THE "GIFT" THAT KEEPS ON GIVING: GLOBAL WARMING MEETS THE COMMON LAW

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ABSTRACT

Global warming issues have captured an Oscar, a Nobel Prize and the mainstream media's attention. There is significant consensus in the scientific community that global warming is real, most likely due to anthropogenic sources (traceable to the Industrial Revolution), and that it is likely to cost trillions of dollars in health effects; and loss of property, crops, and species; and adverse effects on national security, as described in great detail by the 2007 Intergovernmental Panel on Climate Change (IPCC) report. Greenhouse gas (GHG) emissions are a waste-disposal method for sectors such as power generation and transportation used to save the cost of waste containment at the expense of effects on ground receptors and the planet. In response to U.S. federal inactivity, states have initiated creative legislative schemes, but the federal government has actively resisted most of these efforts through litigation. States have now filed public nuisance actions utilizing federal and state common law claims to protect those who actually suffer damages. This article explores the revitalized use of the common law as a residual or default tool for public prosecutors and public entities when national policy and statutory remedies prove inadequate. The trial court decisions are on appeal and we argue that they erred on the key constitutional issue of justiciability. Reviewing courts may consider displacement of federal common law as well as preemption of state actions. These cases fuel the debate—even if they are ultimately unsuccessful in the courts, displaced by constructive legislative action, or preempted by disruptive legislation—by (1) providing public information; (2) identifying real costs, liabilities, and exposure for the regulated community, the public, politicians, investors, and regulators; and (3) forcing some action by the legislative or executive branches as a result. We offer trespass as an additional theory to compel the internalization of the real costs of pollution by focusing on all the effects of the invasion of public and private space (i.e. property) once pollutants exit generators' property lines. Trespass may better reconcile the law with science and economics. Scientists understand that they do not know enough about the short and long-term effects of the materials commonly found in the environment. Thus, the current regulatory system permits waste disposal on public and private property without adequate knowledge about the effects of such materials and without provisions for their undetermined future harms. These external social costs constitute market failures that violate free market principles because production costs are passed on to the public (as test subjects) rather than borne by the generators' customers. Public nuisance actions offer one method for efficient internalization of global warming's true costs, while trespass offers yet another theory by accounting for waste at the property boundary. In addition, government may incur liability for a Fifth Amendment taking of receptors' rights by permitting the trespassing emissions, a result that could encourage some governmental response.

INTRODUCTION

Global warming issues have captured an Oscar, the Nobel Prize, and the attention of mainstream media and main street America. There is significant consensus in the scientific community that global warming is real and due to anthropogenic sources traceable to the Industrial Revolution, and that it is likely to cost trillions of dollars in health effects; loss of property, crops, and species; and adverse effects on national security.[1] Greenhouse gas (GHG) emissions are a waste-disposal method for sectors such as power generation and transportation used to save the costs of waste containment by passing the effects on to ground receptors and the planet.[2] Although some may welcome a Northwest Passage and other consequences of warming, the net costs in disrupted lives, lost territory, and national security are staggering.[3] States allege in court filings that tens of millions of dollars are already being spent to analyze and plan for the "phenomenon commonly known as global warming."[4] The United Nations' figures document substantial mortality to date and into the future.[5] Projected costs are so great that doing nothing is not a reasonable option—either we must reverse the process or, if the tipping point has been reached, we must prepare for the consequences.[6] The evidence is so overwhelming

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1. WORKING GROUP I, INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE, CLIMATE CHANGE 2007: THE PHYSICAL SCIENCE BASIS 512 (2007). *See, e.g.*, Stephan Faris, *The Real Roots of Darfur*, THE ATLANTIC, Apr. 2007, at 67, 68 (proposing that resource scarcity brought on by global warming (drought) is the underlying cause of the conflict in Darfur).

2. For an excellent discussion of the scientific underpinnings of global warming and the need for increased research and development expenditures in power generation, see Frank Princiotta, *The Role of Power Generation Technology in Mitigating Global Climate Change*, 18 DUKE ENVTL. L. & POL'Y F. 251, 265–68, 274 (2008).

3. Currently, international trade routes are being threatened by melting sea caps in the Arctic. This is especially apparent in the Northwest Passage, a trans-Arctic shipping route serving as a fulcrum to international markets. For a discussion of the ecological, economical, and societal effects associated with the problems in the Northwest Passage, see Robert W. Corell, *Challenges of Climate Change: An Arctic Perspective*, 35 AMBIO: J. OF THE HUMAN ENV'T. 140, 150–53 (2006).

4. Numerous cases and secondary sources discuss the current and projected effects of global warming. *See e.g.*, California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *2 (N.D. Cal. Sept. 17, 2007); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 268–69 (S.D.N.Y. 2005); Kenneth P. Alex, *California's Global Warming Lawsuit: The Case for Damages*, *in* CREATIVE COMMON LAW STRATEGIES FOR PROTECTING THE ENVIRONMENT 165, 170 (Clifford Rechtschaffen & Denise Antolini eds., 2000).

5. Matthew F. Pawa, *Global Warming: The Ultimate Public Nuisance*, *in* CREATIVE COMMON LAW STRATEGIES FOR PROTECTING THE ENVIRONMENT 107, 113–19 (Clifford Rechtschaffen & Denise Antolini eds., 2000).

6. A former EPA official recently informed Congress about how the Bush Administration stifled testimony regarding the health hazards of global warming. *See* Andrew C. Revkin, *Cheney's Office Said to Edit Draft Testimony on Warming*, N.Y. TIMES, July 9, 2008, at 12 (describing how former EPA official, Jason K. Burnett, was ordered to edit portions of the climate testimony).

that the U.S. Supreme Court held that the Environmental Protection Agency (EPA) must consider carbon dioxide (CO_2) and other GHGs to be "pollutants" under the Clean Air Act (CAA)—but the Court also reaffirmed the discretion of a presidential administration to do little or nothing about it.[7] The states recently returned to court, in *Massachusetts v. Environmental. Protection Agency* (*Mass. v. EPA*), to compel the issuance of regulations.[8] Further, the EPA recently issued an advance public notice of rulemaking soliciting comments on proposals to regulate GHGs under the CAA, but neither took a position on GHGs nor accepted that they pose any human health risk.[9] The question now is how to reduce GHG emissions and address the effects—an inquiry made much more difficult because of vast data gaps and the limitations of current regulatory schemes.[10]

If this cloud has any silver lining, it is that there are opportunities to implement transportation, energy, and even lifestyle changes[11] that reduce GHG emissions and also benefit nearly every other sector of our environment. Thinking in long time-frames to calculate the full impact is essential, but its not something most Americans are used to. However, we

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7. Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1462 (2007).

8. *See* Petition for Writ of Mandamus to Compel Compliance with Mandate at 12–13, Massachusetts v. Envtl. Prot. Agency, No. 03-1361 (D.C. Cir. Apr. 2, 2008) (alleging that the EPA is unnecessarily delaying the implementation of the Supreme Court's ruling in *Massachusetts v. Envtl. Prot. Agency*); *see also* Felicity Barringer, *White House Refused to Open E-Mail on Pollutants*, N.Y. TIMES, June 25, 2008, at A15 (discussing how the White House allegedly rejected the EPA's finding of endangerment regarding GHGs).

9. *See* Regulating Greenhouse Gas Emissions under the Clean Air Act, 40 C.F.R. 1 (proposed June 17, 2008) (questioning whether the EPA has the authority under the Clean Air Act to regulate greenhouse gas emissions); Advanced Notice of Proposed Rulemaking, http://www.epa.gov/epahome/pdf/anpr20080711.pdf.

10. *See* Robert H. Cutting & Lawrence B. Cahoon, *Thinking Outside the Box: Property Rights as a Key to Environmental Protection*, 22 PACE ENVTL. L. REV. 55, 64–67 (2005) (addressing the impact of environmental externalities and the lack of regulatory enforcement against these externalities).

11. William Ruckelshuas, then Administrator of the EPA, called for Americans to modify their lifestyles when necessary to reclaim and preserve our resources:

> Are we so accustomed to installment credit that we are willing to purchase our life-style affluence today at the expense of a better tomorrow? If it came to a choice, would we consciously squander our resources and foreclose our children's future? I don't believe we would. Up to now the average citizen hasn't had the foggiest notion of what choices were available, or indeed that there were any choices at all. Once people understand what is at stake and what's required, they will do what needs to be done. With persistence we can pay our debt to the past by reclaiming the purity of our air, water and land. With hard work and some sacrifice we can pass on to our children and grandchildren a world of beauty, order and serenity.

Press Release, Envtl. Prot. Agency, Earth Week 1973, (Apr. 8, 1973), http://www.epa.gov/history/topics/earthday/04.htm (last visited Oct. 21, 2008). However, he was doubtful that the elimination of all pollution from waterways could be achieved by 1985. 95 CONG. REC. HR11, 896-2849, 2950 (Mar. 22, 1972).

must do so because a longer-term outlook reveals jeopardy to real assets, such as expensive beach and waterfront properties, as well as potentially devastating health impacts. Additional costs involve damage to infrastructure, real estate, financial institutions, and insurers (and with costs to the public for protection and maintenance as well as potential lost tax base).[12] The problem is how to convince the American people that while global warming seems abstract and far away, it will likely dramatically affect their children and grandchildren.[13]

Recognition by economists and the business sector that the world is nearly economically "flat" also makes it more difficult for economists to deny the transboundary effects of pollution.[14] In his newest book, *Hot, Flat and Crowded*, Thomas Friedman makes the connection: bad environmental policies can damage the global economy while good policies lead to economic opportunity, much as the Council on Environmental Quality concluded in 1972.[15] However, the cost savings from avoiding GHG reductions are also enormous, a huge short-term incentive to pollute.[16] We, along with others, have suggested that free trade agreements offer some leverage. At present, the World Trade Organization, the North American Free Trade Agreement, and Central America Free Trade Agreement

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12. *See* James L. Huffman, *Environmental Protection and the Politics of Property Rights: The Public Interest in Private Property Rights*, 50 OKLA. L. REV. 377, 387–88 (1997) (emphasizing the need to consider future generations in current resource allocation decisions in hope that it may lead to practices favoring conservation as opposed to consumption).

13. The original Americans and legions of other societies take a generational view, even as the temptation of current consumption has proven too much for many. As previously suggested, perhaps we need a revision of the Golden Rule: "Do unto others as you would have them do to your children." Robert H. Cutting, *"One Man's Ceilin' is Another Man's Floor": Property Rights as the Double-Edged Sword*, 31 ENVTL. L. 819, 883 (2001). *See generally* JARED DIAMOND, COLLAPSE: HOW SOCIETIES CHOOSE TO FAIL OR SUCCEED 419–85 (2005) (analyzing cultural adaptations to environmental changes); JARED DIAMOND, GUNS, GERMS & STEEL: THE FATES OF HUMAN SOCIETIES 239–64 (1999) (evaluating the effects of technology on diverse cultures).

14. THOMAS FRIEDMAN, THE WORLD IS FLAT: A BRIEF HISTORY OF THE TWENTY-FIRST CENTURY 411–12 (Farrar, Straus & Giroux eds., 2005) (finding that the transboundary effects of pollution result from the "Economy of Nature" where, for example, wind carries pollutants); *see also* THOMAS FRIEDMAN, HOT, FLAT, AND CROWDED—WHY WE NEED A GREEN REVOLUTION—AND HOW IT CAN RENEW AMERICA (Farrar, Straus & Giroux eds., 2008) [hereinafter HOT, FLAT, AND CROWDED] (discussing the global environmental crisis).

15. COUNCIL ON ENVIRONMENTAL QUALITY, THE ECONOMIC COSTS OF POLLUTION CONTROL: A SUMMARY OF RECENT STUDIES (1972) (a report by major accounting firms that concluded, sector by sector, that the net effect of pollution control would be positive); ENVIRONMENTAL POLLUTION PANEL, PRESIDENT'S SCIENCE ADVISORY COMMITTEE, RESTORING THE QUALITY OF OUR ENVIRONMENT 197 (1965); HOT, FLAT, AND CROWDED, *supra* note 14.

16. It would be interesting to compare the costs saved by generators during the Bush II Administration with the total amount spent in both elections by President Bush and a majority of Congress.

(CAFTA) encourage migration to pollution-friendly economies.[17] This actually exacerbates the GHG problem by providing an unfair competitive advantage to the interests that do not internalize the costs.[18]

This article explores the revitalized use of the common law as a residual or default tool for public prosecutors and public entities when national policy and statutory remedies prove inadequate to prevent serious environmental consequences. Current cases by a consortium of states' attorneys general, Native American groups, and non-governmental organizations (NGOs) focus on public nuisance as the legal vehicle. A case now pending in the Second Circuit involves power plant emissions from sources representing ten percent of the total worldwide emissions, and in the Ninth Circuit a case involves six motor vehicle manufacturers representing twenty percent of U.S. CO_2 emissions.[19] There are several reasons why these cases should be successful, but even if they are unsuccessful, displaced by constructive legislative action or preempted by disruptive legislation, they remain useful for several reasons: (1) informing the public; (2) identifying real costs, liabilities, and exposure for the regulated community, the public, politicians, investors, and regulators; and (3) forcing some action by the legislative or executive branches as a result. Some commentators argue that damage claims in these and similar actions effectively implement a judicial "green tax," which is arguably economically preferable to the relatively crude allocation of costs in cap-and-trade systems.[20] We agree, but note that the tax must include the damage claims in the public nuisance actions and any other consequential damages.

Two federal district courts in *Connecticut v. American Electric Power Co.* (*AEP*) and *California v. General Motors Corp.* (*California v. GM*) declined jurisdiction based on the separation of powers doctrine.[21] The Bush Administration has to date retained control of the issue and is running out the clock by denying California (and several other states) a waiver to set

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17. Cutting & Cahoon, *supra* note 10, at 88–90.

18. *See* Patti A. Goldman, *Resolving the Trade and Environment Debate: In Search of a Neutral Forum and Neutral Principles*, 49 WASH. & LEE L. REV. 1279, 1290–92 (1992) (arguing that the primary defect in the international trade system is the absence of a mandate requiring countries to internalize environmental impacts).

19. California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *3 (N.D. Cal. Sept. 17, 2007); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 268 (S.D.N.Y. 2005) (suggesting that power plants generate ten percent of global carbon dioxide emissions).

20. *See* Jonathon Zasloff, *The Judicial Carbon Tax: Reconstructing Public Nuisance and Climate Change*, 55 UCLA L. REV. 1827, 1841–43 (2008) (taking a critical look at the AEP and automakers litigation).

21. California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547 (N.D. Cal. Sept. 17, 2007); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 274 (S.D.N.Y. 2005).

its own GHG emission standards. The Bush Administration also refuses to make a finding of "endangerment" or set federal standards, thus forcing the *Mass. v. EPA* parties to petition the EPA to take a more active regulatory role in curbing emissions.[22]

The recent political climate has seen decision makers reluctant to embrace the issue of global warming. For instance, the 110th Congress's major GHG legislation was eliminated with the defeat of the Lieberman-Warner Climate Security Act in 2008.[23] This may change completely following the 2008 presidential election, but it will take any new administration a good deal of time to attempt to rebuild the EPA and implement real GHG reduction plans even if enabling legislation is passed quickly. Even then, neither Congress nor the new administration is likely to seek redress for harms already suffered. Fortunately, the scientific community is well-armed, even if under-funded. The question is: Who has the political will to take on significant sources of emissions on behalf of those directly affected? That is where the common law litigation fits in.

We offer trespass as a complementary state law test based on objective property lines that may add a twist to the already formidable evidence from the nuisance cases. Trespass remedies might compel internalization of costs more directly by restricting transboundary emissions.[24] And although legislatures may attempt to legalize a public nuisance, it is not likely that they can legalize a trespassory invasion.[25]

This is the constitutional dimension. When government authorizes a physical incursion, however small, there is U.S. Supreme Court precedent to support the position that it should be considered a Fifth Amendment taking.[26] Thus, government may also be accountable for what it has already permitted to occur or the statute that authorized the intrusion might be

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22. Letter from Stephen L. Johnson, Administrator, EPA, to Gov. Arnold Schwarzenegger, State of Calif. (Dec. 19, 2007), *available at* http://ag.ca.gov/cms_attachments/ press/pdfs/n1514_epa-letter.pdf. *See* Petition for Review, California v. Envtl. Prot. Agency, No.08-70011 (9th Cir. Jan. 2, 2008) (challenging the EPA's denial of the waiver of preemption under § 209(b) of the Clean Air Act, 42 U.S.C. § 7543(b) (2007)), *available at* http://ag.ca.gov/cms_attachments/press/pdfs/n1514_epapetition-1.pdf.

23. *See* David M. Herszenhorn, *After Verbal Fire, Senate Effectively Kills Climate Change Bill*, N.Y. TIMES, June 7, 2008, http://www.nytimes.com/2008/ 06/07/washington/07climate.html (discussing the procedural defeat of the Lieberman-Warner bill).

24. Cutting, *supra* note 13, at 879. *See also* Cutting & Cahoon, *supra* note 10, at 73 (stating that internalization of costs that are passed on to others is one factor state courts have considered in a nuisance claim).

25. *See infra* pp. 53–59 (discussing "takings" decisions, specifically *Loretto*, *Causby*, and *Bormann*).

26. *Id.*

voided.[27] Trespass also offers some reconciliation of law and policy with our understanding of ecosystems and ecosystem management by requiring accountability for the effects of any trespass, including pollutants, beyond the source property.[28] Ironically, trespass does so by protecting the property rights of public and private receptors of the trespassing materials.[29] The nuisance and Fifth Amendment "takings" theories are not flawless and litigation will not solve all the problems associated with global warming. However, we argue that pressure from litigation could spur action among the public and the other branches of government.

Property rights have often been invoked as justification for pollutant generators' actions on their own properties and to restrain the ability of government to limit pollution.[30] As Professor Rose notes: "Landowners [are] accustomed to regarding their land as their property, but they simultaneously regard the adjacent air, water, and wildlife as goods that are free for the taking . . . ."[31] We have previously argued that a return to traditional definitions and protections of property rights may be used to control pollution at its source.[32] As illustrated in Figure 1 below, property rights are a three-dimensional concept, protecting subsurface, surface, and airspace rights.

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27. *Id.*

28. J.B. RUHL ET AL., THE LAW AND POLICY OF ECOSYSTEM SERVICES 87–126, 267–70 (2007).

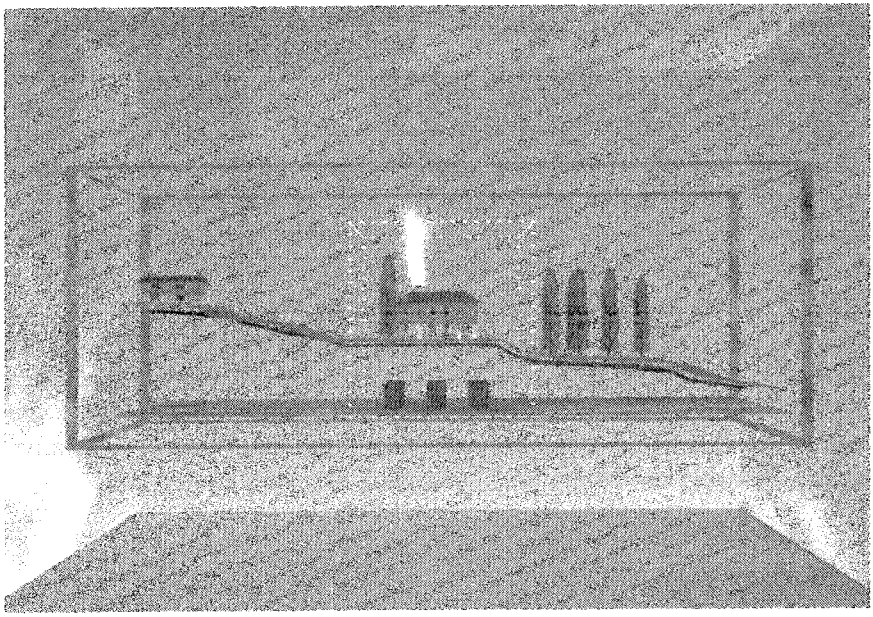
29. DANIEL P. SELMI & KENNETH A. MANASTER, STATE ENVIRONMENTAL LAW § 4:1 (2007).

30. Cutting, *supra* note 13, at 823–24.

31. Carol Rose, *The Several Futures of Property: Of Cyberspace and Folk Tales, Emission Trades and Ecosystems*, 83 MINN L.REV. 129, 137 (1998).

32. Cutting & Cahoon, *supra* note 10, at 58–59. A return to pre-Industrial Revolution property law should have some appeal for strict constructionists.

Figure 1: Property Rights as a Three-Dimensional Construct[33]



By definition, in the U.S., anything that moves outside generators' property lines is inside the property lines of other private or public landowners, known as "receptors."[34] To protect the rest of us—receptors—the burden should be on the generator to identify, capture, and retain all discharges and thus eliminate any invasion or demonstrate the consent of the receptor.[35] Otherwise, there is "market failure" because customers do not pay the full cost of the product, which should include environmental damage and health effects over both the short and long-term.[36]

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33. Image courtesy of Shane Baptista, Univ. N.C., Wilmington Ctr for Teaching Excellence.

34. Cutting, *supra* note 13, at 819.

35. *See* CLIFFORD RECHTSCHAFFEN & DAVID L. MARKELL, REINVENTING ENVIRONMENTAL ENFORCEMENT & THE STATE/FEDERAL RELATIONSHIP 227 (2003) (noting the efficacy of internal industry regulatory procedures and its positive effect on governmental regulatory efforts); Alex, *supra* note 4, at 166 (discussing California's lawsuit against the auto industry for damages for its contribution to global warming); Cutting & Cahoon, *supra* note 10, at 58–59 ("burden should be on the generator to identify, and contain or mitigate all transboundary effect").

36. ENVIRONMENTAL POLLUTION PANEL, *supra* note 15, at 1–2, 5–7, 10–15. *See also* J.H. DALES, POLLUTION PROPERTY & PRICES: AN ESSAY IN POLICY-MAKING AND ECONOMICS 7–8 (1970); Erik T. Verhoef, *Externalities*, *in* HANDBOOK OF ENVIRONMENTAL AND RESOURCE ECONOMICS 197, 199 (Jeroen C.J.M. van den Bergh ed., 1999); Huffman, *supra* note 12, at 380 n.11, 383–84 (arguing that the rights attaching to private property and economic interests are not currently exercised in ways which take into consideration environmental consequences); William Simmons & Robert H. Cutting, Jr., *A*

Recent federal public nuisance actions by several state attorneys general and NGOs focus on protecting receptors' property rights from the effects of generators' GHG emissions.[37] At this stage in history, given the forecasted stakes, the claims ought certainly to be verified and quantified, if necessary, through proof in court. The 2007 Intergovernmental Panel on Climate Change (IPCC) report reduces uncertainty about causality and consequences beyond a reasonable doubt threshold.[38] The evidence-based forum of the courts could allow disposal of these issues should so-called "contrarians" seek to challenge this basic premise,[39] much as trial courts have disposed of the claims of "scientific creationism"[40] and "intelligent design."[41] If the Second and Ninth Circuits or the U.S. Supreme Court reverse and remand the cases for trial on the merits, the plaintiffs still face at least four balancing points subject to extensive trial court discretion before the remedy phase.[42] Importantly, the courts must address the technical feasibility of potential remedies and any remedy's relative economic hardship on the parties.[43] Plaintiffs are ready to provide proof—

Many-Layered Wonder: Non-Vehicular Air Pollution Control in California, 26 HASTINGS L.J. 109, 112–13 (1975).

37. *See* California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *43 (N.D. Cal. Sept. 17, 2007) (finding that because the nuisance claim implicated issues committed to the political branches, it was a non-justiciable political question); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 268 (S.D.N.Y. 2005) (arguing that the emissions of electric power companies' constitute a public nuisance and should be abated).

38. INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE (IPCC), SYNTHESIS REPORT, IN: CLIMATE CHANGE 2007: THE PHYSICAL BASIS, CONTRIBUTION OF WORKING GROUP I TO THE FOURTH ASSESSMENT REPORT OF THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE 37, 46–49 (2007), *available at* http://www.ipcc.ch/ipccreports/ar4-syr.htm (last visited Dec. 3, 2008) [hereinafter IPCC SYNTHESIS REPORT].

39. Noteworthy is the comment of California Governor, Arnold Schwarznegger: "If ninety-eight doctors say my son is ill and needs medication and two say, 'No, he doesn't, he is fine,' I will go with the ninety-eight. It's common sense—the same with global warming. We go with the majority, the large majority." HOT, FLAT, AND CROWDED, *supra* note 14, at 138.

40. *See e.g.*, Edwards v. Aguillard, 482 U.S. 578 (1987) (holding the Louisiana Legislature's requirement that both creation science and evolution be taught violated the Establishment Clause of the United States Constitution).

41. *See e.g.*, Kitzmiller v. Dover Area Sch. Dist., 400 F. Supp. 2d 707 (M.D. Pa. 2005) (applying the endorsement test to find that a school impermissibly favored the theory of intelligent design).

42. *See* Zygmunt J.B. Plater, *Statutory Violations and Equitable Discretion*, 70 CAL L. REV. 524, 535 (1982) (discussing equitable concepts relevant to the balancing of equities); *see generally* Boomer v. Atl. Cement Co., 257 N.E.2d 870, 871 (N.Y. 1970) (disposing of action by balancing equitable costs to the defendants with equitable benefits to the plaintiffs).

43. *Boomer*, 257 N.E.2d at 871 (considering the technological costs and economic implications of an injunction in a nuisance case).

an admirable and formidable task in itself—and the alleged facts certainly project problems on a scale worthy of judicial fact-finding.[44]

I. THE OPPORTUNITY: THAT "BIG BLUE SKY"

A. The Science in a Nutshell

The claims that are at issue in the public nuisance cases are substantial and include harm to persons and property mediated through atmospheric, oceanic, and terrestrial processes.[45] The basic greenhouse model holds that increases in radiative forcing by GHG pollution drive increases in the temperature of the Earth's land, oceans, and atmosphere as well as changes in the circulation of the fluids (air and water) at Earth's surface.[46] Thus, the effects of global warming manifest as both direct temperature increases and less direct effects on weather patterns, including wind flow, precipitation, humidity, storm formation, and seasonality.[47] Concededly, most of the damage from global warming is not directly inflicted by the trespassing GHGs themselves, but by the inherent heat-trapping properties of those trespassing particles.[48] Note, however, that some GHGs are also directly toxic to people and cause other forms of damage; in some cases those effects have been well documented. For example, ozone is a GHG that is continually produced and destroyed in the atmosphere by chemical reactions.[49] In the troposphere, human activities have increased ozone through the release of gases such as carbon monoxide, hydrocarbons, and nitrogen oxide, which chemically react to produce ozone, a gas listed by the EPA as a priority air pollutant and a dangerous component of

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44. *See* Complaint for Damages and Declaratory Judgment at 1–2, 5–15, California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547 (N.D. Cal. Sept. 17, 2007) (stating causes of action for damages and declaratory relief based upon the auto industry's contribution to global warming); California's Memorandum of Law in Opposition to Defendants' Motion to Dismiss at 2–5, Am. Elec. Power Co., 406 F. Supp. 2d 265 (S.D.N.Y. 2005) (stating factual accusations regarding global warming, the threat it poses to plaintiff's property, and defendant's alleged contribution to global warming).

45. *See* California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *43, *47 (N.D. Cal. Sept. 17, 2007) (stressing international dimension of solving global warming); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 268 (S.D.N.Y. 2005) (discussing the plaintiff's allegations that the citizens of New York City will experience severe property and personal damage as a result of global warming).

46. IPCC SYNTHESIS REPORT, *supra* note 38, at 37. For a more extensive discussion in lay terms, see HOT, FLAT, AND CROWDED, *supra* note 14, at 123–27.

47. *Id.* at 31–33.

48. *Id.* at 81–82.

49. *Id.* at 48, 85.

photochemical smog.[50] Carbon monoxide is toxic and also acts as a GHG, albeit with much less radiative effect than CO_2.[51] Halocarbon compounds, many of which were addressed by the Montreal Protocol[52] as ozone-depleting agents, are also potent GHGs.[53] Aerosols, although technically not gases because they are suspended and not dissolved in the air, include soot and other fine particulates that function as warming agents and also as toxicants to humans.[54] Thus, while the major issue with GHG emissions is climate forcing, collateral damages and direct harm from GHG emissions are quite real.

The damages related to radiative forcing damages traceable to trespass by GHGs include, but are not limited to:

- Accelerated sea level rise and consequent coastal erosion, with losses of public and private coastal property and infrastructure (recent analyses show past and future sea level rise to be faster than thought even a few years ago);[55]
- Increased insurance uncertainty because of erosion, inundation, and new storm patterns.[56] How long can the federal government subsidize flood insurance? Costs of repairs, replacement costs, loss of land, damage to infrastructure, and loss of tax base are all huge numbers. Funds for beach renourishment are already routinely zeroed out in the federal budget, shifting costs to states and coastal communities.[57] Regulators are just now beginning to grapple with the projected landward shift of the oceans, although projections of the land likely to be affected have been available for some time;[58]

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50. *Id.* at 37, 85, 88.

51. *Id.* at 143, 149

52. The Montreal Protocol on Substances that Deplete the Ozone Layer, art. 2B, Sept. 16, 1987, S. TREATY DOC. NO. 100-10, 1522 U.N.T.S. 3, *available at* http://www.unep.org/ozone/montreal-protocol/montreal-protocol2000.shtml.

53. IPCC SYNTHESIS REPORT, *supra* note 38, at 82.

54. *Id.* at 39, 76.

55. B. F. Chao et al., *Impact of Artificial Reservoir Water Impoundment on Global Sea Level Rise*, 320 SCI. 212, 212–14 (2008) (adjusting estimates of sea level rise to account for water held in reservoirs).

56. Daniel D. Barnhizer, *Givings Recapture: Funding Public Acquisition of Private Property Interests on the Coasts*, 27 HARV. ENVTL. L. REV. 295, 311, 314 (2003).

57. *See e.g.*, W. J. Cleary, K.T. Willson, & C. W. Jackson, *Shoreline Restoration in High Hazard Zones: Southeastern North Carolina, USA*, 39 J. COASTAL RES. 884, 884–89 (2006) (discussing Southern North Carolina's beach erosion issues).

58. E. Robert Thieler & Erika S. Hammar-Klose, *National Assessment of Coastal Vulnerability to Sea-Level Rise: Preliminary Results for the U.S. Atlantic Coast*, 1999, http://pubs.usgs.gov/of/1999/of99-593 (assessing, in 1999, "the relative vulnerability of different coastal environments to sea-level rise . . . for the U.S. East Coast.").

- Losses of alpine glaciers as water sources and tourist attractions (consider Bolivia and Glacier National Park, respectively);[59]
- Damages to private property and public infrastructure in boreal ecosystems because of melting of permafrost (consider Inuit and Inupiat villages and trans-Alaskan pipelines and roadways);[60]
- Diminished precipitation in certain areas, creating drought and drier conditions than normal with effects on agriculture and risk of forest fires (consider Darfur and the Sahel regions in Africa and the western U.S.);[61]
- Enhanced precipitation in some areas, with increased risk of flooding and increases in relative humidity forecast (consider north-central North America, with possible impacts on grain production by aflatoxins);[62]
- Increased frequency of heat waves with consequent elevated mortality and morbidity in human populations (consider that heat waves are the leading environmental cause of death in the U.S., particularly in urban areas where the urban heat island effect magnifies increased background temperatures);[63]
- Altered climate zones resulting from the synergistic effects of changing patterns of seasonal temperature and rainfall interacting with fixed day length patterns to produce "no-analog climate patterns" that yield regional scale climate zones unlike any seen before, or the elimination of climate zones we take for granted,[64] with effects on existing ecosystem services difficult to predict;
- Altered distributions of pathogens and disease vectors mediated by changes in climate patterns (consider spread of cholera and other water-borne diseases with changed rainfall patterns and resulting flooding, or spread of disease vectors);[65]
- Damages to ecosystems with economic value to humans, notably agro-ecosystems, but also including coral reef ecosystems (via temperature-enhanced bleaching, enhanced ocean acidity, enhanced

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59. Roger G. Barry, *Alpine Climate Change and Cryospheric Responses: An Introduction, in* CLIMATE AND HYDROLOGY IN MOUNTAIN AREAS 1, 3 (Carmen de Jong et al. eds., 2005).

60. Shi-Ling Hsu, *A Realistic Evaluation of Climate Change Litigation Through the Lens of a Hypothetical Lawsuit,* 79 U. COLO. L. REV. 701, 745 (2008).

61. Richard Seager et al., *Model Projections of an Imminent Transition to a More Arid Climate In Southwestern North America,* 316 SCI. 1181, 1181 (2007).

62. IPCC SYNTHESIS REPORT, *supra* note 38, at 49.

63. Pawa, *supra* note 5, at 113.

64. Douglas Fox, *Back to the No-Analog Future,* 316 SCI. 823, 823 (2007).

65. IPCC SYNTHESIS REPORT, *supra* note 38, at 48.

precipitation, and runoff effects), temperate zone fisheries, and rain forest ecosystems;[66]

- Disruptions of global food supplies and trade prices owing to effects on agro-ecosystems and adverse effects on growing crops and animal production,[67] including direct drought and flood damage effects, shifts in agricultural pathogen distributions under changing climate regimes, costs of adapting to altered growing conditions for major crops, and potentially disruptive "no-analog" climate shifts;[68]
- Enhanced frequency of severe weather, including but not limited to tropical cyclones, with concomitant enhanced damages to coastal property, infrastructure and economic interests;[69]
- Increased costs of civil planning, management, regulation, enforcement, insurance, and other responses to direct effects of global warming;[70]
- Increased costs of civil defense preparations, such as planning and response capacity for flooding, extreme weather, and other climate-related disasters;[71]
- Increased costs of military responses, including use of military resources in climate-related disaster relief operations and management of potential threats to national security caused or exacerbated by global warming (consider recent reports of national security challenges posed by impacts of global warming, including destabilization of governments in countries vulnerable to climate effects, conflicts over water and other natural resources, population displacement, disruption by climate-related natural disasters, and impacts on agricultural cash and subsistence cropping);[72]
- Increased mortality, morbidity, heat-related injuries, and health costs. Increased vector-borne disease transmission, medical and psychological casualties from severe weather incidents, and health

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66. *See* John Costenbader, Michael L. Goo, Patrick A. Parenteau & Christopher A.G. Tulou, *Climate Change and the Marine Environment*, *in* OCEAN AND COASTAL LAW AND POLICY 571 (2008) (addressing the environmental affects of global warming on marine species); IPCC SYNTHESIS REPORT, *supra* note 38, at 33, 52.

67. *See* OKMYUNG ET AL., IMPACTS OF GLOBAL WARMING ON NC'S COASTAL ECONOMY 3 (2007), *available at* http://econ.appstate.edu/climate/NC_20Jun2007.pdf (discussing the effects of increased hurricane activity and intensity due to global warming).

68. Pawa, *supra* note 5, at 117.

69. IPCC SYNTHESIS REPORT, *supra* note 38, at 53.

70. *Id.* at 56–57.

71. *Id.*

72. *See* Alex Perry & Chad Iriba, *How to Prevent the Next Darfur*, TIME, May 7, 2007, at 38 (discussing the effects of global warming on African societies).

effects from increased wild fire incidents.[73] These increased health-care costs will also likely result in substantial cost increases for government programs and private providers as well as workers and businesses;

- Increased costs as water becomes scarcer, especially given the IPCC's regional forecasts, which predict steadily diminishing water supplies in the western U.S. and elsewhere and further reduction of the already diminished snow pack, which in California supplies thirty-five percent of it's water.[74] Subsequent increased costs on landscaping, parks, and open space, including needs for invasive species controls, irrigation, and water management practices, and management of endangered and threatened species.[75] Increased electrical bills because of reduced hydroelectric generation and increased use of air conditioning;
- Increased response and rebuilding costs for disasters, such as flooding and fires.[76] Property insurance costs have already climbed substantially in some areas, and some states have begun forming taxpayer-funded insurance pools that offer coverage when private insurers leave markets altogether or have sued private insurers to force them to provide coverage;[77]
- Losses in tourism, a major force in the economies of most coastal states.[78] Although, as cynics point out, there will always be a public beach, even if it is not where it once was;[79]
- Increased costs for raw materials and utilities, including water, growing crops, mining, and timber.[80]

By definition, GHGs enter the space of other property the moment they exit the generator's property, hence if the pollutants were contained at the

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73. IPCC SYNTHESIS REPORT, *supra* note 38, at 48, 51–54.

74. California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *2, *11, *18–21 (N.D. Cal. Sept. 17, 2007); IPCC SYNTHESIS REPORT, *supra* note 38, at 49.

75. *See* Costenbader, Goo, Parenteau & Tulou, *supra* note 66, at 571–89 (describing the effects of global warming on the marine environment).

76. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *2.

77. *See* Spencer S. Hsu, *Insurers Retreat From Coasts; Katrina Losses May Force More Costs on Taxpayers*, WASH. POST, Apr. 30, 2006, at A01 (describing how residents are using taxpayer-funded state insurance plans because private companies are shedding homeowners policies).

78. *See* OKMYUNG ET AL., *supra* note 67, at 10 (describing the impact of global warming on North Carolina beach recreation and tourism).

79. And enterprising counsel have already argued that coastal regulations should be relaxed since structures will be underwater in twenty to thirty years anyway!

80. IPCC SYNTHESIS REPORT, *supra* note 38, at 48.

border (something like the "Bubble Theory"),[81] there would be no effects to other property and fewer effects to the "Economy of Nature."[82] Whether or not anthropogenic GHGs themselves cause damage (and some clearly do), eventually the invasion of private and public spaces produces results at the receptor properties. Science recognizes the resulting entry of heat, wind, fire, or moisture as second invasions, with differing effects depending on the character of the receptor property.[83] Thus, an action by a public entity, such as an attorney general, would be ideal to intercept the problem at the generator's boundaries.

B. The Opportunity

We have previously argued[84] that transboundary pollution, such as GHG emissions, expose receptors, as "test subjects" of the pollution, to long-term and short-term damages that are external social costs, or "externalities."[85] This is a market failure[86] because the customers do not pay all the production costs: those costs are borne by the receptors or the taxpayers (e.g. healthcare or cleanup costs). Consequently, GHG by-products adversely affect the "Economy of Nature" by adding pollutants to the natural systems and climate[87] with unknown results and no mechanism

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81. Chevron U.S.A., Inc. v. Natural Res. Def. Council, 467 U.S. 837, 855–56 (1984) (holding that the EPA has the discretion to formulate and administer the "bubble" concept in air quality emissions).

82. *See* Joseph L. Sax, *The Unfinished Agenda of Environmental Law*, 14 HASTINGS W.-N.W. J. ENVTL. L. & POL'Y 1, 4 (2008) (describing the economy of nature).

83. IPCC, *supra* note 38, at 31–33.

84. *See* Cutting & Cahoon, *supra* note 10, at 60 (advocating for a return of historic property rights in order to protect receptors); Cutting, *supra* note 13, at 819.

85. *See* RUHL, *supra* note 28, at 65–66 (discussing societal costs of pollutants as externalities); *see generally* ENVIRONMENTAL POLLUTION PANEL, *supra* note 15 (discussing in part externalities as price system failures).

86. *See* Huffman, *supra* note 12, at 384 ("Many forms of pollution constitute external costs which are not easily internalized given the existing distribution and definition of property rights. This pollution will often have direct health effects on third parties, and will often have indirect effects for wildlife and ecosystems."); *see also* DALES, *supra* note 36, at 7–8 (discussing how discharging untreated waste can be the most cost-effective way of disposing of unwanted materials, which allows producers to sell and consumers to purchase at lower prices); Cutting & Cahoon, *supra* note 10, at 64 nn.35–42, 65–67 ("When . . . costs are 'externalized' to third parties, there is a market failure in the sense that one of the assumed conditions of an efficient market is missing.") (quoting Huffman, *supra* note 12, 377, 380 n.11, 383–84); Simmons & Cutting, *supra* note 36, at 112–13 (noting that critics of emission-control subsidies argue that industries should internalize the costs of their own polluting activities); Verhoef, *supra* note 36, at 199 ("[M]arket prices do not reflect full social costs (or benefits).").

87. Joseph L. Sax, *Property Rights and the Economy of Nature: Understanding Lucas v. South Carolina Coastal Council*, 45 STAN. L. REV. 1433, 1442 (1993). *See also* Cutting, *supra* note 13, at 832–51 (discussing the view that property rights have been used to deplete natural resources); Plater, *supra* note 42, at 204–05 (describing human settlement on floodplains and the acceleration in

to impose responsibility for the potential consequences. The real costs are difficult to ascertain since there is generally a dearth of knowledge about even the common chemistry of toxicants, and there is a lack of legal authority to acquire that knowledge.[88] Ironically, this means some generators are likely over-regulated. In addition, there is substantial evidence that the science of global warming has been subjected to political manipulation by attempts to suppress the views of top scientists; for example, National Aeronautics and Space Administration's (NASA) James Hansen and the elimination of global warming's human health effects from the EPA reports to Congress.[89] Without knowing the true effects and costs, it is difficult to craft a regulatory framework that is "protective of human health with an adequate margin of safety" or to protect property.[90]

Mechanisms currently used to confront the problem of GHGs and other pollutants are flawed because the public pays the short-term and long-term costs of the externalities. While the regulatory system has been relatively effective for many pollutants, it has effectively and intentionally permitted most GHGs, even though there is a consensus as to the cause and projected effects of GHGs. For example, the ubiquitous "Best Management Practices" and "Best Available Technology" standards both focus on the costs to the generator rather than the costs to receptors. Given the progress

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destruction during flood events); Joseph L. Sax, *Takings, Private Property and Public Rights*, 81 YALE L.J. 149, 150 (1971) (discussing the view of the interconnectedness between property owners and property rights).

88. *See* Cutting & Cahoon, *supra* note 10, at 63–64 nn.30–34 (discussing the difficulty of studying harmful air pollutants under existing legislation and budgets). These costs are not included for at least three reasons: (1) data to quantify the costs is still lacking; (2) classical economics has also had serious difficulty quantifying the value of the environment: "Most environmental amenities cannot be adequately monetized, not because they are not valuable, but because they are not supplied through a market[;]" and (3) partly because of lack of data, many environmental effects, such as long-term health effects and health care costs—and even crime by individuals exposed to toxins such as mercury are simply ignored. There is little incentive for a generator to calculate these costs, let alone to internalize them. But scientists remind us that the human species in general will be forced to pay these costs if generators neither prevent nor pay them—quite frequently that seems to mean the taxpayer. Cutting, *supra* note 13, at 843 (quoting David B. Hunter, *An Ecological Perspective on Property: A Call for Judicial Protection of the Public's Interest in Environmentally Critical Resources*, 12 HARV. ENVTL. L. REV. 311, 335–36 (1988).

89. *See* Andrew C. Revkin, *Climate Expert Says NASA Tried to Silence Him*, N.Y. TIMES, Jan. 29, 2006 (reporting James Hansen's allegations that the Bush administration silenced his speaking out regarding the causes of GHGs and global warming); Revkin, *supra* note 6 (suggesting that unnamed members of the Bush Administration ordered portions of the global warming testimony pertaining to human health be removed); *see also* Cutting & Cahoon, *supra* note 10, at 62–64 (criticizing Congress for not funding research on hazardous air pollutants); Oliver Houck, *Tales from a Troubled Marriage: Science and Law in Environmental Policy*, 302 SCI. 1926–29 (arguing that scientific discovery has historically fallen victim to "scientific management").

90. 42 U.S.C. § 7409(b)(1) (2000).

of the past forty years in reducing pollution and specific pollutants the regulatory framework has much to commend it.

Many of the framework's systemic flaws could be remedied by more public science, as the President's Science Advisory Council recommended in 1965,[91] which would deter political manipulation and facilitate enforcement of existing laws. However, given the discretion permitted by the U.S. Supreme Court in *Mass. v. EPA*, an executive may command that little or no regulation occurs,[92] as states allege in the sequel case.[93] The playing field is wide: the U.S. Supreme Court has confirmed that both the legislative and executive branches have wide discretion to address matters of public health and, in particular, the environmental and property related issues.[94] A new presidential administration and a filibuster-proof Congress will likely be required to accomplish effective regulation. Given the circumstances, common law actions have utility at this time.

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91. ENVIRONMENTAL POLLUTION PANEL, *supra* note 15, at 29–33 (discussing the need for research to help abate and control pollution).

92. The United States Government Accountability Office has just issued a report that concludes that the Bush Administration overstated its enforcement record. U.S. GOV'T ACCOUNTABILITY OFFICE, ENVIRONMENTAL ENFORCEMENT: EPA NEEDS TO IMPROVE THE ACCURACY AND TRANSPARENCY OF MEASURES USED TO REPORT ON PROGRAM EFFECTIVENESS 3–4 (2008), *available at* http://www.gao.gov/new.items/d081111r.pdf. Civil penalties, for example, fell from a high of $292 million in 1998 to $137 million last year. *Id.* at 3. R. Steven Brown, State Environmental Agency Contributions to Enforcement and Compliance, Environmental Counsel of the States (2001), available at http://www.ecos.org/files/687_file_ECOS_20RTC_20f.pdf.; Rechtschaffen & Markell, *supra* note 35, at 217–18; J.A. Mintz, Treading Water: A Preliminary Assessment of EPA Enforcement During the Bush II Administration, 34 ENVTL. L. REP. 10912, 10930 (2004), *available at* http://www.elr.info/articles/vol34/34.10912.pdf. *Cf.* Dan Beese & Robin K. Smith, SEE NO EVIL: WHY OUR ENVIRONMENTAL LAWS AREN'T BEING ENFORCED 21 (Conservation Council of N.C. ed., 2002), *available at* http://www.conservationcouncilnc.org/education/SNEfinal.pdf (discussing agency reluctance to use enforcement tools); R. Steven Brown, The Funding Gap One Billion Dollars Short, Ecostates, J. OF THE ENVTL. COUNCIL OF THE STATES 1, 5–7 (2004) (analyzing effect of budgetary deficits on environmental regulations enforcement).

93. Podcast: Climate Change in the Courtroom, Patrick Parenteau, Professor of Law, Vermont Law School (June 17, 2008) (arguing that EPA continues to drag its feet on making the endangerment finding requirement under the Clean Air Act). A former EPA official in charge of implementing *Mass. v. EPA* has also made similar allegations. *See* Revkin, *supra* note 89 (discussing deliberate editing of climate testimony in effort to conceal heath effects of global warming).

94. *See* Whitman v. Am. Trucking Ass'n, 531 U.S. 457, 475–76 (2001) (confirming that section 109(b)(1) of the Clean Air Act authorizes the EPA to set air quality standards that fit within the limits of discretion proscribed by the Supreme Court); Babbit v. Sweet Home Chapter of Cmtys. for a Great Oregon, 515 U.S. 687, 696–704 (1995) (affirming the determination of the Secretary of the Interior that habitat modification was encompassed by the definition of "harm" under the Endangered Species Act); Chevron U.S.A. Inc. v. Natural Res. Def. Council, 467 U.S. 837, 855–56 (1984) (holding that the EPA has the discretion to formulate and administer the "bubble" concept in air quality emissions). *But cf.* Lucas v. S. C. Coastal Council, 505 U.S. 1003, 1015–16 (1992) (illustrating two types of claims under the Fifth Amendment takings doctrine as examples of limits on legislative and executive powers).

Private actions for damages do face several drawbacks; for instance, their incredible transactional costs[95] and their limited ability to capture externalities.[96] However, the common law actions filed by the attorneys general and NGO's fill a vacuum, working to achieve the reduction of GHG emissions as well as the recovery of damages that GHG-associated externalities cause.[97]

Most 2008 GHG legislation (e.g., Lieberman-Warner) featured a cap and trade regulatory mechanism.[98] It also illustrates the problem that common law actions address. States, of course, have been forming regional cap-and-trade systems in lieu of federal action, and states have been permitting emission offset trading for decades.[99] Cap and trade is actually "regulatory plus," since the "cap" must address a question similar to that in air quality and emission regulation decisions: what level of cumulative emissions yields the desired level of environmental quality? Once that determination is made, a market mechanism must be developed. Section 109 of the CAA mandates that human health be protected from a pollutant's impacts with "an adequate margin of safety."[100] However, for political reasons, these "caps" may be set too high and result in regulatory failures, like the European Union's (E.U.) failure to meet their air quality targets.[101] There is no direct mechanism to provide redress if the regulatory scheme proves inadequate, and the public nuisance actions fill that void. Generators that achieve reductions can bank and trade credits in many creative ways, similar to the concepts used in land use for transferable

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95. *See generally* JONATHAN HARR, A CIVIL ACTION (1996) (highlighting the financial concerns lawyers face in assuming complex litigation).

96. *See* Cutting & Cahoon, *supra* note 10, at 86–87 (discussing how large transactional costs dissuade individuals from filing environmental claims).

97. *See* Pawa, *supra* note 5, at 132 (discussing the plaintiffs' theory of the public nuisance doctrine).

98. *See, e.g.*, Americas Climate Security Act, S. 2191, 110th Cong. (2007); *see also* Envtl. Prot. Agency, *EPA Analysis of the Lieberman-Warner Climate Security Act of 2008*, http://www.epa.gov/climatechange/economics/economicanalyses.html (last visited Nov. 12, 2008) (discussing the components of the S. 2191 of the 110th Congress); Dina Cappello, *House Democrats Unveil Draft Climate Change Bill*, Oct. 7, 2008, http://news.practice.findlaw.com/ap_stories/a/w/1153/10-07-2008/20081007155006_14.html (discussing planned 2009 climate change legislation); Environmental Defense Fund, *Climate Change Bills of the 110th Congress*, http://www.edf.org/page.cfm?tagID=1075 (last visited October 23, 2008) (comparing climate change proposals of the 110th Congress).

99. Alex, *supra* note 4, at 166 n.6 ("[S]tates have recently begun aggressively to seek basic tort remedies against major sources of GHG emissions, in addition to undertaking their own legislative and regulatory initiatives.").

100. 42 U.S.C. § 7409(b)(1) (2000).

101. Zasloff, *supra* note 20, at 1839–40. While the financial downturn of the the fall of 2008 has created pressure to roll back quotas, a majority are resisting.

development rights,[102] and the concepts used to trade standard air quality offsets within air basins such as states and metropolitan areas like Los Angeles have been doing for decades.[103] One version of Lieberman-Warner contains a requirement to reduce the total allotment over time, a "shrinking cap," to a scientifically acceptable level.[104] Theoretically, receptors and competitors can also purchase pollution rights and reduce emissions.

Because GHGs are a global problem, a national trading system makes more sense than trading other pollutants between air basins. This is especially true in the U.S., where the EPA must ensure air quality standards within air basins. Even offsets purchased outside the U.S. or for another GHG could therefore be acceptable. A national system would allow a larger scale market for the regulated community to sell pollution rights to entities that find the cost of pollution rights to be lower than the costs of compliance; this rewards economic and scientific efficiency. A national system might avoid some of the problems of state and local systems, such as those issues in Southern California where litigants contend that the air quality district cannot account for the "credits" themselves, thus new emissions may have exceeded reductions, resulting in more pollution.[105]

Another fundamental question is: how are pollution rights to be allocated? The regulated community naturally tends to support any system in which: (1) there is no cost for the rights and (2) preference is accorded to those already emitting GHGs, thus rewarding polluters. President-Elect Barack Obama backs an initial auction.[106]

Unless the cost of pollution rights reflect the total societal costs, as described in *AEP* and *California v. GM*,[107] no emissions trading system

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102. *See* Suitum v. Tahoe Reg'l Planning Agency, 520 U.S. 725, 729–30 (1997) (describing the use of transferable development rights to compensate property owners for land use restrictions).

103. *See* Cutting & Cahoon, *supra* note, 10 at 85 (arguing that emissions trading is a system that sanctions externalities).

104. America's Climate Security Act of 2007, S. 2191, 110th Cong. §2501 (2007). For materials on EPA's analysis of the Lieberman-Warner Climate Security Act see Envtl. Prot. Agency, *EPA Analysis of the Lieberman-Warner Climate Security Act of 2008*), http://www.epa.gov/climatechange/economics/economicanalyses.html (last visited Nov. 12, 2008).

105. Natural Res. Def. Council v. S. Coast Air Quality Mgt. Dist., No. CV08-05403 (C.D. Cal filed Aug. 18, 2008).

106. *See* Posting of Robert Reich to Robert Reich's Blog, http://robertreich.blogspot.com/2008/05/why-mccains-cap-and-trade-wont-work.html (May 27, 2008, 17:05 PST) (distinguishing Senator McCain's cap and trade system on the basis of how permits are allocated); Bill McKibben, *The Greenback Effect*, MOTHER JONES, May/June 2008, *available at* http://www.motherjones.com/news/feature/2008/05/the-greenback-effect.html (discussing Barack Obama's endorsement of a permit auction).

107. *See* California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *46 (N.D. Cal. Sept. 17, 2007) (the alleged damages include everything from the costs of analysis and preparation to the losses of crops and industry from diminished water supplies, loss of property and loss

fully internalizes the costs of that pollutant. The market price typically tends to reflect the cost of avoiding emissions. The initial price, a reserve at the auction, should therefore include conditions to account for future costs by a combination of these mechanisms: (1) requirements for further research, funded by the pool of rights-holders, similar to California's fishery-funded marine research;[108] (2) requirements for bonding or insurance to compensate costs or damages (as in the attorneys generals' litigation);[109] and (3) ensuring a process that compensates receptors who incur costs or damages. Mathew Pawa and other scholars maintain deaths have occurred and will continue, regardless of cap-and-trade, unless the system has few transactional costs.[110] However, the externalities are borne disproportionately by those other than the generators' customers who might make other choices were the true costs included.[111] In GHG cases, a pooling and self-funded claims system appears far preferable to individual or even class litigation, because the affected class is potentially so large and the damages so great.

Therefore, uncertainty in the business community is twofold: first, uncertainty about the direct effects of global warming on their own companies, including potential increased costs and asset losses, and second, uncertainty about their legal exposure for generating GHG emissions, especially if any of the initial public nuisance actions prevail on appeal. Both considerations have led some in the business community to support GHG reduction legislation, such as the Lieberman-Warner bill, for the relative certainty of a tolerable regulatory framework.[112]

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of tax base); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 273 (S.D.N.Y. 2005) (describing similar damages); *see also* Pawa, *supra* note 5; Alex, *supra* note 4.

108. *See* Mark D. Ohman et al., *CalCOFI in a Changing Ocean*, 16 J. OCEANOGRAPHY SOC'Y 6, 6–7 (2003) (describing how the California Cooperative Fisheries Investigations (CalCOFI) was created in response to declining sardine populations, and how it is currently operated).

109. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547; *Am. Elec. Power Co.*, 406 F. Supp. 2d at 265.

110. Pawa, *supra* note 5, at 107.

111. This would be true even were there is national health insurance of some type, because although more could receive adequate medical care, the costs are borne by the taxpayers unless apportioned somehow to the generators.

112. Bryan Walsh, *Why Green Is The New Red, White and Blue*, TIME, Apr. 28, 2008, at 49. *See also* Environmental Defense Fund, *Top Firms Call for Climate Action*, Sept. 17, 2007, http://www.edf.org/article.cfm?contentID=5828 (discussing the U.S. Climate Action Partnership, and alliance of corporations and environmental leaders).

II. STATES "CAN'T GET NO SATISFACTION"

States have turned to the courts to protect life and property and to recover damages. Thus far, however, the trial courts have refused to decide public nuisance cases, dismissing each on jurisdictional grounds.[113]

A. States' Rights

States and localities have created solutions ranging from restrictions on motor vehicle emissions to taking the lead in conserving energy, utilizing transportation alternatives, and purchasing efficient equipment. California's extensive activities include: (1) GHG emissions standards; (2) comprehensive air quality regulation as part of the California Greenhouse Gas Act;[114] (3) fuel composition standards[115] and corporation average fuel economy (CAFE) standards;[116] as well as (4) cooperative efforts with other states to force the EPA to act.[117]

States have been the sources of great creativity, including comprehensive legislative air quality and transportation packages, formal and informal compacts, and partnerships with cities and NGOs, including implementing regional emissions trading programs.[118] These state actions seem especially appropriate since the CAA holds the states (through State

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113. *See, e.g.*, Murphy v. Comer Oil, No. 1:05-CV-436-LG-RHW, 2007 WL 1066645 (S.D. Miss. Aug. 30, 2007) (dismissing the nuisance claim after finding the case posed a non-justiciable political question); *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *47 (holding lack of manageable standards precluded review of nuisance claim); Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 273 (S.D.N.Y. 2005) (dismissing nuisance claim after "[l]ooking at the past and current actions (and deliberate inactions) of Congress and the Executive within the United States and globally in response to the issue of climate change merely reinforces . . . that the questions raised . . . are non-justiciable political questions.").

114. CAL. HEALTH & SAFETY CODE §§ 38560–38565 (West 2006 & Supp. 2008).

115. CAL. CODE REGS. tit. 13, § 2257(a)(1)(i)–(ii) (1999).

116. CAL. HEALTH & SAFETY CODE § 43018.5 (West 2006 & Supp. 2008). *But see California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *47 (denying enforcement waiver on preemption grounds).

117. *See* Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438 (2007) (exemplifying states efforts to force EPA to regulate); *see also* Ctr. For Biological Diversity v. Nat'l Highway Traffic Safety Admin., 508 F.3d 508 (9th Cir. 2007) (considering global warming under the National Environmental Policy Act); Mid State Coalition for Progress v. Surface Transp. Bd., 345 F.3d 520 (8th Cir. 2003) (same); Friends of the Earth v. Mossbacher, 488 F. Supp. 2d 889 (N.D. Cal. 2007) (same); Nat'l Res. Def. Council v. Kempthorne, 506 F. Supp. 2d 322 (E.D. Cal. 2007) (considering global warming under the Endangered Species Act in addressing the polar bear listing); Border Working Group v. Dept. of Energy, 260 F. Supp. 2d. 997 (S.D. Cal. 2003) (considering global warming under the National Environmental Policy Act).

118. *See* Alex, *supra* note 4, at 166 n.6 ("[S]tates have recently begun aggressively to seek basic tort remedies against major sources of GHG emissions, in addition to undertaking their own legislative and regulatory initiatives.").

Implementation Plans (SIPs)) legally responsible for air quality at the risk of losing control (and Federal Highway Trust Funds) to the federal government.[119] States have also begun to incur millions of dollars in expenses as they analyze and prepare for the consequences of global warming.[120]

B. Litigation

Much of the litigation of the past few years focused on federal resistance both to the EPA's regulation and to states' efforts to regulate fuel composition, mileage, and GHG emissions. Results have been less than favorable to the states, and even *Mass. v. EPA* is back in court because of the refusal of the Bush Administration to act.[121] Now, attorneys general and NGOs have launched a major offensive in federal court. Using both federal and state public nuisance theories, they are trying to obtain extensive relief, seeking to force electrical power generators and automakers to reduce GHG emissions or bear the costs global warming imposes on our society and ecosystems.[122]

These cases serve an important public information function. This, in turn puts pressure on a recalcitrant administration and legislature to enact more comprehensive but politically palatable solutions, such as cap-and-trade. Since consumer behavior, particularly energy use, can radically influence GHG volume, consumer awareness may spark consumer behavior modifications; though information for consumers and investors remains difficult to obtain.[123] These cases also offer a chance for the responsibility of global warming related damages to shift from receptors onto generators

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119. *See, e.g.*, E. Donald Elliott et al., *Recent Clean Air Act Developments–2006*, 37 ENVTL. L. REP. 10274, 10276 (2007) (discussing SIP compliance deadlines).

120. *See, e.g.*, Alex, *supra* note 4, at 167 ("California now includes millions of dollars of expenditures in its annual budget for projects and actions related to global warming.").

121. JUSTIN R. PIDOT, GLOBAL WARMING IN THE COURTS: AN OVERVIEW OF CURRENT LITIGATION AND COMMON LEGAL ISSUES 1 (2006).

122. *See* California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *4 (N.D. Cal. Sept. 17, 2007) (seeking monetary damages until harms arising from automobile emissions cease); Connecticut v. Am. Elec. Power Co., 406 F. Supp 2d 265, 270 (S.D.N.Y. 2005) (seeking injunctive relief to force defendants to decrease carbon dioxide emissions); *see generally* North Carolina v. Tenn. Valley Auth., 515 F.3d 344, 353 (4th Cir. 2008) (North Carolina filed a public nuisance claim against the Tennessee Valley Authority (TVA), which was recently tried after a TVA appeal, claiming immunity, was denied.); Anne Paine, *TVA Rejects Health Threats*, THE TENNESSEAN, July 25, 2008, at 1 (reporting that an expert witness testified that reducing emissions could save some 1,400 lives annually from all direct and global warming related power plant pollutants, those direct and global warming related).

123. Robert Cutting, Lawrence B. Cahoon & Ryan C. Leggette, *Enforcement Data: A Tool for Pollution Control*, 36 ENVTL. L. REP. 10060, 10064–65 (2006).

through efficient, effective, and creative equitable relief.[124] In addition, the generators' tremendous exposure to liability in these public nuisance cases may be just enough incentive to spur generators to develop their own creative solutions to the problems associated with GHG emissions.

The first case, *AEP*, targets five electrical power generators that, combined, account for ten percent of the U.S.'s total CO_2 emissions.[125] The second case, *California v. GM*, is aimed at the U.S.'s six largest auto manufacturers whose vehicles emit more than twenty percent of the U.S.'s total CO_2 emission.[126] The district courts dismissed the cases on the jurisdictional issue of justiciability.[127] In both cases, the plaintiffs at the district level and now on appeal rely on a line of prominent transboundary nuisance suits.[128] However, because the transboundary cases pre-date the *Erie* Doctrine, modern courts are not bound by their decisions.[129]

Future potential hearings will feature a stellar cast of expert scientific witnesses and extensive evidence on causation, including the nature and extent of damages to particular properties and victims.[130] Some commentators think that presenting evidence related to causation and

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124. Ironically, of course, an administration that acts expansively might doom federal common law claims under the displacement theory. *See* Zasloff, *supra* note 20, at 1849 (arguing that the Clean Air Act, which possesses legal remedies for interstate pollution beyond conferences and mediation, undermines the vitality of federal common law for interstate air quality).

125. *Am. Elec. Power Co., Inc.*, 406 F. Supp. 2d at 268.

126. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *3. *See also* CAL. ENERGY COMM'N, INVENTORY OF CALIFORNIA GREENHOUSE GAS EMISSIONS AND SINKS: 1990 to 2004 (2006) (analyzing past and present trends in California's GHG emissions); *see generally* Zasloff, *supra* note 20, at 1862 (suggesting that these cases chose the wrong defendants because focusing "upstream" on carbon producers would be more equitable and efficient and would potentially avoid some of the issues now causing difficulty, such as preemption in the automobile manufacturers' case).

127. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *47 (dismissing nuisance claim as a non-justiciable political question); *Am. Elec. Power Co.*, 406 F. Supp. 2d at 273 (same). Another separation of powers argument, displacement of federal common law and preemption of the state law, was briefed and could be decided on appeal. Appellant's Opening Brief in Ninth Circuit Court of Appeals at 44–59, *California v. Gen. Motors Corp.* (on file with author).

128. *See* Illinois v. Milwaukee (*Milwaukee I*), 406 U.S. 91, 107–08 (1972) (upholding a claim for discharge of sewage into interstate waters); *see also* New Jersey v. New York, 283 U.S. 473, 482 (1931) (upholding jurisdiction); Georgia v. Tenn. Copper Co., 206 U.S. 230, 238–39 (1907) (upholding claim for interstate air pollution of "sulphurous fumes"); Missouri v. Illinois, 200 U.S. 496, 520–21 (1906) (upholding a claim for discharge of sewage containing concentrations of typhus bacillus into an interstate river; but the claim was ultimately denied on the question as to whether the bacillus survived); Missouri v. Illinois, 180 U.S. 208, 241–42 (1901) (claim upheld for discharge of raw sewage into an interstate river).

129. *See* generally Erie R.R. Co. v. Tompkins, 304 U.S. 64 (1938).

130. *See e.g.*, Plaintiff's Complaint in Intervention for Declaratory and Injunctive Relief at ¶¶ 24–34, *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547 (identifying a host of factors associated with global warming, from increased risks of susceptibility to hurricanes and wildfires to health risks of asthma and other respiratory conditions).

damages will not be difficult because although the logistics may prove challenging, modern information technology has the ability to facilitate and handle complex cases.[131] However, the courts face two undeniably formidable challenges: first, determining whether the receptors suffered an unreasonable interference with their enjoyment of their property, considering generators' avoidance costs and technological limitations, and second, determining the nature of any remedies.

It is within this last challenge, determining the nature of the remedies, that we see a fundamental legal difference between *AEP* and *California v. GM*. In *California v. GM*, the plaintiffs are exclusively seeking monetary damages, while the *AEP* suit seeks equitable relief.[132] Both the *California v. GM* legal team and commentators, such as Professor Zasloff, argue that seeking damages may offer a strategic advantage.[133] However, we are a bit more skeptical that purely monetary damages can properly quantify the harms of global warming, such as loss of life and the loss of North Carolina's Outer Banks. However, we do agree that the threat of money damages can lead to prevention and remediation, except that portion that is considered a cost of doing business.[134] We assume that the *California v. GM* suit focuses on damages in part to avoid the *AEP* ruling, which held that the judicial discretion required for equitable relief would impermissibly interfere with legislative discretion.[135]

Another fundamental difference between *AEP* and *California v. GM* is the choice of defendant. In *AEP* the defendants are generators, who create both the instrumentality (electrical power plants) and the polluting activity. In *California v. GM*, the defendants supplied the instrumentality (vehicles) but do not actually create the emissions by driving.[136] Thus, in *Califonia v. GM* you and I are the actors generating the actual GHG emissions.

Why federal court? The cases are in federal court for the national scope of federal common law and, strategically, so that the attorneys general may

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131. Pawa, *supra* note 5, at 119–20; Zasloff, *supra* note 20, at 1868.

132. Alex, *supra* note 4, at 169.

133. *Id.*; Zasloff, *supra* note 20, at 1838–44.

134. Zasloff, *supra* note 20, at 1838–44.

135. The trial court in *AEP* focused on the breadth of discretionary relief sought by the plaintiffs as indicative, noting that "[t]he scope and magnitude of the [equitable] relief Plaintiffs seek reveals the transcendently legislative nature of this litigation." *Am. Elec. Power Co. Inc.*, 406 F. Supp. 2d at 270–73. Thus, the court concluded that the separation of powers doctrine barred the action. *Id.* If that was the intent of California, though, it did not work. *See California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *11 (finding that the remedy sought made no difference).

136. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547. However, unlike the gun cases, most Americans have little choice in transportation and so we become the instrumentalities. Thus, provision of instrumentalities that ordinarily pollute is the errant behavior since the outcome is known, unlike the outcome of use of guns, almost all uses of which do not ordinarily result in harm.

argue that preemption is not involved.[137] The appeal of the theory is immediate: one federal nuisance standard for transboundary pollution, no matter how many source states, and a comprehensive set of remedies. However, even though there are centuries of case law that support the public nuisance claim, decisions from the last hundred years have eliminated strict liability and created subjective balancing points,[138] where the court weighs the economic value and social utility of the generators' activities against receptors' property rights. The authority to address air pollution through the states' police power—through public nuisance actions—is without question.[139] However, public officials have seldom exercised this power.

Then, Congress began to address environmental issues through comprehensive legislation, and the courts seized upon these statutes to negate the ability of federal common law to address interstate nuisances.[140] However, the authority of attorneys general was not diminished by the passage of the CAA, as noted in *California v. GM*:

> The CAA provides that "[e]ach state shall have the primary responsibility for assuring air quality within the entire geographic area comprising such state," 42 U.S.C. § 7407(a), and "[t]hat the prevention and control of air pollution at its source is the primary responsibility of states and local governments. 42 U.S.C. § 7401(a)(3)."[141]

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137. Instead, it is a separation of powers dispute between branches of the federal government.

138. Plater, *supra* note 42, at 533–34 (discussing the historical development of equity). For an excellent review of the evolution of trespass and nuisance, see H. Marlow Green, Note, *Common Law, Property Rights and the Environment: A Comparative Analysis of Historical Developments in the United States and England and a Model for the Future,* 30 CORNELL INT'L L.J. 541, 552–53 (1997), reviewing the evolution of trespass and nuisance.

139. *See, e.g.*, Huron Portland Cement Co. v. Detroit (HPC), 362 U.S. 440, 442 (1960) (stating that states may exercise police powers concurrently with the federal government in cases of interstate commerce). In this case, Huron Portland Cement Company challenged a Detroit ordinance that declared certain air pollution from ships to be a public nuisance. The court, for example, focused on the fact that air pollution control is primarily a "state and local matter." Hence, traditional remedies such as public nuisance applied. The same language was adopted in 42 U.S.C. §§ 7401(a)(3), 7407(a) (2000). The power to commence nuisance actions was still contemplated, as also evidenced by the SIPs approved following the passage of the Clean Air Act. *Id.* at 442–46.

140. *Compare* Illinois v. Milwaukee (*Milwaukee I*), 406 U.S. 91 (1972) (upholding application of federal common law to abate interstate nuisance), *with* Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304 (1981) (denying the use of federal common law to impose stricter emission standards), *and* Int'l Paper Co. v. Ouellette, 479 U.S. 481 (1987) (holding that the CWA preempts state law in interstate nuisance actions).

141. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547. The court also notes section 209(a) of the Clean Air Act, 42 U.S.C. § 7543 (2000), "expressly precludes state regulation of emissions from new automobiles, *with certain exceptions*." *Id.* (emphasis added).

The statutory framework focuses on generators in an attempt to eliminate, through regulation, potential public nuisances. Because more than twenty percent of GHGs originate in the U.S.,[142] the logical conclusion is that there is a gap between the regulatory framework and the emission of GHGs. Thus, the remedies of statutory law and public nuisance common law merge, approaching the problem from the differing perspectives of the receptors, generators, regulators, and the courts. States under the CAA have since its inception codified the longstanding rights of the attorneys general to initiate nuisance actions, and the EPA has approved the powers as part of the SIPs,[143] which then gave those plans the force of federal law.[144] In California, § 41509(b) of the Health & Safety Code preserves to the attorney general the specific authority to supplement statutory law with nuisance actions to address the effects of air pollution.[145] The only open

142. *E.g.*, G. MARLAND, T.A. BODEN, & R.J. ANDRES, CARBON DIOXIDE INFORMATION ANALYSIS CENTER, UNITED STATES OF AMERICA FOSSIL-FUEL CO_2 EMMISSIONS: TRENDS (2008), http://cdiac.esd.ornl.gov/trends/emis/tre_usa.html (last visited Dec. 3, 2008) ("The United States continues to be the largest single national source of fossil fuel-related CO_2 emissions with emissions of 1577 million metric tons of carbon in 2005. . . . Emissions in 2005 rose slightly (0.8%) from 2004 but have doubled since the early 1960s, although the U.S. share of global emissions declined from 44% to 21% over the same interval because of higher growth rates in other countries.").

143. The SIP is the key document on which delegation to the states to manage air quality programs rests. 40 C.F.R. §§ 51.230–51.232 (2000). The SIP consists of regulations and other materials designed by states to meet statutory requirements. *Id.* If the EPA approves the SIP, then the state has been delegated the authority to implement the SIP. Thus EPA reviews the legal authority, which in most states had included public nuisance tools for many years before the first SIP submittal. The California SIP does not specifically mention nuisance, but the plan includes reference to the numerous enforcement tiers, all of which empower the attorney general to take civil and criminal actions, which in most jurisdictions, and California specifically, had always included nuisance. California Environmental Protection Agency, Air Resources Board 2, http://www.arb.ca.gov/planning/sip/2007sip/2007sip.htm. *See* Simmons & Cutting, *supra* note 36, at 144–45 (discussing the power of California's attorney general to "enjoin any pollution of nuisance"); *see also* Nat'l Audubon Soc'y v. Dep't of Water, 869 F.2d 1196, 1206–14 (9th Cir. 1989) (Reinhardt, J., dissenting) (discussing the rights of private parties and states to assert federal interests under the Clean Air Act).

144. In *Her Majesty the Queen v. Detroit*, a case involving a challenge to a Detroit incinerator, the court noted: "If a state implementation plan ("SIP") is approved by the EPA, its requirements become federal law and are fully enforceable in federal court." Her Majesty the Queen v. Detroit, 874 F.2d 332, 335 (6th Cir. 1989). *See* 42 U.S.C. § 7604(a) (2000) (authorizing citizen suits against any person or government agency); *see generally* Conservation Law Found., Inc. v. Busey, 79 F.3d 1250, 1268–69 (1st Cir. 1996) (assuming the SIP to have the effect of federal law); United States v. Tenn. Air Pollution Control Bd., 967 F. Supp. 975, 981–82 (M.D. Tenn. 1997) (stating that a state or local administrative agency may bring a suit against the United States); Cate v. Transcon. Gas Pipe Line Corp., 904 F. Supp. 526, 536–38 (W.D. Va. 1995) (refusing to implement Virginia's odor rule because both the state and EPA did not consider it to be part of the SIP); 1 W. RODGERS, ENVIRONMENTAL LAW: AIR AND WATER §§ 3.9–3.11 (1986) (describing the SIP development process and the EPA review process that precedes an SIP becoming effective).

145. CAL. HEALTH & SAFETY CODE § 41509(b) (West 1975). *See* Simmons & Cutting, *supra* note 36, at 144–45 (analyzing California's air emission and performance standards). Other powers

question was whether the states could pursue federal facilities under the CAA as well as the Clean Water Act (CWA), so Congress clarified both statutes in 1977.[146] Section 7604(e) of the CAA, acknowledged the general power of public officers not only to initiate common law actions, but also to pursue federal facilities in both federal and state court:

> (e) Nothing in this section shall restrict any right which any person (or class of persons) may have under any statute or common law to seek enforcement of any emission standard or limitation or to seek any other relief (including relief against the Administrator or a State agency). Nothing in this section *or in any other law of the United States* shall be construed to prohibit, exclude, or restrict any State, local, or interstate authority from—(1) bringing *any* enforcement action or obtaining *any judicial remedy or sanction in any State or local court*, or (2) bringing *any administrative enforcement action or obtaining any administrative remedy or sanction* in any State or local administrative agency, department or instrumentality, against the United States, any department, agency, or instrumentality thereof, or any officer, agent, or employee thereof under State or local law respecting control and abatement of air pollution.[147]

In unambiguous terms, Congress confirmed the intent to include the traditional common law enforcement actions under the CAA and clarified that these enforcement powers even extended to federal facilities.[148] At that time, the federal common law available for environmental cases included interstate federal common law public nuisance as it predated *Milwaukee v. Illinois (Milwaukee II)*, 451 U.S. 304 (1981). Section 7604(e) also clarifies that the common law enforcement preservation language prevails against "any other law of the United States"—a key distinction between the CAA and the CWA.[149] The CWA has similar common law reservations for citizen

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given the states include: (1) what sources to regulate; (2) the right to set more restrictive standards for stationary sources; (3) the right to a waiver of preemption for additional and more stringent automobile emissions standards; and (4) discretion on how to enforce standards and a responsibility to do so under the SIP.

146. Clean Air Act Amendments of 1977, 91 Stat. 685 (1977); Clean Water Act of 1977, 91 Stat. 1566 (1977).

147. 42 U.S.C. § 7604(e) (2000) (emphasis added).

148. H.R. REP. NO. 294, at 137 (1977), *reprinted in* 1977 U.S.C.C.A.N. 1077, 1215.

149. 42 U.S.C. § 7604(e). The 1977 amendments also authorized actions in state court, rather than requiring filing in federal court, but do not limit the use of federal courts. The language also contemplates interstate disputes, which certainly existed at the time, thereby extending state court jurisdiction without limiting federal jurisdiction.

suits, but not for government enforcement actions.[150] This distinction is important when considering justiciability, displacement, and even preemption.

C. The Trial Court Decisions

The Second Circuit has had *AEP* since 2005 and may be waiting for one or more of the following: (1) the EPA to act; (2) the supplemental briefs of the *AEP* parties addressing the implications of *Mass. v. EPA*; or (3) the fall 2008 appellate arguments of the *California v. GM* parties. The *AEP* and *California v. GM* trial courts dismissed the actions based on the jurisdictional issue of justiciability, rooted in the separation of powers between branches of the federal government.[151] If the pragmatic inclination of the trial courts to escape this immense litigation is understandable, the reasoning is somewhat startling. Both courts found that the federal courts were relieved of the authority to decide public nuisance cases as a general proposition if any of the factors enunciated in *Baker v. Carr*, listed below, apply:[152]

> (1) a textually demonstrable constitutional commitment of the issue to a coordinate political department;[153] (2) a lack

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150. *Compare id. with* 33 U.S.C. § 1365(e) (1988). The limitation to citizen suits *per that section* is a key reason why the *Milwaukee II* majority found that federal common law was not available to the states. For a discussion, see Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304, 328–29 (1981).

151. The *AEP* court relied on the justiciability doctrine to require that the political branches of government make an "initial policy decision" before the judiciary will intervene in matters relating to the regulation of carbon dioxide. Connecticut v. Am. Elec. Power Co., 406 F. Supp. 2d 265, 271–73 (S.D.N.Y. 2005). The GM court followed the same reasoning and clarified that the Clean Air Act, 42 U.S.C. §§ 7401–7671 (2000) and the Energy Policy and Conservation Act, 42 U.S.C. §§ 6231–6246 (2000) do not "directly address the issue of global warming and carbon dioxide emission standards." California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *29 (N.D. Cal. Sept. 17, 2007).

152. *See* Baker v. Carr, 369 U.S. 186, 217 (1962) ("Unless one of these formulations is inextricable from the case at bar, there should be no dismissal for non-justiciability . . . ."); *see also* Pawa, *supra* note 5, at 142–43 ([T]he district court proceeded to address the political question doctrine and dismissed the case precisely on that basis.").

153. The *California v. GM* court found there has been a clear delegation of the power to determine federal common law nuisance issues to the executive and legislative branches based on two considerations: (1) the Interstate Commerce Clause (ICC) indicates that the legislative branch should have authority over all such controversies, and (2) the Executive Branch has primary jurisdiction in foreign policy issues. *California v. GM*, 2007 U.S. Dist. LEXIS 68547, at *38. The court first based its decision on the grounds that the ICC somehow deprives the federal judiciary of its role to resolve real cases. *Id.* The court confused the role of the *court* (true separation of powers) with the role of the *state* (unreasonable regulatory interference under the ICC). Without any authority whatsoever, the court declared: "The Court finds that the concerns raised by the potential ramifications of a judicial decision on global warming in this case would sufficiently encroach upon interstate commerce, to cause the

of judicially discoverable and manageable standards for resolving it;[154] (3) the impossibility of deciding without an initial policy determination of a kind clearly for nonjudicial discretion; (4) the impossibility of a court's undertaking independent resolution without expressing lack of the respect due coordinate branches of the government; (5) an unusual need for unquestioning adherence to a political decision already made; or (6) the potentiality of

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Court to pause before delving into such areas so constitutionally committed to Congress." *Id.* at *42. Not only is the conclusion unsupported and incorrect, but it also proves too much if accepted since it would eliminate any nuisance claim where there was any effect on interstate activity. The power over interstate federal common law nuisance cases was not delegated to Congress through the Interstate Commerce Clause; it has always remained in the Article III Courts. U.S. CONST. art. III, § 2. cl. 1. Moreover, Congress has the power to authorize state action even where there is an unreasonable effect on interstate commerce. It used this power, for example, following U.S. Supreme Court decisions that involved the interstate transportation of hazardous waste. *See* Chem. Waste Mgmt., Inc. v. Hunt, 504 U.S. 334, 340 n.3 (1992) ("Just as Congress has power to regulate the interstate movement of these wastes, States are not free from constitutional scrutiny when they restrict that movement."). The courts also found that "the political branches have weighed in" on "foreign policy" questions, and determined that the issues are relegated to the executive branch. *California v. GM*, 2007 U.S. Dist. LEXIS 68547 at *42. *But see* Thomas W. Merrill, *Global Warming as a Public Nuisance*, 30 COLUM. J. ENVTL. L. 293, 319–28 (2005) (arguing that since there is clearly no direct conflict with actual foreign policy, any claim would have to be grounded on a general "dormant foreign policy" consideration; an argument that he finds unpersuasive since virtually any issue with international overtones would therefore be barred). The U.S. Supreme Court in *Massachusetts v. EPA* similarly gave short shrift to the foreign policy and national defense arguments raised in that case. Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1463 (2007).

154. The application of this factor is a tortured denial of hundreds of years of the evolution of the law as well as the courts' own experience fitting the law to facts in complex cases: the difference here is scale, not methodology or formula. The *California v. GM* court correctly stated the standard and then misapplied it. These cases are no more difficult than any other large transboundary nuisance case, and the U.S. Supreme Court has validated the continuation of large, complex, interstate nuisance cases even following the passage of complicated federal environmental quality statutes. *Milwaukee II* notes with approval that environmental agencies can continue to utilize federal common law. *Milwaukee II*, 451 U.S. 304, 313–14 (1981). That should be the end of the inquiry on the issue of separation of powers since the courts have hundreds of years of experience in both equitable and legal remedies, including the incorporation of radical new technologies. The court's ruling was also premature because there is no theoretical problem with damages and no need to decide without the benefit of evidence and experts. The trial courts support their decisions by holding that the many interstate nuisance cases cited by the plaintiffs are distinguishable because the remedy is different. That is true only in the motor vehicle case, but it actually tends to prove that the court ought to accept the remedy of damages, just as actions for equitable remedies were validated by the cases cited by plaintiffs. Given hundreds of years of application of the damages formulae, the issue of damages should present much less of a problem than the issue of equitable remedies. The courts then concluded that the cases are factually distinguishable because the instant litigation involves more national and international issues. This distinction is debatable; the courts provided no authority to indicate support for the contention that the courts' reluctance to hear the case should increase with the number of issues involved. Instead, the courts, perhaps unintentionally, focused on the admittedly widespread political effects of the case rather than on whether the court possessed the power to decide the issues that lead to those effects.

> embarrassment from multifarious pronouncements by various departments on one question.[155]

The trial courts selected options one, two, and three. The standards are both murky and subjective. The cases could quickly become Justice Kennedy's call, as he will likely be the deciding vote in the U.S. Supreme Court. The question is what role Justice Kennedy sees for the courts and the states given the great discretion still accorded to the *federal* executive by the Court in *Mass. v. EPA*, especially in view of the EPA's refusal to regulate.[156] The answer should be that the public nuisance cases represent a different and complementary vehicle that is necessary to protect life and property when the executive and legislative branches have not adequately done so.

The court in *California v. GM* correctly noted that its inquiry should be restrained: "[b]ecause these claims touch on public policy, foreign policy, and political issues, it is tempting to jump to the conclusion that such claims are barred by the political question doctrine."[157] However, "it is error to suppose that every case or controversy which touches foreign relations lies beyond judicial cognizance."[158] The justiciability inquiry is limited to "'political questions,' not . . . 'political cases,'"[159] and should be made on a "case-by-case" basis.[160] Thereafter, though, both courts, seemingly overwhelmed by the technical complexity of the cases, jumped to the wrong conclusion.

All of the bases for the decisions fail because (1) courts have traditionally decided complex transboundary nuisance cases for hundreds of years amid radically changing technologies,[161] and (2) the statutory

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155. Baker v. Carr, 369 U.S. at 198.

156. Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1463 (2007).

157. *California v. Gen. Motors Corp.*, 2007 U.S. Dist. LEXIS 68547, at *16 (quoting Alperin v. Vatican Bank, 410 F.3d 532, 537 (9th Cir. 2005)).

158. Baker v. Carr, 369 U.S. at 211.

159. *Id.* at 217.

160. *Id.* at 211.

161. "Long before the 1972 decision in *Illinois v. Milwaukee*, federal common law enunciated by this Court assured each State the right to be free from unreasonable interference with its natural environment and resources when the interference stems from another State or its citizens." Georgia v. Tenn. Copper Co., 206 U.S. 230, 238–39 (1907). *See* New Jersey v. New York, 283 U.S. 473, 482 (1931) (upholding a claim for ocean dumping of garbage that then affected out-of-state property); *Tenn. Copper Co.*, 206 U.S. at 238–39 (upholding a claim concerning interstate sulfur dioxide emissions); Missouri v. Illinois, 200 U.S. 496, 520–21 (1906) (upholding a claim concerning the discharge of raw sewage into an interstate river); *see also Milwaukee II*, 451 U.S. at 335 (Blackmun, J., dissenting) ("The right to such federal protection is a consequence of each State's entry into the Union and its commitment to the Constitution."); *see, e.g.*, Huron Portland Cement Co. v. Detroit, 362 U.S. 440, 445 (1960) (holding that municipal pollution laws were constitutionally applied to federally licensed steamships);

framework plainly contemplates continued life for nuisance actions at both the federal and state level.[162] The attorneys general argue persuasively that under *Georgia v. Tennessee Copper Co.*,[163] the states retained all of their residual powers on joining the Union.[164] For example, in *Milwaukee II*, the dissent noted that the EPA could utilize the federal common law of nuisance as a supplement to the statutory framework of the CWA.[165] If the courts can continue to adjudicate federal common law nuisance claims brought by the federal government with the approval of the U.S. Supreme Court, the cases are *justiciable.* Justiciability is only a dispute between branches of the federal government, so once the power of the federal courts is validated for a class of cases (interstate public nuisance), the courts have the same powers for *any* litigants in interstate public nuisance cases, particularly multiple states.[166] Moreover, as noted above, the state powers to pursue public nuisance have been approved and confirmed by the EPA through SIPs since the inception of the CAA in the early 1970's and affirmed by Congress in the 1977 amendments.[167] Since federal courts have decades of experience deciding these cases, there is no substantial reason that the federal courts should not be able to provide the superior federal common

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Boomer v. Atl. Cement Co., 257 N.E.2d 870, 871–72. (N.Y. 1970) (reviewing the evolution of trespass and nuisance); Green, *supra* note 138, at 552 (same).

162. 42 U.S.C. § 7604(e) (2000); 33 U.S.C. § 1365(e) (2000).

163. Georgia v. Tenn. Copper Co., 206 U.S. 230, 237 (1907) (describing the quasi-sovereign nature of states).

164. In the California Attorney General's words:

> When the states by their union made the forcible abatement of outside nuisances impossible to each, they did not thereby agree to submit to whatever might be done. They did not renounce the possibility of making reasonable demands on the ground of their still remaining quasi-sovereign interests; and the alternative to force is a suit in this court.

Brief of Attorney General at 6, California v. Gen. Motors Corp., No 06-cv-05755 MJJ (N. D. Cal. Mar. 6, 2007) (citing Georgia v. Tenn. Copper Co., 206 U.S. 230, 237 (1907)). Justice Kennedy is familiar with this case, having famously offered it as justification for state standing in *Mass. v. EPA* at oral argument. Transcript of Oral Argument at 15, Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, (2007) (No. 05-1120).

165. [T]here can be no merit to the Court's suggestion, ante, at 325, that the technical difficulty of the subject matter renders inappropriate any recourse to the common law. The complexity of a properly presented federal question is hardly a suitable basis for denying federal courts the power to adjudicate. Indeed, the expert agency charged with administering the Act has not hesitated to invoke this common-law jurisdiction where appropriate.

Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304, 349 n.25 (1981) (Blackmun, J., dissenting) (internal citations omitted).

166. The issue of justiciability was not specifically raised in *Milwaukee II*, seemingly because the Court had no difficulty with continued EPA use of the federal common law, which shows that the courts can in fact manage such disputes.

167. *See supra* notes 144–47.

law remedies. This also seems circular since the court will presumably be faced with the same facts in the interstate nuisance cases approved in *International Paper Co. v. Oullette*.[168] We agree with Professor Zasloff that the justiciability issue is bogus, or as Professor Parenteau has noted, the courts probably just thought the cases were way too much work and that legislative or executive action would eliminate need to decide the cases.

D. To Displacement—and Beyond

There remain real issues of displacement of federal common law. If state actions are limited by the preemption doctrine, or the complexity of the "source state law test" per *International Paper Co. v. Oulette*,[169] or by the commerce clause, there would be no redress but for the federal common law. Two principal arguments against the continued existence of federal common law are (1) the statutory framework of the CAA itself admits to no need for federal common law nuisance and (2) the foreign policy implications of the case interfere with the control of foreign policy by the executive branch. As noted above, we do not find this latter argument compelling.[170]

Reliance by defendants and the trial courts on CWA precedent, particularly *Milwaukee II,* is misplaced.[171] The virtue of the common law as a complementary enforcement mechanism designed to address real injury as opposed to abstract regulation was extolled in *Milwaukee I* and the *Milwaukee II* dissent.[172] The CWA was overhauled following *Milwaukee I*, and the Court shifted to hold that, given the new comprehensive legislation, there was no need for federal common law.[173] This point was vigorously disputed in the *Milwaukee II* dissent.[174]

Milwaukee II is readily distinguishable for two reasons. First, air is a qualitatively different medium from water because it affects an entire jurisdiction rather than a water body. Second, the design of the CAA and

168. Int'l Paper Co. v. Ouellette, 479 U.S. 481, 499 (1987).

169. Id. at 499.

170. *See supra* note 154.

171. Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304, 327–29 (1981).

172. *Id.* at 336–37; Illinois v. Milwaukee (*Milwaukee I*), 406 U.S. 91, 103–05 (1972).

173. The *Milwaukee II* court rejected the state's argument that the anti-preemption language that allowed states to set more stringent discharge standards could be stretched into an implied power to permit states to initiate *federal* common law nuisance claims. The Court held that the savings clause for "citizen suits" provisions (a) applied *only* to citizens' suits and (b) did not add any rights but only preserved whatever might exist. Since the court had already found there was no longer any federal common law action, absent more specific statutory authorization it would be unavailing anyway. *Milwaukee II*, 451 U.S. at 327–29.

174. *Id.* at 335 (Blackmun, J., dissenting).

the CWA differ markedly in their breadth and depth of options for state activity.[175] There is longstanding statutory and regulatory recognition of the need for states to supplement enforcement of the CAA through SIPs and public nuisance actions. Section 7604(e) of the CAA specifically confirms and extends these historic powers.[176] The majority in *Milwaukee II* found that CWA common law preservation language is narrowly drawn and thereby limited to "citizens suits," foreclosing state action.[177] In contrast, Section 7604(e) is expansive and specifically contemplates both public and private supplemental actions. Thus, both the issues of displacement and preemption disappear with examination of the plain language of the governing statute. It follows that since EPA public nuisance actions utilize the federal common law, these federally authorized public nuisance actions should also utilize the federal common law, especially since the SIPs, which authorize these actions, are considered federal law.

There is also no sound policy reason the courts should reach to find that states have been foreclosed from a traditional tool, as Justice Blackmun cautioned in *Milwaukee II*.[178] If federal common law is available for the federal government (as *Milwaukee II* confirms), and federal or state courts are available in general for nuisance actions, why should access to one of the most appropriate bodies of law for addressing interstate air pollution be denied to the state representatives who have primary responsibility for the resulting air quality in their jurisdictions, especially since that interpretation

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175. See the dissent in Nat'l Audubon Soc'y v. Dept. of Water and Power, 869 F.2d 1196, 1206–14 (9th Cir. 1988) and Simmons & Cutting, *supra* note 36, *passim,* for a discussion of the viability of a cause of action for air pollution under the federal common law. In the CWA Congress established uniform standards, with the principal powers of discretion to states limited to: (1) whether to impose more stringent standards in a given water body; and (2) whether to issue a discharge permit if the receiving waters are at capacity. 33 U.S.C. § 1313(d) (2000). In contrast, Congress set air quality standards for many pollutants, but delegated most of the creative process, including both coverage and enforcement, to the states. 42 U.S.C. § 7410 (2000). Discretionary areas include: (1) the right to determine what facilities to regulate; (2) the statutory right of attorneys general to bring nuisance actions in general; (3) the right to set more stringent state air quality standards; and (4) the flexibility to establish SIPs with widely varying coverage and emissions regulations keyed to the state's air basins and ecosystems; and (5) the right to set emissions standards, a right recently upheld by two district courts: Cent. Valley Chrysler Jeep v. Goldstone, No. CV F 04-6663, 37 E.L.R. 20309 (E.D. Cal. Dec. 11, 2007), and Green Mountain Chrysler Plymouth, v. Crombie, 508 F. Supp. 2d 295 (D. Vt. 2007), but the EPA later denied the waiver

176. 42 U.S.C. § 7604(e).

177. "Respondents argue that this evinces an intent to preserve the federal common law of nuisance. We, however, are inclined to view the quoted provision as meaning what it says: that nothing in § 505, the citizen-suit provision, should be read as limiting any other remedies which might exist." *Milwaukee II*, 451 U.S. at 328–29 (1981). The majority held that the section did not really authorize any action. The dissenters, however, urged that the plain language of the savings clause preserved useful and longstanding remedies under the federal common law. *Id.* at 341–42 (Blackmun, J., dissenting).

178. *Id.* at 334 (Blackmun, J., dissenting).

would result in a multitude of uncoordinated state actions? Absent displacement, the federal common law of nuisance would be available.

Displacement in the context of the CAA is an open question. In *New England Legal Foundation v. Costle,* for example, the court of appeals held that private litigants could not rely on a nuisance cause of action because the EPA had issued a variance approving the very facility and the very pollutants that were the subject of the action.[179] The court had no difficulty finding displacement for specifically regulated facilities, but carefully limited the decision to the facts and avoided the question of whether all federal common law nuisance actions had been eliminated by the CAA.[180] Professor Merrill proposes to refine this inquiry by borrowing the concept of "field" versus "conflict" preemption, although preemption is clearly a more stringent standard than displacement.[181] We agree with Professor Merrill that the attorneys general have better arguments if a "conflict displacement" test is utilized because the remedies are truly complementary.[182] We disagree with Professor Merrill's argument that "field" displacement should occur based on *any* substantial legislative activity. We rely on the statutory construction and also agree with the dissenters in *Milwaukee II,* who argue that even under the CWA, the most harmonious interpretation would be to permit federal common law nuisance actions as a complementary remedy rather than encourage the inevitable patchwork of state actions that would result.[183] Professor Zasloff suggests that there never really was any federal common law, or if there was, it was limited to interstate conflicts.[184] However, *Milwaukee I* and *Milwaukee II* certainly seem to acknowledge that a federal common law action was available for the state and federal governments, given the variety of interstate wrongs that could be committed by a state or its citizens against another.[185]

Noteworthy, however, is recognition in the attorneys generals' briefs that at a certain point (more like the clear and distinct language from Congress) federal regulation may displace common law.[186] Where does

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179. New England Legal Fund v. Costle, 666 F.2d 30, 32 (2nd Cir. 1981).

180. *Id.*

181. Merrill, *supra* note 153, at 311.

182. *Id.*

183. *Milwaukee II,* 451 U.S. at 353–54 (1981) (Blackmun, J., dissenting).

184. Zasloff, *supra* note 20, at 1849 (citing Professor Kirsten H. Engel, *Harmonizing Regulatory and Litigation Approaches to Climate Change Mitigation: Incorporating Tradable Emissions Offsets Into Common Law Remedies,* 155 U. PA. L. REV. 1563 (2007)).

185. *See supra* note 161.

186. Appellant's Opening Brief in Ninth Circuit Court of Appeals at 14, California v. Gen. Motors Corp. (on file with author). Zasloff, *supra* note 20, at 1849.

cap-and-trade regulation fall on the continuum? Professor Zasloff contends that cap-and-trade legislation can be harmonized with damages in public nuisance cases and notes that Professor Engel suggests bolting a "Clean Development Mechanism," like the E.U.'s, as an equitable remedy.[187] We agree, as the cap-and-trade proposals as a rule do not offer redress for damages or a complementary enforcement mechanism.

Finally, arguments can be made that *Milwaukee II* is not sound law in water pollution either, and that the current U.S. Supreme Court might want to revisit *Milwaukee II* in light of the massive consequences alleged in the attorney general's litigation and the inaction of the EPA. The U.S. Supreme Court could easily renew the balance of power by permitting complementary actions, allowing the legislative and executive branches to address generators proactively, and allowing courts to protect receptors from many consequences that still occur, as the *Milwaukee I* court found[188] and Justices Blackmun, Marshall, and Stevens argued in the *Milwaukee II* dissent:

> The Court's analysis of federal common-law displacement rests, I am convinced, on a faulty assumption. In contrasting congressional displacement of the common law with federal pre-emption of state law, the Court assumes that as soon as Congress "addresses a question previously governed" by federal common law, "the need for such an unusual exercise of lawmaking by federal courts disappears." This "automatic displacement" approach is inadequate in two respects. It fails to reflect the unique role federal common law plays in resolving disputes between one State and the citizens or government of another. In addition, it ignores this Court's frequent recognition that federal common law may complement congressional action in the fulfillment of federal policies.[189]

The dissent argued that polluters could and should comply with both standards because one was permitted by statute, and the other was required by the common law to protect the receptors. To do otherwise provides a

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187. Zasloff, *supra* note 20, at 1871.

188. The majority in *Milwaukee I* stated that public nuisance claims and statutory claims can be an effective combination to address air pollution. Illinois v. Milwaukee (*Milwaukee I*), 406 U.S. 91, 107 (1972).

189. *Milwaukee II*, 451 U.S. at 333–34 (1981) (Blackmun, J., dissenting) (footnote omitted) (citation omitted).

shield that Congress did not intend.[190] Thus, the convenient but mechanical test of the majority overrode the original purpose of the federal common law to protect receptors from any failures, or "gaps," in the regulatory system.[191]

Constructions of *Milwaukee II* that have the effect of imposing a nuisance (or trespass) without any remedy to private parties for special damages would conflict with the U.S. Supreme Court decision in *Richards v. Washington Terminal Co. (Richards)*, as well as state court holdings such as *Bormann v. Board of Supervisors* and *Gacke v. Pork Extra, Inc.*[192] Imposition of a nuisance constitutes a taking by nuisance in violation of the Fifth Amendment, an interpretation to be avoided.[193] In *Richards*, a railroad built a tunnel on a route selected and authorized by Congress, immediately adjacent to plaintiff's property.[194] The court held that Congress could not immunize private railroads from suits for private nuisance even when the route was dictated by Congress and not by the railroad.[195]

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190. Thus, under the statutory scheme, any permit issued by the EPA or a qualifying state agency does not insulate a discharger from liability under other federal or state law. . . . To the contrary, the permit granted pursuant to § 402(k), 33 U.S.C. § 1342(k), confers assurance with respect to certain specified sections of the Act, but the requirements under other provisions as well as separate legal obligations remain unaffected. Congress plainly anticipated that dischargers might be required to meet standards more stringent than the minimum effluent levels approved by the EPA. Those more stringent standards would necessarily be established by other statutes or by common law. Because the Act contemplates a shared authority between the Federal Government and the individual States, § 101 (b), 33 U. S. C. § 1251(b) (1976 ed., Supp. III), it is entirely understandable that Congress thought it neither imperative nor desirable to insist upon an exclusive approach to the improvement of water quality.

Milwaukee II, 451 U.S. at 341 (Blackmun, J., dissenting) (footnotes omitted) (citation omitted).

191. The Act provides no support for deviation from well-settled conflict-of-law principles. Under conflict-of-law rules, the affected State's nuisance law may be applied when the purpose of the tort law is to ensure compensation of tort victims. "[It] is beyond dispute" that affected States have "a significant interest in redressing injuries that actually occur within the State." This traditional interest of the affected State, involving the health and safety of its citizens, is protected by providing for application the affected State's own tort laws in suits against the source State's polluters. The State's interest in applying its own tort laws cannot be superseded by a federal act unless that was the clear and manifest purpose of Congress.

Intl. Paper Co. v. Ouellette, 479 U.S. 481, 502 (Breyer, J., dissenting) (citing Keeton v. Hustler Magazine, Inc., 465 U.S. 770, 776 (1983)).

192. *Milwaukee II*, 451 U.S. at 317; Richards v. Wash. Terminal Co., 233 U.S. 546 (1913); Bormann v. Bd. of Supervisors, 584 N.W.2d 309, 321 (Iowa 1998); Gacke v. Pork Xtra, L.L.C., 684 N.W.2d 168, 175 (Iowa 2004).

193. U.S. CONST. amend. V.

194. *Richards*, 233 U.S. at 548.

195. *Id.* at 557.

E. Fashioning the Remedy

We discuss remedies issues in more detail following the arguments for trespass as a companion theory.[196] Public prosecutors' actions seem superior to many other methods since their jurisdiction is statewide and they are charged with acting in the public interest. Public prosecutor actions would thus allow a limited number of entities to manage multiple micro-environments. However, as recognized in *Boomer*, therein lies a problem—limited judicial resources.[197] While the facts alleged are complex, modern litigation tools make management of the cases brought by public officers more efficient, and public officers also have extensive experience managing extensive claims and remedies. Thus, the transactional costs could be less than in individually litigated cases and more claims could be processed.

F. The State Court Alternative

We agree with Professor Zasloff that the federal common law is not exclusive, although we agree with the plaintiffs that it is certainly more appropriate.[198] Once there is a resolution on the further issue of state claims in federal court, the fallback position for the states is to take action in state court. On balance, we agree with the California position that the federal common law offers national uniformity and a ready forum for any affected state that is far superior to multiple state court actions. If it were necessary to forgo state court remedies because of preemption, to demonstrate the need for the federal common law, we think the states must be tempted to concede, though we also think that it is unnecessary to do so.

While multiple, multi-state litigation would be labor-intensive, presumably states can coordinate as they have in past anti-trust and tobacco cases.[199] While both substantive and procedural laws may differ from state to state, the litigation process will certainly permit coordination of discovery. Professor Zasloff lists several advantages to state court: (1) a better basis in policy; (2) enhancement of state legislative efforts; and (3) enhancement by regional diversity.[200] Advantages of state law may also include the following. First, state property-related law concepts include

196. *See infra* Part III. For an excellent discussion, see Alex, *supra* note 4 and Pawa, *supra* note 5.

197. Boomer v. Atl. Cement Co., 257 N.E.2d 870, 871 (N.Y. 1970). *See infra* note 333.

198. Zasloff, *supra* note 20, at 1852–53.

199. Even if actions in each affected state were required or desirable, the workload is at least as great for the defendants, and the hometown venue might be more favorable in any event.

200. Zasloff, *supra* note 20, at 1830.

wide discretion to the states to modify state law through their legislatures and courts.[201] Second, the use of state law may introduce additional causes of action, including trespass and unfair competition. These cumulative actions offer some alternative rights, theories, and remedies that might prove useful. To the extent equipment is modified, it may benefit all states. Finally, state law claims might be less susceptible to intervention by the U.S. Supreme Court.

However, there are also some disadvantages to state court actions, which include preemption defenses resulting in choice of law issues and interstate litigation in multiple state courts and in federal court (the problem envisioned by the *Milwaukee II* dissenters when they argued for continuation of federal common law nuisance).[202] The *Milwaukee II* majority expressly noted that preemption is a higher standard than displacement.[203] The recent case of *Bates v. Dow Agrosciences, L.L.C.* enunciated the test:

> [B]ecause the States are independent sovereigns in our federal system, we have long presumed that Congress does not cavalierly pre-empt state-law causes of action. In areas of traditional state regulation, we assume that a federal statute has not supplanted state law unless Congress has made such an intention "clear and manifest."[204]

In *AEP* and *California v. GM*, the statutory and regulatory history validates the actions.[205] As in *Bates*, the preemption language in the statute should be narrowly construed.[206] There the Court held that the preemption

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201. *See* Stevens v. Cannon Beach, 510 U.S. 1207, 1211–12 (1994) (Scalia, J., dissenting) (arguing that certiorari should be granted following an Oregon Supreme Court decision that extended public trust concepts); Kim v. New York, 681 N.E.2d 312, 315 (N.Y. 1997) (explaining principles of state law); People v. Lim, 118 P.2d 472, 476 (Cal. 1941) (identifying a state's flexibility to declare public nuisances). *Cf.* Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1015–16 (1992) (discussing deference to state law definitions of property interests as one example of the advantages of state law).

202. Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304, 353–54 (1981) (Blackmun, J., dissenting).

203. *Id.* at 316–17.

204. Bates v. Dow Agrosciences, L.L.C., 544 U.S. 431, 449 (2005) (citation omitted).

205. *See supra* text accompanying notes 178–83. Unlike the plaintiffs in *AEP*, the plaintiffs in *California v. GM* sought damages. In the automakers case, the court recognized "that any state that is dissatisfied with the federal government's global warming policy determinations may exercise its 'procedural right' to advance its interests through administrative channels and, if necessary, to 'challenge the rejection of its rulemaking petition as arbitrary and capricious.'" California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *33–34 (N.D. Cal. Sept. 17, 2007) (citing Clean Air Act, 42 U.S.C. § 7607 (2000)).

206. *Bates*, 544 U.S. at 452.

clause for state labeling requirements within the Federal Insecticide, Rodenticide, and Fungicide Act (FIFRA) did not affect state tort claims that were not based on labeling requirements.[207] The preemption clause in the CAA is narrowly limited to standards applicable to motor vehicles per § 209.[208] Section 116 reserves the power to the states to impose more stringent standards in all areas other than the narrow class of preempted motor vehicle standards[209] and says nothing about common law actions by either public officers or private individuals. Section 7604(e) confirms that no provision of law restricts public and potentially private common law actions.[210] In fact, these actions must be considered part of the scheme of the statute rather than at odds with it. In *Bates,* the Court acknowledged the value of parallel regulatory and common law actions to enforce a regulatory scheme,[211] and the majority included the key votes from Mass. v EPA: Stevens, Kennedy, Ginsburg, Souter, and Breyer (joined by Rehnquist and O'Connor).[212] The Court cautioned that courts should not search to find preemption and distinguished *Cippolone v. Liggett Group*[213] based on differences in statutory language. The Court also specifically rejected defense arguments that focused on speculative *effects* of the common law.[214] Defendants contended that they would have to modify their labels to comply with the requirements of the common law cases, much as defendants in the automakers case contend that the effects of the litigation might impact emissions or fuel economy, thus bootstrapping the preemption argument.[215] The special status accorded states in *Mass. v. EPA*, grounded on inherent rights of the states,[216] should bolster this argument in actions to protect the public.

The *Bates* Court also held that a common law case is not precluded by a "permit shield" (in that case, registration under FIFRA).[217] The *Bates* Court reasoned that common law actions appropriately utilize state common law

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207. *Id.* at 444.

208. 42 U.S.C. § 7541 (2000).

209. *Id.* § 7418.

210. *Id.* § 7604(e).

211. *Bates*, 544 U.S. at 447–48.

212. *Id.* at 433, 447–48.

213. *Id.* at 451. This tobacco liability case held that state court actions are preempted by the very broad language of the preemption clause. Cipollone v. Liggett Group, 505 U.S. 504, 515 (1992).

214. *Bates*, 544 U.S. at 445–47.

215. *Id.* at 445, 448.

216. *See e.g.*, Georgia v. Tenn. Copper Co., 206 U.S. 230, 237 (1907) (describing the quasi-sovereign nature of states).

217. *See Bates*, 544 U.S. at 442, 444, 451 (stating that a pesticide manufacturer abiding by certain common-law rules that mirror the requirements codified in the federal statute, is acceptable and can give rise to common-law claims that are not pre-empted by the federal statute).

to protect state victims except as explicitly preempted by the governing act.[218] FIFRA is an extensive statute, yet the court saw the place of the common law action.[219] Moreover, the *Bates* Court emphasized that there was a history of litigation over toxics prior to the Act[220] and that these actions provided complementary incentives for manufacturers to avoid injury; reasons that apply to the current actions. The history of actions for nuisance (and trespass) by air pollutants spans several centuries.[221]

We also think that the reasoning of the dissent in *Milwaukee II*, by analogy, is persuasive if the court found any reason to go beyond the language of the CAA.[222] As noted earlier, the *Milwaukee II* dissent clearly saw value in a complementary system of accountability, as did the majority in *Milwaukee I*.[223] The case of *International Paper Co.* v. *Ouellette* validates state law actions in federal court based on interstate claims with the proviso that the source state law should be utilized. *Ouellette* was a case where property owners (not the state), on Lake Champlain in Vermont, sued New York point sources on state common law grounds.[224] The Court unanimously found that even if the CWA did not preempt state common law suits, there was a curious and unwieldy condition that the source state law is to be applied.[225] Justice Brennan, joined by Justice Blackmun and Justice Marshall, concurring in part and dissenting in part, found that there was no reason to complicate the picture by the majority insistence that choice of law remain a significant issue, and would have simply found no preemption: "we have refused to pre-empt a State's law, even when it is

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218. *Id.*

219. *Id.* at 441–42; Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) of 1947, 7 U.S.C. § 136v (2006).

220. *Bates*, 544 U.S. at 449–450.

221. The Supreme Court also recently decided a medical products case on preemption grounds. *See* Riegal v. Medtronic, Inc., 128 S. Ct. 999, 1007 (2008) (stating that the preemption clause in the Act undermined the claim). Another medical device case was affirmed by a split court, with Roberts recused. Desiano v. Warner-Lambert Co., 467 F.3d 85 (2d Cir. 2006), *aff'd by,* Warner-Lambert Co. v. Kent, 128 S. Ct. 1168 (2008).

222. Milwaukee v. Illinois (*Milwaukee II*), 451 U.S. 304, 334 (1981) (Blackmun J., dissenting). See also Justice Brennan's dissent in *Oullette*:

> As a threshold matter, the Court's opinion assumes that in enacting the Act, Congress valued administrative efficiency more highly than effective elimination of water pollution. Yet there is no evidence that Congress ever made such a choice. Instead, the Act reflects Congress' judgment that a rational permit system, operating in tandem with existing state common-law controls, would best achieve the Act's primary goal of controlling water pollution.

Int'l Paper Co. v. Oullette, 479 U.S. 481, 504 (1987) (Brennan, J., dissenting).

223. Illinois v. Milwaukee (*Milwaukee I*), 406 U.S. 91, 103–05 (1972); *Milwaukee II*, 451 U.S. at 334.

224. Int'l Paper Co. v. Oullette, 479 U.S. 481, 483–85 (1987).

225. *Id.* at 497.

contrary to subsidiary objectives concerning administration, if the State's law furthers the federal statute's primary purpose and is consistent with the Act's saving of States' authority in an area traditionally regulated by States."[226] For example, a polluter could comply with the minimum standards of the Act yet still cause damage for which the common law may provide the only remedy.[227] This reasoning appears to be in line with the decision of key members of the majority in *Bates*, who would determine the outcome in the public nuisance cases.[228] We also agree with the dissent in *Ouellette* and with Professor Zasloff that state law of any affected state should be available, since the logic of "consolidating" state law actions is more harmonious with the national scope of the CWA (and by extension, here, the CAA),[229] and so many sources are multi-state.[230] Even locating the source state as a matter of fact may prove difficult, with business entities located within multiple jurisdictions. Whether the question turns on either the majority or the dissenting view, complex choice of law issues remain. This is why we think federal common law is preferable.

Courts should not find preemption under the CAA, even for the automakers suit. The "preemption clause" of § 209 is limited to "motor vehicle standards," a term that is much more precise than the broad language of the tobacco cases ("regulations" and "requirements"),[231] which was a key distinction (but different statute) noted by the Court in *Bates*.[232] Second, since the CAA expressly contemplates continued actions by the attorneys general, the question of whether litigation is even considered "standards" is not relevant.[233] There is no limitation in § 7604(e) to cases involving stationary sources and it appears in the general provisions part of the CAA.[234] This of course makes sense, because the effects to receptors and state air quality occur regardless of the source.[235]

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226. *Id.* at 504–05 (Brennan, J., concurring in part and dissenting in part).

227. *Id.* at 497 (Powell, J., majority opinion).

228. Bates v. Dow Agrosciences L.L.C., 544 U.S. 431, 441–42 (2005).

229. *Id.* at 504–05 (Brennan, J., concurring in part and dissenting in part); Zasloff, *supra* note 20, at 1855.

230. Zasloff, *supra* note 20, at 1855.

231. Cipollone v. Liggett Group, Inc., 505 U.S. 504, 521 (1992). *But see Cipollone*, 505 U.S. at 545 (Blackmun, J., concurring in part and dissenting in part) (arguing for the supplemental deterrence provided by tort litigation); Zasloff, *supra* note 20, at 1857.

232. *Bates*, 544 U.S. 431.

233. 42 U.S.C. § 7604(e) (2000).

234. *Id.*

235. *See* Her Majesty the Queen v. Detroit, 874 F.2d 332 (6th Cir. 1989) (holding that: (1) claims under Michigan Environmental Protection Act were not removable under the "artful pleading" doctrine; (2) prior permit proceeding before the Michigan Air Pollution Control Commission was not a prior adverse determination of plaintiffs' claims and thus did not preclude their action; and (3) Clean Air Act did not displace state law which was as strict or stricter than emission limitations established in the

The arguments on CAFTA preemption are similarly unpersuasive because CAFTA specifically refers to the CAA; therefore, § 209 applies.[236] The plain meaning is simple: a regulation under § 209 may have an effect on fuel economy, but that effect was always anticipated (up or down). The § 209 waiver and the correlative language in CAFTA would be superfluous if CAFTA meant that no effect on fuel economy could ever occur.[237] As Justice Stevens wrote for the majority in *Mass. v. EPA*:

> EPA has been charged with protecting the public's "health" and "welfare," 42 U.S.C. § 7521(a)(1), a statutory obligation wholly independent of DOT's mandate to promote energy efficiency. *See* Energy Policy and Conservation Act, § 2(5), 89 Stat. 874, 42 U.S.C. § 6201(5). The two obligations may overlap, but there is no reason to think the two agencies cannot both administer their obligations and yet avoid inconsistency.[238]

The manufacturers in *California v. GM* are actually arguing the "effects test" rejected by the *Bates* Court.[239] Manufacturers do not even have to adjust emissions (or fuel economy) in response to litigation for damages or injunction. Manufacturers can use any number of options, including: (1) limiting the mix of vehicles sold to reach the desired net results; (2) changing the number of vehicles sold in general; or (3) compensating via damages or offsets of emissions accomplished by carpools, mass transit, indirect source control, or other usual tools. Finally, any construction that eliminated at least a private nuisance claim (for special damages only) should run afoul of U.S. Supreme Court cases, such as *Richards,* and state cases like *Bormann* and *Gacke.* This conflict should trigger government liability, a result that can be avoided by permitting the common law actions.

Defendants in both cases argued that a state action would conflict with dormant commerce clause restrictions as in *B.M.W. of North America, Inc. v. Gore* (*Gore*).[240] *Gore* was a case where the Court concluded that the

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Clean Air Act); Cent. Valley Chrysler-Jeep, Inc. v. Goldstene, 529 F. Supp. 2d 1151, 1165 (E.D. Cal. 2007) (holding that California's regulations, if granted waiver of preemption under the Clean Air Act, would not be preempted).

236. Dominican Republic-Central America-United States Free Trade Agreement Implementation Act (CAFTA) of 2005, 19 U.S.C. § 4001 (2000). *See* Trade Agreements, Office of the U.S. Trade Representative, http:// www.ustr.gov/Trade_Agreements/Section_Index.html (last visited Apr. 10, 2005).

237. *Id.*

238. Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1462 (2007).

239. Bates v. Dow Agrosciences L.L.C., 544 U.S. 431, 445 (2005).

240. B.M.W. of N. Am., Inc. v. Gore, 517 U.S. 559 (1996).

plaintiff specifically sought to penalize B.M.W. for its lawful activities in other states and to change that behavior.[241] The Court was concerned that the actions of one state that were designed to modify lawful behavior in another state would interfere with interstate commerce.[242] Nevertheless, Congress can also authorize actions that would otherwise violate the dormant commerce clause and has done so, for example in the interstate compacts that were authorized following a line of cases that included *Chemical Waste Management v. Hunt.*[243] These actions are authorized by SIPs and acknowledged by 42 U.S.C. § 7604(e).[244] Even if this issue were to be reached, these cases still prevail, since lawful actions in State A that adversely impact lives or property in State B can still be prosecuted under *Gore*:

> To avoid such encroachment, the economic penalties that a State such as Alabama inflicts on those who transgress its laws, whether the penalties take the form of legislatively authorized fines or judicially imposed punitive damages, must be supported by the State's interest in protecting its own consumers and its own economy. Alabama may insist that BMW adhere to a particular disclosure policy in that State. Alabama does not have the power, however, to punish BMW for conduct that was lawful where it occurred and that had no impact on Alabama or its residents. Nor may Alabama impose sanctions on BMW in order to deter conduct that is lawful in other jurisdictions.[245]

This latter phrase refers to the intent to change lawful behavior in other jurisdictions that, like those in the preceding sentence, have no effect in the state bringing the action, specifically State A's regulation of State B's conduct toward citizens of State A while they are in State B.[246] The Court also specifically left open the question as to whether a state can attempt to deter unlawful conduct in another jurisdiction. Even under source state law, that conduct should constitute a public nuisance.[247] But *California v. GM* is concerned with the settled categories of: (1) damages within the plaintiff's jurisdiction, caused by defendants that are sometimes outside the

241. *Id.* at 572–73.

242. *Id.* at 571–72.

243. Chem. Waste Mgmt., Inc. v. Hunt, 504 S. Ct. 334, 340 n.3 (1992) ("Congress has power to regulate the interstate movement of . . . wastes.").

244. 42 U.S.C. § 7604(e) (2000).

245. *Gore,* 517 U.S. at 572–73.

246. *Id.* at 571 n.16.

247. *Id.* at 573, 574 n.20.

jurisdiction, and (2) claims that are for in-state *damages* even though the acts occurred elsewhere and *not* for civil penalties or punitive damages.[248] This is precisely the logic of the federal common law interstate nuisance cases, such as *Tennessee Copper,* relied upon by the attorneys general.[249] A contrary result would effectively insulate a polluter from damage anywhere but in its source state. Combined with the difficulty of ascertaining the "source state" law under *Ouellette*, this result argues for application of the most logical and efficient law: the federal common law of nuisance per *Tennessee Copper* and related cases.[250] Notably, the Court also expressly approved consideration of conduct elsewhere in determining the degree of culpability.[251]

G. Trespass as a Complementary Claim

In the words of Robert Frost, "[g]ood fences make good neighbors."[252] The concept of trespass may offer some advantages to the thicket of obstructions noted in the nuisance cases. We have argued that visualizing the world as a series of physical spaces with clear boundaries can assist in understanding the movement of pollution through time and space, as well as the effects that might result on the receptor properties, whatever the pollutant may be (see Figure 1).[253] Trespass is a true "bright-line" concept with property boundaries as "the line." Proof requires only: (1) knowledge that emissions are occurring, and (2) invasion of the physical space of the plaintiff.[254] While a legislature might constitutionally legalize a nuisance

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248. California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, *47 (N.D. Cal. Sept. 17, 2007).

249. *Id.* at *45 (citing Georgia v. Tenn. Copper Co., 206 U.S. 230 (1907)).

250. Int'l Paper Co. v. Oullette, 479 U.S. 481 (1987); Georgia v. Tenn. Copper Co., 206 U.S. 230 (1907). The Court recognized the states' interest in federal common law:

> When the states by their union made the forcible abatement of outside nuisances impossible to each, they did not thereby agree to submit to whatever might be done. They did not renounce the possibility of making reasonable demands on the ground of their still remaining *quasi*-sovereign interests; and the alternative to force is a suit in this court.

Id. at 237. The reach of state nuisance law includes instrumentalities engaged in interstate commerce, such as the ships in *Huron-Portland Cement v. City of Detroit.* Huron Portland Cement Co. v. Detroit, 362 U.S. 440 (1960).

251. *Gore*, 517 U.S. at 574 n.21.

252. ROBERT FROST, NORTH OF BOSTON 12 (2d ed. 1917).

253. Cutting, *supra* note 13. *See also* Cutting & Cahoon, *supra* note 10, at 58–60 (arguing for property rights of receptors in order to remain free of pollution).

254. RESTATEMENT (SECOND) OF TORTS § 158–163 (1965).

(under the federal Constitution)[255] and thereby eliminate public (but not private) nuisance actions in some cases, government could incur liability for a "taking" under the Fifth Amendment if it authorizes a trespass.[256]

Professor William Rodgers predicted in 2007:

> As with nuisance, trespass will outlive its enemies. No lawmaking power on earth and no rumor-generating public relations campaign can long convince a human population that their bodies are fitting grounds for industrial experiments. With the bodies go the souls and in the two will be an army of determined skeptics.[257]

The real goal of this worldview of containment (which would have the effect of internalizing costs of pollution directly), although it is suited to litigation, is to compel research and regulation that recognizes the real effects and costs on receptors rather than focusing on the costs to generators.[258]

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255. RODGERS, *supra* note 144, §§ 2.8, 2.9 ("Nuisance law is always vulnerable to statutory 'legalization' campaigns that have taken on a new and ugly urgency in recent times. The worst nuisances can be quickly rescued by a legislative or administrative approval.") (footnote omitted).

256. See, for example, the Court's statement in *Richards v. Washington Terminal Co.*, 233 U.S. 546 (1913):

> We deem the true rule, under the Fifth Amendment, as under state constitutions containing a similar prohibition, to be that while the legislature may legalize what otherwise would be a public nuisance, it may not confer immunity from action for a private nuisance of such a character as to amount in effect to a taking of private property for public use.

Id. at 557. In *Richards*, the railroad built a tunnel on a route selected by Congress, immediately adjacent to plaintiff's property. The Court held that Congress could not immunize private railroads from suits for private nuisance even when the route was dictated by Congress and not by the railroad. *Id.* at 551.

257. RODGERS, *supra* note 144, at 90.

258. Cutting, *supra* note 13, at 851–56. The following list proposes some possible benefits. (1) The short-term and long-term effects: research is required of those who temporarily hold a right to pollute. This will provide necessary data. (2) The costs of controlling greenhouse gases, in contrast with the immense health and property costs now borne often by the least able to pay or to litigate (a significant social justice issue) would be placed on the generators' ledgers and reflected in product cost, as the market economy demands, and as some views of green taxes require. Only in that way can demand be channeled to alternatives that are more efficient in reducing their carbon footprint. (3) The Precautionary Principle would be implemented in place of the following philosophy: using citizens as test subjects and making it increasingly difficult for them to get medical care and sue. (4) The historic integrity of property would be restored instead of the current *de facto* condemnation of receptors' rights. (5) Equity and justice would be served for all communities and populations, since it is necessary to control far fewer sources than there are receptors in the population that are presently forced to endure the often-unknown risks. (6) Containing the collective trespasses is also consistent with the policies of many environmental acts, including the assertion of § 101 of the Clean Water Act that surface discharges should end by 1985, the Resource Conservation and Recovery Act's "cradle to grave" accounting

Trespass describes the passage of GHGs through private and public airspace as well as the heat and other physical incursions that result. This is certainly an action so closely related to the facts of the nuisance, that a court might find it to be part of the fabric of federal common law public nuisance. There is little question of either pendent or diversity jurisdiction in federal court with the federal common law nuisance claim.

Historically, trespass was defined as any intentional physical invasion of private property to protect the sanctity of property rights (the *res* itself), whereas nuisance was defined as any action that unreasonably interfered with the use and enjoyment of another's property (conditions affecting the *res*).[259] Both trespass and nuisance were originally grounded in strict liability.[260] Merely throwing a rock through the airspace of a property without damaging anything at all constitutes a trespass that entitles the owner to at least nominal damages. But the concept of trespass conflicted with the views of the Industrial Revolution that the air, surface waters, and groundwater were "free goods" for waste disposal.[261] Courts accommodated this view by eviscerating the traditional property rights of receptors and the essence of trespass itself.[262] The straightforward boundary inquiry of trespass was replaced by a reactive and superficial, "out of sight, out of mind" exception, based upon the assumption—without scientific basis—that when the invading material was an "invisible" agent, there was no physical incursion to trigger trespass, but rather only a "nuisance."[263] But "nuisance" allows judges to deny relief unless the invasion caused "unreasonable interference" with the receptor property. This test both increased the burden on the aggrieved receptor and provided numerous opportunities subjectively to "balance" the interests of the generator and the receptors.[264] "Industrial progress" was routinely found to outweigh what the courts labeled "trifling inconveniences" of pollution to receptors, such

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system, and the Clean Air Act's "Bubble Concept" that enables facilities to measure net emissions at the property lines instead of applying emissions standards to each individual stack. (7) If the Supreme Court did accept a global warming trespass case, there is precedent in *Loretto v. Manhattan Teleprompter*, 458 U.S. 419, 441 (1982), that should be followed. Thus, government should also be accountable for the results of permitted pollution. (8) The popular and scientific support for accountability is likely to be substantial.

259. Martin v. Reynolds Metals Co., 342 P.2d 790, 792 (1959).

260. Cutting, *supra* note 13, at 828.

261. Cutting & Cahoon, *supra* note 10, at 61.

262. *Id.* at 70.

263. Cutting, *supra* note 13, at 870–72.

264. Boomer v. Atl. Cement Co., 257 N.E.2d 870, 871–72 (N.Y. 1970); Plater, *supra* note 42, at 535 (discussing equitable concepts relevant to the balancing of equities).

as downstream owners.[265] Any nuisance that affects more than a few receptors is typically labeled a "public nuisance." This concept permits legislative protection and blocks private actions (except to the extent that the nuisance affects a given property differently). Until now, those public nuisance cases rarely interested the public officials who must initiate them.

This nullification of venerated property law also violates the basic free market principles of internalization, noted earlier, that require all costs of production to be passed on to the consumer of that product.[266] By the late twentieth century, U.S. courts were naturally forced to recognize that invisible pollutants, such as radioactivity or toxic gases, do physically enter the "space" of other property.[267] The Alabama Supreme Court noted that given modern knowledge of the conservation and transformation of matter and energy, "we may define trespass as an intrusion which invades the possessor's protected interest in exclusive possession, whether that intrusion is by visible or invisible pieces of matter or by energy which can be measured only by the mathematical language of the physicist."[268]

That finding should have restored the historic rule of trespass and thus halted GHGs and other pollution at the property boundary. If the trespass is visible, no damage at all is required to justify relief. If invisible pollutants are involved, the courts have added an additional requirement that the plaintiff must prove substantial damage to the property itself or persons on the property—even damage to the value of the property was not enough to permit an action. The concept of preferential treatment for the seemingly discredited distinction of visibility thus did not disappear! The comments of the *Borland* court are illuminating:

> It might appear, at first blush, from our holding today that every property owner in this State would have a cause of action against any neighboring industry which emitted particulate matter into the atmosphere, or even a passing motorist, whose exhaust emissions come to rest upon another's property. But we hasten to point out that there is a point where the entry is so lacking in substance that the

265. *E.g.*, Pa. Coal Co. v. Sanderson, 6 A. 453, 464–65 (Pa. 1886) ("Trifling inconveniences to particular persons must give way to the necessities of a great community"); *see also* James M. McElfish, Jr., *Property Rights, Property Roots: Rediscovering the Basis for Legal Protection of the Environment*, 24 E.L.R. 10231, 10248–49 (1994) (discussing the relationship between property rights and environmental protection).

266. DALES, *supra* note 36, at 7–8. *See also* Huffman, *supra* note 12, at 386 (advocating for the "refinement" of property rights as a means to avoid external costs as opposed to regulation).

267. Cutting, *supra* note 13, at 825; RESTATEMENT (SECOND) OF TORTS § 158–163 (1965).

268. Borland v. Sanders Lead Co., Inc., 369 So. 2d 523, 528 (Ala. 1979) (quoting Martin v. Reynolds Metals Co., 342 P.2d 790, 794 (Or. 1959)).

> law will refuse to recognize it, applying the maxim de minimis non curat lex—the law does not concern itself with trifles. In the present case, however, we are not faced with a trifling complaint. The Plaintiffs in this case have suffered, if the evidence is believed, a real and substantial invasion of a protected interest.[269]

The *Bradley* court returned to Professor Rodgers to justify limiting the remedy for trespass:

> While the strict liability origins of trespass encourage courts to eschew a balancing test in name, there is authority for denying injunctive relief if defendant has exhausted his technological opportunities for control. If adopted generally, this principle would result substantially in a coalescence of nuisance and trespass law. Acknowledging technological or economic justifications for trespassory invasions does away with the historically harsh treatment of conduct interfering with anothers possessory interests.[270]

Historically the only unilateral justification was "necessity," as when a boater, threatened by a thunderstorm, takes refuge on private property.[271] There was no *de minimis* defense, regardless of the weight accorded the maxim by the *Borland* court. The "modern" view thus elevates the economic interest of the trespasser above the property rights of the receptors, partly because it does not account for the effects that are unknown.[272] Thus, some branch of government authorizes an easement for passage of pollutants over both public and private interests.

One might ask instead, whether it is harsher to permit these invasions based on the claimed technological and economic limitations of the generators without adequate scientific knowledge of the effects or a mechanism to account for future harm? The *Bradley* court simply created its own science when it found that "airborne particles [that] are transitory or quickly dissipate, do not interfere with a property owner's possessory rights

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269. *Borland*, 369 So. 2d at 529.

270. Bradley v. Am. Smelting & Refining Co., 709 P.2d 782, 787 (Wash. 1985).

271. *See, e.g.*, Tuders v. Kell, 739 So. 2d 1069, 1073–74 (Ala. 1999) (stating that the doctrine of necessity may be a justifiable defense in an emergency situation).

272. *See, e.g.*, San Diego Gas & Elec. Co. v. Superior Court, 920 P.2d 669, 695 (Cal. 1996) (holding that the intangible nature of electric and magnetic fields are better dealt with in the realm of nuisance law rather than trespass); Maddy v. Vulcan Materials Co., 737 F. Supp. 1528, 1540–41 (D. Kan. 1990) (adopting the requirement from *Bradley* for a showing of "actual and substantial damage[s]").

and, therefore, are properly denominated as nuisances."[273] The problem is that airborne pollutants can and do in fact interfere with property rights directly (toxic pollutants) and indirectly, through effects such as heat and other consequences of climate change that affect the receptors' properties. As the President's Science Advisory Committee noted in 1965, "[i]n small amounts, pollution can produce effects so subtle as to escape notice."[274] Thus, whether or not the intrusion is a technical (legal) trespass, the materials are actually within receptor property, causing mischief that might not be apparent for years.

These rulings place the burden squarely on the receptor.[275] Only the Colorado Supreme Court has recognized that physical entry by some, but not all, pollutants (in that case trichloroethylene (TCE)) constitute a physical trespass,[276] and thus plaintiffs need not prove that "contaminants are present on their properties at levels of toxicological concern or are otherwise causing damage to their properties in order to prevail on their trespass claim."[277] The components within this category are viewed as "intangible[s]" rather than physical invasions, apparently more like equations than actual physical intrusions.[278] This is all legal fiction of course, as science understands the concept of the physical invasion even by sound, noise, radiation, lasers, and heat. Why not simply hold that even if some invasions seem more abstract, the burden still ought to be on the generator to demonstrate: (1) why it is a priority to permit airborne waste disposal; (2) what harms may result; and (3) whether adequate provision has been made for any actual damages.

As for the other elements of trespass, intent has not proven to be a difficult issue, because courts quickly concluded there could be no other purpose for a stack (or exhaust pipe) than to disburse materials over and onto other properties.[279] Although nominal damages and injunctive relief are the rule, a trespass analysis would then employ the same proof of

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273. *Bradley*, 709 P.2d at 791.

274. ENVIRONMENTAL POLLUTION PANEL, *supra* note 15.

275. *See Bradley*, 709 P.2d at 787 (stating the plaintiff has the burden to prove the tort of trespass).

276. *See* In re Hoery, 64 P.3d 214, 217 (Colo. 2003) (holding that any level of damage is sufficient for trespass).

277. Cook v. Rockwell Int'l Corp., 273 F. Supp. 2d 1175, 1201 (D. Colo. 2003). This federal district court recently reviewed Colorado law and noted that the Colorado courts reserved exceptions for "noise, electromagnetic fields and radiation waves emitted by power lines." *Id.* at 1201.

278. *Id.* at 1201.

279. Cutting, *supra* note 13, at 872. *See, e.g.*, *Bradley*, 709 P.2d at 786 ("We find that the defendant had the requisite intent to commit intentional trespass as a matter of law.").

causation and damages as Messrs Pawa, Alex, and others believe would be straightforward.[280]

Ordinarily, once a trespass is proved, the remedy of injunction is available.[281] The injuries commonly cannot be easily measured in monetary terms, thus equitable relief is routine.[282] The "modern" view requires investigation by and at the expense of the receptors to support a finding of "reasonable suspicion" of injury. It is difficult to explain to the interdisciplinary community (both scientists and lay audiences) why property is entitled to absolute protection against visible (but benign) invasions. On the other hand, receptors must endure invisible and potentially lethal pollutants that are given free passage unless the receptors (at their expense) can prove some type of "damage." This proof of harm is often established years later when someone in the scientific community is able to identify the harm through epidemiological studies of human test subjects, e.g., fine particulates, or alternately, through actual property damage.[283] Why is the burden not on the generator to identify the effects before permission to pollute is granted, as the Precautionary Principle would appear to require? Even given that the regulatory system ought to uncover real, substantial harms, testing of chemicals, especially for long-term effects, is decades behind schedule. Therefore, it becomes difficult to demonstrate harm because the legal framework requires more data.[284] Thus, discharges are permitted based on the argument that no harm has (yet) been demonstrated. The Industrial Revolution thus worked a revolution in the law of property and trespass that simply avoids the issues of unknown

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280. Zasloff, *supra* note 20, at 1867–70.

281. Cutting, *supra* note 13, at 878 (stating that injunction is available (1) when there is irreparable injury; (2) where the remedy at law (damages) is inadequate; (3) to avoid the multiplicity of suits that continuing trespass would involve; or (4) to prevent the trespasser from acquiring a property interest by adverse possession, prescription, or some other property concept).

282. This burden of proof advantage in a trespass case is accompanied by a slight remedial advantage as well. Upon proof of a technical trespass plaintiff always is entitled to nominal damages. It is possible also that a plaintiff could get injunctive relief against a technical trespass—for example, the deposit of particles of air pollutant on his property causing no known adverse effects. The protection of the integrity of his possessory interests might justify the injunction even without proof of the substantial injury necessary to establish a nuisance. Of course absent proof of injury, or at least a reasonable suspicion of it, courts are unlikely to invoke their equitable powers to require expensive control efforts.

Bradley, 709 P.2d at 787.

283. *See* Cutting & Cahoon, *supra* note 10, at 69–70 (providing that courts have altered trespass law to recognize "invisible" material but have shifted it from a property (spatial) basis to a harm basis, with the burden on the receptor).

284. *See id.* at 83 (discussing how environmental statutes, politics, and budget deficits make it difficult to determine the costs of pollution).

short-term and particularly long-term damages. By requiring proof of "substantial damage," many private actions for redress are doomed because of the passage of time until damages appear and the consequential difficulty of diagnosis and causation; not to mention issues of collectability. That is why relying on private actions is so "efficient" from a purely economic perspective: the very real and immediate costs of waste disposal are offset only by the few claims that might actually succeed years later.

H. The Modern View

The first question is whether there is a trespass under the "modern" view, and if so, whether that trespass caused substantial damage. Each state court can answer that question differently, since substantive property law is a state matter (for now).[285] The next question is whether "substantial damage" is really a proper standard, given the unknown effects of many pollutants, the relatively small number of sources (automakers, not vehicles), and the high costs to society of the effects (externalities that are subject to proof). A final question is whether authorization of a property invasion by government or the judiciary works a "taking" under the Fifth Amendment, so that either damages would lie as in *Loretto* and *United States v. Causby*,[286] or the statute that authorized the emission would be voided.[287]

In a claim for global warming, on facts such as those alleged in the *AEP* and *California v. GM* cases, if causation can be established for nuisance, then causation should also be satisfied for trespass. This is so, because the emissions pass through both private and public airspace on the way to become part of the greenhouse.[288] An additional trespass exists when heat is redirected to the property. If water or fire enters the property, or if onsite water is caused to leave the property, that is also a physical invasion with a demonstrable chain of causation. The courts under the "modern" view of trespass used the term "substantial" to mean, "not

285. Lucas v. S.C. Coastal Council, 505 U.S. 1003, 1030–31 (1992). *But cf.* Stevens v. Cannon Beach, 510 U.S. 1207, 1211 (1994) (Scalia, J., dissenting) ("[A] State may not deny rights protected under the Federal Constitution . . . by invoking nonexistent rules of state substantive law.") (internal citation omitted).

286. Loretto v. Teleprompter Manhattan C.A.T.V. Corp., 458 U.S. 419, 441 (1982); United States v. Causby, 328 U.S. 256, 260–65 (1946).

287. *See* Gacke v. Pork Xtra, L.L.C., 684 N.W.2d 168, 175 (Iowa 2004) (holding that a statute must be invalidated to the extent that it constituted a taking); Bormann v. Kossuth County Bd. of Supervisors, 584 N.W.2d 309, 321 (Iowa 1998) (holding a statute invalid since it provided for immunity against nuisance suits).

288. *See* Cutting, *supra* note 13, at 865–81 (stating that Courts have noted that there may be no nuisance that is not also a trespass given the physical invasion).

trifling."[289] The claims that are at issue in the public nuisance cases are hardly trivial, and thus the test of "reasonable suspicion" should be satisfied.[290]

I. Historic Trespass

We have argued that just as courts altered the historic rule, and because property rights are a state law matter, the highest court of any state could also restore the lost property rights of receptors to be free from any trespass.[291] A court could simply strike the requirement for substantial damage. The burden would then shift back to the generators to contain wastes or to demonstrate consent that there is no harm, and that an intrusion into others' property should be permitted. The question would also arise as to whether the authorizing agency would also become liable for all the consequences of the license. Considering the relatively small number of

289. *E.g.*, Borland v. Sanders Lead Co., 369 So. 2d 523, 529 (Ala. 1979) (holding that in order to recover under a trespass theory, "substantial damages to the *res*" is required).

290. *See, e.g.*, Bradley v. Am. Smelting & Refining Co., 709 P.2d 782, 787 (Wash. 1985) (holding that an intentional deposit of microscopic particulates gives rise to both a trespass and nuisance claim). The effects and potential damages are discussed at *supra* text accompanying notes 110 and 259 and at *infra* text accompanying note 345. This is an opportunity for the courts both to protect property rights (and thereby the occupants) and to reconcile the law with science. In *United States v. Causby*, 328 U.S. 256 (1946), the Court was of the view that the nation (particularly, the courts) can afford to ignore or accommodate physical intrusions by the very pollutants ultimately responsible for the effects of global warming. To be sure, those pollutants, of which the nature and extent of their effects are unknown "ha[ve] no place in the modern world." *Id.* at 261. In the modern world though, the Precautionary Principle has long held that entities need not wait for proof of harm to act. Illustrative of this concept is Principle 15 Rio Declaration on Environment and Development that states: "In order to protect the environment, the precautionary approach shall be widely applied by States according to their capabilities. Where there are threats of serious or irreversible damage, lack of full scientific certainty shall not be used as a reason for postponing cost-effective measures to prevent environmental degradation." Conference on Environment and Development, June 3–14, 1992, *Rio Declaration on Environment and Development,* Principle 15, U.N. DOC. A/CONF.151/26 (Aug. 12, 1992), *available at* http://www.un.org/documents/ga/conf151/aconf15126-1annex1.htm. There is, however, ample authority in the law of trespass and nuisance for action in the face of predicted harm. Here, waiting for proof generally dooms the receptors, sometimes literally, and most commonly results in no action because of limits on research and redress based largely on time and cost. With what we do not know, and with what we know now about some of those materials once thought to be desirable and benign (asbestos, mercury, dioxin, polychlorinated biphenyl, Agent Orange, fine particulates, etc.), the precautionary principle would seem to be the only prudent course of action. If the judiciary refuses to exercise its historic jurisdiction to adjust risks, then the costs fall on the receptors or on the public. In this case, a possible option would be to subsidize the industry; though, the process would require more transparency such as in the legislative arena.

291. Cutting & Cahoon, *supra* note 10, at 74 (proposing that those who choose to trespass should have the burden of showing the harm of the trespass and accepting any responsibility for future harms).

generators versus receptors,[292] and considering the potentially catastrophic effects of global warming alone—not to mention all other pollutants—a return to the protection of property and persons of receptors seems more just than requiring those receptors, years later, to locate causes of harms and responsible parties, and then prove their cases in court.

J. The Constitutional Dimension

For both nuisance and trespass there is a constitutional dimension present when the property invasion is authorized by the government.[293] This is important: (1) because potential government liability would surely drive some change and (2) courts ruling on issues such as displacement and preemption should consider that elimination of the common law remedy renders the statute subject to this constitutional claim, whereas a decision that authorized parallel remedies should not.

The Alabama, Oregon, and Washington Supreme Courts had no difficulty concluding that invisible materials had physically invaded the space of the receptor plaintiffs.[294] The cause was not actionable as a trespass, however, without proof of at least a reasonable suspicion of substantial damage.[295] Whether there is a technical trespass or not, if the government participates in or permits a physical intrusion, there arises an issue regarding the "taking" of the private property rights of the receptors. This issue leads to one of two consequences: (1) the government is also held responsible for compensation (hardly likely to be a popular topic in budget discussions), or (2) the enabling act is declared to be unconstitutional.[296]

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292. *See* IPCC SYNTHESIS REPORT, *supra* note 38 (discussing the causes of climate change).

293. Cutting & Cahoon, *supra* note 10, at 75–78 (discussing the "taking" of property rights through trespass and nuisance).

294. *See* Bradley v. Am. Smelting & Refining Co., 709 P.2d 782 (Wash. 1985) (holding that an intentional deposit of microscopic particulates gives rise to both a trespass and nuisance claim); Borland v. Sanders Lead Co., 369 So. 2d 523 (Ala. 1979) (allowing a trespass claim for the emission of lead particulates and sulfoxide gases); Martin v. Reynolds Metals Co., 342 P.2d 790 (Or. 1959) (upholding a finding of trespass for the emission of fluoride compounds in the form of gases and particulates).

295. All three cases required that a plaintiff to show (1) the invasion affects an interest in the landowner's exclusive possession of his/her property; (2) the act that led to the invasion was intentional; (3) reasonable foreseeability that the act could invade plaintiff's possessory interest in their land; and (4) substantial damages to the *res*. *Bradley*, 709 P.2d at 790; *Borland*, 369 So. 2d at 529; *Martin*, 342 P.2d at 794.

296. *See, e.g.*, United States v. Causby, 328 U.S. 256, 265 (1946) (Black J., dissenting) (proposing that damages and injunctive relief are the appropriate remedies in trespass and nuisance cases and cautioning against the use of the takings clause as it usurps congressional power).

Loretto v. Teleprompter Manhattan C.A.T.V., Corp. is illustrative.[297] In that case, a Manhattan building owner successfully sued the City of New York by arguing that a city ordinance requiring installation (by the preceding owner) of wiring and relatively small cable boxes on her building constituted a "taking" under the Fifth Amendment.[298] The *Loretto* Court noted a long line of cases holding that any physical intrusion is materially different from regulatory restrictions such as those contested in *Penn Central*.[299] The Court held: "[w]e conclude that a permanent physical occupation authorized by government is a taking without regard to the public interests that it may serve. Our constitutional history confirms the rule, recent cases do not question it, and the purposes of the Takings Clause compel its retention."[300] The government need not actually commit the trespass. The Court added that "[a] permanent physical occupation authorized by state law is a taking without regard to whether the State, or instead a party authorized by the State, is the occupant."[301] Nor does size matter:

> In *United States v. Causby,* the Court approvingly cited *Butler v. Frontier Telephone Co.*, holding that ejectment would lie where a telephone wire was strung across the plaintiff's property without touching the soil .... "[An] owner is entitled to the absolute and undisturbed possession of every part of his premises, including the space above, as much as a mine beneath. If the wire had been a huge cable, several inches thick and but a foot above the ground, there would have been a difference in degree, but not in principle. Expand the wire into a beam supported by posts standing upon abutting lots without touching the surface of plaintiff's land, and the difference would still be one of degree only. Enlarge the beam into a bridge, and yet space only would be occupied. Erect a house upon the bridge, and the air above the surface of the land would alone be disturbed."[302]

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297. Loretto v. Teleprompter Manhattan C.A.T.V. Corp., 458 U.S. 419 (1982).

298. *Id.* at 421.

299. Penn Cent. Transp. Co. v. New York City, 438 U.S. 104, 124 (1978) (arguing that a "physical invasion by the government" may be more readily characterized as a "taking" than "interferences from some public programs adjusting the benefits and burdens of economic life").

300. *Loretto*, 458 U.S. at 426.

301. *Id.* at 432–33 n.9 (citation omitted).

302. *Id.* at 437 n.13 (citation omitted).

The *Loretto* Court also held that a permitting condition that authorizes physical entry by others effectively imposes an easement. The governmental action constitutes a taking because it interferes with the fundamental right to exclude and control:

> In *Kaiser Aetna v. United States,* the Court held that the Government's imposition of a navigational servitude requiring public access to a pond was a taking where the landowner had reasonably relied on Government consent in connecting the pond to navigable water. The Court emphasized that the servitude took the land-owner's right to exclude, "one of the most essential sticks in the bundle of rights that are commonly characterized as property."

The Court explained:

> This is not a case in which the Government is exercising its regulatory power in a manner that will cause an insubstantial devaluation of petitioner's private property; rather, the imposition of the navigational servitude in this context will result in an *actual physical invasion* of the privately owned marina. . . . And even if the Government physically invades only an easement in property, it must nonetheless pay compensation.
>
> . . . .
>
> Although the easement of passage, not being a permanent occupation of land, was not considered a taking *per se, Kaiser Aetna* reemphasizes that a physical invasion is a government intrusion of an unusually serious character.
>
> . . . .
>
> In short, when the "character of the governmental action," is a permanent physical occupation of property, our cases uniformly have found a taking to the extent of the occupation, without regard to whether the action achieves an important public benefit or has only minimal economic impact on the owner.
>
> The historical rule that a permanent physical occupation of another's property is a taking has more than tradition to commend it. Such an appropriation is perhaps the most serious form of invasion of an owner's property

> interests. To borrow a metaphor, *cf. Andrus v. Allard*, the government does not simply take a single "strand" from the "bundle" of property rights: it chops through the bundle, taking a slice of every strand.[303]

The majority also noted the distinction between temporary and permanent physical intrusions.[304] Emissions could be considered permanent as long as allowed, and as for waste disposal methods, they are qualitatively different from truly temporary sources, such as the usual construction cases. Intermittent intrusions can also constitute takings, although—as in *Causby* and *Kaiser Aetna*—less than a total taking may result.[305] In *Causby,* the U.S. Supreme Court returned the case to the Court of Claims for determination of damages based on its conclusion that since the Civil Aeronautics Act[306] only authorized flight at roughly 500 feet above ground level and higher, any flight below that limit physically invaded private airspace and constituted a "taking" per the Fifth Amendment.[307] The Court relied on earlier cases involving infrequent firing of artillery rounds over plaintiff's property and intermittent flooding, where the only real question in each was the extent of damages.[308] The Court held that the site need not be completely uninhabitable: a navigation easement would also work a taking. This taking would then be measured by its permanency and intensity (or extent):

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303. *Id.* at 433–35. (quoting Kaiser Aetna v. United States, 444 U.S. 164, 176 (1979); Andrus v. Allard, 444 U.S. 51, 65–66 (1979); *Penn. Cent. Transp. Co.*, 438 U.S. at 124; United States v. Causby, 328 U.S. 256, 265 (1946); Portsmouth Harbor Land & Hotel Co. v. United States, 260 U.S. 327, 329–30 (1922)) (alteration to original) (citations omitted) (footnotes omitted). *See also id.* at 427 n.5 (summarizing the case law concerning the role of physical invasion in the development of takings jurisprudence).

304. *Loretto*, 458 U.S. at 434. Another recent case underscores the constitutional distinction between a permanent occupation and a temporary physical invasion. In *Pruneyard Shopping Center v. Robbins,* 447 U.S. 74 (1980), the Court upheld a state constitutional requirement that shopping center owners permit individuals to exercise free speech and petition rights on their property, to which they had already invited the general public. The Court emphasized that the State Constitution does not prevent the owner from restricting expressive activities by imposing reasonable time, place, and manner restrictions to minimize interference with the owner's commercial functions. Since the invasion was temporary and limited in nature, and since the owner had not exhibited an interest in excluding all persons from his property, "the fact that [the solicitors] may have 'physically invaded' [the owners'] property cannot be viewed as determinative." *Id.* at 84.

305. *See, e.g., Kaiser Aetna*, 444 U.S. at 179–80 ("Government must condemn and pay for before it takes over the management of the landowner's property."); *Causby*, 328 U.S. at 267–68 (discussing the appropriateness of damages for temporary versus permanent takings).

306. Civil Aeronautics Act of 1938, ch. 601, 52 Stat. 973 (repealed 1958).

307. *Causby*, 328 U.S. at 263–65. This case involved Army Air Corps bombers and other aircraft using a final landing approach situated no more than 100 feet above plaintiffs' property during World War II.

308. *Id.* at 261 n.6, 263.

> Though it would be only an easement of flight which was taken, that easement, if permanent and not merely temporary, normally would be the equivalent of a fee interest. It would be a definite exercise of complete dominion and control over the surface of the land. *The fact that the planes never touched the surface would be as irrelevant as the absence in this day of the feudal livery of seisin on the transfer of real estate.* The owner's right to possess and exploit the land—that is to say, his beneficial ownership of it—would be destroyed. In the supposed case, the line of flight is over the land. And the land is appropriated as directly and completely as if it were mused [sic] for the runways themselves.
>
> There is no material difference between the supposed case and the present one, except that here enjoyment and use of the land are not completely destroyed. But that does not seem to us to be controlling. The path of glide for airplanes might reduce a valuable factory site to grazing land, an orchard to a vegetable patch, a residential section to a wheat field. Some value would remain. But the use of the airspace immediately above the land would limit the utility of the land and cause a diminution in its value.[309]

With global warming, the collective invasions occur on two levels: the initial pass-through and the effects. The effects—however microscopic—are very substantial: certainly inundation, fires, or elimination of major

309. *Id.* at 261–62 (emphasis added). The Court did not address whether the Civil Aeronautics Act itself had violated constitutionally protected property rights of *all* private owners by lopping off ownership of airspace over about five hundred feet above ground level as a "public highway," but one for which the government paid nothing. The Court simply declared that the notion of private property ownership to the "periphery of the universe . . . has no place in the modern world." *Id.* at 260–61. The government also conceded that flights into airspace below about 500 feet that rendered the property uninhabitable would constitute a "taking," thus offering a way to save the bulk of the statute, at least in that case. With the stroke of a pen the Court effectively validated Congressional elimination of historic property rights. By avoiding the issue for airspace above the jurisdictional limit, the Court in essence adopted the view of the dissent that airspace, if not the air itself, ought to be considered to be in public ownership as are public trust waters. *Id.* at 260–61. Justice Black in the *Causby* dissent would have voided the entire Civil Aeronautics Act based on his view that the Act did include the "private airspace" and that the singular nationalization of so much airborne real estate without compensation would require nullification of the Act. However, he concluded that there was no taking based on the argument that there exist navigation easements in all airspace, just as there are navigation easements on waters. *Id.* at 271–72, 273 n.3. A federal navigation easement for the public is very different from a permit to trespass by pollutants of unknown effect.

water supplies will have a far more dramatic effect than flying B-24s at midnight above Causby's chicken coops. If anything, the *Causby* view of airspace simplifies the task of the states to protect public property rights in airspace as well as the underlying private property rights. In *Causby,* for example, the Court used the North Carolina statute both to confirm private ownership and to acknowledge the federal claim to navigation.[310]

That government "permitted" the intrusion is provable on two levels: (1) the federal government has intentionally elected to permit unlimited greenhouse gas emissions in the face of evidence that the U.S. Supreme Court found overwhelming in *Mass. v. EPA*,[311] and (2) the few states that have attempted to regulate GHG emissions, if the courts uphold the regulations, have issued conventional "permits," as the EPA may eventually do.

There is another line of taking-by-nuisance cases emanating from *Causby* and *Richards* that is analogous but likely limited to private nuisance actions. In *Bormann*, as in *Richards*, plaintiffs argued that a statute insulating farm nuisances from liability created a private nuisance and imposed an easement on private property in violation of the Iowa Constitution's "takings" clause.[312] The Iowa Supreme Court voided the statute because it shielded against private actions for nuisance and thus affected only a limited number of landowners.[313]

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310. *See Causby*, 328 U.S. at 264–65 (stating that the definition of property will normally be determined by referring to local law; therefore, ownership of the airspace that rests above the waters and lands of North Carolina is vested in the owners of the surface below—this is in accordance with local law); *see, e.g.*, Long v. Charlotte, 293 S.E.2d 101, 101, 108–09 (N.C. 1982) (holding that inverse condemnation—a claim that the government has interfered with an owner's property rights without giving the owner just compensation—is the sole remedy for landowners suing the city because the local airport was producing noise and vibration).

311. Massachusetts v. Envtl. Prot. Agency, 127 S. Ct. 1438, 1462–63 (2007). The trial court in *California v. GM* also found that the conduct of the Administration in permitting unlimited GHG was deliberate and intentional. California v. Gen. Motors Corp., No. C06-05755 MJJ, 2007 U.S. Dist. LEXIS 68547, at *24 (N.D. Cal. Sept. 17, 2007).

312. Bormann v. Bd. of Supervisors, 584 N.W.2d 309, 313, 319–20 (Iowa 1998). *See also,* Richards v. Wash. Terminal Co., 233 U.S. 546, 548 (1913) (holding that Congress could not immunize private railroads from suits for private nuisance even when the route was dictated by Congress and not by the railroad). We discuss the issue at some length in Cutting & Cahoon, *supra* note 10, at 75–77.

313. *Bormann*, 584 N.W.2d at 321. In 1998, the Iowa Supreme Court declared Iowa's Right to Farm Act unconstitutional. The Act, like those in most states, provided immunity to farm operations from nuisance suits. Neighbors complained of odor and water quality issues and challenged the county's approval of a 960-acre proposed intensive livestock operation because that designation triggered application of the Act's nuisance shield provision. The court reasoned that this restriction meant that state action permitted the imposition of a legal servitude or easement on the neighboring properties without providing compensation for the deprivation of the receptors' property rights. Drawing upon *Richards*, and other cases involving invasion of the physical space of property owners by flooding and sewage treatment plant odors, the court concluded that odors from the site physically

There are two further constitutional issues. Even if the government does not permit the trespass, the courts should no longer permit the imposition of even a temporary easement for a private party trespass or nuisance over receptor property by allowing the generator to pay damages. Courts have noted that under many state laws (and perhaps the Federal Constitution) the process would unconstitutionally extend to private parties the right to condemn interests in the property.[314] Further, if the use of public property for waste disposal is permissible, that use should constitute a violation of the public trust concept or even qualify as a "gift of public funds" in some jurisdictions.[315]

K. Displacement and Preemption

We think the analysis applied earlier to nuisance applies to trespass with full force. Any interpretation of *Milwaukee II* (and *Ouelette*) that results in a trespass without any remedy under either federal or state common law should trigger the *Loretto* trespass analysis and the *Richards/Bormann* private nuisance analysis,[316] that must be avoided both as a matter of construction and as a matter of protecting the public treasury. A claim against the sovereign would not be subject to preemption arguments under the Federal Constitution, nor would the supremacy clause likely affect claims against the government under state constitutions. The sovereign may enact GHG standards protecting citizens; it is the government's failure to do so that results in trespasses constituting "takings."

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invaded the adjacent properties, thus working a "taking" of the airspace of the receptors. Id. at 318–19. The U.S. Supreme Court declined to review the case notwithstanding that nearly every state has an act with similar provisions. The Iowa Supreme Court subsequently reaffirmed the decision in its essential terms. *See* Gacke v. Pork Xtra, L.L.C., 684 N.W.2d 168 171, 175 (Iowa 2004) (holding that a statute must be invalidated to the extent that it constituted a taking).

314. Cutting, *supra* note 13, at 883. *See also* Borland v. Sanders Lead Co., 369 So. 2d 523, 526 (Ala. 1979) (holding that simply allowing a private defendant effectively to buy out a plaintiff "would permit private condemnation, which, unquestionably, is impermissible"); Boomer v. Atl. Cement Co., 257 N.E.2d 870, 876 (N.Y. 1970) (Jasen, J., dissenting) (arguing that court facilitation of a nuisance unconstitutionally authorizes private condemnation by permitting a defendant to pay damages).

315. *See, e.g.*, Ill. Cent. R.R. v. Illinois, 146 U.S. 387, 436–37, 455–56 (1892) (stating that the public trust doctrine, which requires that the state is the owner of public lands, only allows use of the land if it is in the public's interest, so private users will be subject to limitations); *see also* Cutting, *supra* note 13, 884–85 n.405–09 (discussing the public trust doctrine as adding "a public dimension" to the protection of receptors' rights).

316. Cutting, *supra* note 13, at 881–84 (discussing rights of private receptors).

III. REMEDIES

The possible net results of either a nuisance or trespass finding (as in *AEP* and *California v. GM*) are: (1) compensatory damages; (2) equitable relief; (3) takings compensations; or (4) a declaration that the statute itself is unconstitutional.[317]

The attorneys general can also represent direct interests of the state in public lands.[318] The attorney general plays an interesting role in the conflict by conducting the state's defense of its statutes against actions by private parties who claim a "taking." The state might avoid paying damages by conceding the unconstitutionality of the statute. The attorney general could argue that the state will likely incur defense litigation costs (if not damages costs) from citizen and NGO suits. The attorneys general should be able to seek indemnity and damages from defendant generators who benefited from the trespass or nuisance.

We have also argued that any remedy should become effective at the generators' borders, since by definition any transgression is an invasion of some airspace. This result would reduce the multiplicity of litigation and focus immediate attention on all effects of the transboundary movement of greenhouse (or other) gases.

A. Damages

Calculating compensation for pollution with delayed effects is difficult for at least four reasons: (1) legislatures have not provided regulatory agencies, the legal authority, or the resources to acquire more data on pollutants and their effects on the population (critics contend this is because of campaign contributions that have "captured" them);[319] (2) lacking research, scientists and economists cannot fully quantify the costs of pollution; (3) many environmental amenities, such as open space or a stable climate, are difficult to quantify monetarily[320] (though given this current data deficit, the appropriate courts could retain jurisdiction to decide

317. *See Gacke*, 684 N.W.2d at 171, 175 (Iowa 2004) (declaring statutes permitting nuisance without recovery to be unconstitutional); Bormann v. Bd. of Supervisors, 584 N.W.2d 309, 321 (Iowa 1998) (holding that a statute authorizing a taking without just compensation is unconstitutional).

318. *See, e.g.*, New Mexico v. Gen. Elec. Co., 467 F.3d 1223, 1243, 1247–48 (10th Cir. 2006) (stating that there is not doubt that New Mexico manages public waters for the people and that the state is authorized to initiate suits to protect those waters, but Congress' creation of CERCLA, designed to cleanup hazardous waste, creates a comprehensive scheme that will preempt a state's cause of action against polluters when the state seeks an unrestricted award of money damages).

319. Houck, *supra* note 89, at 1926, 1928.

320. *See generally* Cutting & Cahoon, *supra* note 10, at 68 (arguing that parties should look at property from an ecosystemic viewpoint).

damages issues later); and (4) as a result of the lack of knowledge, judges, policymakers, and the public have difficulty even comprehending catastrophic scenarios as far out as 2050 or 2100.[321]

The fraud themes of the tobacco litigation raised in the *Cipollone* case could be used in the damages and injunctive relief phases.[322] Critics contend that automakers and power generators have concealed knowledge of greenhouse gas emissions risks and funded disinformation campaigns, much as Big Tobacco did with the hazards of smoking.[323] For example, automakers have for decades lobbied against tougher CAFE standards and for favorable tax status to promote larger vehicles (e.g., SUVs), when they knew in the 1970s that fuel efficient vehicles also produce fewer emissions.[324] They should have been reasonably aware of the cumulative effects of emissions, including the ultimate effects of the accumulation of greenhouse gases.[325] Similarly, utilities have marketed conversion to electric power without regard to the resulting increase in emissions, instead of encouraging conservation and investing in sustainable energy sources.[326] Claims for punitive damages on these theories would be subject to the new rule of *Exxon Shipping Co. v. Baker*, but the actual damages—even under that formula—would result in staggering sums.[327]

Damage calculation would differ depending on source category. A mobile source manufacturer's total emissions vary with the use of its vehicles; thus requiring apportionment via market-share or some other valid statistical measurement (at least until each vehicle is wired in through some

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321. *See supra* Part II.D.

322. *See* Cipollone v. Liggett Group, Inc., 505 U.S. 504, 527 (1992) (alleging fraudulent misrepresentation).

323. Stephen Faris, *Conspiracy Theory*, THE ATLANTIC, June 2008, at 32, 34. (discussing the legal ramifications of the possibility that industry has funded groups to promote writers who overestimate the uncertainties of global warming and minimize the anticipated effects, as recently alleged by the Union of Concerned Scientists). *See generally* Pawa, *supra* note 5, at 119 (discussing industry-funded campaigns to deceive policymakers and the public about the consequences of global warming).

324. THE ENERGY PROJECT, HARVARD BUSINESS SCHOOL, ENERGY FUTURE 181 (Robert Stobaugh & Daniel Yergin eds., 1979) (discussing industry attitudes towards fuel efficiency and the energy economy from the 1950s to the 1970s). Thomas Friedman notes that Amory Lovins of the Rocky Mountain Institute calculates that we could also have been free of dependence on Middle East oil as of 1985 had we continued to conserve fuel at the same rate as the country did in the years after the OPEC oil embargo of 1974, but that President Reagan rolled back the CAFE standards in the heat of deregulation. HOT, FLAT, AND CROWDED, *supra* note 14, at 12.

325. The Presidents Science Advisory Council warned of global climate change in 1965. *See*, ENVIRONMENTAL POLLUTION PANEL, *supra* note 15, at 199.

326. Peter Lehner, *Changing Markers to Address Climate Change*, 35 B.C. ENVTL. AFF. L. REV. 385, 395–96 (2008).

327. *See* Exxon Shipping Co. v. Baker, 128 S. Ct. 2605, 2626–27 (2008) (stating punitive damages need to be regulated at common law so that penalties are "reasonably predictable").

network). Regulators for stationary sources can calculate stack emissions much more directly and in real-time.

Monetary damages in court actions as well as emissions charges or legislatively-imposed taxes might also be utilized to: (1) support data collection to eliminate the "data deficit," at least on global warming issues, and (2) mitigate future damages through a pool, insurance, or bonding (thus utilizing very efficient free-market prognosticators of environmental damage).

B. Equitable Remedies

Equitable relief in the nuisance cases would involve balancing. In trespass cases at least one state supreme court has indicated that *Boomer*-like balancing ought to be used for trespass, but only at the remedy phase after there has been a clear determination of liability.[328] The toolbox includes:

1. Injunction

An injunction could be as straightforward as a prohibition on transboundary emission of greenhouse gases. Injunctions could also be utilized to mandate the submission of a plan to eliminate the incursions, allowing creative solutions by defendants themselves.

2. Creative Remedies

In attorneys general or NGO public interest litigation, public officers have vast experience handling mass claims in consumer and antitrust litigation; hence courts might be more likely to utilize continuing jurisdiction. Remedies could include:

- Bonding or indemnification by generators for past, present, and future harms;
- A mechanism for expedited resolution of any claims resulting from the effect of a discharge (although numerous procedural issues arise, e.g., employing special masters);[329]
- Timetables and conditions for emissions reductions reflecting prevailing scientific wisdom and the precautionary principle;

328. Spur Ind., Inc., v. Del E. Webb Dev. Co., 494 P.2d 700, 705–06 (Ariz. 1972) (discussing damages as the only remedy in "balancing of convenience" cases).

329. *See generally* FED. R. CIV. P. 53.

- Regulation of products that emit, such as restrictions on sales of high emission/low mileage cars, retrofits or recalls, and buybacks;
- Efforts to reduce emissions through changed consumer behavior (e.g., energy conservation), including contributions to alternative transportation and advertising;
- Restoration damages, such as reforestation;
- Pre- and post-decree monitors, monitoring, and receivers;
- Restitution of profits from avoidance of the control emissions costs;
- Funding research to better inform the nation and litigants; and
- Credits for reductions in other, more potent greenhouse gases such as methane, nitrous oxide, or CFCs, perhaps based on their relative radiative forcings.[330]

A court could also consider ordering credit for actions such as global reduction of carbon dioxide emissions. Negotiated settlements could quite clearly include an even wider range of creative options for defendants. Could the court reach the issue of reduction in vehicle trips per day by requiring such things as alternative transportation? Certainly courts could require a plan affording creativity to defendants in meeting timetables for reduction that might include credit for reductions through mass transit alternatives such as contributing to publicity to stimulate demand and providing hardware or other technology.

Professor Zasloff believes that damages claims are superior to equitable relief claims because they may avoid (1) justiciability arguments (such as those made in *AEP*); (2) they more closely approximate to "green taxes" favored by economists; and (3) equitable relief is difficult and expensive to manage and leads to transaction costs.[331] The California Attorney General's lead counsel argued that *California v. GM* seeks damages because there are real and identifiable past and future costs.[332] All of these are valid considerations, but equitable relief may actually provide more flexibility to the generators. Moreover, the attorneys general have substantial experience managing extensive systems of redress, and equitable remedies can be used to provide additional incentives—such as the threat of contempt—encouraging defendants to avoid damaging conduct.[333]

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330. IPCC SYNTHESIS REPORT, supra note 38, at 36 (explaining relative radiative forcing).

331. *See* Zasloff, *supra* note 20, at 1835 (discussing the higher transaction costs in consumer-demand scenarios for encouraging emissions producers to engage in cost-avoidance activities).

332. Alex, *supra* note 4, at 167–70.

333. This is a major goal of consumer protection litigation, for example, those cases under California's Business and Professions Code. Once the public prosecutor has a "handle" on the defendant through injunctive relief, later compliance is enhanced. Attorneys general have for many years administered complex damage and refund cases in the arenas of consumer protection, antitrust,

Note that because Professor Zasloff believes that the California automaker case, *California v. GM*, is preempted; he is of the view that damages should be sought from upstream defendants (e.g., fossil fuel producers).[334]

C. The Constitutional Claims

1. *Loretto* Damages

"Takings" damages vary with the nature and extent of the invasion. Permanent takings would effectively require condemnation damages. Temporary takings might only result in damages during that temporary taking.[335] Condemnation (or inverse condemnation) theoretically results in the payment of fair market value, which might be difficult to determine given the data deficit and the effects of any permitted continuation of the trespass. The best solution would include an adjustment mechanism with low transactional costs to adjust for the risk of future unknown damages and provide for payment security through bonding or insurance.

2. Voiding the Statute

We think temporary "takings" damages are preferable to voiding the statute because: (1) the temporary nature of the pollution is recognized, and (2) the government must either reduce the effect or condemn the property, an option that might not be palatable. The shield statutes were voided because they eliminated the right of private parties to sue for a nuisance property invasion.[336] But taking all airspace for the transit and deposition of

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and in the tobacco litigation, among others. Devices include *cy pres*, restitution, damages, and refunds per the unfair business practice statutes, special masters, private contractors (for mailings, e.g.), multi-state remedies, such as the tobacco settlement funds, and expedited claims review. Interview with Thomas Greene, Special Assistant Attorney General, State of California (Oct. 15, 2008). Mr. Greene confirmed that the office is fully prepared to administer complicated claims procedures for *California v. GM*.

334. Zasloff, *supra* note 20, at 1856–58.

335. *See generally* First English Evangelical Lutheran Church v. Los Angeles, 482 U.S. 304, 318–19, 321 (1987) ("We merely hold that where the government's activities have already worked a taking of all use of property, no subsequent action by the government can relieve it of the duty to provide compensation for the period during which the [temporary] taking was effective."); United States v. Causby, 328 U.S. 256, 268 (1946) (stating it would be "premature" to evaluate the amount of the award without knowing if the taking was temporary or permanent).

336. *See, e.g.*, Gacke v. Pork Xtra, L.L.C., 684 N.W.2d 168, 171, 175 (Iowa 2004) (declaring statutes permitting nuisance without recovery to be unconstitutional); Bormann v. Bd. of Supervisors, 584 N.W.2d 309, 321–22 (Iowa 1998) (invalidating a statute that authorized the use of property in such a way as to infringe on the rights of others by allowing the creation of a nuisance without the payment of just compensation).

pollutants without a mechanism to counter the effects might justify voiding the entire statute.[337] Voiding the permitting statute might outlaw all emissions if the statute requires an emitting permit, or alternatively voiding might also allow emissions if the statute only outlaws emissions requiring a permit. If the statute is voided, courts would still play a key role because common law remedies could be utilized in the same action to eliminate the trespass or nuisance and allow the plaintiff to recover damages. The courts would also hear any enforcement actions.

On the other hand, there are reasons to consider voiding an enabling act. First, why permit *any* invasion of others' property, especially if the court concludes it would constitute a "taking?" Second, does the statute impose identifiable rights on private property (easement allowing trespass or nuisance, e.g.) and then deny a private party's access to the courts for claiming special damages?[338] Third, does the statute sweep away extensive public and private rights in actual physical space, a result that as a matter of judicial economy might invite invalidation rather than a multitude of individual actions for redress of damages?[339]

IV. COUNTERMEASURES

To avoid government liability, states might react either positively to implement rights of receptors through a statutory mechanism to control

337. *See Causby,* 328 U.S. at 273–74 (Black, J., dissenting) (concluding that the Civil Aeronautics Act was constitutional, but noting that in his view the proper remedy for the court would have been to void the entire statute if the majority wanted to reach the issue in the case (a constitutionally protected zone of airspace)).

338. *See Gacke*, 684 N.W.2d at 171, 175 (declaring statutes permitting nuisance without recovery to be unconstitutional); *Bormann*, 584 N.W.2d at 321–22 (invalidating a statute that authorized the use of property in such a way as to infringe on the rights of others by allowing the creation of a nuisance without the payment of just compensation).

339. Other policy criteria that might be considered include: (1) the existence of a valid public purpose that justifies an invasion by pollutants sufficient to satisfy the tests of *Kelo v. City of New London*, 545 U.S. 469, 480, 483 (2005), and *Hawaii Housing Auth. v. Midkiff*, 467 U.S. 229, 244 (1984); (2) the nature of the pollutant, including the risk of harm; (3) the scope of interest affected, including the impact on the property (under *Causby* and its progeny); (4) the harmfulness of the invasion (determined in large measure by whether there has been an appropriation of the entire property rather than just an easement); and (5) the larger interest. The larger interest is especially relevant if the extent of the taking is broad in scope, and might give little reason to save the statute (although a minor easement over a wide region could be compensable in temporary damages). If there is no valid public purpose, then the statute ought to be voided. If the emissions are not immediately harmful, consideration must be given to whether both the short-term and long-term effects might be managed by a combination of equitable relief and compensation. This discussion is about greenhouse gases, but the concepts are the same for other pollutants. The cumulative extent of the damages from greenhouse gas emissions might augur for the invalidation of any statutes permitting catastrophes on the scale of those predicted as a result of global warming.

emissions, or negatively by attempting to block actions by receptors. Legislatures could: (1) authorize courts to exercise continuing jurisdiction during a temporary taking period; (2) require indemnification, insurance, and bonding from dischargers; or (3) specifically authorize condemnation (if the test of valid public purpose can be met). We have previously suggested concrete steps to reconcile receptors' rights with those of the generators.[340]

A legislature could also alter its regulatory structure to protect receptors against transboundary emissions by outlawing any emissions and implementing a reduction procedure and timetable. The declining rights could even be allocated via a cap-and-trade system. A compensation mechanism for receptors—enforceable by either state agencies or the courts—in the event of damage could be included. Alternatively, of course, without legislation in many jurisdictions, the government might initiate enforcement proceedings (through either statutes or the common law), act as *parens patriae*, or even utilize the trade regulation statutes.[341] Enforcement actions would involve far fewer litigants (not all sources would resist) resulting in less time and cost, and could result in very substantial penalties (to offset costs and fund research) as well as extensive equitable relief (especially compared with the complexity and potential governmental downside of defense of mass claims for "takings").

There are significant issues regarding the government's acquisition of pollution rights through condemnation, including concerns relating to logistics and cost. Another issue is the government's liability as the owner of the condemned property who facilitates the effects of global warming. The question is whether imposing unknown pollutants on receptors—especially without any remedy for harm—would be a valid public interest.[342] Is protecting the economic interest of generators sufficient to overcome the impact on receptors? The government's best argument is that sovereign immunity would blunt any action for damages, which generally insulates the government from a constitutional claim (but did not save the

340. *See* Cutting, *supra* note 13, 893–94 nn.461–63 (discussing the reconciliation of receptors' and generators' property rights); *see also* Cutting & Cahoon, *supra* note 10, at 87–90 nn.111–17 (proposing concrete requirements for shifting pollution burdens away from receptors to generators).

341. *See, e.g.*, CAL. BUS. & PROF. CODE §§ 17202, 17204 (West 2008) (providing public prosecutors and courts the power to bring charges and grant relief in instances of unfair competition).

342. *See generally Kelo*, 545 U.S. at 480, 483 ("The disposition of this case therefore turns on the question [of] whether the City's development plan serves a public purpose."); *Hawaii Housing Auth.*, 467 U.S. at 244 ("[I]n our system of government, legislatures are better able to assess what public purposes should be advanced by an exercise of the taking power.").

U.S. in *Causby*).[343] That position, however, might prove politically unpalatable.

While generally the existence of a permit cannot constitute a defense if the landholder has not consented to the intrusion,[344] a legislature might be tempted to enact specific shield legislation to avoid the multiplicity and complexity of trespass actions by NGOs and attorneys general. Many states have done this for farm nuisance claims. This procedural shield would deprive owners of their property rights under either nuisance or trespass theories and should be voided following the U.S. Supreme Court precedent in *Richards*.[345] The state could also amend property laws to exclude airspace—even below 500 feet—but then the statute would eliminate all private property rights—a taking under *Causby*.[346]

V. GLOBAL WARMING IN A GLOBAL ECONOMY

Given the global nature of the problem, a serious issue we cannot overlook is how a nation might implement the advocated common law remedies sought by the plaintiffs in the GHG litigation and still remain competitive in the global economy. While a full discussion is beyond the scope of this article, we cannot ignore that trade pacts must be modified to permit nations to limit access to their markets for entities that operate under less-stringent environmental regulations. Failure to allow such limits constitutes an unfair trade practice as well as a practice that is harmful to the global environment and therefore public health.[347] In a "race to the

343. United States v. Causby, 328 U.S. 256, 266–68 (1946) (the Court agreed with the Court of Claims that there was a taking of an easement of private airspace and returned the case for determination of damages).

344. *See generally* Bates v. Dow Agrosciences, L.L.C., 544 U.S. 431, 448 (2005) (arguing that states are not precluded from providing remedies where federal statutes do not, so long as the state requirements do not differ from those imposed by the federal statute); DANIEL SELMI & KENNETH MANASTER, STATE ENVIRONMENTAL LAW § 4:1 (2007) ("Moreover, the fact that the government has issued a permit authorizing the 'invasion' will not preclude a trespass action if the owner of the invaded property did not consent to the intrusion.").

345. *See* Richards v. Wash. Terminal Co., 233 U.S. 546, 553 (1913) ("[T]he legislature . . . may not confer immunity from an action for private nuisance . . . as to amount in effect to a taking of private property for public use."); Gacke v. Pork Xtra, L.L.C., 684 N.W.2d 168, 171, 175 (Iowa 2004) (declaring statutes permitting nuisance without recovery to be unconstitutional); Bormann v. Bd. of Supervisors, 584 N.W.2d 309, 321 (Iowa 1998) (invalidating a statute that authorized the use of property in such a way as to infringe on the rights of others by allowing the creation of a nuisance without the payment of just compensation).

346. *Causby*, 328 U.S. at 262–63 (1946).

347. *See generally* PATRICK WOODALL, WHEN BAD THINGS HAPPEN TO GOOD LAW 8 (2004), *available at* http://www.sierraclub.org/trade/california/CATradeReport.pdf (arguing that the major trade treaties threaten to invalidate state as well as federal environmental laws).

bottom," generators move from jurisdictions with more stringent pollution control laws (as well as labor laws) to areas with few laws or lax enforcement, thereby achieving significant cost reductions.[348] Some economists, however, contend that manufacturing countries still behave more as the customer nations environmental regulations would require.[349] One example is the U.S. border with Mexico, where U.S. companies simply moved from the U.S. to the Mexican side of the Rio Grande, and where Mexican enforcement of environmental regulations has historically been lax (the *maquiladora* phenomena).[350] Why should entities that operate in less-developed nations to avoid more stringent pollution control rules enjoy any advantage for evading measures intended to protect the population's health and the planet's resources and environment? U.S. laws are presently designed to prohibit just such tactics. The CAA and the CWA both contain provisions designed to prevent polluters from simply moving to another area to avoid pollution regulations.[351] Why countenance the phenomenon at a global level? We have thus advocated renegotiation of the trade treaties to make evasion of market countries' standards an unfair trade practice.

On another level, could U.S. enforcement actions reach foreign sources? The customary law offers one avenue for enforcement, but only if the parties agree.[352] Is there jurisdiction in U.S. courts? Professor Zasloff makes an interesting case for U.S.-based actions[353]. Causing effects in the jurisdiction ought to permit it, unless the plaintiff has "unclean hands" because the U.S. is doing the same things! But, in any forum, would India, China, and Russia, and the U.S. comply? We think the idea is useful to illustrate why the trade pacts must be modified so that it is declared to be an unfair trade practice to produce goods or services that generate pollutants in excess of the market state law and that actually cause damage in the market state (1) because of the pollution, or (2) because of the competitive

348. *See generally* Ralph Nader, *WTO Means Rule by Unaccountable Tribunals*, WALL ST. J., Aug. 17, 1994, at A12 (discussing the impact of the WTO's "least restrictive" requirement on U.S. domestic law).

349. Alan M. Rugman & Alain Verbeke, *Corporate Strategy and International Environmental Policy*, 29 J INT'L BUS. STUD. 819, 819–33 (1998).

350. *See, e.g.*, Alejandro Queral, *Border Lines: Issues in the Lower Rio Grande Valley*, 2 EJ TIMES 1 (2001), at 11, http://www.sierraclub.org/ej/downloads/v2i1.pdf (discussing the *maquiladora* phenomena in Mexico).

351. Clean Air Act, 42 U.S.C. § 7475(a)(3)(A) (2000); Clean Water Act, 33 U.S.C. § 1311(a) (2000).

352. *See, e.g.*, Trail Smelter Case (*United States v. Canada*), 3 R.I.A.A. 1905, 1965 (Mar. 11, 1941) (detailing international arbitration concerning pollution arising in Canada which was causing damage to the United States), discussed in Read, *The Trail Smelter Dispute*, 1 Can Y.B. Intl. 213, 215–29 (1963) and in Schwabach, *The Sandoz Spill: The Failure of International Law to Protect the Rhine from Pollution*, 16 ECOL. L.Q. 443, 454–71 (1989).

353. Zasloff, *supra* note 20.

advantage enjoyed by the state with lax laws.[354]

Clearly, negotiations on the successor treaty to Kyoto offer the most immediate promise, although with the fall 2008 monetary crisis, E.U. countries have suggested retreat from earlier goals. "This is not the time to abandon a climate change agenda," stated British Prime Minister Gordon Brown, saying the two issues were linked355 It is assumed that any new pact will rely on emissions trading since it appears that it will be less expensive and more politically palatable to contain emissions at foreign facilities than to retrofit many developed nations' existing sources and developing countries continue to maintain that they should shoulder less of the burden because of the costs and the advantage that the developed world obtained from polluting for decades. Creativity in credits for reductions from other sources (e.g. indirect source control, such as assisting mass transit) or of other greenhouse gases is attractive when the alternatives are available globally. With these options business entities should have less incentive to facilities or work offshore. The principle problem with emissions trading is that if the emissions reduction goal is insufficient, as critics contend has been the case in the E.U.,[356] and costs are not internalized, who will compensate the victims?

CONCLUSION

Given an absence of coordinated national activity to address the effects of global warming, the common law offers an interesting resurrection of the concept of accountability for GHG emissions. Current actions by the attorneys general and NGO's: (1) raise public awareness, particularly of the costs of inaction; (2) keep some pressure on reluctant administrations, especially if part of the price tag of the damage litigation falls on government; and (3) offer a real tool to provide remedies for the results of global warming. The concept of trespass offers some further procedural as well as substantive advantages. It also provides a worldview that blends traditional property rights with the scientific realities of pollutant transport from generators to receptors.

Under nearly any scenario, significant public or private research investment would be needed so that scientists, the medical community, and economists could finally quantify the actual costs of pollution. In many

354. The same should be true for child labor and other unfair labor practices, including workplace exposure to toxics.

355. Arthur Max, *Crisis Bodes Ill for Climate Change Talks*, Oct. 15, 2008, http://News.Practice.Findlaw.Com/Ap/I/1103/10-15-2008/20081015132004_53.Html.

356. Zasloff, *supra* note 20, at 1939–40.

cases, the results may reveal process changes or new uses for wastes. In any event, generators ought to provide both research and sufficient licensing fees for regulatory evaluation, similar to the review procedures for pharmaceutical products, before disposing of waste in public and private space. If pollution is to be subsidized by government permit, the process should be crystal clear. The public sector could then allocate additional subsidies to researchers through more independent scientific panels than have been seen for most of the eight years of the Bush Administration. Presumably, generators would then have a market incentive to fund research to eliminate transboundary waste. Appropriately, better research should also reveal areas that have been over-regulated.

Perhaps most importantly, the public interest in holding generators responsible for adverse effects cannot be underestimated—especially when the costs to that same body politic are fully understood. There are far more receptors than generators and we will lay odds that the public would rather see generators shoulder the burden for all the costs of polluting as the free market demands, than let the populace be subjected to both the conditions and the costs.