.g., increase regulatory standards). The latter parameter, built into the structure of the typology, allowed us to identify what we refer to as “pro” and “anti” cases, with pro cases having the objective of increasing regulation or liability associated with climate change and “anti” cases being aimed in the opposite direction.¹⁷⁸ Although pro litigation has dominated, accounting for 161 of the 201 litigation matters in the study, anti litigation has been steadily on the rise. The result has become an intensely contested, broadly cast field of litigation observers have likened to “siege warfare”¹⁷⁹ and a “food fight.”¹⁸⁰ They are not far off.

Indeed, within the substantive mitigation regulation category of litigation (case types 1-6 on Table 1), where anti litigation is concentrated, the 33 anti litigation matters account for 39% of the total of 84 matters, and the litigation filing history tracked in Figure 3 for that broad category shows a clear upward trend. In terms of outcomes in that category, moreover, Table 3 shows that anti litigation has had at least as much traction in the courts as has pro litigation, though neither thrust has seen much success. Of the 51 pro matters focused on substantive mitigation regulation issues, 31 have reached final resolution, with plaintiffs prevailing in ten cases and losing in 21.¹⁸¹ Those numbers for the 33 total anti litigation matters are 18 matters in final resolution with eight wins and ten losses for plaintiffs. Anti litigation, in other words, is a significant component of climate change litigation involving agency permits and rules, though it has gone largely unnoticed in legal scholarship. Also largely neglected in the commentary is how unsuccessful climate change litigation has been in general. Here, therefore, we take a closer look at the content and experiences of pro and anti climate change litigation.

¹⁷⁸“Pro” cases are Case Types 1, 3, 5, 6, 7, 9, 10, 11, 13, 14, 15, and 16 in our typology set out on Table 1, and “anti” cases are Case Types 2, 4, 8, 12, and 17. If a case in Case Type 18, “other,” had a discernible pro or anti direction, we coded it appropriately.

¹⁷⁹ *Supra* note 45

¹⁸⁰ Elaine Spencer, *Food Fight! Greenhouse Gas Regulation in 2011*, GREENTECH, Jan. 11, 2011, <http://www.wagreentech.com/2011/01/food-fight-greenhouse-gas-regulation-in.html>. (climate policy debate is “best described as an old fashioned food fight, with parties hurling lawsuits and investigations and threats.”)

¹⁸¹ We include in final resolution cases the relatively small number of matters that have settled with a clear indication that the plaintiff obtained or failed to obtain all or a substantial portion of the relief sought in the complaint. Settlements with no clear “winner” were coded as neutral and are shown in the “other” category in Table 1. Because of the difficulty in tracking and obtaining settlement documents, we cannot claim to have identified all settled climate change litigation matters.

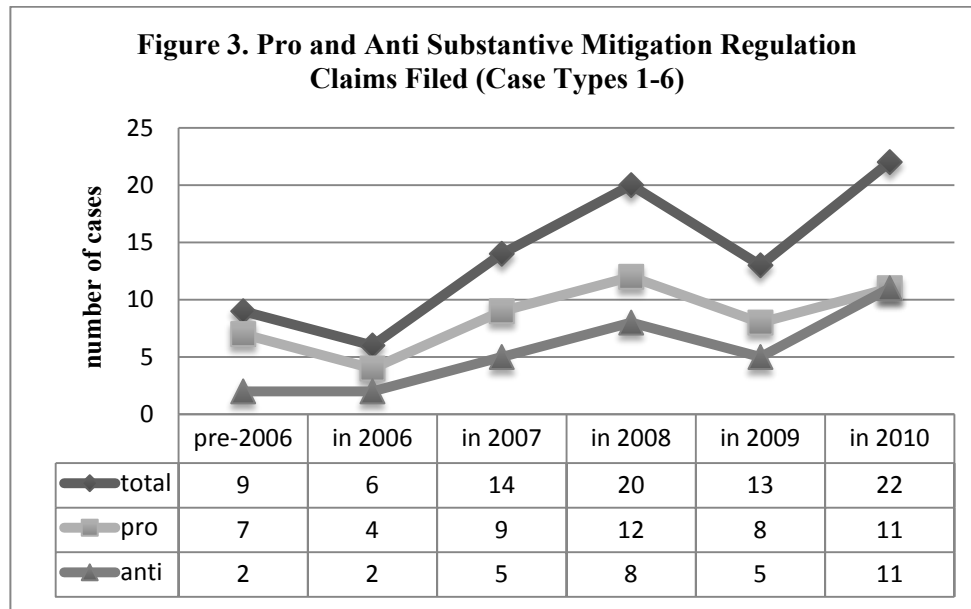


Table 3. Outcomes of Substantive Mitigation Regulation Matters (Case Types 1-6)

Case Type	Total	Successful	Unsuccessful	Pending	Other
1 (pro)	28	3	16	7	2
2 (anti)	4	0	4	0	0
3 (pro)	22	7	4	8	3
4 (anti)	29	8	6	14	1
5 (pro)	0	0	0	0	0
6 (pro)	1	0	1	0	0

One of the more glaring differences between pro and anti climate change litigation is their respective scopes. As can be seen from Table 1, pro litigation is distributed among the monitoring, impact assessment, and reporting category (case types 11 and 12), where it comprises all but one of the cases, and cases involving agency permits and approvals (type 1), agency rules and standards (type 3), common law liabilities (type 14), and threatened resources (type 16). Anti litigation, by contrast, is highly concentrated in the agency rules category (type 4), in which the 29 matters account for over 80% of all the anti litigation matters in our study.

This skewed concentration of anti litigation in the agency rules and standards category both explains and is explained by the filing date history shown in Figure 3. Quite simply, until agencies on their own initiative or as a product of the surge of pro litigation began promulgating substantive mitigation regulation rules and standards, there was little for anti litigation to shoot at. Consider, for example, the history and aftermath of *Massachusetts v EPA* covered above in Part II.C.1. The EPA had initially refused to grant the rulemaking petition, meaning only pro

litigation would be involved to move the agency's position. The Supreme Court issued its opinion in 2007, pushing the agency into decision making mode, but even then it took EPA until 2009 to begin proposing its massive set of rules and not until late 2009 did the agency promulgate any final rules.¹⁸² The pushback of anti litigation in response to EPA's rules thus could not have begun until late 2009, and even then would be confined to the agency rules and standards category for some time until the permits begin to be issued under the new rules and challenged by both pro and anti interests. The double spike of pro and anti filings in 2010 shown on Figure 3 thus suggests that anti litigation is poised to become as active and diverse as pro litigation as more federal and state rules and standards come on line, agencies begin issuing permits, and monitoring and reporting regulations become more prevalent.¹⁸³

The scope and timing of pro and anti litigation matters also go a long way toward explaining a finding from our study that one would hardly have picked up by reading legal commentary on climate change litigation: climate change litigation, and pro litigation in particular, thus far has not registered much success in court. Pro litigation has been scattershot, exploring every potential avenue from common law to endangered species as a way to gain leverage on climate change policy. Many of the strategies seemed to have low probabilities of success from the start. The Clean Air Act PSD permit cases for example, depended for any success on an agency or court agreeing that pollutants not regulated under the statute (at the time) nonetheless were required to be regulated in permits issued under the statute.¹⁸⁴ Similarly, many of the NEPA pro matters demanded that agencies provide more detail on climate change impacts than seems reasonable to demand under existing scientific capacity.¹⁸⁵ It should be no surprise that success rates on those and similar claims have been low.

For its part, anti litigation, concentrated as it is in the agency rules and standards category, has been reactive and necessarily focused on finding dents in an agency's rulemaking process or substance. Anti litigation thus has relied on novel stretch claims such as constitutional defects (11 matters), or on traditional uphill battles such as challenging rules as arbitrary and capricious (most anti cases in the type 4 category). Even so, relative to the number of cases filed in the respective groups, anti litigation has been more successful than pro litigation in the substantive mitigation regulation category (24% success rate versus 19.5%). And relative to cases that have reached final resolution, anti litigation has been substantially more successful than pro litigation (44% success rate versus 32%).

One unifying theme for both thrusts is that the vast majority of climate change litigation—90% of all the cases in our study—has been advanced primarily through claims under statutes most of which, like the Clean Air Act, NEPA, and the ESA, have been on the books and fodder for judicial interpretation and application for decades. These statutes have decades of built up jurisprudence that

¹⁸² See Meltz, *supra* note 3, at 1-5.

¹⁸³ That is, of course, unless legislative initiatives preclude further agency regulatory initiatives, thus foreclosing pro litigation on such matters and making anti regulation unnecessary. New legislation forcing agencies to regulate would, of course, prompt yet more pro and anti litigation.

¹⁸⁴ See *supra* Part I.C.1.a.

¹⁸⁵ See *supra* Part I.C.2.

limits the latitude for courts to chart novel new interpretations favoring pro or anti climate change litigation interests. Even *Massachusetts v. EPA*, which unquestionably altered the path of climate change policy, was on the merits a rather plain vanilla statutory interpretation decision focused on the meaning of the term “air pollutant” in the Clean Air Act.¹⁸⁶

To be sure, it does not take many wins such as *Massachusetts v. EPA* to advance the pro or anti interests behind the litigation, so success rates do not necessarily tell the whole story of the impact of pro or anti litigation. One big anti win, say, success in having a new EPA rule nullified or casting public nuisance claims as nonjusticiable, would be a major story as well. But the aggregate effects on climate change jurisprudence of many “small” losses across the spectrum of pro and anti litigation can also be profound. NEPA litigation, for example, has treated climate change just like any other issue—most courts say agencies should consider significant GHG emissions and climate change impacts in their NEPA process, but the courts (and CEQ) have devised no special rules for scope and depth of analysis. Although no one of these cases may be headline worthy, the aggregate effect can be to build up a general jurisprudential practice. It is this backdrop of pro and anti litigation losses under existing statutes that largely has been ignored in commentary on climate change litigation and which could only have been revealed through a comprehensive empirical study. Having shed light on it and the other specific findings of our study, we now turn to drawing some broader empirical and normative conclusions.

III. EMPIRICAL AND NORMATIVE THEMES

Parts I and II of this Article have delved into the details of climate change litigation at levels of scope and detail never before explored in legal commentary. As discussed in the Introduction, our reason for getting to this point has been to provide the foundations for informed and reasoned approaches to a number of empirically and normatively oriented questions about climate change litigation. The sections that follow offer what we believe our study indicates those foundations to be.

A. The Judicial Action on Climate Change: How Much, Where, and Who’s Playing?

Our study has caught climate change litigation at what likely is a turning point in many respects. On the one hand, with 201 matters, a growing number of which have been resolved through judicial decision or settlement, climate change litigation surely is “up and running” in the courts with no indication of it dying out. On the other hand, its composition is likely to diversify and its pro versus anti siege warfare component to intensify. As noted above, EPA and other agencies are

¹⁸⁶ See 549 U.S. at 528-32 (majority opinion), 555-60 (dissenting opinion). Kathryn A. Watts, *From Chevron to Massachusetts: Justice Stevens’s Approach to Securing the Public Interest*, 43 U.C. DAVIS L. REV. 1021, 1026 (2010); Kathryn Hurie, Note, *To Emit Is Human; To Regulate, Divine: Statutory Interpretation of the Clean Air Act in Massachusetts v. Environmental Protection Agency*, 127 S. CT. 1438 (2007), 33 S. ILL. U. L.J. 527 (2009).

just now promulgating rules, and anti litigation is likely to surge as the new rules come on line and permits are issued. As climate change progresses, moreover, more threatened resources are likely to prompt more robust litigation in that category, and the rights and liabilities and adaptation categories are likely to come on line as well.

Of course, just as predictive models of climate change impacts are not reliable, so too for any predictions of future climate change policies. New legislation or a new Supreme Court decision could quickly unleash or corral climate change litigation on any or all fronts.¹⁸⁷ Nevertheless, the time is ripe for taking stock of the climate change litigation scene. We do so in this section to gain a macro sense of its trend, locus, and participants at this important juncture.

1. How much action is there in the court system?

One of the ironies of legal commentary on climate change litigation is that the predicted “wave” of litigation, if one can call it that, has already hit, but not for the reasons given. The predictions of massive volumes of litigation have largely focused on the small cohort of public nuisance cases, one of which surely could burst through to a full trial and make a splash if the plaintiffs prevail. Yet as Figure 4 shows, the wave of climate change litigation already hit in 2007 and has been rolling steady ever since. Its continued force is based on the pro-anti battle in the substantive mitigation regulation cases and the impact assessment claims brought under NEPA and CEQA. Actual hard law to apply in the form of resolved matters has built steadily as well, to the point that in 2010 more cases were resolved than were newly filed. And as Figure 5 shows, most of the action is in federal and state courts, in which 89% of the matters are pending or resolved. With 144 resolved pieces of litigation and 57 pending in courts and agencies around the nation as of the closing date of our study, it is our impression that climate change litigation is not just coming, it is here, and the courts are where the action is.¹⁸⁸

¹⁸⁷ One ongoing debate in legal scholarship, for example, is whether the Clean Air Act is an appropriate vehicle for climate change emissions regulation and whether Congress should enact legislation limiting its application. Compare Teresa B. Clemmer, *Staving Off the Climate Crisis: The Sectoral Approach Under the Clean Air Act*, 40 ENVTL. L. 1125 (2010) (arguing for using the Clean Air Act and against preemptive legislation), with Craig Oren, *Is the Clean Air Act at a Crossroads?*, 40 ENVTL L. 1231 (2010) (arguing that the Clean Air Act is a poor GHG emissions regulation mechanism).

¹⁸⁸ To be sure, agency adjudication is likely to get a lot more business as the business of permit issuance becomes more active, and facial rules challenges are likely to be a diminishing percentage of the litigation as climate change regulation matures. But more agency permit adjudication will likely lead to more claims for judicial review by courts.

Figure 4. Total Annual Cases Filed and Resolved

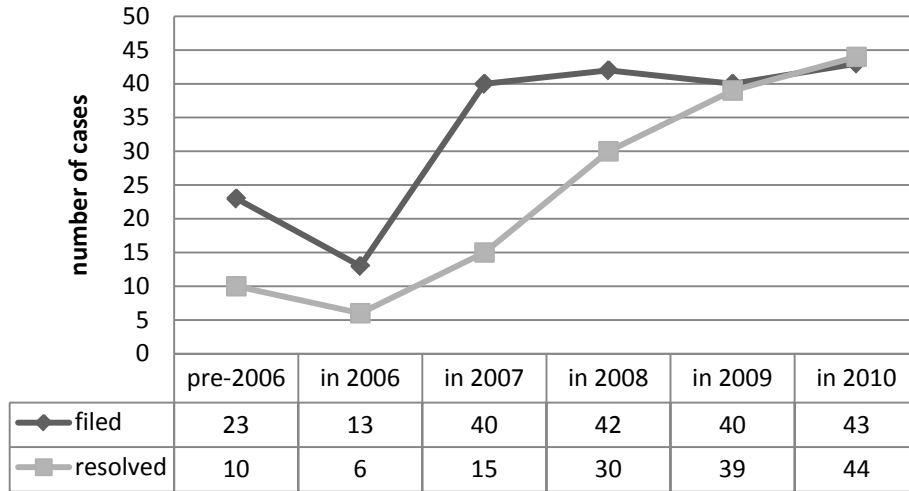
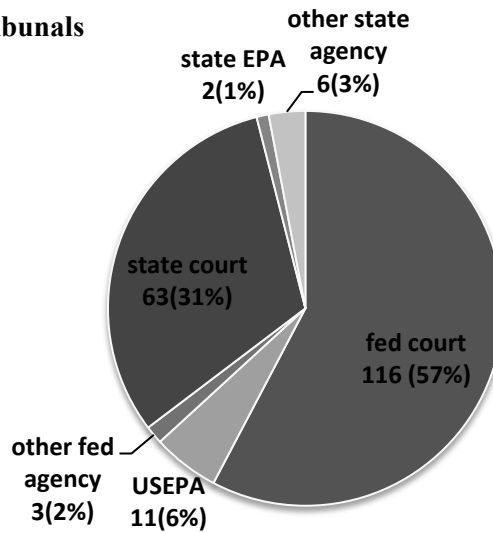
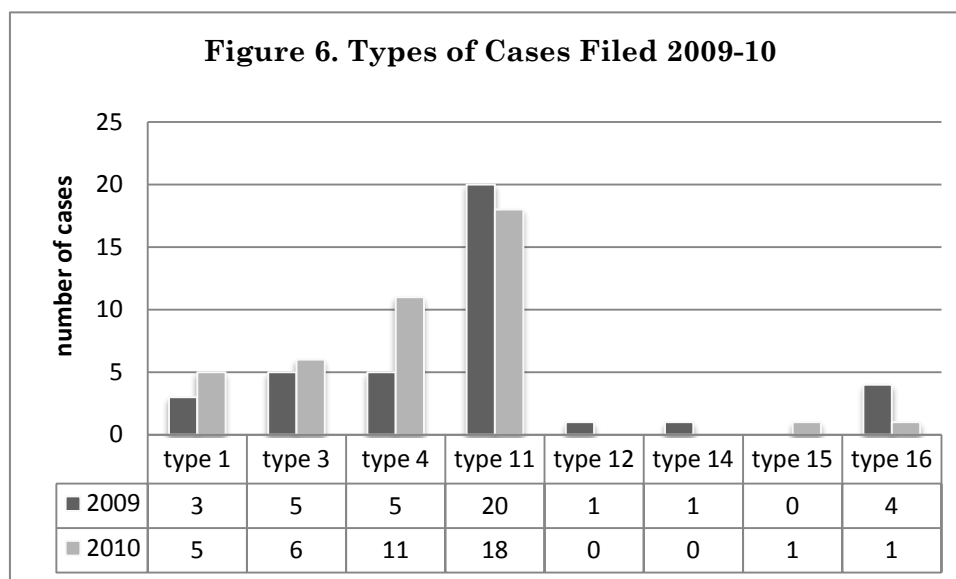


Figure X. Tribunals



2. Where is the litigation action hot and cold?

Equally as apparent as the tribunal focus is where the claims focus is hot and cold at this stage of climate change litigation. As Figure 6 shows, in 2009 and 2010 cases were filed in only eight of our 18 claim types. Pro litigation in the monitoring, impact assessment, and reporting category (type 11) dominated in both years, with 50% in 2009 and 40% in 2010. Its only real competition came from cases challenging agency rules and standards (types 3 and 4), which combined accounted for 27% in 2009 and 40% in 2010.



The spike of filings in these two groupings of claim types supports our earlier predictions that climate change litigation, barring game-changing new legislation with preemptive effects, is likely to bulge around pro and anti claims under existing federal and state statutes to challenge agency action. The other two categories with some presence in 2009-10 filings—claims challenging agency permits (type 1) and claims involving identification of threatened resources (type 16)—also seem likely to remain fueled by continued pro litigation filings: more permits will be issued as new regulations take hold, and more species and habitat will be threatened as climate change gains traction at landscape levels. The question, therefore, is not whether these forms of climate change litigation will surge forward—they will unless new legislation stops them—but rather which other categories of litigation unrepresented thus far in the mix of filings will come on line. We anticipate a significant volume of enforcement cases over time, both those brought by government and citizen suits, as part of this mix, in addition to rights and liabilities cases and adaptation suits.

3. *Who are the players and what is their game?*

As for who is making the action, the story is largely what would be expected from the weight of where the action is in play—private plaintiffs are suing government defendants. As Table 5 shows, the most litigious plaintiffs by far are environmental NGOs followed far behind by industry NGOs and companies. The primary targets for all three have been federal and state governments, though environmental NGOs also include companies as defendants frequently. Of course, the fact that agency permits, rules, and impact assessments make up the substance of the vast majority of climate change litigation matters explains why the federal

and state governments are in the bull's eye of NGO and corporate plaintiff litigation claims.

Table 5. Parties in Climate Change Litigation

Category	Pty	Fed	St	Local	Tribe	ENGO	INGO	Co	P
substantive (1-10)	Pl.	0	15	4	0	51	18	19	6
	Def.	42	34	9	0	0	0	17	0
assessment (11-12)	Pl.	0	4	5	5	76	6	3	4
	Def.	48	27	19	0	0	0	21	0
rights (13-15)	Pl.	0	3	1	0	3	1	3	2
	Def.	4	2	1	0	0	0	6	0
resources (16-17)	Pl.	0	0	0	0	11	2	0	0
	Def.	12	1	0	0	0	0	0	0
other (18)	Pl.	0	0	0	0	0	0	3	2
	Def.	0	4	1	0	0	0	1	0
totals	Pl.	0	22	10	5	141	27	27	14
	Def.	106	68	30	0	0	0	45	0
	All	106	90	40	5	141	27	72	14

What Table 5 does not reveal is what is behind the state, local, and tribal government plaintiff action. Who are they suing? We were surprised to find that in all cases in which a state, local, or tribal government was among the plaintiffs, another governmental entity was the target defendant. *Massachusetts v. EPA* was not the anomaly, but the rule. Indeed, all but one of the 15 cases involving a state government as plaintiff had the federal government as a defendant; the defendant in the other case was a local government. Also, states line up on both sides of the pro versus anti battle—eight of the state plaintiff cases were pro litigation and seven were anti. The same is true for the four local government plaintiff cases, all of which had the federal government as defendant, three times in pro litigation and once in anti litigation. All five tribal plaintiff suits were pro litigation against the federal government, with one also having a state government defendant.

Intergovernmental litigation is by no means unusual in environmental law¹⁸⁹ or other fields,¹⁹⁰—governments can and do sue other governments—but it was striking to us to find that *all* climate change litigation through 2010 involving a government entity as a plaintiff involved a government entity, usually the federal government, as a defendant. Professor Hari Osofsky has suggested that climate change is fundamentally a multi-scalar governance challenge and that intergovernmental litigation is a medium in which to “debate the appropriateness and necessity of regulatory entities at different scales taking particular steps to address global climate change.”¹⁹¹ Our findings suggest she is on point and that governments have turned to litigation as a means of resolving governance scale

¹⁸⁹ See, e.g., Keith Laing, *Florida to challenge federal water standards*, The News Service of Florida (Dec. 8, 2010) (discussing Florida’s legal challenge to Federal Water Quality Standards implementation).

¹⁹⁰ See, e.g., M. Scott Carter, *AG files suit, making Oklahoma 28th state to challenge health care law*, Journal Record Legislative Report (Jan. 24, 2011).

¹⁹¹ Hari M. Osofsky, *The Continuing Importance of Climate Change Litigation*, 1 CLIMATE LAW 3, 15 (2010).

disputes not being managed effectively through legislative institutions. To be sure, as federal and state agencies issue GHG emission permits and promulgate emission standards under existing and new legislation, government enforcement activity against private actors is likely to come on line (as are citizen suits). But with no clear agenda coming out of Congress for what is federal and what is state in climate policy,¹⁹² we anticipate intergovernmental litigation to serve as the medium for resolving many of the federalism issues pervading climate change policies.

B. The Impact of the Courts on Climate Change Policy: Lessons to Date, and Areas for Further Research

While climate change is a new policy issue that presents what may be many novel policy questions, an outstanding question involves the extent to which it has proved exceptional in spawning novel policy responses?¹⁹³ In jurisprudence, at least, thus far it has not been treated as such. Whether climate change policy demands a new policy model for legislatures, for the most part it is being channeled in the courts through a set of stale environmental laws and old common law doctrines each of which has decades of its own judicial baggage. While we did not attempt to judge qualitatively how “far out there” a particular litigant’s claim may have asked a court to depart from the settled jurisprudence of these statutes and doctrines, it is our sense from cohorts of matters such as the Clean Air Act, NEPA, and CEQA cases that however far it was, in most cases it was too far for the court to take the leap. Climate change may be an exceptional problem for other institutions, but for the courts it has generally been business as usual. In this section we elaborate on that conclusion. In doing so, we identify some future fruitful research opportunities that build on the empirical work we have done.

1. How have courts responded as agencies address (or decline to address) climate change through discrete regulatory initiatives and adjudicatory decisions?

While it may have involved only a mundane application of statutory interpretation doctrine to decide the merits, gateway cases such as *Massachusetts v. EPA*, where a court’s decision either catalyzes or closes the door to agency regulation, are one test for climate exceptionalism in the courts. *Massachusetts v. EPA* forced open the door to agency regulation and triggered a cascade of agency rulemaking and judicial litigation. Likely for this reason it has been deemed exceptional by at least one audience that watches climate change litigation closely, environmental lawyers. Respondents to a 2010 survey of environmental law

¹⁹² See Robert L. Glicksman, *Climate Change Adaptation: A Collective Action Perspective on Federalism Considerations*, 40 ENVTL. L. 1159, 1163 (2010) (“Despite the critical need for the development of adaptive responses to climate change, the federal government has done little to stake out its turf on adaptation policy or to coordinate the responses of lower levels of government”); Ruhl, *supra* note 33 at 412 (“[T]he United States has compiled close to zero in the way of coordinated anticipatory adaptation policy for managing the risk in the United States of climate change catastrophe and crisis.”).

¹⁹³ For a thoughtful overview of this question, see generally John Nagle, *Climate Exceptionalism*, 40 ENVTL. L. 53 (2010).

practitioners and academics asking about the most important environmental law cases overwhelmingly characterized *Massachusetts v. EPA* as the most significant environmental law decision of all time.¹⁹⁴ Moreover, while some consider *Massachusetts v. EPA* to be a traditional narrow case of statutory interpretation, some, including the dissent, would characterize it as exceptional for its standing analysis.¹⁹⁵

Beyond *Massachusetts v. EPA*, however, the bottom line from our empirical study is that some pro climate change litigation challenging discrete agency decision on permits and rules is successful at achieving its objective and some is not, some anti litigation is successful and some is not, and it is difficult to construct a story about the jurisprudential attitude other than it appears to involve nothing new or novel. It would be an unjustified stretch, therefore, to suggest that there is some coherent pattern to the outcome and aftermath of climate change litigation that elevates climate change to any special jurisprudential status. If anything, a fair and complete reading of the case law on climate change tells a story of courts applying existing laws consistent with their settled interpretations rather than embedding a new jurisprudence of climate change within the existing statutory frameworks.

2. To what extent have courts crafted a distinct climate change jurisprudence?

Indeed, stepping back from the statistics, when one reads all of the judicial opinions issued in climate change litigation matters, which we did, does anything in the form of a distinct jurisprudence of climate change materialize from the litigation fog? No. Our assessment is that, at this point at least, climate change litigation looks about the same as litigation over any other regulatory question that has ground its way through the courts. Nothing about adding climate change into the mix has appeared to trigger judicial responses leading to anything distinctly or exceptionally “climate change” in quality. In terms of actual litigation outcomes and aftermaths and of judicial tone and temperament, climate change in the courts has been a story of business as usual.

To begin with, there is nothing in the record of climate change jurisprudence that in any way sets climate change litigation aside as a special case warranting new judge-made law. As we have reviewed above in Parts I.C and II, courts have not forged any new law of the Clean Air Act, NEPA, the ESA, CEQA, or the other statutes that have been fodder for climate change litigation, and they have yet even to reach a common law claim on the merits. No court has stood up to say, The legislature and agencies have dropped the ball, and the courts must now make climate change law! Legal scholars could debate for long whether the courts *should* do so, a question we do not purport to address here. For our purposes, we can safely report that the reality is the courts have not done so.

¹⁹⁴ See James Salzman & J.B. Ruhl, *Who's Number One?*, THE ENVTL. FORUM, Nov.-Dec. 2009, at 36, 37.

¹⁹⁵ *Mass. v. Env'tl. Protection Agency*, 549 U.S. 497 (2007) (Roberts, J. & Scalia, J., dissenting); See e.g., Stephen M. Johnson, *The Roberts Court and the Environment*, 37 B.C. ENVTL. AFF. L. REV. 317, 335 (2010) (noting that “[i]n *Massachusetts v. EPA*, for instance, the Court created generous standing rules for States”).

More deeply, this is not the same as saying courts don't think climate change is important. Many do and say so. *Massachusetts v. EPA*, for example, contains rhetorical flourishes to that effect.¹⁹⁶ But in the end the case was about routine statutory interpretation. On the merits of whether EPA has authority to regulate greenhouse gases under the CAA, the majority approached the statutory interpretation question with sterile, narrowly confined precision devoid of commentary on climate change.

Climate change litigation is still in its early stages, however, and it is quite possible that future case law will include exceptional approaches or outcomes. Given the dynamic quality of the attention being paid to climate change throughout government it is impossible to predict when and where the courts will be called in to referee or provide direction. With this caveat, it strikes us that the following three significant climate change issue arenas are among those that may bear watching for the opportunities they may provide for exceptional approaches and/or outcomes. First, the square peg, round hole challenge of addressing climate change under the CAA suggests that EPA is likely to need to apply the Act creatively to make it workable. This need for extreme agency creativity has already manifested itself in the Agency's tailoring rule, in which EPA straightforwardly acknowledges that its regulatory scheme for stationary sources of GHG emissions departs from the approach embodied in the text of the CAA.¹⁹⁷ While the agency has invoked long-established canons of statutory construction to justify this disconnect,¹⁹⁸ treatment of this issue may require special care by the judiciary given the significant gap between legislative direction and agency capacity that provides the context for its decision making.

Next, advocates on either side of the nuisance cases are already arguing aggressively that the courts' treatment of these cases has the potential to be exceptional, in terms of whether it allows the cases to be heard on the merits, and if it reaches them how it addresses the merits. In a forthcoming article, Professor Douglas Kysar argues, for example, that it would be a radical break from precedent to disallow nuisance cases on justiciability grounds.¹⁹⁹ On the other hand, Professor Laurence Tribe refers to the "incompatibility of climate change and nuisance doctrine" and argues that "worldwide climate change is a systemic phenomenon that is intractable to anything but a systemic political solution, one that the adversarial and insulated model of nuisance litigation is structurally incapable of providing."²⁰⁰

Finally, some of the challenges associated with climate change have stirred up strong feelings between EPA and the states. It remains to be seen how this will work out. The courts have found themselves in the position on many occasions of resolving disputes between EPA and the states, and determining how authority

¹⁹⁶ But these pronouncements all played into the majority's opinion on the question whether the plaintiffs had standing. See 549 U.S. at 516-27.

¹⁹⁷ Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule, 75 Fed. Reg. 31,514 (Jun. 3, 2010).

¹⁹⁸ *Id.* at 31, 533.

¹⁹⁹ Kysar & Ewing, *supra* note 11.

²⁰⁰ Laurence H. Tribe, Joshua D. Branson & Tristan L. Duncan, *Too Hot for Courts to Handle: Fuel Temperatures, Global Warming, and the Political Question Doctrine* (Wash. Legal Found. Critical Legal Issues Working Paper Series, No. 169 Jan. 2010).

under a cooperative federalism system should be allocated.²⁰¹ There have been few circumstances, however, in which EPA has withdrawn federal authorization of a state program, as it recently proposed for part of Texas's CAA permitting program.²⁰² In the particular context of the CAA, there similarly have been very few instances in which EPA has felt compelled to issue a Federal Implementation Plan because a State was not prepared to implement a new permitting program, as EPA recently has done for several states because of their lack of preparedness to implement the PSD program for GHG emissions.²⁰³

Our suggestion above in connection with the courts' role in assessing EPA's emerging regulatory scheme for addressing GHG emissions holds equally true here. Increasing workloads during a time of diminishing resources is a recipe for turbulent times for our cooperative federalism approach to regulation under the CAA. The courts may well find themselves in the middle of a difficult debate about allocation of responsibility for implementation of the Act as capacity to meet legislative demands falls far short of what minimally is needed to conform to the congressional design. The courts have faced such challenges before,²⁰⁴ but may need to consider a broad range of rarely used canons of construction in directing how this gap between rhetoric and reality should be closed.

3. To what extent have the courts prompted or forced legislative or administrative attention to climate change policy?

If there were anything to the idea of climate change litigation jurisprudence exceptionalism, one would expect it to have registered in other institutions, in agencies and legislatures. To be sure, some climate change pro litigation matters can reasonably be placed in the chain of causation leading to administrative agency action. Most famously, after a history of EPA vacillation on the question whether it has the authority to regulate emissions under the Clean Air Act,²⁰⁵ the Supreme Court in *Massachusetts v. EPA* decided it does and seemingly pushed the agency

²⁰¹ See e.g., *Nat'l Res. Def. Council v. EPA*, 859 F.2d 156 (D.C. Cir. 1988) (approving EPA's regulations for authorizing states to implement the Clean Water Act NPDES program).

²⁰² *Texas v. EPA*, No. 10-60614 (5th Cir. 2010); *Texas v. EPA*, No. 10-1425 (D.C. Cir.). See *Approval and Promulgation of Air Quality Implementation Plans; Maryland; Transportation Conformity Regulations; Withdrawal of Proposed Rule*, 75 Fed. Reg. 48,627 (Aug. 11, 2010) (withdrawing EPA's approval of Maryland's SIP). For discussions of the limited number of times EPA has withdrawn authorization, see e.g., Robert V. Percival et al., *Environmental Regulation: Law, Science, and Policy* 953-54 (5th ed. 2006); Clifford Rechtschaffen & David L. Markell, *Reinventing Environmental Enforcement and the State/Federal Relationship* 329-35 (Env'tl. Law Inst. 2003).

²⁰³ *Action to Ensure Authority to Issue Permits under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Failure to Submit State Implementation Plan Revisions Required for Greenhouse Gases*, 75 Fed. Reg. 81874 (Dec. 29, 2010) (finding that PSD permitting requirements in 13 states do not meet CAA requirements because their programs do not cover GHG emissions).

²⁰⁴ See e.g., *NRDC v. Costle*, 568 F.2d 1369 (D.C. Cir. 1977) (rejecting EPA's argument that it could exempt farms from water pollution laws because of the "administrative infeasibility" of issuing and administering millions of permits).

²⁰⁵ See Cannon, *supra* note 3, at 53-54 (former EPA General Counsel describes the agency history leading up to the litigation).

inexorably in the direction of regulating.²⁰⁶ Still, putting aside its controversial standing analysis, some scholars consider the case a resounding judicial *rejection* of climate exceptionalism in terms of how existing statutes are to be applied, as the Court employed basic statutory interpretation canons to conclude that a traditional pollution control statute covers greenhouse gas emissions.²⁰⁷

Whether endorsing exceptionalism or not, there are no other cases like *Massachusetts v. EPA*, where a court has so overtly nudged an agency toward a cascade of regulation, much less command it. Rather, some successful pro litigation efforts seem at most to have encouraged agency action or weakened agency resistance to regulate, though it is hard to trace the effects in any direct sense. For example, the courts didn't demand that CEQ issue its guidance on how to address climate change in NEPA analyses,²⁰⁸ nor must CEQ issue such guidance for the courts to demand that agencies include climate change in environmental assessments under some conditions. After all, CEQ had thought of including climate change in NEPA analyses in 1997, well before courts got involved, and courts had thought of requiring integration of climate change in NEPA analyses well before CEQ followed through on its initial concepts in its 2010 guidance. So it is difficult to say whether the courts prompted, facilitated, or provided cover for CEQ's 2010 guidance; perhaps it was simply all about politics and the change in administrations would have led to the agency action regardless of judicial action. Both the 1997 and 2010 draft guidances, after all, were issued in Democrat administrations, with silence on the issue from the intervening Republican administration.

Indeed, a slate of recent settlements of pro litigation against the federal government suggests that politics and change in administration have much to do with how litigation plays into administrative action. To put it bluntly, of 20 matters we identified as settled on terms favorable to the plaintiff since the beginning of climate change litigation, 11 were pro litigation matters against the federal

²⁰⁶ See *supra* note 3. Having found that greenhouse gas emissions are pollutants under the Clean Air Act, the Court observed that the statute charges EPA with regulating greenhouse gas emissions from motor vehicles if in EPA's "judgment [the emissions] cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 549 U.S. 497, 528 (2007) (quoting 42 U.S.C. § 7521(a)(1)). Noting that the statute defines "welfare" to include "effects on . . . weather . . . and climate," the Court rejected all of the EPA's proffered bases for its judgment not to regulate greenhouse gas emissions. See *id.* at 506 (quoting 42 U.S.C. § 7602(h)). Rather, the Court concluded, under the clear terms of the statute the EPA can avoid taking further action to regulate carbon emissions from motor vehicles "only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do." *Id.* at 533 (citation omitted). As its only example of a "reasonable explanation," the Court suggested that EPA might find "the scientific uncertainty is so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming." *Id.* at 534. The Court thus left EPA little wiggle room, though it noted "[w]e need not and do not reach the question whether on remand EPA must make an endangerment finding, or whether policy concerns can inform EPA's actions in the event that it makes such a finding." *Id.*

²⁰⁷ See Nagle, *supra* note 193, at 54 ("The Court thus rejected... 'climate exceptionalism'—the belief that the problem presented by climate change is different from the air pollution problems that we have addressed in the past").

²⁰⁸ See *supra* text accompanying notes 155-158.

government settled after the Obama Administration took office.²⁰⁹ This experience, however, is by no means unique to climate change, as changes in presidential administrations have frequently led to settlement of litigation filed antagonistically against the prior administration or as friendly litigation against the incoming administration.²¹⁰

Another problem with chalking up the pro litigation wave as having been a causal agent in broadly pushing administrative action on climate change toward regulation is that anti litigation must also be taken into account. Courts in the successful anti cases have directly and overtly snuffed regulatory change that would have ramped up substantive mitigation regulation and more rigorous impact assessment requirements. As discussed in Part II, anti litigation has had at least as much success as pro litigation, and neither has had resounding success rates in any case. Overall, therefore, the impact of climate change litigation on agency action has likely been moderate at best, and even at that has been a two-way street.

4. *What has been the overall impact of climate change litigation on the institutional structures of the administrative state?*

To say that climate change litigation has not mandated that other branches act is different from concluding that its impact on other institutions has been insignificant. Clearly, had *Massachusetts v EPA* ruled that GHGs are not subject to Clean Air Act regulation, Congress and the EPA would have been on different paths than the ones taken. Similarly, the host of cases involving the applicability of PSD and BACT regulation to emissions of GHG cases led EPA to promulgate a rule that resolved this question.²¹¹

Beyond these relatively direct judicial interventions, there is some evidence that courts have tried to prod agencies and Congress to act. In a forthcoming article, Professor Douglas Kysar and Benjamin Ewing stress the value of this judicial function, arguing that “[i]n the way that checks and balances correct against the tyrannical overreaching of any particular branch of government, prods and pleas [by the court system] counteract the oppressive underreaching of government institutions.”²¹² There is evidence that the courts have sought to have this type of influence. In exercising judicial restraint and declining to act in an exceptional way themselves, courts have prodded the other branches to act. As the

²⁰⁹ Again, we must caution that we cannot assure we identified all settled cases, and that some judgment was involved in assessing whether the plaintiff prevailed through settlement. Several cases against the federal agencies involving missed decision deadlines—e.g., failure to promulgate a rule by a statutorily mandated date—were settled on terms requiring the agency to meet a deadline. Although in this sense the plaintiff prevailed, we counted the outcome as neutral if the agency committed to no substantive decision. Our rationale was that the settlement established no climate change law, but rather only forced an agency to make a decision about climate change law. Several additional settlements made after the Obama Administration took office fall in this category.

²¹⁰ See, e.g., Jim Rossi, *Presidential Administrations and Administrative Law: Bargaining in the Shadow of Administrative Procedure: The Public Interest in Rulemaking Settlement*, 51 Duke L.J. 1015 (2001).

²¹¹ See *supra* note ____.

²¹² Kysar and Ewing, *supra* note 11, at 12, 13.

South Dakota Supreme Court suggested in refusing to overturn Public Utility Commission (PUC) issuance of a power plant permit:

Global warming presents a momentous and complex threat to our planet. A resolution for this problem, critical though it is, cannot be made in the isolation of judicial proceedings. The social, economic, and environmental consequences of global warming implicate policy decisions constitutionally reserved for the executive and legislative branches. . . .

As members of the judiciary, we refrain from settling policy questions more properly left for the Governor, the Legislature, and Congress. No matter how grave our concerns on global warming, we cannot allow personal views to impair our role under the Constitution. In South Dakota, the Legislature designated the PUC as the responsible agency for this question of granting a permit.²¹³

Thus, our study provides some evidence that courts are performing this “prods and pleas” function in the climate change arena.

Assessing the effectiveness of this prodding and pleaing, however, is another matter. Our empirical study has focused on the action of the courts and in that sense only goes so far. There is the remaining challenge of connecting the dots between climate change litigation and responses by agencies and the legislature. This strikes us as an important area for future research. For example, where is the evidence that Congress or state and local legislatures have paid any attention to the courts on matters of legislative climate change policy? Superficially, it appears that while many members of Congress have probably paid attention to the ramifications of the EPA rule promulgations *Massachusetts v. EPA* nudged into motion, Congress has done nothing about it either way. Legislation has been introduced in response to the case to remove greenhouse gases from the scope of the Clean Air Act,²¹⁴ but there has yet to be any explicit congressional endorsement or override of the Court’s opinion. The same is true with respect to congressional responses to court decisions on climate change issues under the ESA, NEPA, and all the other federal statutes swept within the cases in our survey—Congress has been inert in response. A natural follow-up to our research on the action in the courts would be a thorough review of the legislative responses to this activity, including consideration of the impact of the judicial activity we have described and other factors on legislative efforts.

²¹³ *In the Matter of Otter Tail Power Company*, 744 N.W.2d 594, 603 (S.D. S. Ct. 2008). See also *Green Mt. Chrysler Plymouth Dodge Jeep v. Crombie*, 508 F. Supp. 2d 295, 398 (in this case involving motor vehicle standards the court similarly highlighted the importance of legislative and regulatory action to address climate change while declining to act address various issues itself, noting: “This Court’s task is to determine whether the plaintiffs have carried their burden to show that Vermont’s GHG regulation stands as an obstacle to the objectives of Congress. Many of the technical, political and even moral issues raised by this case are not, and should not be, resolved here, but may remain the subject of debate and policy-making in Congress, in state legislatures, and in federal and state agencies.”)

²¹⁴ See Save Our Energy Jobs Act, H.R. 4396, 111th Cong., 1st Sess. § 2(b) (2009).

IV. SPECULATIONS ON THE FUTURE OF CLIMATE CHANGE LITIGATION

We were surprised by what our study revealed about the past and present of climate change litigation, so we are cautious in making predictions about its future and in suggesting what scholars might devote to climate change research. Nevertheless, we formed a strong impression that climate change litigation is a highly active and dynamic field about to take on new dimensions and magnitudes. And as we have the advantage, like it or not in retrospect, of having read and analyzed every climate change matter, 201 in all plus over 100 we excluded from the study, we do feel at least somewhat equipped to offer informed speculation about such matters. In this section we ask your indulgence in allowing us the liberty to do so.

As the discussion above has unfolded, we have suggested trends along the way and suggested how they might influence the future of climate change litigation. Although extrapolation from trends is dangerous in such a dynamic environment, we feel confident in making several predictions. First, unless derailed by preemptive litigation, regulatory developments under the Clean Air Act will trigger rounds of federal and state permitting which will fuel a surge of pro and anti litigation in our permits and approvals categories (types 1 and 2). Second, anti litigation in general is likely to grow in magnitude and widen in scope as more federal and state agencies promulgate rules and engage in discrete decisions. This will be true not only for substantive mitigation regulation, but also for monitoring, impact assessment, and reporting procedures, and it will lead to industry NGOs and companies taking a larger share of the plaintiff side of litigation. Third, although intergovernmental litigation is likely to continue as long as Congress remains silent on its federalism vision for climate policy, government enforcement of the newly minted standards and permits will put federal agencies finally on the plaintiff side of litigation as well as broaden state governments into that role. We further expect the citizen suit component of pro litigation to expand dramatically as permits are issued and (non)-compliance issues arise, as citizens initiate legal actions to complement government enforcement.

So far we have limited predictions to extrapolating from trends revealed in our study. Our study results also show, however, that while climate change litigation is broader in scope than has been covered in legal scholarship, it has yet to encompass all that fits under climate change policy. For example, given the growing sense that the country faces very significant economic, social, and environmental adaptation challenges because of climate change, we wanted to explore the potential for and experience of public and private adaptation litigation. The same was true for our rights and liabilities categories, which encompass claims about civil rights, contract disputes, business losses, and so on. We wondered about the role of the courts to date in grappling with these challenges – to what extent have adaptation issues found their way to the courts, including not only through administrative actions but also in disputes over civil rights and economic relations. Yet we found very little of such litigation.

Nonetheless, it strikes us as inevitable that climate change litigation will soon creep into these as yet unrepresented claim categories. As inert as Congress has been on the mitigation legislation front, we see little prospect of it taking the bull

by the horn on the adaptation and rights and liabilities fronts anytime soon. And in any event, courts will necessarily be the arbiter of contract disputes, civil rights claims, and other claims traditionally in the domain of the courts. Indeed, for that reason it is here that courts may begin to forge a special jurisprudence for climate change whereas they have not for regulatory claims.

Finally, we anticipate that before long it will make sense to refer to climate change law for some statutes as being established and reasonably settled through the aggregation of judicial opinions. The courts and agencies have been busy, resolving 110 litigation matters in 2008-10, meaning it is possible for lawyers to research and synthesize bodies of case law. For example, there already is a fairly well defined case law under NEPA and CEQA establishing that greenhouse gas emissions and climate change impacts are fair game for impact assessment procedures, but that the normal rules apply for determining the level of analysis agencies must provide. While litigation under the Clean Air Act is about to enter a new phase and will be rocky for several years as EPA rolls out its rules, it too may stabilize into a coherent case law sooner than might be expected. The law of climate change, for long only a prospect, is now on the books in large part due to litigation. Its judicial contribution may not be an example of exceptionalism at work, but even business as usual in the courts has made for substantial development of climate change law. That is not likely to change anytime soon.

CONCLUSION

The story of climate change in the courts has been not one of forging a new jurisprudence, but rather of operating under business as usual. It is also not the story one would pick up from media coverage or from legal scholarship, both of which have honed in on fewer than a dozen of the 201 matters we classify as climate change litigation. The real story, in other words, is to be found in the other 190-plus cases that are winding or have wound their way through agency and judicial forums. That story is one of pro and anti interests locking horns with agencies in litigation concentrated under a few federal statutes, grinding away at fairly narrow factual and legal issues. Many unglamorous cases have been filed and decided, failing to get into the headlines. But the result is that the aggregate effect of all those “unimportant” cases has been lost in the commentary, completely crowded out by predictions of waves of common law nuisance claims and the next “big” regulatory case. The fact is there have been few common law cases, none reaching the merits, and few “big” cases like *Massachusetts v. EPA*, while there have been scores of cases building up a case law under a variety of statutes.

One can only tell the story of those cases, however, if one looks for it, which is what our study was intended to do. Perhaps our big picture conclusion—that the courts have treated climate change as business as usual—is itself also not a hot story. But it should be. It speaks volumes about the judiciary and about litigation as institutions in our governance system. We hope, now that the story is out, it will lead scholars and commentators to broaden the focus of the questions they ask of climate change litigation and to refine the conclusions they draw.