Litigating Canada-U.S. Transboundary Harm: International Lawmaking and the Threat of Reciprocity

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Litigating Canada-U.S. Transboundary Harm: International Environmental Lawmaking and the Threat of Extraterritorial Reciprocity

SHI-LING HSU* & AUSTEN L. PARRISH**

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INTRODUCTION

One of the challenges facing international legal theorists is to understand the extent of recent changes in international law and relations. A burgeoning amount of scholarship exists that grapples with the declining relevance of territoriality\(^1\) and state sovereignty,\(^2\) the impact of globalization,\(^3\) and the migration of law across borders.\(^4\) Scholars have similarly debated the role that non-state actors play in international law.\(^5\)

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including the salience of international institutions, and the importance of transnational processes and global networks. Intimately connected to all these debates is another phenomenon, which the changes in the international system foster: the extraterritorial application of U.S. laws by U.S. courts to solve transboundary disputes.

These changes have played out with pronounced force in the international environmental law context. For many environmentalists, the traditional view of environmental lawmaking as the exclusive business of nation states has become anachronistic. In a fast-paced global econo-


11. See Michael McGonigle, Between Globalism and Territoriality: The Emergence of an International Constitution and the Challenge of Ecological Legitimacy, 15 Can. J.L. & Jurisprud. 159, 168 (2002); see also Russell A. Miller, Surprising Parallels Between Trail Smelter and the Global Climate Change Regime, in Transboundary Harm in International Law: Lessons from the Trail Smelter Arbitration 168 (Rebecca M. Bratspies & Russell A. Miller eds., 2006) (explaining that the rise of “nonstate actors suggests a new world order in which the nation state’s Westphalian prerogative is increasingly suspect”); cf. Duncan B. Hollis,
my, international environmental treaties are often too cumbersome and sluggish to address environmental challenges. From climate change litigation, to transboundary pollution, to shared management of natural resources, international environmental lawmaking is increasingly occurring at the subnational level in U.S. courts. Some American environmentalists cheer these developments, perceiving them to encourage an environmental race to the top. Other scholars declare the “dawn of a new era” of transboundary environmental litigation.


As broad as this scholarship is, however, in some respects it remains undeveloped. First, the existing scholarship often speaks in abstract theoretical terms or in broad generalities, while failing to explain how domestic law can practically address transboundary challenges. The scholarship at times ignores context and nuance; generically proposing domestic litigation is one thing, explaining how a suit in a particular dispute might succeed is another. Second, the scholarship is United States-centric. Missing from the conversation is an understanding of how trends in international law and relations are playing out beyond U.S. borders. Will other countries’ citizens seek in their courts to apply their own domestic environmental laws extraterritorially? If so, how will this impact American interests? This Article will jump headfirst into this scholarship gap. It does so by focusing on an unlikely flashpoint: the U.S.-Canada relationship.

application of domestic environmental laws); see also Joel A. Gallob, Birth of the North American Transboundary Environmental Plaintiff: Transboundary Pollution and the 1979 Draft Treaty for Equal Access Remedy, 15 HARV. ENVTL. L. REV. 85 (1991) (arguing for court-based solutions to transboundary pollution problems); cf. Noah D. Hall, Bilateral Breakdown: U.S.-Canada Pollution Disputes, 21 NAT. RESOURCES & ENV’T. 18, 23 (2006) (“Ideally, we could allow domestic litigation to resolve these disputes in a way that strengthens, not undermines, the United States-Canada relationship.”); Hall, supra note 14, at 723–736 (describing how domestic litigation can be used to address transboundary pollution).


19. Attorneys asserting Alien Tort Claims Act (ATCA) claims have first-hand knowledge of the disconnect between theory and practice. Although academics have encouraged those claims for human rights violations, the number of successful claims has been limited. See Barnali Choudhury, Beyond the Alien Tort Claims Act: Alternative Approaches to Attributing Liability to Corporations for Extraterritorial Abuses, 26 NW. J. INT’L L. & BUS. 43, 44 (2005) (explaining that “individuals using the ATCA to hold MNCs accountable for human rights violations have not met with considerable success”); Sean D. Murphy, Taking Multinational Corporate Codes of Conduct to the Next Level, 43 COLUM. J. TRANSNAT’L L. 389, 428–29 n.158 (2005) (explaining that “numerous suits have been filed against MNCs under the Alien Tort Claims Act...although to date with limited success”).

Transboundary problems straddling the 49th parallel have recently cast a pall over the relationship between the world’s closest political and economic allies. This Article forecasts that, in light of recent border-tensions and the apparent American willingness to extraterritorially apply U.S. laws, Canadians increasingly will explore the extraterritorial application of their own domestic laws to remedy transboundary environmental harm. The Article explores this argument through the lens of a particularly contentious cross-border issue—the transboundary air pollution that the province of Ontario suffers from U.S. stationary pollution sources. Canadian diplomatic attempts to resolve this longstanding pollution problem have failed. And, with recent studies showing that U.S. pollution causes yearly health and environmental costs in Ontario exceeding $5.2 billion, Canadians may be less willing to overlook the problem in anticipation of a cooperative solution.

This Article proceeds in three parts. In Part I, the Article provides context: it describes the deterioration of U.S.-Canadian cooperation and the increasingly common rejection of bilateral institutions and treaties to solve cross-border disputes. In so doing, the Article canvases several of the most important and recent transboundary cases between Canada and the United States. Part II places the focus on a particular irritant in U.S.-

21. Noah Hall has noted the issue without reaching it: “If American citizens can protect themselves from Canadian pollution using citizen suits under U.S. law in U.S. courts, should not the Canadian federal government also give its citizens the same opportunity to protect themselves from American pollution using Canadian domestic laws in Canadian courts?” Hall, supra note 14, at 738 n.38; see also Abate, supra note 18, at 133 (asking whether the “floodgates of litigation” will open with suits “hauling U.S. businesses into Canadian courts for the effects of polluting activities that originate in the United States”); Marcia Valiante, “Welcomed Participants” or “Environmental Vigilantes”? The CEPA Environmental Protection Action and the Role of Citizen Suits in Federal Environmental Law, 25 DALHOUSIE L.J. 81 (2002) (exploring the desirability of citizen suits under Canadian law).


23. See Laurel Broten, Minister of Env’t, Remarks at a Media Briefing on Transboundary Air in Washington, D.C. (May 10, 2006), available at http://www.ene.gov.on.ca/en/about/minister/speeches/051006.php (describing the problem of transboundary air pollution as one “that kills Canadians and Americans without prejudice” and “a problem that we cannot ignore”).
Canada relations: the problems facing Ontario from U.S. pollution and Canada’s failure to find lasting and comprehensive diplomatic solutions. In Part III, the Article suggests that the province of Ontario in particular likely will explore enacting and then using extraterritorial laws to remedy transboundary harm when traditional dispute mechanisms prove ineffective. The Article explains how changes in law and science have created a receptive environment for this kind of transboundary lawsuit brought in a foreign court against American polluters. Particularly, it explains how the province of Ontario could enact a statute that would enable transboundary litigation to proceed. Lastly, in Part IV, the Article briefly explores the normative question of whether international environmental lawmaking through domestic litigation is a positive development. In answering that question, the Article ends on an ambivalent note. In the near term, transboundary civil litigation is a viable and useful tool to address serious cross-border harm – a tool that Canadians should use. Over the long term, however, domestic transboundary litigation will likely prove a poor substitute for the bilateral cooperation and effective federal involvement that until recently characterized Canada-U.S. relations.

I. CONTEXT: THE U.S.-CANADA RELATIONSHIP

Given the trade and economic integration between Canada and the United States, transboundary environmental disputes are hardly surprising. Until recently, however, Canada and the United States have been particularly effective at resolving these disputes diplomatically or through international or bilateral dispute resolution processes. But the once unparalleled cooperation between the two nations—although still strong—appears to be on a decline. A context exists where Canadians are willing more than ever to explore unilateral, extraterritorial solutions.

A. A History of Dispute Avoidance and Peaceful Resolution

The United States and Canada’s ability to cooperate and peacefully resolve differences has been unique. Internationally, the partnership between the two countries is admired: “[I]t has neither precedent nor equal in the international system today.”24 So strong has been the cooperation that the relationship is often described in romantic terms:

24. Kari Roberts, A Continental Divide? Rethinking the Canada-U.S. Border
[I]n a world in which it sometimes seems that each country is at odds with every other, the Canada-U.S. relationship has sometimes looked like an island of tranquility in a sea of conflict...the idea that Canada and the U.S. had somehow developed a magic formula for achieving a happy international marriage... Traditionally then, a strong preference has existed for the two neighbors to resolve their differences through diplomacy rather than through formal legal action.

Cooperation has been, in many ways, essential because Canada and the United States are strikingly interdependent. U.S.-Canada trade in services, cross-border investments, and tourism surpasses $42 billion yearly. In fact, the trading relationship represents the largest flow of income, goods, and services in the history of the world: a staggering $1.2 billion U.S. dollars daily. The United States exports more to Can-


27. See Roger F. Noriega, Assistant Sec’y of State for W. Hemisphere Affairs, Remarks to the Economic Club of Toronto about Trade and the Canada-U.S. Border (Mar. 29, 2004), available at http://www.state.gov/p/wha/rls/rm/31949.htm (describing the trade partnership); see also The Embassy of the United States of America, Ottawa, Canada, Canada-United States Relations (Jan. 2007), http://ottawa.usembassy.gov/content/content.asp?section=can_usa&subsection1=general&document=canusarelations (explaining that Canada and the United States have the world’s largest bilateral trading relationship and that Canada is the leading export market for 39 of the 50 U.S. states).

ada than it does to Britain, France, Germany, Japan, and China, combined. But the interdependence is not limited to trade. More than 200 million border crossings each year occur between the two countries, and ninety percent of all Canadians live within a hundred miles of the U.S. border. The countries also share numerous environmental challenges. These challenges include maintaining air and water quality, and the management of other shared resources, such as migratory birds and wildlife. Along the almost 5,000 mile border are also hundreds of

...
shared rivers and lakes,\textsuperscript{34} including the Great Lakes, which is the world’s large surface freshwater system (twenty percent of the world’s supply).\textsuperscript{35} With such a large number of shared resources and high level of integration, the two countries can hardly avoid sporadic disputes.\textsuperscript{36}

The reasons for the countries’ willingness to resolve disputes cooperatively are open to debate. On the one hand, the historic cooperation may be nothing more than the result of close cultural ties and a common history. Canada “share[s] a common law heritage in private law and in liberal democratic and federal structures of government” with the United States and the countries have other historical, societal, and legal similarities.\textsuperscript{37} Contact between the two nations is significant. For instance, over “2.4 billion phone calls took place between [the] two countries in 2002.”\textsuperscript{38} Also, over 250,000 people living in Canada are Americans or were born in the United States, while in the United States there are over 630,000 people with Canadian ancestry.\textsuperscript{39} And the majority of Canadians and Americans share a common language. Not surprisingly then,

\textsuperscript{34} See Catherine A. Cooper, The Management of International Environmental Disputes in the Context of Canada-United States Relations: A Survey and Evaluation of Techniques and Mechanisms, 24 CAN. Y.B. INT’L L. 247, 249 (1986); see also Gallob, supra note 17, at 112.


\textsuperscript{36} Lynton K. Caldwell, Transboundary Conflicts: Resources and Environment, in THE CANADA-UNITED STATES RELATIONSHIP: THE POLITICS OF ENERGY AND ENVIRONMENTAL COOPERATION 15 (Jonathan Lemco ed., 1992) (“The topography and hydrology bisected by the political boundary dividing Canada and the United States makes binational environmental policy problems inevitable.”); see also Cooper, supra note 34, at 249 (explaining that the geographic setting between the U.S. and Canada provides “ample opportunity for the generation of international environmental disputes”); John N. Hanson et al., The Application of the United States Hazardous Waste Cleanup Laws in the Canada-U.S. Context, 18 CAN.-U.S. L.J. 137, 137–38 (1992) (“[I]nterincreasing integration of the Canadian and United States economies, a process accelerated by the Canada/United States Free Trade Agreement, and the tightening of environmental standards on both sides of the border, is likely to result in increased environmental litigation between Canadian and United States parties.”); David G. Lemarquand, Preconditions to Cooperation in Canada-United States Boundary Waters, 26 NAT. RESOURCES J. 221, 221–23 (1986) (describing the risk of transboundary water pollution and disputes between the two nations).

\textsuperscript{37} Gérard V. La Forest, The Use of American Precedents in Canadian Courts, 46 ME. L. REV. 211, 212–13 (1994). La Forest also notes that there are “commercial and other forces peculiar to North American legal and societal development.” Id. at 213; see also Sarah K. Harding, Comparative Reasoning and Judicial Review, 28 YALE J. INT’L L. 409, 411, 412 (2003) (“As followers of the common law tradition, [Canada and the United States] adhere to similar interpretations of the rule of law, follow similar procedural and evidentiary rules, and believe strongly in the concept of stare decisis.”).


\textsuperscript{39} Id.
Canadians and Americans “tend to have closely similar attitudes, interests, and, arguably, a uniquely North American perspective and approach to problems.”

On the other hand, the existence of international agreements and bilateral institutions has contributed to the historic success in the countries’ cooperative approach to transboundary disputes. Bilateral treaties are one part of the equation. Almost a century ago, the two countries “established the foundation for their bilateral relationship on environmental matters with the Boundary Waters Treaty of 1909…” The treaty provides several means of addressing transboundary disputes, and it imposes obligations on the countries not to pollute boundary waters. The two countries subsequently have entered into literally hundreds of treaties that address a wide range of trade and environmental issues.

Cooperation and bi-national management of shared resources has not been limited in form to treaties. One of the lasting contributions to the

40. Bilder, supra note 25, at 13; see also John F. Helliwell, Canada: Life Beyond the Looking Glass, 15 J. OF ECON. PERSP. 107, 108 (2001) (arguing that the “United States is of far more importance to Canadian life and attitudes than the strength of the bilateral economic ties would suggest”). Differences, of course, do exist. See, e.g., VOLKER THOMSEN, CANADA ENROUTE TO PROSPERITY 18 (2004) (noting that despite “Canada’s dependence on the U.S. market[,]… Canadian values [are] so different from U.S. values” and Canadian “ambitions are different from U.S. ambitions”).


42. Hall, supra note 17, at 19; see also Treaty Between the United States and Great Britain Relating to the Boundary Waters Between the United States and Canada, U.S.-U.K., Jan. 11, 1909, 36 Stat. 2448 [hereinafter Boundary Waters Treaty].

43. Boundary Waters Treaty, supra note 42, pmbl. (noting that the Treaty’s purpose was to “prevent disputes regarding the use of boundary waters and to settle all questions which are now pending… involving the rights, obligations, or interests [of Canada and the United States]”); see also F.J.E. Jordan, Great Lakes Pollution: A Framework for Action, 5 OTTAWA L. REV. 65, 66 (1971–1972) (describing the purpose of the Boundary Waters Treaty).

44. Boundary Waters Treaty, supra note 42, art. IV; see also Jordan, supra note 43, at 67–68 (describing Canada’s insistence that a provision prohibiting pollution be included in the Boundary Waters Treaty).

Canadian-U.S. relationship made by the Boundary Waters Treaty was its creation of the International Joint Commission (IJC). Composed of six members (three from each country), the IJC was the first permanent U.S.-Canadian institution and was intended to be nonpolitical and impartial. The IJC “provides transboundary oversight, research, and fact-finding for the two governments…” It has the ability both to issue binding arbitral decisions, and to conduct nonbinding investigative reports. While the binding procedures have not been utilized, dozens of issues have been referred to the IJC for nonbinding recommendations and the IJC has handled well over a hundred cases. Until recently, the IJC has received high grades for its ability to work quiet diplomacy as a gentle persuader, and has “been praised as a low-key, diplomatic as a gentle persuader, and has “been praised as a low-key, nonbinding investigative key.

46. See Holsti & Levy, supra note 41, at 284.
49. Boundary Waters Treaty, supra note 42, art. IX (referral procedures); id., art. X (binding arbitration procedure); see also James G. Chandler & Michael J. Vechsler, The Great Lakes-St. Lawrence River Basin from an IJC Perspective, 18 CAN.-U.S. L.J. 261, 265–67 (1992) (describing the procedure for referring matters to the IJC for investigation and for binding arbitration).
50. See Chandler & Vechsler, supra note 49, at 263, 267 (explaining that the IJC has “never been asked to undertake [its binding arbitration role]”).
51. See, e.g., Wang, supra note 26, at 165 (stating that the IJC “has played an important role in the settlement” of transboundary water disputes and that “[i]n over one hundred cases referred to it from 1912 to [1981] it has produced unanimous reports in all but four cases”); Jennifer Woodward, Note, International Pollution Control: The United States and Canada–The International Joint Commission, 9 N.Y.L. SCH. J. INT’L & COMP. L. 325, 329 (1988) (noting that from 1909 to 1972, thirty-six references were sent to the IJC for nonbinding recommendations).
behind the scenes actor that helps move governments to solutions the governments are prepared to accept.” One would find it “hard to quarrel with [the IJC’s] long record of success” as a “truly one of a kind system for the settlement of disputes.”

Of course, the IJC is not the only established institution between the two countries. A more recent institution for resolving transboundary disputes developed from the environmental side agreement to NAFTA—the North American Agreement on Environmental Cooperation (the Side Agreement). The Side Agreement’s purpose was to address regional environmental concerns and to promote the effective enforcement of environmental laws, while preventing potential trade and environmental conflicts. To accomplish this, the Side Agreement established the North American Commission on Environmental Cooperation (CEC). Three entities compose the CEC: “the Council (made up of cabinet-level environment ministers from the three countries); the Joint Public Advisory Committee (made up of fifteen appointed members, five from each of the three countries), and the Secretariat (a professional staff).” In addition to government-to-government claims, the IJC is highly respected and its recommendations are very influential in both the United States and Canada.”; see also INT’L JOINT COMM’N, CANADA AND THE UNITED STATES 2005 ANNUAL REPORT (2005), available at http://www.ijc.org/php/publications/pdf/ID1591.pdf (summarizing IJC activities).


57. For a summary of the environmental criticisms of NAFTA, see Halil Hasic, Article 1110 of NAFTA: Investment Barriers to “Upward Harmonization” of Environmental Standards, 12 SW. J. L. & TRADE AM. 137 (2005).


59. Robinson-Dorn, supra note 17, at 306 (citing COMM’N FOR ENVTL. COOPERATION,
private actors are permitted to make submissions to the CEC if any of the state parties fail to effectively enforce their environmental laws. The CEC is also empowered to investigate, develop factual records, and make nonbinding recommendations. Until recently, the CEC had taken an increasingly important role in resolving cross-border disagreements.

B. The Retreat from Bilateralism

The unparalleled cooperation between the two countries, however, may be cycling downward. Notably, the countries in recent years have been hesitant to use traditional transboundary dispute mechanisms. The countries have bypassed treaty processes, have stopped using the IJC on important matters, and have limited the CEC’s influence. Dis-
disputes that once seemed temporary and easily resolved have become “increasingly protracted and difficult.”66 “From the closing of the U.S. border to Canadian beef and the softwood lumber impasse, to U.S. allegations of lax Canadian immigration laws and security at airports and other points of entry, the disputes over cross border waterways, navigating the border relationship has become more complicated.”67 Some commentators have “decried the end of an era, arguing that the Canada-U.S. relationship has been irrevocably changed.”68

Three recent landmark, but contentious, disputes underscore the extent of the changed state of relations. First was Devil’s Lake.69 Several bilateral relations or take on any of the new environmental challenges facing the two countries”); Toope & Brunée, supra note 48, at 282 (explaining how in the 1980s and 1990s, the countries “drastically reduced their reliance upon the IJC’s reference function”).

65. See Knox, supra note 60, at 439–40 (describing the low number of submissions related to the United States).


68. ROBERTS, supra note 24, at 3; see also Sax & Keiter, supra note 67, at 297–98; cf. COUNCIL ON FOREIGN RELATIONS, BUILDING A NORTH AMERICAN COMMUNITY: REPORT OF AN INDEPENDENT TASK FORCE 1 (2005) (noting that Canada, Mexico, and the United States “face a historic challenge: Do they continue on the path of cooperation in promoting more secure and more prosperous North American societies, or do they pursue divergent and ultimately less secure and less prosperous courses?,” but concluding that governments are still committed to cooperation). See generally TENSIONS AT THE BORDER, supra note 54 (describing tensions over climate change, acid rain, energy, and transboundary pollution). This is not the first time for such pessimism. In the 1980s, several scholars argued that the “vision of a unique Canadian-U.S. talent for dispute-settlement” was “more rhetoric than reality—a tinsel romance under only a paper moon.” Bilder, supra note 25, at 6.

69. See Hall, supra note 14, at 721 (describing the Devils Lake dispute); Joseph M. Flanders, Note, Transboundary Water Disputes on an International and State Platform: A Controversial Resolution to North Dakota’s Devils Lake Dilemma, 82 N.D. L. REV. 997, 1002–04 (2007) (describing dispute); see also People to Save the Sheyenne River, Inc. v. N.D. Dep’t of Health, 697 N.W.2d 319 (N.D. 2005) (Canadian environmentalist and Manitoba challenge to the North Dakota Department of Health’s grant of a permit for diversion). For a related dispute where Canadians have turned to litigation in a U.S. court when diplomacy was ineffective, see Manitoba v. Norton, 398 F. Supp. 2d 41 (D.D.C. 2005) (dispute over the U.S. Bureau of Reclamation’s “NorthWest
years ago, the State of North Dakota embarked upon a plan to solve a drainage problem that Devils Lake causes. Devils Lake has no natural outlets; when it expands (as it has been), it causes substantial harm and dislocation. Working with the U.S. federal government, North Dakota developed a plan to build a drainage canal that would feed into the Sheyenne River. The Sheyenne River, however, flows into the Red River, which forms the border between North Dakota and Minnesota before crossing the U.S.-Canadian border into the province of Manitoba and eventually flowing into Lake Winnipeg. Concerned about the environmental impacts of this plan (in particular the introduction of invasive species), Manitoba and various other groups objected. North Dakota ignored these objections, despite urging from the U.S. federal government. The dispute has been “nasty,” and has caused “political turmoil.” Although an agreement was reached eventually, the terms of

Area Water Supply Project” in North Dakota).


71. See Abate, supra note 18, at 132; Hall, supra note 14, at 721.

72. People to Save the Sheyenne River, Inc., 697 N.W.2d at 323; see also Nicole Shalla, People To Save The Sheyenne River, Inc. v. North Dakota Department of Health: Setting A Permit Precedent, While Allowing Pollution To Transcend International Borders, 10 GREAT PLAINS NAT. RESOURCES J. 73, 74–78 (2006) (summarizing the Sheyenne River case and describing the background of dispute).

73. See generally DeNeen L. Brown, ‘Sacred’ Waters, Unholy Controversy; Dakota Tribe Fights Plan to Drain Lake, WASH. POST, June 25, 2004, at A14 (describing Canada-U.S. dispute over Devils Lake); Devils Lake Too ‘Sacred’ for Drainage: Elder from North Dakota Tribe Opposed to Controversial Project, WINNIPEG FREE PRESS, June 30, 2004, at B10 (“Canadian officials have joined with environmental groups and native Americans to raise concerns about plans by the federal and state governments to build drainage outlets, intended to reduce the lake's flooding.”).

74. See John Knox, Environment: Garrison Dam, the Columbia River, the IJC, and NGOs, 30 CAN.-U.S. L.J. 129, 133–34 (2004); see also Hollis, supra note 70, at 4; Sheryl A. Rosenberg, A Canadian Perspective on the Devils Lake Outlet: Towards an Environmental Assessment Model for Management of Transboundary Disputes, 76 N.D. L. REV. 817, 839–40 (2000).

the agreement required North Dakota to concede very little.\textsuperscript{76} Demonstrating the distrust for bilateral institutions, both countries were unwilling to submit the matter to the International Joint Commission\textsuperscript{77} and the CEC was unwilling to hear the dispute.\textsuperscript{78}

Second, on the heels of Devils Lake came the Trail Smelter controversy. In\textit{ Pakootas v. Teck Cominco Metals, Ltd.}\textsuperscript{79} the State of Washington and members of an Indian tribe sued Teck Cominco, the Canadian mining giant, for hazardous water pollution emanating from Teck’s smelter. The smelter is located on the Columbia River in Trail, British Columbia, just ten kilometers upstream from the U.S. border.\textsuperscript{80} The plaintiffs sought to apply the U.S. Superfund law extraterritorially.\textsuperscript{81} If successful, Teck faces billions of dollars in liability. Again the countries did not attempt to head off private litigation through submission to the IJC, even though the IJC had successfully adjudicated a transboundary controversy involving the very same smelter seventy years earlier.\textsuperscript{82}

\textsuperscript{76} See John R. Crook, \textit{United States and Canada Agree on Measures To Address Devils Lake Flooding and Ecological Protection}, 99 AM. J. INT’L L. 909 (2005); see also Hollis, supra note 70, at 7.

\textsuperscript{77} See Knox, supra note 74, at 138 (“[The] U.S. was temporarily willing to send Devil’s Lake to the IJC, but the Canadians objected, so it did not go. Now, the U.S. is not willing to go even though the Canadians are, so it is not going to go.”); see also Burns, supra note 75, at 208 (noting that “attempts by the Canadian government to deal with the problem diplomatically, directly and through the International Joint Commission” were unsuccessful); Sax & Keiter, supra note 67, at 297–98 (describing the reluctance to use the IJC in the Devil’s Lake and other disputes).

\textsuperscript{78} See Hall, supra note 14, at 722 (describing how the CEC dismissed petitions on grounds that the Boundary Waters Treaty is not enforceable under U.S. law).


\textsuperscript{80} U.S. ENVTL. PROT. AGENCY, UPPER COLUMBIA RIVER EXPANDED SITE INSPECTION REPORT NORTHEAST WASHINGTON 2–10 (2003); see also EDITH BROWN WEISS ET AL., \textit{International Environmental Law and Policy} 246 (1998) (explaining that the Trail Smelter is “just north of the international boundary, about seven miles as the crow flies, or about eleven miles along the course of the [Columbia] river”).


\textsuperscript{82} Trail Smelter Arbitration, 3 R.I.A.A. 1905 (1938) (requiring that Canadian company operating smelter cease causing damage in the State of Washington), \textit{further proceedings} 3 R.I.A.A. 1938 (1941) (holding Canada responsible for transboundary pollution). See generally John E.
Teck has asked the U.S. Supreme Court to review the Ninth Circuit’s decision, which upheld the district court’s refusal to dismiss on jurisdictional grounds. The Trail Smelter dispute has significantly increased border tensions, and may be the most important transboundary environmental case in decades.

Finally, there was the Softwood Lumber impasse: a decades-long trade dispute over the Canadian export of softwood lumber. A “major irritant in U.S.-Canadian relations,” the dispute boiled over in 2002 when the United States imposed countervailing and antidumping duties on Canadian lumber, claiming that Canada was impermissibly subsidizing timber harvesting. Over the last four years, Canada repeatedly has won rulings in NAFTA panels, but the United States has ignored them. In turn, the United States has collected a total of $5 billion in duties, and relies on favorable rulings in the World Trade Organization to resist Canadian entreaties to remove the duties and return the mon-


83. Teck Cominco had asked for and was granted an extension to file for a writ of certiorari, which was granted by Justice Kennedy on January 12, 2007. The Supreme Court docket information is online at http://www.supremecourtus.gov/docket/06a686.htm.


85. For a description of its importance, see Parrish, *supra* note 14.


89. In fairness to the United States, seeking parallel redress in WTO and NAFTA panels is not unusual. See Raj Bhala & David A. Gantz, *WTO Case Review 2004*, 22 ARIZ. J. INT’L & COMP. L. 99, 198 (2005). But the total U.S. rejection of NAFTA panel decisions in a trade dispute with Canada was striking, as was the ineffectiveness of NAFTA in playing any kind of dispute resolution role.
ey. Recently, an agreement between Canadian Prime Minister Stephen Harper and President Bush has stipulated to the return of $4 billion in collected duties. Although the agreement seems to have temporarily quelled the dispute, the controversy has continued to simmer and tensions build on a number of fronts. The Softwood Lumber dispute “has led some Canadians to question whether the United States will comply with NAFTA if decisions by the dispute-settlement mechanism run counter to private American interests.” Unfortunately, these three high-profile cross-border disputes do not stand alone. Numerous other tensions loom on the horizon.

90. For a pre-agreement review of the legal wrangling, see Bhala & Gantz, supra note 89, at 178–200.
91. See, e.g., Crook, supra note 87, at 702.
92. See, e.g., Lumber Deal Jeopardized by Opposition from BC, Timber Groups, 24 INSIDE U.S. TRADE 27 (2006) (“The British Columbia provincial government and producers…are opposing a final softwood lumber deal…, casting doubt on the agreement’s survival.”); Alan M. Field, Timber!, J. COM., Sept. 25, 2006 (arguing that even though the dispute is coming to an end with the agreement, many believe the agreement to be a “giant step in the wrong direction” and “exactly the opposite of the approach [one] would need to forge a continental economy for global competition”); Kelly Louiseize, Not Everyone Happy with Softwood Deal, 26 N. ONT. BUS. 28, 28–29 (2006) (describing how the agreement has been forced on the Ontario Forest Industry and that “Canadian mills will be shut down in a bad market”); see also Softwood Lumber Dispute, CBC NEWS, Aug. 23, 2006, http://www.cbc.ca/news/background/softwood_lumber/ (describing the resistance to the initial agreement from British Columbia, Quebec, and Alberta and a subsequent renegotiation of the agreement to address their concerns).
93. COUNCIL ON FOREIGN RELATIONS, BUILDING A NORTH AMERICAN COMMUNITY: REPORT OF AN INDEPENDENT TASK FORCE 16 (2005).
94. See Crook, supra note 87, at 702–03; see also Hanson et al., supra note 36, at 137–38 (predicting an increase in transboundary disputes); Parrish, supra note 14, at 380–82 (listing other cross-border disputes ongoing between Canada and the United States); cf. Wendy Stueck, Water Tension Rising Between Canada and the U.S.—Issues Surfacing as Population Growth Puts More Pressure on Shared Lakes and Rivers, GLOBE & MAIL (Toronto), May 17, 2005, at B7 (describing current transboundary water disputes). Two of the biggest disagreements are about borders themselves. See, e.g., Sheldon Alberts, Warming Stirs Arctic Feud, Congress Told—Retired U.S. Brass Warn Melting Makes Northwest Passage a Worry, WINNIPEG FREE PRESS, May 11, 2007, at A18 (describing a dispute over Canadian claims to arctic sovereignty in the Northwest Passage as a “future flashpoint between the two long-standing allies”); Shawn McCarthy, U.S. Says Canada Blocking Review of Maine LNG Projects, GLOBE & MAIL (Toronto), Mar. 9, 2007, at B3 (“The proposals to build liquefied natural gas receiving terminals on Passamaquoddy Bay, off the Bay of Fundy, have become a major irritant between Washington and the [Canadian Government].”); Barrie McKenna, Canada to Deny LNG Passage: Ottawa Tells U.S. That Access to Sites on Maritime Border Poses Many Risks, GLOBE & MAIL (Toronto), Feb. 16, 2007, at B3 (describing sovereignty dispute where the United States claims passage is in international waters, while Canada insists it is in Canadian territory). Other suits involving cross-border environmental harm exist. See, e.g., Michael T. Delcomyn, Artic National Wildlife Refuge Oil: Canadian and Gwich’in Indian Legal Responses to 1002 Area Development, 24 N. ILL. U. L. REV. 789 (2004) (describing possible lawsuits over ANWR oil drilling); Donald Goldberg & Martin Wagner, Human Rights Litigation to Protect the Peoples of the Arctic, 98 AM. SOC’Y INT’L L. PROC. 227
To some extent, the reason for this changed state of North American cooperation is symptomatic of the U.S. federal government’s approach to international law and environmental policy more broadly, rather than any particular hostility towards Canada. The American withdrawal from cooperative institutions such as the IJC and the CEC appears part of a larger trend. In recent years, the United States has rejected or retreated from all kinds of international institutions, agreements, and bilateral treaties. Academics often have encouraged the disengagement, asserting that international institutions like the IJC and CEC threaten democratic sovereignty. And in the last two decades, Americans have had

(2004) (discussing the human rights petition with the Inter-American Commission on Human Rights for damages to the Artic, impacting the Inuit, as a result of U.S. greenhouse gas emissions).

95. For a discussion of this trend, see Bryant G. Garth, Rebuilding International Law After the September 11th Attack: Contrasting Agendas of High Priests and Legal Realists, 4 LOY. U. CHIC. INT’L L.J. 101, 101–02 (2007) (explaining how the Bush Administration believed after 9/11 that “[i]nternational law needed to be put in the service of the War on Terror or ignored” and detailing a “series of anti-international law decisions”). See generally PHILIP SANDS, LAWLESS WORLD: AMERICA AND THE MAKING AND BREAKING OF GLOBAL RULES FROM FDR’S ATLANTIC CHARTER TO GEORGE W. BUSH’S ILLEGAL WAR (2005) (criticizing the United States for its withdrawal from international norms).


an increasingly uneasy relationship with international law and institutions generally. 98 Certainly, policy-makers have focused on the importance of local and regional actors in U.S.-Canada transboundary relations, and have downplayed federal cooperation and bilateralism. 99 Nowhere is the disengagement with international law more evident than with treaties involving environmental issues. 100 In the international environmental context, some scholars have described how the U.S. has turned increasingly to unilateralism and away from traditional international cooperation. 101 For environmental issues, the reluctance to cooperate, however, is also symptomatic of the federal government’s environmental agenda. 102 Since 2000, the Bush Administration has presided


99. Allen L. Springer, From Trail Smelter to Devils Lake: The Need for Effective Federal Involvement in Canadian-American Environmental Disputes, 37 AM. REV. OF CAN. STUD. 77 (2007) (criticizing the singular focus on local and regional actors and the “view that national governments should be kept at arm’s length, at least until the problems faced become so intractable that only federal intervention can break the deadlock”).

100. See, e.g., J. William Hutrell, Multilateral Environmental Agreements, SL098 A.L.I.-A.B.A. 1, 9 (2006) (listing ten international environmental agreements that the United States negotiated but to which the United States is not a party, and describing the “ill will” the United States has created globally by imposing a perceived double standard).


102. See, e.g., Robert L. Glicksman, From Cooperative to Inoperative Federalism: The Perverse Mutation of Environmental Law and Policy, 41 WAKE FOREST L. REV. 719, 777 (2006) (“The Bush Administration has pursued a series of initiatives, in both the pollution and federal lands contexts, that make it more difficult for the federal government to prevent environmental harm, including the adoption of weaker regulations, the reduction of funds for environmental protection purposes, and a failure to enforce environmental laws and regulations against alleged violators.”). These feelings are widespread among academics. See, e.g., ROBERT PERKS ET AL., Rewriting the Rules: The Bush Administration’s Assault on the Environment (2002); John M. Carter et al., Cutting Science, Ecology, and Transparency Out of National Forest Management: How the Bush Administration Uses the Judicial System to Weaken Environmental Laws, 33 ENVTL. L. REP. 10,959 (2003); Patrick Parenteau, Anything Industry Wants: Environmental Policy Under Bush II, 14 DUKE ENVTL. L. & POL’Y F. 363, 364 (2004) (arguing that the Bush Administration is making damaging changes to the environmental law in a deceptive way). The sentiments are also described in the popular press. See, e.g., Mark Grossi, Norton Stops by Yosemite: Interior Secretary Defends Restoration, FRESNO BEE, Apr. 23, 2004, at A1 (“Environmentalists, who say Bush is attempting to dismantle decades of environmental law, also attended the
over an almost complete stalemate in terms of environmental law and policy. 103

The blame, however, does not lie solely with the United States. Although Canadians usually pride themselves as being a team player on the international stage, 104 in the changed state of U.S.-Canada relations, Canada seems to have demonstrated a less cooperative spirit. Former Prime Minister Paul Martin, fighting for his political life in 2005, loudly refused to support President Bush's proposed missile defense system. 105 Continuing Canadian military support for the U.S.-led mission to rebuild Afghanistan has met with intense Canadian criticism. 106 The newly elected leader of Canada's Green Party has called for renegotiating NAFTA, saying that "it works for the U.S., but not for Canada." 107 Even the softwood lumber deal that Prime Minister Harper negotiated seemed uncertain because two key Canadian firms were reluctant to withdraw their own lawsuits against the United States for imposing the countervailing and antidumping duties. 108

Earth Day event.


104. For example, Canadian armed forces have taken part in virtually every major world conflict since its confederation in 1867, playing disproportionately large, important, and costly (from a Canadian perspective) roles in World Wars I and II. Canada's only Nobel Peace Prize winner, former Prime Minister Lester B. Pearson, earned his international renown for helping to resolve the 1956 Suez crisis by introducing the idea of a United Nations peacekeeping force, a quintessentially Canadian solution of cooperative mediation in military conflicts. DESMOND MORTON, A SHORT HISTORY OF CANADA 240–42 (2000).


108. See Steve Merkt, Ottawa Sets Oct. 12 as New Date for Implementing Softwood Lumber Deal with U.S., CANADIAN PRESS, Oct. 9, 2006 (describing how "a substantial number of lumber exporters refused to withdraw legal actions against the United States over punitive softwood duties, a key U.S. requirement for it to revoke the duties"); see also Josie Newman, Timber Accord Rankles Canadian Firms: Many Charge That Agreement To Pay Taxes on a Sliding Scale on Exports to U.S. Violates Free Trade, CHRISTIAN SCI. MONITOR, Oct. 18, 2006 (explaining timber producers opposition to the agreement); U.S., Canadian Lumber Groups Oppose Dismissal of NAFTA Case, INSIDE U.S. TRADE, Dec. 1, 2006 (describing attempts to keep NAFTA challenges
The most telling change in the Canadian approach, however, may be
the seminal 2005 Canadian Supreme Court decision in
British Columbia v. Imperial Tobacco.109 In that case, the Court upheld
British Columbia’s recovery of damages from twelve tobacco
manufacturers (nine of them non-Canadian)110 for health care costs
associated with tobacco use.111 What is extraordinary about the
Imperial Tobacco case is that it not only applied British Columbia
law to American defendants that had no presence in Canada
(except for tobacco sales), but it involved a newly-enacted provincial
statute112 that reversed the burden of proof with respect to whether a
patient's illness actually resulted from tobacco use.113 British Columbia’s
willingness to enact, and the Canadian Supreme Court’s willingness to
uphold, such a significant departure from the usual norms of litigation
114 may signal an erosion of Canada’s traditionally cooperative spirit
(if not a blueprint for future litigation).115

The reason for Canada’s retreat from bilateralism with the U.S. is
open to speculation. In part, Canada may have few options when faced
with American intransigence. But with more nationalist moods at home,
Canada too has become concerned over the loss of its sovereignty.116

110. The appellants before the Canadian Supreme Court included: Imperial Tobacco Canada
Ltd., Rothmans, Benson & Hedges, Inc., JTI-MacDonald Corp., Canadian Tobacco Manufa-
c tures’ Council, Philip Morris Inc., Philip Morris International Inc., and British American Tobacco
(Investments) Ltd. Some were Canadian corporations, others were incorporated under the laws of
Virginia and Delaware, and the remainder were incorporated in the United Kingdom. Id.
111. Id.
112. Tobacco Damages and Health Care Costs Recovery Act, 2005 S.C., ch. 46 (Can.).
113. [2005] 2 S.C.R. 473 (Can.); see also Devrin Froese, Professor Raz, the Rule of Law, and
and Health Care Costs Recovery Act as altering the rules of civil procedure and evidence “to allow
the government to overcome difficulties in proving causation”).
114. See, e.g., David R. Wooley, Acid Rain: Canadian Litigation Options in U.S. Court and
of the Canadian federal government has been historically not to initiate or encourage litigation
over transboundary air pollution).
115. For a general discussion of the case, see Michael Hall, The Imperial Tobacco Approach
(describing traditional territorial limitations on jurisdiction under Canadian law). For criticism,
see F.C. DeCoste, Smoked: Tradition and Rule of Law in British Columbia v. Imperial Tobacco,
Ltd., 24 WINDSOR Y.B. ACCESS JUST. 327, 329 (2006) (criticizing the case for upholding a
statute that “targeted certain, known defendants (tobacco companies one and all) and no one else;
permitted the state to recover from them the cost of health care benefits without proving loss; im-
posed this liability retroactively without limit in time; abolished accrued limitations defenses; and
established a special regime of procedural law, which impaired the ability of defendants to main-
tain any defense not otherwise legislated away”).
though supportive of international institutions, Canadians are increasingly less enthusiastic, if not distrustful, of bilateralism and U.S.-Canadian institutions, believing them unfairly to favor American interests.

II. CANADA’S TRANSBOUNDARY POLLUTION PROBLEM

The real issue is whether the changed state of cooperation will spill over into other areas and upset the Canadian distrust of lawsuits as a way to remedy transboundary harm. Will Canadians follow the American trend and embrace extraterritoriality as a way to solve transboundary problems? One of the most intractable challenges facing Canada is transboundary air pollution—usually in the form of smog—originating from the United States and causing the brunt of its harm in

Perspective, 24 CAN.-U.S. L.J. 215, 215 (1998) (noting how Canada has always been sensitive to being overtaken by American law and culture, and “sometimes suffers nightmares about the firmness and durability of its own sovereignty”).

117. See Derek H. Burney, Time for Courage on Foreign Policy, THE GAZETTE (Montreal), Feb. 13, 2005, at A13 (advocating for increased bilateralism and noting Canada’s recent policy of keeping “a safe distance” from the United States); John Ivison, An Olive Branch PM Should Grab: Bush Eager to Use Ottawa Visit to ‘Mend Fences,’ NAT. POST, Nov. 11, 2004, at A6 (describing chill in U.S.-Canada relations under Prime Minister Chretien’s leadership); Christina Spencer, Fumbling for Foothold: Why Bother with Foreign Policy? A Canadian at Oxford Considers What Canada Could Be, OTTAWA CITIZEN, Sept. 12, 2004, at C8 (reviewing book and describing “Canadian exceptionalism” – “the tendency to assume the worst about Americans while always attributing the noblest motives to [Canadians]”).

118. One good example of this is the Canadian approach to the IJC. In the 1980s and 1990s, Canada came to view the IJC as a threat to domestic sovereignty that illegitimately favored American interests. Kim Richard Nossal, The IJC in Retrospect, in THE INTERNATIONAL JOINT COMMISSION SEVENTY YEARS ON 124, 129 (Robert Spencer et al. eds., 1981) (“To surrender – even willingly – a modicum of national sovereignty [to IJC-type institutions] would be disadvantageous to both sides, but to Canadians in particular.”); see also Kal J. Holsti & Thomas Allen Levy, Bilateral Institutions and Transgovernmental Relations Between Canada and the United States, in CANADA AND THE UNITED STATES: TRANSNATIONAL AND TRANSGOVERNMENTAL RELATIONS 875, 879 n.2 (Annette Baker Fox et al. eds., 1974) (noting comments of a Canadian official “who suggested that more bodies of the IJC type would not be welcome [in the late 1970s] because they are difficult to control by the central governments”); David Lemarquand, The International Joint Commission and Changing Canada-United States Boundary Relations, 33 NAT. RESOURCES J. 59, 76 (1993) (“Although Canada, as the smaller power, had traditionally found the IJC a useful balancing mechanism, the Canadian government confidence in the IJC was on increasingly shaky ground as Canada lost confidence in bilateral institutional mechanisms as the best means of dealing with the United States.”); Joseph L. Sax & Robert B. Keiter, The Realities of Regional Resource Management: Glacier National Park and its Neighbors Revisited, 33 ECOLOGY L.Q. 233, 295–98 (2006) (describing the unlikelihood that Canada would agree to an IJC referral on transboundary disputes).

119. See Hall, supra note 14, at 738 n.338 (noting that “Canada does not have the same tradition of citizen enforcement [as the United States]”); see also Valiante, supra note 21, at 81.
Ontario. Unfortunately, despite various attempts over decades, Canada has had little success in solving this problem using traditional diplomacy. Ontario pollution is fast becoming one of the more pressing irritants in U.S.-Canadian relations. As described below, Canadians may no longer be content to ignore the problem.

A. A History of Transboundary Air Pollution

Although a detailed discussion is beyond the scope of this Article, a little history places the current disagreement in context. For decades, transboundary air pollution, including SO\(_2\) emissions from coal-fired power plants, and NOx emissions from a variety of combustion sources, has been the primary cause of acid rain in Southern Ontario and Quebec. Bilateral efforts to curb transboundary emissions of SO\(_2\) and NOx began in earnest in 1966, when the IJC established a sub-body called the International Air Quality Advisory Board to advise both national governments on transboundary air issues. The problem became significant in the early 1980s: the United States “was emitting approximately 25.7 million tons of sulphur dioxide and 23 million tons of nitrogen dioxide annually, while Canada’s annual emissions totaled 5.2 million tons and 2 million tons, respectively.” In 1980, the United

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123. WEISS ET AL., supra note 80, at 579. For a description of the environmental and health damages caused by acid rain in the 1980s, see Elizabeth Knapp, Our Neighbor’s Keeper? The United States and Canada: Coping with Transboundary Air Pollution, 9 FORDHAM INT’L L.J. 159, 166–72 (1985–1986); Erik K. Moller, Comment, The United States-Canadian Acid Rain Crisis: Proposal for an International Agreement, 36 UCLA L. REV. 1207, 1212 (1989) (citing studies showing that “50% of the acid rain falling in Canada originate[s] in the United States”). For more recent figures, see Tony Van Alphen, N.Y. Sick of Breathing Our Smoke; State Going to
States and Canada signed a Memorandum of Intent regarding Trans-boundary Air Pollution, aspiring to jointly solve the problem. At times, the negotiations “were acrimonious, particularly during the Reagan Presidency when the United States would only agree to study the problem more.” For “over a decade following the signing of the Memorandum of Intent in 1980, the countries failed to achieve significant progress in negotiating a bilateral agreement.” Not until 1991 did President George H.W. Bush and Prime Minister Brian Mulroney sign the Air Quality Agreement, which temporarily resolved the dispute.

Although the Air Quality Agreement was an advancement in many respects, it was another decade until the countries took significant further steps. In 2000, the countries signed Annex 3. Known as the ozone protocol or ozone annex, Annex 3 to the Air Quality Agreement contained specific obligations for both countries to reduce emissions of NOx and volatile organic compounds. Canada, for example, agreed to work towards aligning its motor-vehicle-emission regulations with U.S. standards, cap NOx emissions from Ontario power plants, and reduce

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124. See, e.g., Weiss et al., supra note 80, at 579.
126. Roelofs, supra note 125, at 440.
128. See Roelofs, supra note 125, at 444–51.
emissions from a variety of coating and refinishing operations, among other things. In a similar vein, the United States agreed to call for new state implementation plans under the Clean Air Act, requiring states to submit new plans to reduce NOx emissions in a regulatory action known as the NOx SIP Call. The United States also obligated itself to implement VOC emissions reductions from a list of forty-one types of emitters and implement performance standards for new emissions sources in thirty-five categories. The 2000 Ozone Annex reads like a highly-detailed and ambitious recipe for harmonizing standards on both sides of the U.S.-Canada border.

Most recently, Canadian Environment Minister John Baird and U.S. Environmental Protection Agency Administrator Stephen Johnson announced that they would begin negotiating an annex for particulate matter pollution. Given the "withering criticism" leveled at Johnson and the EPA over a recent decision to let stand a ten-year-old standard for fine particulate matter however, the United States is extremely unlikely—having passed on


132. Ozone Annex, supra note 130.


protecting American populations—to engage with the problem of improving Canadian air quality.\footnote{135}{Given the divergent interests of the Ontario provincial government and the Canadian federal government, it would likely be of little interest to the former that the much more conservative federal government has commenced negotiations with U.S. environmental officials.}

Despite early cheers of success, progress under the Air Quality Agreement and the companion Annex 3 has occurred only in fits and starts. Due in large part to the 1990 Clean Air Act Amendments, which imposed an emissions trading program for power plant emissions of \(\text{SO}_2\), transboundary transport of \(\text{SO}_2\) declined substantially in the 1990s.\footnote{136}{U.S. ENVTL. PROTECTION AGENCY, NATIONAL AIR QUALITY AND EMISSIONS TRENDS REPORT, 45 fig.2-56 (2003); see also Jennifer Yelin-Kefer, Warming Up to an International Greenhouse Gas Market: Lessons from the U.S. Acid Rain Experience, 20 STAN. ENVTL. L.J. 221, 224–41 (2001) (describing market mechanisms for controlling acid rain).} Momentum from Clinton Administration initiatives reduced emissions well into the Bush Administration, but progress on the legal and regulatory front has stalled since 2000.\footnote{137}{See supra notes 102–103 and accompanying text.} Although \(\text{NO}_x\) emissions have continued a downward decline that began in 1997,\footnote{138}{Sulfur dioxide emissions from electric generating plants have plateaued since 2000.} Moment from Clinton Administration initiatives reduced emissions well into the Bush Administration, but progress on the legal and regulatory front has stalled since 2000.\footnote{139}{Although \(\text{NO}_x\) emissions have continued a downward decline that began in 1997, sulfur dioxide emissions from electric generating plants have plateaued since 2000.} One need not look far to uncover the reason for the recent stall in progress. Since 2000, the U.S. federal government has not made environmental issues a top priority.\footnote{140}{Although President Bush has proposed a further tightening of the original \(\text{SO}_2\) cap under his “Clear Skies Initiative,” he has been unable to push that initiative through Congress, due to opposition from Democrats.} The Democrats, offering competing air pollution proposals which are more ambitious than the Clear Skies Initiative,\footnote{141}{President George W. Bush signed the Clear Skies Initiative in 2002. The initiative called for emission reductions through voluntary programs. See The Clear Skies Initiative, Executive Summary (Feb. 14, 2004), available at http://www.whitehouse.gov/news/releases/2002/02/clearskies.html; cf. Michael Traynor, Citizenship in a Time of Repression, 35 STETSON L. REV. 775, 778 (2006) (complaining about the government’s use of terminology and finding it “appalling…that…a measure that would increase pollution” is described as the “Clear Skies Initiative”). For a general discussion, see Ronald P. Jackson, Jr., Extending the Success of the Acid Rain Provisions of the Clean Air Act: An Analysis of the Clear Skies Initiative and Other Proposed Legislative and Regulatory Schemes To Curb Multi-Pollutant Emissions from Fossil Fueled Electric Generating Plants, 12 U. BALI. ENVTL. L. 91 (2005) (analyzing and describing the Clear Skies Initiative).}
Skies Initiative and also address greenhouse gas regulation, have staled Congress.\textsuperscript{142} The reduction of SO\textsubscript{2} emissions has thus become a hostage to partisan wrangling and has been shelved in favor of more politically salient issues such as terrorism.

\section*{B. The Makings of a Transboundary Air Pollution Lawsuit}

From a Canadian perspective, the time appears ripe for a lawsuit over the continuing transboundary air pollution affecting Ontario. Every year, fine particulate matter\textsuperscript{143} and ozone air pollution annually cause almost 5,000 premature deaths, over 18,000 hospital admissions, over 21,000 emergency room visits, and over four million minor illnesses.\textsuperscript{144} These adverse health outcomes impose substantial costs in the form of direct and indirect health care costs, loss of productivity and tax revenue, and the imputed value of loss of life.\textsuperscript{145} Last year, Ontario estimated that yearly air pollution related health costs were more than $6.6 billion. The amount is sobering: $600 for every man, woman and child in Ontario, or $1,000 for every man, woman, and child in the Toronto metro area, where most of the health effects are concentrated.\textsuperscript{146} Air pollution causes a variety of other environmental damages too—including loss of visibility and damage to buildings, outdoor structures, crops, and forests—costing yearly an additional $3 billion annually.\textsuperscript{147}

\textsuperscript{142} See supra note 103.
\textsuperscript{143} Fine particulate matter (PM\textsubscript{2.5}), which consists of microscopic airborne solid or liquid particles, is the by-product of virtually any combustion process. The “2.5” subscript denotes the maximum diameter, in microns, of particulate matter that is considered “fine.” Particulate matter, denoted PM\textsubscript{10}, is smaller than ten microns in diameter, but larger than 2.5 microns in diameter. Fine particulate matter is microscopic and thus small enough to be inhaled and lodge in lung tissue, where it can become carcinogenic or aggravate other lung diseases. A number of epidemiological studies have recently identified fine particulate matter, and ground-level ozone to a lesser degree, as the most important pollution contributors to premature deaths and other illnesses. See generally U.S. Environmental Protection Agency, Particulate Matter, http://www.epa.gov/particles/ (last visited Sept. 16, 2007).
\textsuperscript{144} ONT. MINISTRY OF THE ENV’T, TRANSBORDINARY AIR POLLUTION IN ONTARIO 59 (June 2005), available at http://www.ene.gov.on.ca/envision/techdocs/5158e.pdf.
\textsuperscript{146} ONT. MINISTRY OF THE ENV’T, supra note 144, at 61 tbl.4.5.
\textsuperscript{147} Id.
The international nature of the problem renders air pollution particularly difficult to tackle. More than half of Ontario’s harmful air pollution originates in the United States. In terms of cost, transboundary pollution accounts for $3.7 billion of the $6.6 billion in health costs, and half of the $3 billion of other environmental damages. Table 1 below shows the Canadian estimates for the total incidents of adverse health outcomes and the costs of those outcomes for particulate matter and ozone pollution in Ontario.

| Table 1 |  
|---------|---|
| **Premature deaths** |  
| Incidents from Ontario pollution | Incidents from transboundary pollution |
| 2,130 | 2,751 |
| **Hospital admissions** |  
| 6,541 | 11,939 |
| **Emergency room visits** |  
| 7,950 | 13,925 |
| **Minor illnesses** |  
| 2,119,608 | 2,682,437 |

Certainly, Ontario has its own housecleaning to do. Canadian environmental organizations have often criticized Ontario’s smog plan as insufficient, and even a bit misleading. Ontario recently shelved a plan to retire all of its coal-fired power plants by 2007. First, the Ontario government admitted that it did not have the means to replace the electricity generating capacity of those plants until 2009, and then, under pressure, it conceded that even 2009 might be too ambitious.

148. *Id.* at 54.
149. *Id.* at 53–64 tbl.4.1; *see also* Stewart Elgie, *Federal, State and Provincial Interplay Regarding Cross-Border Environmental Pollution*, 27 CAN.-U.S. L.J. 205, 215 (2001) (describing the environmental interdependence between the United States and Canada and stating that “[f]ifty percent of Ontario’s air pollution comes from the U.S., [and] about eighty percent of the pollution of the Great Lakes comes from the U.S.…”).
150. ONT. MINISTRY OF THE ENV’T, supra note 144, at 59 tbl.4.3.
152. In a 2003 campaign promise, Ontario Liberal Party leader Dalton McGuinty promised to close all coal-fired power plants by 2007. McGuinty, now Ontario’s Premier, admits that the province will not be able to get by without those power plants in 2007 and that it must delay that shutdown date to 2009, another target date that has been called into question. *See Liberals Take Heat over Coal Power Plants on Day of Record May Consumption*, CBC NEWS, May 30, 2006,  
http://www.cbc.ca/canada/toronto/story/2006/05/30/tocoalplants 20060530.html; *Liberals Will Delay Closing Two Coal Plants Past 2009*, CBC NEWS, June 9, 2006,  
153. *See, e.g.*, *Liberals Take Heat*, supra note 152.
There are signs, however, that Canada is now taking the air pollution problem seriously. Canadian Prime Minister Harper recently introduced a federal Clean Air Act, which he has sent to committee in the House of Commons.\(^{154}\) Ontario also has moved ahead, albeit slowly, with finding alternative sources of energy to replace the coal-fired capacity that it plans to mothball, including a newfound interest in nuclear energy.\(^{155}\) The Canadian Broadcasting Company has reported that the Ontario government announced its plans to refurbish old nuclear power plants despite “raising the ire of environmentalists….\(^{156}\)

Assuming that Ontario is willing and able to undertake its own house-cleaning, and perhaps because Ontario is willing to clean house, finding a way to make the United States take Ontario’s environmental concerns seriously becomes a high priority. Laurel Broten, Ontario’s Minister of the Environment, has missed few opportunities to remind Americans that air pollution emitted in the United States affects Canadians.\(^{157}\) Through U.S. counsel, the Minister submitted comments to the Bush Administration’s proposed New Source Review reforms.\(^{158}\) Those

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155. See, e.g., Steve Erwin, Six Ontario Sites To Be Considered for New Nuclear Reactors, CAN. PRESS, June 13, 2006 (describing efforts to build nuclear power plants in Ontario); Luann LaSalle, Nuclear Division of SNC-Lavalin Aiming To Help Build Ontario Power Plants, CAN. PRESS, Nov. 20, 2006 (describing the move to build nuclear power plants and how environmental concerns over nuclear power decrease when balanced against concerns regarding greenhouse gas emissions by coal, gas, and oil-fueled power plants); Ontario Power Authority Report Eyeing Three Sites for New Nuclear Plant, CAN. PRESS, Nov. 10, 2006 (describing the possibility of a new nuclear power plant on shores of Lake Erie).


158. See Press Release, Ont. Ministry of the Env’t, Ontario Challenges U.S. To Protect Air Quality: Reducing Transboundary Air Pollution Will Benefit All Ontarians (Feb. 17, 2006),
reforms, if adopted, would have weakened the Clean Air Act regulations mandating the upgrade of pollution control equipment whenever a new pollution source is constructed or substantially modified. The Minister’s comments, however, fell on deaf ears. At the very least, as far as environmental policy is concerned, the Minister’s input was less influential than that of many other stakeholders in the Bush Administration. Ontario officials may have to confront the uncomfortable and un-Canadian reality that filing a transnational civil lawsuit may be the only way to secure American engagement on the problem of transboundary air pollution.

III. EXPLORING DOMESTIC SOLUTIONS: THE POSSIBILITIES OF LEGISLATION AND LITIGATION

For the first time, domestic litigation may be a reasonable alternative for Canadians when diplomatic and bilateral dispute resolution procedures have failed. Two landmark cases may allow Ontario to recover damages for transboundary air pollution: Pakootas v. Teck Cominco, a U.S. case, and British Columbia v. Imperial Tobacco, a Canadian case. Together with significant advances in air quality modeling and in epidemiological research that link certain types of air pollution with specific health effects, Ontario may have a unique opportunity to forge a legislative and litigation strategy for recovery against responsible parties in the United States. It may now be quite possible for Ontario to use domestic law to remedy harms from transboundary pollution.


160. For literature exploring lawsuits by Canadians against U.S. polluters in U.S. courts (not Canadian courts as discussed here), see Fischer, supra note 121; see also John Benham, Acid Rain: The Limitations of Private Remedies, 8 S. Ill. U. L.J. 515 (1983); Wooley, supra note 114, at 139.
A. The Jurisdictional Barriers

For a long time, jurisdictional obstacles prevented Canadians from suing Americans for environmental damage caused by pollution originating in the United States.\(^1\) The first barrier to relief was subject matter jurisdiction, in the form of the local action rule. That long-standing common law rule provided, in broad terms, that “an action in tort for damage to real property must be brought where the property is located.”\(^2\) Although courts applied the local action rule more liberally in the United States,\(^3\) the English common law from which the Canadian and U.S. rule derived\(^4\) excluded “all types of trespass to foreign...land...” As Chief Justice Baxter of the New Brunswick Supreme Court once explained: “[A]n action founded on trespass to realty in a foreign country whether the title does or does not come into question can[not] be tried here.”\(^5\) The rule thus prevented Canadian citizens

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2. Gallob, supra note 17, at 96; see also British South Africa Co. v. Companhia de Moçambique [1893] A.C. 602 (H.L.), rev’d [1892] 2 Q.B. 358 (C.A.). The Moçambique case was the seminal case that established the local action rule.


4. English courts had “no jurisdiction to entertain actions where the facts occurred abroad,” because of the “ancient common law practice whereby juries were chosen from persons acquainted with the facts of a case, who therefore decided questions of fact from their own knowledge and not from evidence of witnesses.” Fairley, supra note 163, at 258 (1978) (quoting J. MORRIS, THE CONFLICT OF LAWS 293 (1971)).

5. Gallob, supra note 17, at 96–97; see also William K. King, Transboundary Pollution: Canadian Jurisdiction, 1 CAN.-AM. L.J. 1, 9–14 (1982) (describing the Canadian approach to the local action rule in detail); McCaffrey, supra note 163, at 218–19 (describing the local action rule and why it presented a barrier to suit); Rylands v. Fletcher, (1868) 3 L.R.E. & I. App. 330.

from filing suits in the United States against Americans for harm felt in Canada. Cases where Canadian residents have successfully sued U.S. corporations for pollution originating from the United States, therefore, have been rare. In fact, until the mid-1970s, no recorded decision existed involving Canadians suing Americans in a U.S. court for transboundary pollution. Unfamiliarity with the legal system, the costs of bringing suit abroad, and the perception of bias (real or imagined) also practically discouraged Canadians from suing in U.S. courts.

Not only were Canadians unlikely to succeed if they filed an action in the United States, they were also unlikely to sue successfully in a Canadian court. In Canada, a court could overcome the local action rule, but personal jurisdiction often would be lacking. Indeed, traditional concepts of personal jurisdiction—derived from international law concepts of territorial sovereignty—prevented lawsuits where the defendant was not present. “Extraterritorial service of process was unknown at

29 O.R. 57.

167. For a notable exception, see Michie v. Great Lakes Steel Div., Nat’l Steel Corp., 495 F.2d 213 (1974) (thirty-seven Canadian residents sued three Michigan corporations for nuisance arising from the discharge of air pollutants, but ultimately settled out of court); see also Ricci, supra note 120, at 308–09 (describing the Michie case and settlement). See generally McCaffrey, supra note 161, at 36 (noting that “[i]n view of the seriousness of the [transboundary pollution] problem, it is somewhat surprising that there are not more reported lawsuits”).

168. See McCaffrey, supra note 163, at 220.


171. Phillips v. Eyre, [1870] 6 Q.B. 1 (finding that suit may be brought in England for a wrongful act committed abroad if: (1) the wrong is of a character that it would have been actionable if committed in England; and (2) the act could not be justified by the law of the place where it occurred). See generally McCaffrey, supra note 163, at 240 (explaining why subject matter jurisdiction would not be an obstacle to suit in Canada for transboundary harm originating in the United States).

172. See Parrish, supra note 170, at 8–10; see also McCaffrey, supra note 163, at 217, 239–42 (“In some transnational pollution actions it will be impossible to bring defendant [sic] before a court at the place of the injury since the conditions necessary for assertion of personal jurisdiction will not be present.”); Roger H. Transgrud, The Federal Common Law of Personal Jurisdiction,
common law,” and jurisdiction ended at the border. Although Canadian courts have now recognized the effects test—permitting jurisdiction when effects are felt within the province—courts have been hesitant to exercise personal jurisdiction over foreign defendants “with respect to the pursuit of transboundary mischief matters.” Even in the late 1970s, “judicial minds remain[ed] very sensitive [in Canada] to any modality which [might] be considered as constituting inappropriate interference with another jurisdiction.” Traditionally then, the local action rule, combined with the personal jurisdiction doctrine, prevented private lawsuits for transboundary harms. The famous Trail Smelter Arbitration has often been cited as an example where these two rules combined to prevent domestic litigation. In fact, the 1909 Boundary Waters Treaty was drafted precisely because at the time there existed “no remedies or redress” for transboundary harms.


173. McCaffrey, supra note 163, at 241; see also Pennoyer v. Neff, 95 U.S. 714 (1877).


175. Moran v. Pyle Nat’l (Can.) Ltd., [1973] 43 D.L.R. (3d) 239, 250–51 (Can.) (finding personal jurisdiction when foreseeable harm could be caused in another province); Jenner v. Sun Oil Co., [1952] 2 D.L.R. 526, 526 (Ont. High Ct.) (finding jurisdiction over the American defendant in a defamation case, even though the defamatory words were not written or ushered in the jurisdiction when “they were so transmitted as to be published within the jurisdiction” in such a manner as to be likely to “cause the plaintiff to suffer substantially in his reputation” in Ontario).

176. Fairley, supra note 163, at 268.

177. Id. at 268–69 (citing Interprovincial Coops. Ltd. v. Manitoba [1976] 1 S.C.R. 477 (Can.)).

178. See id. at 271 (noting that “Canadian legal precedents tend to be unnecessarily restrictive in respect” to transboundary pollution claims).

179. See HUNTER ET AL., supra note 16, at 511; WEISS ET AL., supra note 80, at 262 (describing the traditional jurisdictional hurdles to private litigation in the context of the Trail Smelter Arbitration). For the most comprehensive analysis of the case and its impact on modern international environmental law, see TRANSBOUNDARY HARM IN INTERNATIONAL LAW: LESSONS FROM THE TRAIL SMELTER ARBITRATION, supra note 11.

180. Robert Day Scott, The Canadian-American Boundary Waters Treaty: Why Article II?, 36 CAN. B. REV. 511, 518 n.15 (1958) (quoting the Draft Press Release, prepared for Secretary Knox, in Chandler P. Anderson Papers, Manuscript Division, Library of Congress). (“[T]he treaty proceeds to establish a new rule for the benefit and protection of those interests, on either side of the boundary...there being, under existing conditions no remedies or redress in such cases.”); see...
Jurisdictional barriers were not the only barriers to relief. Firstly, in Canada the statutory authority defense also often prevented litigation. “[I]f properly invoked, [the statutory authority defense] may provide a complete defense.” 181 The defense applied in “most Canadian jurisdictions, [because] many activities which cause pollution in one form or another are permitted by statute.” 182 The seminal case, Manchester v. Farnworth, explains it well: “[w]hen Parliament has authorized a certain thing to be made or done in a certain place, there can be no action for nuisance caused by the making or doing…so authorized.” 183 Even if federal or provincial environmental legislation existed, it was limited and “not as prevalent in Canada as it [was] in the United States.” 184 Secondly, standing doctrines, as interpreted in Canada, also at one time created practical problems to redress. 185 Even modern environmental legislation—such as Ontario’s Environmental Protection Act—was assumed to apply only to conduct occurring within the province. 186 Lastly, even if a judgment could be secured, enforcing the judgment against a defendant without assets in the jurisdiction could well be futile. 187 More practically, the relatively small size of damage awards, the lack of contingency fees, the unavailability of jury trials, and the reality that the losing parties usually pay attorneys fees have made Canadian litigation less attractive. 188

also McCaffrey, supra note 163, at 196 (discussing reasons for 1909 Boundary Waters Treaty and quoting Chandler P. Anderson).

181. Jeffery, supra note 161, at 175.


185. Id. at 179.


187. See McCaffrey, supra note 163, at 217 (“Further, if defendant has no assets within the jurisdiction in which the injury occurred, he might simply disregard any proceedings there, forcing plaintiff to obtain a default judgment of uncertain enforceability in defendant’s country.”).

Times have changed. The legal impediments to Canadians suing Americans for U.S.-originated pollution “are being removed gradually by many jurisdictions in what may be characterized as a more focused attempt to prevent or curtail polluting activities and to ensure that those responsible bear the costs.” By the 1970s, personal jurisdiction law had developed in Canada to permit suit “in transboundary pollution cases founded on nuisance or trespass theories.” In a seminal article in 1973, Stephen McCaffrey concluded that although transboundary pollution cases might be difficult to prosecute, at least “the courts’ doors are open.” And in 1986, several American states and Canadian provinces—including Ontario—signed the Uniform Transboundary Reciprocal Access Act. That Act, originating from the Canadian and American Bar Associations, “provides a remedy to actual or potential victims of transboundary pollution in the courts of the polluter’s residence if a victim residing within the country of origin would have had a remedy for that same pollution harm.” Although the two nations have not accepted the Draft Treaty and it has not been widely adopted by the states and provinces, Americans and Canadians are nevertheless now “accustomed to asserting their rights and seeking redress for wrongs in each other’s courts.”

The Pakootas v. Teck Cominco case, involving an application of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), is a major reason that the legal landscape is changing. Pakootas symbolizes many of the forces that have appeared to make litigation more palatable, and bilateralism less palatable. First,

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2003, at 54, 56 (“Litigants are attracted to the high quality of U.S. courts, the willingness of U.S. courts to exercise jurisdiction over international disputes, and, rightly or wrongly, the belief that U.S. courts are ready to award large sums of damages.”).

190. McCaffrey, supra note 163, at 249.
191. Id. at 259; cf. Fischer, supra note 121.
193. Gallob, supra note 17, at 92.
194. Id.
196. Wang, supra note 26, at 182 (describing the reliance on domestic law in U.S. and Canadian disputes).
197. 35 ENVTL. L. REP. 20,083 (E.D. Wash. 2004) (order denying motion to dismiss on jurisdictional grounds), aff’d, 452 F.3d 1066 (9th Cir. 2005).
the plaintiffs in Pakootas sought to leapfrog federal efforts to settle the dispute. Relatively soon after the filing of the complaint, Canadian defendant Teck Cominco reached a settlement agreement with the EPA staying the cleanup order. But the Pakootas suit, unaffected by the settlement agreement, nevertheless sought to enforce the cleanup order.\footnote{199. \textit{See Pakootas}, 452 F.3d at 1071 n.10.}

Second, from the other side of the border, the case also offers a potentially important lesson in drafting self-serving statutes. In upholding the District Court’s refusal to grant Teck’s motion to dismiss, the Ninth Circuit reached the surprising conclusion that “the suit involve[d] a domestic application of CERCLA,”\footnote{200. \textit{Id.} at 1069.} even when regulating conduct occurring solely outside U.S. borders. The Ninth Circuit broadly interpreted the term “facility” in CERCLA as including the site where the hazardous waste that Teck discharged came to rest (i.e., on the banks of Lake Roosevelt in the United States). Hence, according to the Ninth Circuit, the suit did not involve an extraterritorial application of law.\footnote{201. \textit{Id.} at 1074. The point is not that the Ninth Circuit’s reasoning was sound; it was not. The court’s reasoning and analysis is flawed in several respects. Rather the point is that what is good for the goose is good for the gander. If U.S. law permits such suits, then Canadian legislatures and courts may well be inclined to find that Canadian law permits the same kinds of suits. 

202. The U.S. Supreme Court is considering Teck Cominco’s appeal and has invited the Solicitor General to file a brief representing the views of the United States. 127 S. Ct. 2930 (2007). 

Trail Smelter case, the National Mining Association and the Edison Electric Institute lobbied EPA Administrator Michael Leavitt, Secretary of State Colin Powell, and Attorney General John Ashcroft to stop the EPA from enforcing administrative orders against Teck.204 Member firms of the Edison Electric Institute—electricity generation companies that have coal-fired power plants that emit the pollutants that flow north and foul Ontario’s air—saw themselves as standing in Teck’s shoes.205 The National Mining Association and the U.S. Chamber of Commerce also filed amicus briefs in the Ninth Circuit.206 Both groups were concerned with the possibility of Canadians extraterritorially applying their own law, and argued against the U.S. court setting a precedent by permitting the case to go forward.

B. Causation—Identifying the Defendants

Historically, if a plaintiff was able to navigate the various jurisdictional barriers to suit, proving that the defendant caused the transboundary harm was another challenge. The common law was not receptive to recovery when several possible defendants existed, let alone thousands.207 Where a discrete and identifiable source of pollution from a single defendant imposed measurable harm, an action in nuisance would lie to abate the environmental harm,208 or, in a modern case, provide for

204. See Parrish, supra note 14, at 411 (describing the “glass house” concern that “Canada might successfully use legal rather than diplomatic means to punish U.S. polluters”); see also Letter from Jack N. Gerard, President & CEO of the Nat’l Mining Ass’n, to Colin L. Powell, U.S. Sec’y of State, John Ashcroft, U.S. Attorney Gen., & Michael O. Leavitt, Adm’r, U.S. EPA (Apr. 22, 2004) (on file with author) [hereinafter Gerard Letter] (arguing that the effects would be “devastating” if U.S. companies had to defend against allegation that their facilities and activities violated Canadian environmental laws).

205. See, e.g., Letter from Thomas R. Kuhn, President of Edison Elec. Inst. to Colin L. Powell, U.S. Sec’y of State, & Thomas L. Sansonetti, Assistant Attorney Gen. for the Env’t & Natural Res. Div. (June 2, 2004) (“The unilateral EPA action raises the possibility of Canadian retaliation against our member companies and other U.S. industries whose emissions may cross the international border.”); Gerard Letter, supra note 204 (questioning the wisdom of pursuing a Canadian company under U.S. environmental laws and addressing the possibility that Canada and Mexico may pursue similar actions under their own respective domestic laws against U.S. companies).

206. Brief of Amicus Curiae Chamber of Commerce of the United States of America in Support of Defendant-Appellant Supporting Reversal, Pakootas v. Teck Cominco Metals, 452 F.3d 1066 (9th Cir. 2005); Brief for Amici Curiae the National Mining Ass’n & the National Ass’n of Manufacturers Supporting Appellant & Reversal, Pakootas v. Teck Cominco Metals, 452 F.3d 1066 (9th Cir. 2005).


208. See, e.g., JAMIE CASELS, THE UNCERTAIN PROMISE OF LAW: LESSONS FROM BIOPAL
a damages remedy. But modern pollution problems involving less discernible pollutants from multiple sources—such as the SO$_2$, VOCs, NOx, and PM$_{2.5}$ that literally millions of polluters emit—are ill-fitted for traditional tort remedies.

A comparison of two cases, decided almost a century apart, underscores the problem. In Missouri v. Illinois, the State of Missouri un成功 sought to enjoin Chicago from flushing its untreated sewage into the Des Plaines River. The Des Plaines River feeds into the Illinois River, which empties into the Mississippi River just forty-three miles upstream of St. Louis. A credible case was made that Chicago’s sewage contributed to a second typhoid outbreak in St. Louis. But the Court denied relief, noting that several other plausible explanations existed for the outbreak, and that therefore the plaintiff had failed to prove causation. This multiple-cause problem continues to create problems for recovery a hundred years later. Recently, the House of Lords grappled with the same sort of multiple causation issue in Fairchild v. Glenhaven Funeral Services. There, the court found it necessary to explain (in a long and convoluted way) why an asbestos worker, who died from the asbestos-related disease mesothelioma, was entitled to recover in tort against firms that had employed him in asbestos-related occupations. Incredibly, the United Kingdom’s highest court—some 40 years after the establishment of a link between asbestos and the lung disease mesothelioma—had to overrule a lower court, which remarkably held that neither firm could be found liable.

Given the common law hurdles in recovering against multiple defendants, modern environmental statutes have partially solved the problem. Those statutes imposed regulations that attempted, ex ante, to prevent

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69 (1993).
209. Id. at 78. For a discussion of these problems in the climate change context, see David A. Grossman, Warming up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation, 28 COLUM. ENVTL. L. 1, 22–33 (2003). For a similar discussion in the acid rain context, see Fischer, supra note 121, at 449–50; Curtis Webb, Causation in Acid Rain Litigation: Facilitating Proof with Joint Liability Theories, 1983 BYU L. REV. 657, 657 (1983).
211. 200 U.S. 496 (1906).
212. Id. at 517.
213. Id.
214. Id. at 524–25.
216. Id. at 43, para. 7.
217. Id. at 40, para. 2.
harm, and also in some cases to provide an *ex post* remedy. In fact, modern environmental statutes emerged precisely because of the common law’s inability to deal with certain kinds of environmental harms. But, of course, these statutes only provided relief when legislatures specifically created a remedy. In the absence of a legislative response, recovery against multiple defendants—all of which could have but might not have caused the harm—has remained unlikely.

Yet a modern trend is emerging to counter this traditional bias against recovery from inchoate defendants. The increased use of statistical inferences in court proceedings and legislation suggest that courts are more receptive to finding causation than they once were. Again, two recent cases are instructive. *Agency for Health Care Administration v. Associated Industries of Florida* involved the application of a Florida statute, which enabled Florida to recover tobacco-related health care costs from tobacco manufacturers. The Florida Supreme Court upheld the use of a “market-share” theory of liability, permitting the plaintiffs to recover against the defendants based on the defendant’s market share in the tobacco products that likely led to illness. It further held that the use of statistical evidence in finding liability did not violate Florida’s constitution. A similar approach was also used recently by the province of British Columbia, which copied aspects of the Florida statute and then sought recovery against several foreign and Canadian tobacco makers. The British Columbia statute contained the same provi-

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218. For example, the most comprehensive environmental statute in the world, the U.S. Clean Air Act, 42 U.S.C. §§ 7401 et seq., provides a myriad of interconnected programs aimed at reducing air pollution with the hope that it will obviate the need for litigation to solve air pollution disputes. An *ex post* remedy exists in the Clean Air Act in the form of a citizen suit provision. See 42 U.S.C. § 7604.

219. The common law of nuisance, for example, one of the favored theories of environmental liability in the pre-statute era of environmental law, has not generally yielded success for environmental plaintiffs. See, e.g., Georgia v. Tenn. Copper, 206 U.S. 230 (1907); Missouri v. Ill., 200 U.S. 496 (1906).


221. 678 So. 2d 1239 (Fla. 1996). Significantly, the court stated in dicta that joint and several liability was also possible, although not as a concurrent theory with market-share liability. *Id.* at 1255.

222. *Id.* The seminal case upholding the theory of market share liability was *Sindell v. Abbott Laboratories*, 26 Cal. 3d. 588 (1980).

223. *Agency for Health Care Admin.*, 678 So. 2d at 1255–56.

224. *Id.* at 1256.
visions for market-share liability and statistical evidence that were in the Florida statute. The British Columbia statute also had a provision that reversed the burden of proof in favor of the province. In *British Columbia v. Imperial Tobacco*, the Supreme Court of Canada upheld the statute in all respects, including its extraterritorial application to the nonresident tobacco manufacturers.

This emerging trend in the use of statistical evidence—a key to the continued rise of market-share liability—comes just in time to support a theory of liability based on pollution contribution, or pollution share, which may be invoked to support a Canadian cause of action. Epidemiological research over the past twenty years has yielded strong statistical links between certain types of air pollution and certain types of adverse human health effects (including premature death). As a result, Canadian plaintiffs can now credibly argue that U.S. pollution emissions have led to some statistical “harm,” even if it those plaintiffs cannot show it was the specific U.S. defendant’s pollution that led to illness or death. Air pollution modeling, monitoring, and reporting technologies probably are accurate enough to be admitted as evidence in court. At the very least, the science has advanced enough to serve as a legitimate basis for legislative and regulatory action.

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225. Tobacco Damages and Health Care Costs Recovery Act, 2000 S.B.C. ch. 30, § 3(2) (Can.). The government must first prove, however, “on a balance of probabilities,” that the defendant breached a common law duty to persons exposed to tobacco products, that exposure can cause or contribute to the disease, and that the tobacco product involved was sold in British Columbia by the defendant. Id. at § 3(1)(a)–(c).


228. For a discussion on the nature of harm in tort law and environmental law, see Albert C. Lin, *The Unifying Role of Harm in Environmental Law*, 2006 Wis. L. Rev. 897 (2006).

229. Certainly, monitoring and reporting technology, in place since the advent of the Acid Rain Program, has withstood any scrutiny without any substantial complaints of error. Modeling results, as well, satisfying the traditional statistical burden of a 90 or 95 percent level of confidence, should not be a cause of concern for a fact-finder. See, e.g., *ABT ASSOCIATES ET AL., THE PARTICULATE-RELATED HEALTH BENEFITS OF REDUCING POWER PLANT EMISSIONS*, exhibits E-1–E-3 (October 2000), available at http://cta.policy.net/fact/mortality/mortalityabt.pdf (showing the 5, 50, and 95 percentiles); *ABT ASSOCIATES ET AL., POWER PLANT EMISSIONS: PARTICULATE MATTER-RELATED HEALTH DAMAGES AND THE BENEFITS OF ALTERNATIVE EMISSION REDUCTION SCENARIOS*, app. B (June 2004), available at http://www.cleartheair.org/dirtypower/docs/abt_powerplant_whitepaper.pdf, (indicating that tables show 5 and 95 percentile estimates) [hereinafter *ABT ASSOCIATES ET AL., POWER PLANT EMISSIONS*]. The results reported by Abt Associates indicate that there is a 90 percent chance that the “true” mean is between the 5 and 95 percentile estimates.

230. See discussion of air quality modeling in EPA rulemakings, *infra* notes 236–44 and ac-
pollution to adverse health outcome is not yet as firmly established as that for tobacco and lung diseases, conceptually, the differences between a tobacco lawsuit and an air pollution lawsuit have disappeared.

Advances in pollution modeling sufficiently link pollution to health harms in several ways to overcome the traditional difficulties in proving causation. First, measuring the amount of pollution that a power plant emits has become relatively simple. Aided by reporting requirements, the EPA maintains a database that allows any user to find out how much pollution was emitted by a specific power plant emitted in a given year. The EPA’s eGRID database allows users to run individualized search queries by power plant, power plant owner, location, fuel type, and over a hundred other characteristics. Most importantly, the eGRID database provides information on emissions of nitrogen oxides (NOx), sulfur dioxide (SO2), carbon dioxide, and mercury.\(^{231}\)

Second, air quality models can now link pollution at the smokestack to pollution where the alleged health and environmental damages occur. Drawing largely on modeling efforts headed up by the EPA, Ontario agencies have developed a three-dimensional model that uses climatological sub-models to track the movement of pollution for thousands of miles.\(^{232}\) In measuring pollution levels at the endpoint, these models incorporate the effects of a variety of meteorological data, such as clouds, seasonal variations in temperature and precipitation, and a variety of other factors.\(^{233}\) The Ontario Environment Ministry used the model to measure the effect of transboundary pollution by zeroing out pollution from Ontario sources and natural sources and imputing the rest to pollution emanating from the United States.\(^{234}\)

This linking is particularly robust with respect to SO2 and NOx emissions from coal-fired power plants, which account for two-thirds of the total SO2 emissions and a quarter of the total NOx emissions in the United States.\(^{235}\) SO2 and NOx are particularly important not only as accompanying text.

\(^{231}\) eGRID is available online at http://www.epa.gov/cleanenergy/egrid/index.htm.

\(^{232}\) A description of the model used by the EPA, the Community Multiscale Air Quality (CMAQ) Model, is available on the EPA website at http://www.epa.gov/asmdnerl/CMAQ/cmaq_model.html.

\(^{233}\) Modeling Efforts To Evaluate Transboundary Influences and the Effects of Natural Sources on Ozone and PM\(_{2.5}\) Levels in Ontario, in PRELIMINARY APPLICATION AND EVALUATION OF THE PROVISIONS OF THE GUIDANCE DOCUMENT ON ACHIEVEMENT DETERMINATION FOR THE PM\(_{2.5}\) AND OZONE CANADA-WIDE STANDARDS 76–77 (2005).

\(^{234}\) Id. at 77.

\(^{235}\) This assertion is derived from data from the EPA’s annual National Emissions Inventory (NEI) Air Pollutant Emissions Trends Data reports on the emissions of the six criteria air pollu-
id rain precursors, but also as precursors to the formation of deadly fine particulate matter, the air pollutant most responsible for premature deaths. Imputing a specific amount of pollution to certain specific coal-fired power plants, or to other polluting facilities, would now be a very feasible task for air quality modelers. Zeroing out the contributions of selected power plants and other emitters would produce estimates of the transboundary air pollution attributable to these facilities. The result would be the basis for Ontario’s health and environmental damage claims. Coal-fired power plants present a particularly easy mark because the ten largest parent company electricity generating companies emit fully half of the SO\textsubscript{2} pollution.

One might wonder if such modeling results would constitute evidence that is robust enough to be admissible in a court of law, and to form the basis for billions of dollars of damages. For the answer, one need look no further than EPA rulemakings. EPA’s highly controversial Clean Air Interstate Rule (CAIR) requires upwind polluting states (mostly Midwestern and Southern) to reduce their emissions of SO\textsubscript{2} and NO\textsubscript{x} in order to help downwind states (mostly Northeastern) reduce their ambient levels of ozone and particulate matter pollution. EPA originally announced the final rulemaking for CAIR on May 12, 2005, following a public consultation period that spanned seventeen months from the original notice of proposed rulemaking, to the announcement of the final rule. This consultation period involved the somewhat...
unusual step of EPA's making available the data, air quality model (CMAQ), and modeling results that formed the basis of the CAIR. After receiving twelve petitions for reconsideration, however, EPA relented and emerged with the final rule in April 2006. Notably, EPA did not receive objections specific to the CMAQ model. CMAQ has been used in six other rulemakings.

Granted, the standards of evidence in a rulemaking are, in theory, supposed to be less stringent than the evidentiary standard in a court of law. In practice, however, given the high stakes involved in some rulemakings, the burden placed on administrative agencies is often as great, and perhaps greater, than that placed on a party to litigation. In *Industrial Union Department v. American Petroleum Institute*, the Court overturned a proposed Occupational Safety and Health Administration (OSHA) standard for benzene exposure, and held that “the burden was on the Agency to show, on the basis of substantial evidence, that it is at least more likely than not that the long-term exposure to 10


244. *Id.*


246. RICHARD J. PIERCE, ADMINISTRATIVE LAW TREATISE § 7.5, at 464 (4th ed. 2002) ("Courts often require agencies to provide some evidentiary support for the legislative facts that provide the predicates for agency rules, but courts should recognize that legislative facts are not susceptible to the kind of evidentiary proof routinely required to support findings of adjudicative facts.").

ppm of benzene presents a significant risk of material health impairment.”248 It is now well-known history that this holding sent OSHA back to the drawing board for ten years, forced it to prepare a 36,000-page record to support its benzene rule, and has profoundly changed administrative rulemaking.249 The CAIR, with its seventeen-month run-up (not counting the previous Clinton administration attempts to ratchet down the standard), impacting the electric utility industry as much as it does, and pushing over 450 counties into non-attainment status,250 has been at least as hard-fought, not to mention the other rulemakings that have relied upon CMAQ, which have affected the electric utility industry, the petroleum industry, the automotive and truck industries, the trucking industry, and the locomotive and marine industries.251 CMAQ has even supported a new rule limiting motor vehicle emissions of, of all things, benzene.252

Appropriately, CMAQ remains under development. Since its introduction in 1999, six new releases have been rolled out.253 A complex model that combines meteorological, emissions, physical, chemical, and even land use data and models, and provides interfaces for the several dozen submodels, is bound to be in a constant state of development. So, EPA has recognized that not only is waiting for the “kinks to be worked out” futile, but also that it would frustrate air quality objectives. As a peer review panel noted, “[t]he scientific content and performance of the CMAQ modeling system continues to improve with each release due to the excellent efforts of AMD staff. CMAQ…represents the state-of-the-science of widely used models, particularly models that are used in a regulatory context.”254 CMAQ has already formed the basis for the formulation of rules that will carry with them many billions of dollars of

251. See supra note 245.
253. The Community Modeling and Analysis System website, maintained as a resource for modelers using CMAQ, contains documentation for CMAQ model versions 4.0 through 4.6, and is available at http://www.cmascenter.org/help/documentation.cfm?temp_id=99999.
compliance costs. CMAQ already has endured the most vigorous industry challenges.

C. Causation—Identifying the Plaintiffs

The final traditional hurdle faced in attempting to hold U.S. polluters liable for transboundary pollution is for Ontario to identify the injured parties. Jurisprudential considerations generally require that a party alleging harm appear before the court. Among other reasons, knowing the plaintiff’s identity typically is essential to determine whether standing requirements have been met.

Exceptions exist. Class action lawsuits permit the possibility of recovery when, prior to the initiation of the suit, there is known harm but not all of the harmed individuals can be identified.\textsuperscript{255} Indeed, the class action lawsuit is in part aimed at discovering the identity of the harmed individuals. While the notion of a class action lawsuit infringes upon some procedural norms, it is a mechanism that has been developed to address widespread harms that may not be easily remedied in a traditional model of litigation.\textsuperscript{256} For example, a large class of victims may suffer so small an injury that individual victims are unlikely to absorb the transaction costs of stepping forward to make a claim. Yet if the harm is serious enough, adjudication is considered appropriate, even if additional work is necessary to identify the victims.\textsuperscript{257} Thus, an effort to broadly notify possible plaintiffs of potential claims seems reasonable enough, along with a process to make claim filing relatively simple by opt-in. In such cases, the class action approach is necessary and worthwhile to provide a pared-down remedy, the alternative being no recovery at all. Moreover, even if individual plaintiffs recover small amounts, the class action lawsuit recognizes that the aggregate harm can be quite large, and the importance of deterring future malfeasance great.\textsuperscript{258}


\textsuperscript{256} Among other issues, there is the collective action problem faced by potential class action litigants: that one’s persons efforts to bring a suit produces positive externalities for other similarly-situated litigants and therefore produces a free-rider problem. See, e.g., William B. Rubinstein, Why Enable Litigation?: A Positive Externalities Theory of the Small Claims Class Action, 74 UMKC L. REV. 709, 710–12 (2006).

\textsuperscript{257} Id.

\textsuperscript{258} Id.
Similar considerations militate in favor of recovery for damages from air pollution. Unlike a class action lawsuit, however, the hypothetical Ontario lawsuit actually presents a clear plaintiff—the province of Ontario, which has spent its health care resources caring for individuals harmed by air pollution, and has also suffered economic damages unrelated to adverse health outcomes. But Ontario would not be able to identify specific individuals that were harmed by air pollution. Rather, Ontario would rely upon epidemiological evidence showing that a certain number of individuals in their population die from air pollution in any given period of time. In fact, an air pollution damages lawsuit presents questions very similar to lawsuits by states and provinces to recover damages suffered by its citizens in using tobacco products. In Agency for Health Care Administration v. Associated Industries of Florida and British Columbia v. Imperial Tobacco, the plaintiffs Florida and British Columbia alleged that some people, not necessarily named persons, were harmed, sometimes fatally, by their use of tobacco products, and that the respective governments were also harmed in caring for or compensating these individuals.

While such a cause of action may not exist in common law, Florida and many other U.S. states enacted state statutes to create a cause of action and a remedy. In particular, U.S. states that made extensive Medicare payments drafted state statutes that explicitly provided a right of action for the state attorney general or some other official or agency to recover for the Medicare payments. It was thus Florida’s lead that British Columbia followed when its provincial parliament drafted a statute that explicitly provided a cause of action and a remedy for the province for the health care costs the province absorbed in caring for those suffering from tobacco-related illness.

Certainly, creating a new cause of action by statute raised eyebrows. But it is important to draw upon the lessons of the round of tobacco litigation: that new causes of action have often filled in the gaps in the law

259. 678 So. 2d 1239, 1257 (Fla. 1994).
261. TEX. HUM. RES. CODE ANN. § 32.033(d) (Vernon 2005); MASS. GEN. LAWS ANN. ch. 118E, § 22 (2003); MINN. STAT. § 256B.37(1) (1993); COLO. REV. STAT. ANN. § 26-4-112(3) (West 1973).
262. The theory is one of subrogation, in which the state steps into the shoes of one having a cause of action which, in the tobacco context, means tobacco victims seeking to recover Medicaid payments. See supra note 261.
263. Id.; see also Hall, supra note 115, at 68-72 (describing case); DeCoste, supra note 115, at 329–30 (describing case).
that have left very large and important harms unremedied. With the U.S. Congress failing abysmally to address perhaps the number one public health issue of this generation, litigation stepped in. Just as class action lawsuits represent an evolution in the law to deal with harms that the traditional model of litigation failed to remedy, the creation of causes of action to remedy tobacco-related harms and air pollution harms become viewed as not only acceptable fixes, but natural progressions of the law in adapting to the ever-changing nature of information.

Solving the identifiable victim problem will require the marshalling of statistical evidence. In *Associated Industries of Florida* and *Imperial Tobacco*, statistical evidence was presented as to the number of victims of tobacco use for whom health care costs were incurred by Florida and British Columbia, respectively. In *Associated Industries of Florida*, the Florida Supreme Court, while upholding most aspects of the statute giving rise to the cause of action, struck down the provision that allowed Florida to only provide statistical evidence of the cost of making Medicare payments, and avoid identifying each individual recipient for whom recovery is sought. To do so, the court held, would violate due process guarantees under the Florida Constitution, by preventing defendants from rebutting the statutorily-created presumption, and contesting the propriety of individual Medicare payments.

Canadian courts had no such trouble in *Imperial Tobacco*. The British Columbia statute provides, in language similar to the Florida statute, that “[i]f the government seeks in an action under subsection (1) to recover the cost of health care benefits on an aggregate basis… it is not necessary… to identify particular individual insured persons… to prove the cause of tobacco related disease in any particular individual insured person, or… to prove the cost of health care benefits for any particular individual insured person….” The British Columbia statute does provide that the court “may order discovery of a statistically meaningful sample of the documents [that identify recipients]….” Finally, the statute provides that “[s]tatistical information and information derived from epidemiological, sociological and other relevant studies, including information derived from sampling, is admissible as evidence for the

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264. 678 So. 2d at 1253–54.
265. Id.
267. Id. at § 2(5)(d).
purposes of establishing causation and quantifying damages or the cost of health care benefits."

The victim identifiability issue was briefed and argued at the trial court level, which held that the provision did not interfere with the independence of the judiciary, and would not necessarily prevent the defendant from rebutting the statutory presumption.\textsuperscript{269} The Supreme Court of Canada, in upholding the British Columbia statute in all respects, did not even address the issue of identifying the victims of tobacco use, despite an extended discussion of judicial independence and the "rule of law."\textsuperscript{270} Whether this was a conscious or inadvertent omission on the part of the Court, it appears that the law of Canada would not preclude recovery on the basis of a statistical presentation of the victims of air pollution.

Will a court have an open mind in hearing a transboundary air pollution case and grappling with the issue of the quality of statistical evidence? Air pollution data, because of the nature of the statistical evidence, cannot \textit{possibly} identify the specific victims of air pollution. All that is known is that of a population dying prematurely from some lung ailment or cardiopulmonary disease, a certain percentage of those cases are likely to be due to air pollution, rather than smoking, hereditary reasons, or other causes. And admittedly, the statistical case that air pollution leads to adverse health outcomes does not enjoy as long of a history of research as that linking tobacco use to lung disease. But if the \textit{Imperial Tobacco} case is any indication, then Canadian courts are unlikely to be terribly concerned with the identifiability of victims of air pollution.

Are these estimates ready for the rigor and scrutiny of litigation? Only the courts can say for sure, but the epidemiological research linking adverse health outcomes to ambient concentrations of various pollutants has become highly credible science. By now, scores of studies have tracked fluctuations in pollution, primarily particulate matter, with health outcomes. Changes in health outcomes have been studied in the presence of events that change pollution levels, such as a strike at a local steel mill,\textsuperscript{271} a ban on coal sales,\textsuperscript{272} and new restrictions on the sulfur content of fuel oil.\textsuperscript{273}

\textsuperscript{268} Id. at § 5.
\textsuperscript{270} Id. at para. 57–68.
\textsuperscript{271} C. Arden Pope III et al., \textit{Daily Mortality and PM\textsubscript{10} Pollution in Utah Valley}, 47 ARCHIVES ENVTL. HEALTH 211 (1992).
More significantly, epidemiologists also have conducted other, more reliable, long-term time series studies, and even more reliable “cohort,” or panel data studies, which track the health outcomes of large groups of individuals over long time periods. Researchers carefully have scrutinized two studies in particular—one tracking over 500,000 people over seven years,274 and one tracking over 8000 people in six cities over fourteen to sixteen years (known as the “Harvard Six Cities Study”).275 These studies found and measured a statistically significant relationship between long-term levels of particulate matter pollution and premature mortality. Because of their crucial findings, and because of the statistical issues involved, a third-party consultant vetted the studies and subjected them to a “reanalysis.” The independent consultant then published a ninety-seven-page “condensed” report,276 which essentially corroborated the original researchers’ findings. The conclusions were compelling enough that the EPA in 1997 relied upon them heavily in setting a National Ambient Air Quality Standard for fine particulate matter.277

The original Harvard Six Cities Study does not stand alone. Since the mid-1990s, dozens of new studies and follow-ups have been conducted—including a follow-up to the Harvard Six Cities Study—further solidifying and quantifying the link between particulate matter and adverse health outcomes.278 Of course, these studies statistically separated

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273. Anthony Johnson Hedley et al., Cardiorespiratory and All-Cause Mortality After Restrictions on Sulphur Content of Fuel in Hong Kong: An Intervention Study, 360 LANCET 1646 (2002).
278. See, e.g., Francine Laden et al., Reduction in Fine Particulate Air Pollution and Mortali-
out the effects of air pollution from other potential causes, such as smoking, diet, exercise, and a variety of other factors that affect health outcomes.

This epidemiological evidence is of a significantly higher quality than that which previously has been found wanting in litigation contexts. In *General Electric v. Joiner*, the Supreme Court upheld a district court’s exclusion of expert testimony on the harmful effects of polychlorinated biphenyls, or PCBs, which the plaintiff contended led to his lung cancer. In so doing, the Court applied a deferential “abuse of discretion” standard, but pointedly noted that the evidence (at that time) only involved animal studies, and other epidemiological studies that did not find a statistical link between PCBs and lung cancer. By comparison, the epidemiological studies that link particulate matter with adverse health outcomes are based on experiences with human subjects – obviously not experimental subjects, but those offering up their life and health as data – and have established highly statistically significant relationships. With statistical significance typically defined as a 95% probability, this kind of epidemiological evidence should be more than enough to pass judicial muster.

Reports commissioned by the Ontario Medical Association (OMA) have drawn upon this literature to estimate the effects of air pollution on Ontarians. The OMA developed a special computer model, Illness Costs of Air Pollution (ICAP), which takes as inputs air quality and population data, and calculates, using relationships derived in the air quality modeling and health effects literature, a projected number of premature deaths, hospital admissions, emergency room visits, and minor illnesses. Originally developed to help Ontario perform cost-benefit analyses of various air pollution reduction strategies, ICAP has been

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280. *Id.* at 141.
281. See supra notes 274–276, 278.
283. See supra note 275, supra.
284. See supra note 275, supra.
285. See supra note 275, supra.
used more recently to estimate the contribution of different sources of pollution to the overall pollution problem. By varying the amount of pollution amount, different policy scenarios can be evaluated for their pollution effects and resulting costs. Similarly, by using the results of air quality models that measure the contributions of different individual air polluters, ICAP can estimate the damages that individual air polluters cause. ICAP incorporates a wide range of economic costs associated with adverse health outcomes, such as the value of a lost life, loss in economic productivity, direct health care costs, loss in quality of life, and risk of death. Despite the many categories of economic cost associated with adverse health outcomes, ICAP seems to err on the side of conservative estimates, going so far as to deduct health care costs for some cases where premature mortality enables Ontario to avoid caring for a person because of her death.

So are courts ready for epidemiological evidence of the link between air pollution and adverse (and for Ontario, costly) health outcomes? As in the case of evaluating air quality models as evidence, it is certainly noteworthy that this body of epidemiological research has survived the brutal EPA rulemaking process, withstanding the withering scrutiny of polluters that stand to lose billions of dollars from new pollution rules. It is also useful to remember that courts have in the past used statistical evidence to gauge damages. Securities litigation often relies heavily on statistical analysis to bolster assertions that some illicit trade yielded gains to the defendant, from alterations in the price. Antitrust litigation also often utilizes statistical analysis to show that market power exists or that prices are higher than they otherwise would be, thus aiding in the measure of damages.

As for the other economic costs of pollution, such as the environmental costs, they are apt to be far less contentious. Damages due to acid rain are easily distinguishable from other potential damages—the dis-

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286. An extensive literature exists on estimating the value of life for policy-making purposes. Often called the “value of a statistical life,” or “VSL,” the dollar value assigned to a life lost to pollution or some other risk is the most controversial aspect of cost-benefit analysis. Some estimates of VSL are based on contingent valuation surveys, which query subjects how much they would be willing to pay to avoid certain risks of death. Other estimates of VSL are based upon risk premiums paid to workers in high-risk professions such as construction.

287. DSS Report, supra note 278, at 22.


tinct washing away and erosion of solid structures caused by acid rain is a unique identifying feature of this form of pollution. The unique blackening and erosion of statutes is an unfortunately clear sign of acid rain. The damages of such tangible structures are not trivial to measure, but they suffer no conceptual leaps as statistical analysis does. Similarly, damage to crops and forests by way of lost productivity is not a subject that economists will hotly contest.

D. Other Possible Causes of Action for Ontario

If Ontario chose not to enact a statute, there would be some plausible common law causes of action that could provide a remedy for transboundary air pollution. Public nuisance has emerged as one of the more promising theories in “public tort” lawsuits seeking relief against defendants that are associated with widespread harms, similar to those caused by pollution. Plaintiffs have advanced public nuisance as a theory of recovery in lawsuits against handgun manufacturers and distributors, lead paint manufacturers, electric utilities (for carbon dioxide emissions), and automobile manufacturers (also for carbon dioxide emissions). To date, the results have been mixed, with courts showing some reluctance to impose liability for the manufacture of lawful products, and where, in the case of handguns and automobiles, there are intervening third party causes of harm other than the manufacturer. At the same time, courts have been willing to move away from traditional doctrinal restrictions that limit recovery to noxious land uses and preclude recovery against activities that are heavily regulated and conducted legally.

296. See Ausness, supra note 291, at 871–72.
297. Id. at 874–75.
298. See, e.g., supra note 292.
Public nuisance, invoked in several early air pollution cases, would seem to be a candidate theory for redressing Ontario's transboundary air pollution problem. The Restatement of Torts standard for recovery, an intentional and unreasonable interference with the use and enjoyment of land, contemplates that some balancing between the gravity of harm and the utility of defendant's conduct determine whether the interference is "unreasonable." Liability for air pollution almost always involved activities that are productive and legal, so the legality of defendants' activity, by itself, would not preclude a finding of unreasonableness. And the formulation of the balancing test has evolved over time, such that the plethora of pollution reduction measures and alternative electricity generating sources could weigh in favor of a finding of unreasonableness. Modern evidence of the link between air pollution and adverse health outcomes may solidify the finding that the gravity of the harm outweighs the utility of the defendants' conduct.

One potential problem with utilizing a nuisance theory to recover for this kind of air pollution, however, is that it typically requires that individual defendants to a nuisance suit be substantial contributors to the air pollution problem. In a "pollution share" suit similar to the Sindell v. Abbott "market share" suit, liability would require that enough defendants be bundled together to form a "substantial" contribution, possibly more than 50%, on the theory that recovery requires meeting the "more likely than not" standard. This requirement certainly would make it difficult to hold electric utilities liable for greenhouse gas emissions, and for fine particulate matter might complicate a prospective suit by Ontario to recoup air pollution costs.

300. RESTATEMENT (SECOND) OF TORTS § 822 (1979).
301. Id. at § 826(a).
302. W. PAGE KEETON, ET AL., PROSSER AND KEETON ON TORTS § 88, at 629 (5th ed., 1984) [hereinafter KEETON 1984] ("Thus an industrial enterpriser who properly locates a cement plant or a coal-burning electric generator, who exercises utmost care in the utilization of known scientific techniques for minimizing the harm from the emission of noxious smoke, dust and gas and who is serving society well by engaging in the activity may yet be required to pay for the inevitable harm caused to neighbors."). Even environmental permits may not insulate polluters from a nuisance suit. W. PAGE KEETON, ET AL., PROSSER AND KEETON ON TORTS § 88 A, at 87 (5th ed. Supp. 1988).
303. KEETON 1984, supra note 302, § 88, at 627.
304. Id. § 88, at 626.
305. See supra, notes 222–227 and accompanying text.
306. KEETON 1984, supra note 302, § 103, at 714.
What about a theory of *parens patriae*, a suit to protect its citizens, as was done in the landmark air pollution case *Georgia v. Tennessee Copper*?\(^307\) *Parens patriae* has often involved “quasi-sovereign” interests,\(^308\) so the abatement of air and water pollution that harms a province’s citizens, and costs a province money, would seem to call for *parens patriae*.\(^309\) The Canadian Supreme Court has looked favorably upon *parens patriae* as a means of sovereigns recovering for the loss of Crown goods and property.\(^310\) But a traditional limitation on *parens patriae* has been that most cases have targeted behavior that was either tortious or illegal.\(^311\) And a traditional limitation on *parens patriae* is such that it provides a mechanism for standing, but not a new substantive cause of action.\(^312\)

Common law tort doctrines always have evolved to fit the changing realities of litigation. It is certainly quite possible that a Canadian court would expansively interpret various tort theories to support an Ontario suit over transboundary air pollution. But environmental harms traditionally have found traditional tort suits ill-fitting.\(^313\) And the scientific and technical advances that would support a statutorily-created cause of action may or may or may not solve all of the obstacles to invoking traditional tort causes of action.

Jurisprudential considerations call for some caution when allowing lawsuits to go forward without actually having a named, identified victim or plaintiff in court. But the nature of many modern injuries, especially environmental ones, is such that the harm can be certain although unsusceptible of a precise location or effect in an individual case. Courts have adapted to these modern realities in the past, by allowing class ac-

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\(^307\) 206 U.S. 230 (1907).

\(^308\) See, e.g., State v. Dover, 891 A.2d 524, 528–29 (N.H. 2006); cf. Estados Unidos Mexicanos v. DeCoster, 229 F.3d 332, 336 (1st Cir. 2000) (“The [U.S.] Supreme Court has never recognized *parens patriae* standing in a foreign nation where only quasi-sovereign interests are at stake. The justifications offered to support *parens patriae* standing in the individual States of the Union are not applicable here.”).

\(^309\) See, e.g., EPA v. Green Forest, 921 F.2d 1394, 1404 (8th Cir. 1990); Burch v. Goodyear Tire & Rubber Co., 420 F. Supp. 82, 86 (D. Md. 1976) (“The state’s interest as *parens patriae* is most evident when it seeks to preserve its natural resources, or when it asks protection for the health of its citizens.”) (citations omitted).

\(^310\) British Columbia v. Canadian Forest Products, [2004] 2 S.C.R. 74, para. 9, 76 (Can.).

\(^311\) See Ausness, supra note 291, at 861–62.

\(^312\) Id.

tion lawsuits, for example. Allowing recovery in environmental cases is a logical continuation of this trend.

Only a short time ago, a domestic solution to a transboundary pollution problem would have seemed problematic from both a jurisprudential and an international perspective. The consciously extraterritorial application of domestic law was, until recently, a relatively rare occurrence. But the pace of globalization seems to be straining the limits of traditional mechanisms of resolving transnational disputes. At the same time, science and technology finally seem to be catching up in terms of monitoring complex environmental harms. While these new tools are applied most often in the regulatory context, they have become robust enough to be applied in a litigation context, and could support a lawsuit that in the past would have been foiled by traditional evidentiary obstacles. As a descriptive matter, the time is ripe for a jurisdiction like Ontario to piece together the various pieces of the puzzle that would form the basis of a domestic lawsuit that remedies transboundary pollution. Whether such an approach is a normatively positive development, we briefly explore below.

IV. THE VALUE OF INTERNATIONAL LAWMAKING THROUGH DOMESTIC LITIGATION

While this Article predicts that Canadians may choose to embrace transnational civil litigation, what are the broader implications for international law? Is the growth of transnational civil litigation, instead of a bilateralism, a positive development? Consistent with the authors’ earlier scholarly work, transnational litigation is not an ideal solution to transboundary problems—but it may be the only viable option presently available, and does serve some important functions.

Throughout the history of environmental law, litigation has served an important function in terms of animating subsequent negotiations and political developments by potentially changing the baseline rules. By introducing some uncertainty with respect to the default outcome, litiga-

314. Treaties on international civil liability seek to establish tort remedies for international harms, but have suffered chronic weakness due to a number of political and jurisprudential problems. Noah Sachs, Beyond the Liability Wall: Strengthening Tort Remedies in International Environmental Law (unpublished manuscript), available at http://works.bepress.com/cgi/viewcontent.cgi?article=1000&context=noah_sachs.

315. See, e.g., Parrish, supra note 14; Parrish, supra note 15.
tion has often cast a long shadow over post-litigation bargaining. For example, the landmark case *TVA v. Hill*\(^{316}\) sent shock waves throughout the environmental community by holding that the Endangered Species Act did, in fact, bar completion of a dam that would wipe out the last known habitat of a fish species listed under the Act. The unexpected ruling plays a central part of the lore of environmental law, as it dramatically changed the landscape of land use regulation, and has played a prominent role in animating subsequent regulatory bargaining situations.\(^{317}\) Also, in *City of Chicago v. Environmental Defense Fund*,\(^{318}\) the Court held that the ash generated by a waste combustion facility (which the City of Chicago operated), was subject to the Resource Conservation and Recovery Act. The holding led to a "flurry" of activity at EPA and in Congress. The decision also grabbed the attention of municipal waste incinerator operators, who suddenly were facing civil and criminal liability simply for operating their facilities as they always had. Stuck in the middle of hostilities between the municipalities with waste incinerators and environmental organizations, EPA wrote new regulations charting a middle course. Although environmentalists roundly criticized them, there was no doubt that the new regulations would not have been implemented but for the Supreme Court decision.\(^{319}\)

Transboundary litigation may serve the same purpose in an international context, serving as a catalyst for bilateral negotiations. A Canadian embrace of extraterritorial reciprocity could spur U.S. policymakers to once again meaningfully engage with bilateralism.\(^{320}\) Even though the Bush Administration's disengagement may have nothing to do with Canada and everything to do with its environmental agenda, a transboundary lawsuit would certainly grab the attention of environmen-

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tal policy-makers and cause them to consider re-ordering environmental priorities.

Climate change litigation may well serve this role. With the U.S. and Australia refusing to ratify the Kyoto Protocol, with Canada refusing to attempt to meet the Kyoto targets despite having ratified the Protocol, and with China and India, the second- and fourth-largest emitters of carbon dioxide, there are mounting doubts that Kyoto will accomplish even its modest goals. What then? One hopes that efforts on the state and local levels will achieve some measure of success, particu-

321. See, e.g., David A. Grossman, Warming up to a Not-So-Radical Idea: Tort-Based Climate Change Litigation, 28 COLUM. J. ENVTL. L. 1 (2003) (describing climate change litigation to address certain harms as an alternative when political action fails); Eduardo M. Peñalver, Acts of God or Toxic Torts? Applying Tort Principles to the Problem of Climate Change, 38 NAT. RESOURCES J. 563 (1998) (arguing that tort litigation could effectively address climate change harm); see also Abate, supra note 320, at 373 (arguing “that climate change litigation is a more effective tool to bring about a mandatory federal regulatory program than are legislative efforts at the state, regional, and city levels, or voluntary initiatives within the regulated community”).


323. As a normative matter, most people outside of the Bush Administration and Australia’s Howard Administration are certainly hoping for Kyoto to provide effective governance. As the number of countries experiencing difficulty in meeting their targets increase, however, and as Kyoto signatories begin to signal that they have given up hope of meeting their targets, one wonders if there is any hope for Kyoto. See, e.g., Expectations Low as Kyoto Parties Meet To Chart Long-term Strategy, GREENWIRE, Nov. 28, 2005 (on file with author). In 2005, New Zealand dropped plans for a carbon tax because it would have increased electricity and fossil fuel prices too much to justify the decrease in emissions. New Zealand Scraps Kyoto Carbon-Tax Plan, PLANET ARK, Dec. 22, 2005, available at http://www.planetalk.org/dailynewsstory.cfm/newsid/34180/story.htm. In the most Kyoto-enthusiastic region of the world, Europe, the majority of EU members failed to submit their greenhouse gas emissions allocation plans on time as required by the EU. See More Than Half of E.U. Nations Miss Deadline for New Emissions Plans, GREENWIRE, July 5, 2006 (on file with author); Netherlands to Cut Emissions Quota: 14 Others Lag Behind, GREENWIRE, Sept. 6, 2006 (on file with author). Trying to protect the competitiveness of its industries from American competition that does not worry about greenhouse gas regulation, Canada also effectively dropped out of efforts to comply with Kyoto. Enviros Threaten to Sue Canada to Adhere to Kyoto, GREENWIRE, Oct. 31, 2006 (on file with author).

324. See supra note 13 for an in-depth discussion of these issues; see also Laura Kosloff & Mark Trexler, State Climate Change Initiatives: Think Locally, Act Globally, NAT. RESOURCES & ENV’T, Spring 2004, at 46 (2004) (describing state and local attempts to address climate change); Hari M. Osofsky, Local Approaches to Transnational Corporate Responsibility: Mapping the
larly given that some scholars believe subnational and nonstate actors are more adept at solving environmental problems than states using traditional sources of international law. But if international climate diplomacy continues to appear cumbersome and feckless, litigation may be an appropriate tool for bringing the parties back to the bargaining table. For example, just starting a conversation about damages for climate change would affect the relative bargaining positions of the many key climate stakeholders.

A second function of litigation may be to focus attention on the transboundary air pollution problem, possibly changing the political dynamics with a view to, again, change the default outcomes. Private party litigation can serve the important function of “focusing attention upon the problem and providing relief to those persons who have suffered.” Even if a judgment proves ultimately uncollectible, the use of Canadian domestic laws to address a transboundary environmental problem may create a mindset, over time, among lawyers and policymakers that the extraterritorial application of domestic law is an acceptable way of focusing attention on a transboundary problem.

Litigation always has filled gaps left open by institutions of first resort. When the executive and legislative branches have dithered and have failed to address significant public health and environmental


330. See supra note 291.
harms, public tort litigation often has stepped into the breach (albeit not always successfully). The very purpose behind environmental citizen suit provisions in domestic law, for example, is to encourage private attorneys general to pursue such actions.\textsuperscript{331} At the very least, “[l]itigation may provide interim relief until [more] comprehensive solution[s]” to environmental challenges are found.\textsuperscript{332} And, from an environmental perspective, doing something is better than doing nothing.\textsuperscript{333}

This is not to say that we endorse domestic extraterritorial litigation as a long-term sustainable approach to addressing transboundary problems. For one thing, domestic extraterritorial litigation could lead to a patchwork of inconsistent adjudications as different courts from both sides of the border will approach cross-border issues using different laws.\textsuperscript{334} A hodgepodge of different judgments and policies could create unpredictability for businesses and industry.\textsuperscript{335} Second, whether the courts are friendly to environmental issues is unclear.\textsuperscript{336} Even with the


\textsuperscript{332} Wooley, supra note 114, at 139.

\textsuperscript{333} The Prevention Principle underscores the rationale behind this contention. “Preventing environmental damage is almost always less costly than allowing the damage and incurring the environmental costs and other consequences later.” HUNTER ET AL., supra note 16, at 404; see also Declaration of the United Nations Conference on the Human Environment prin. 6, U.N. Doc. A/CONF.48/14/Rev. 1 (June 16, 1972) (declaring that the release of substances that cause serious environmental damage “must be halted in order to ensure that serious or irreversible damage is not inflicted upon ecosystems”).

\textsuperscript{334} For a discussion of how litigation can lead to patchwork solutions, see Paul L. Langer, \textit{Significant Current Developments in Environmental Insurance Coverage}, 690 PLI/Comm. 129, 131 (1994) (describing how a “litigation explosion” over the insurance coverage aspects of environmental liability has led to a “patchwork of inconsistent and often conflicting decisions”); cf. Abate, supra note 320, at 385 (noting that a drawback to climate change litigation may be the patchwork, rather than comprehensive, nature of litigation solutions); Jonathan Turley, \textit{A Crisis of Faith: Tobacco and the Madisonian Democracy}, 37 HARV. J. ON LEGIS. 433, 471–80 (2000) (describing the problems of the patchwork solutions caused by mass tort litigation and calling for national standards).


changes in law and science described above, litigants might find judges reluctant to hear these kind of cases. Finally, even if the courts are willing to tackle the complex environmental issues, the foreign and political nature of transboundary pollution poses unique challenges—the lawsuits would be complex, time-consuming, and costly both for the litigants and the courts. 337

And these concerns do not even reach the bigger conceptual problems, such as the undemocratic nature of extraterritorially applying domestic laws,338—or the likely responses, such as diplomatic protests, nonrecognition of judgments,340 or the enactment of blocking or claw-back statutes.342

But these issues can be left aside for now. Litigation as a means of settling and resettling default positions currently is an important part of international lawmaking. Just as litigation has been able to change the assumptions regarding the legal order with respect to environmental matters in the United States, it has the potential in the international realm to realign the hands that have been dealt various stakeholders, and

how the U.S. Supreme Court’s decisions are more pro-development than pro-environmental, and at odds with congressional policy. Professor Richard Lazarus, for example, has demonstrated that a significant number of U.S. Supreme Court decisions have anti-environmental results. Richard J. Lazarus, Thirty Years of Environmental Protection Law in the Supreme Court, 17 Pace Envtl. L. Rev. 1 (1999); Richard J. Lazarus, Restoring What’s Environmental About Environmental Law in the Supreme Court, 47 UCLA L. Rev. 703 (2000); Richard J. Lazarus, Environmental Law and the Supreme Court: Three Years Later, 19 Pace Envtl. L. Rev. 653 (2002).

337. See, e.g., Hall, supra note 15, at 449 (noting that the U.S. Supreme Court “has admitted that it is not the ideal forum for addressing transboundary pollution disputes, which tend to involve complex technical and scientific issues with major political and economic ramifications”); cf. Richard B. Bilder, The Role of States and Cities in Foreign Relations, 83 AM. J. INT’L L. 821, 830–31 (1989) (noting the problems with domestic courts deciding issues involving foreign affairs); Jack L. Goldsmith, Federal Courts, Foreign Affairs, and Federalism, 83 VA. L. REV. 1617, 1668 (1997) (arguing that courts are poorly equipped to address questions involving foreign relations).

in the end bring about more cooperative outcomes. In the context of the Canada-U.S. relationship, it has the potential to bring the parties back together, hopefully with a renewed focus on bilateral cooperation. Canadians would be wise to consider this litigation option.

CONCLUSION

In recent years, environmental and international legal theorists have cheered the growth of extraterritorial domestic litigation as a method of addressing transboundary disputes. This growth is intimately connected with the changing nature of international law and relations, including the important role that non-state actors now play in the international arena. Largely ignored, however, is how these changes are developing outside the United States, in a way that impact American interests. As a result of America’s embrace of extraterritoriality and the United States retreat from bilateralism, Canadians increasingly will explore the use of their own domestic laws to resolve transboundary air pollution emanating from the United States. Changes in law and science make such lawsuits possible, and extraterritorial reciprocity may, for the first time, be a very real threat. By itself, such litigation would be nothing to celebrate, but insofar as it would over time re-engage the parties to this historically harmonious relationship in bilateralism, it would represent a welcome shift in international lawmaking.

339. For example, the European Community and the United Kingdom submitted protests when the United States amended its Export Administration Regulations to prohibit the export of oil or natural gas exploration equipment to the Soviet Union. A.V. Lowe, ExTRAtERRitorIAL JurISDiction: An AnNOTAtED COlleCtIOn Of leGAl materIAls 197, 201 (1983) (quoting diplomatic notes asserting that “[t]he United States measures as they apply in the present case are unacceptable under international law because of their extra-territorial aspects. They seek to regulate companies not of United States nationality in respect of their conduct outside the United States and particularly the handling of property and technical data of these companies not within the United States”).

340. See generally Robert E. Lutz, A Lawyer’s Handbook for Enforcing Foreign Judgments in the United States and Abroad (2007). For a discussion of extraterritoriality and its connection to judgment enforcement, see Berman, Dialectical Regulation, supra note 329, at 944–45 (arguing that “it is clear that judgment recognition is increasingly the place where deterritorialized jurisdictional assertions meet the reality of territorial enforcement”).