U.S.-Canada Cooperation
Past Lessons for Future Successes

The border between Canada and the United States spans a distance of more than 5,500 miles or 8,800 kilometers. Such a long frontier has, over the last century, been the setting for transboundary discussions, disputes, and even legal battles on environmental issues.

These conflicts and interactions have generated bilateral cooperative mechanisms, including agreements and treaties whose effectiveness may be unparalleled in the world. In fact, a design for successful U.S.–Canada transboundary action on common issues in the 21st century may be found in past successes.

A retrospective of key transboundary interactions since the beginning of the 20th century reveals where Canada and the United States have developed ways and means to cooperate. The Boundary Waters Treaty is the first and most important example. It was signed in 1909 between the United States and Britain on Canada’s behalf in an effort to deal with long-standing concerns both countries had regarding how to share the Great Lakes and other boundary waters. A creative and far-sighted mechanism, the Boundary Waters Treaty established significant principles for transboundary cooperation. Celebrating its centenary in 2009, Secretary of State Hillary Clinton described the treaty as “the first to deal with the modern concept of pollution and included the prohibition that one country was not to create pollution to the harm of health and property of the other.”

The basic principles espoused in the Boundary Waters Treaty included sharing common resources on an equal basis, establishing common facts;
using the best available scientific information to inform discussion and decision-making; and creating a binational organization independent of government through which to handle issues of common concern. Since the time of their development, the approaches and values spelled out in the *Boundary Waters Treaty* have been used in many other international agreements where nations have come together to develop regimes for managing common resources and transboundary pollution.

The Trail smelter dispute, which ran from 1927 to 1941, resulted in another key principle central to transboundary cooperation. The Trail, British Columbia site of the Consolidated Mining and Smelter Company lead and zinc smelter was the source of sulfur dioxide (SO2) emissions that travelled the 14 miles south to cross the international frontier into Washington State.

John Wirth, in his examination of the Trail smelter conflict,\(^2\) opines that when the Trail smelter dispute was finally settled in 1941, fundamental issues had been raised in such areas as international law, the technology of air pollution abatement, and the scientific investigation of the effects of SO2 on forests, crops, and soils. Wirth concludes that the Trail settlement is justly celebrated as the first international ruling on transborder air pollution and for its affirmation of the “polluter pays” principle in international law.

Later in the 20th century, when acid rain became a U.S.–Canada transboundary issue, the scope and nature of the concern and the approaches taken by the two countries were clearly influenced by the experience of the *Boundary Waters Treaty* and the Trail smelter arbitration decision. A 1979 Joint Statement of Transboundary Air Quality used concepts and phrasing taken directly from the 1909 *Boundary Waters Treaty* and applied them to the area of air pollution.\(^3\)

At the same time, Canada and the United States were negotiating and signing with European nations the 1979 United Nations Economic Commission for Europe’s *Convention on Long-Range Transboundary Air Pollution* (LRTAP). In the end, when the U.S.–Canada Memorandum of Intent on acid rain was signed in 1980, “it closely paralleled the 1979 LRTAP convention model”\(^3\) and went further to explicitly commit to completing a bilateral air quality agreement to deal with transboundary air pollution—an agreement that was finally concluded in 1991 as the *Agreement Between the Government of Canada and the Government of the United States of America on Air Quality*.

While the origin of this initiative was the acid rain problem, the agreement itself was drafted in such a way as to provide a basis for dealing with transboundary air quality issues well into the future, including ones that were unknown at the time of the signing. In this way it followed the pattern established by the *Boundary Waters Treaty*.  

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Figure 1. Ambient levels of ozone in the border region.a

Since 2000, the ozone concentrations within 500 kilometers (310 miles) of the Canada–U.S. border must be reported in each biannual progress report on the Air Quality Agreement. This graphic reports the ozone conditions for 2004–2006.

aCanada–United States Air Quality Agreement Progress Report 2008 Figure 23.
With the signing in January 1994 of the North American Free Trade Agreement (NAFTA) side agreement, the North American Agreement on Environmental Cooperation (NAAEC), another mechanism was created for transboundary cooperation. The NAAEC allows Canada, the United States, and Mexico to look at and deal with transboundary air pollution that, like toxic pollutants such as DDT, is continental in scope.

Clearly, there are experiences and practices that have proven successful in terms of bilateral transboundary air pollution where Canada and the United States have acted together effectively to deal with common concerns. What are the essential elements that have made this cooperation work? What have been the winning conditions in addressing and managing U.S.–Canada transboundary issues? Are these applicable to current issues, in particular climate change?

Since then, Canada and the United States have advanced their abilities to develop scientific consensus on transboundary air pollution by establishing both common and comparable analytical techniques and air transport models, as well as air quality monitoring and emission inventory methodologies. Now, as Figure 1 illustrates, every biannual progress report to the U.S.–Canada Air Quality Agreement communicates to governments and the public with data and analysis about acid rain and ozone that has been developed on the basis of scientific consensus.

Evidence for Action

Achieving the bilateral Air Quality Agreement to tackle transboundary acid rain was a protracted and painful transboundary interaction, lasting well over a decade. It was made more difficult by the fact that scientists in the United States and Canada had divergent views of the evidence. No independent forum existed through which to develop common scientific facts—and which both governments would recognize as credible.

In the U.S.–Canada discussions leading to the negotiation in 2000 of the Ozone Annex to the Air Quality Agreement to address transboundary ground-level ozone, much had changed. The implementation of the Air Quality Agreement meant that an institutional forum for scientific cooperation on transboundary air pollution had been established and scientists were able to work together to establish common statements of the facts. Maps of the flow of U.S. Midwestern ozone episodes, for example, no longer stopped at the Canadian border. Working together under the agreement, scientific evidence was gathered to demonstrate that ozone was flowing across the border and that it was causing damage to health—and both the Canadian and U.S. governments recognized the scientific advice as being credible, in part, because it was generated in a bilateral forum.

The completion in 2005 of the Emission Trading Feasibility Study went even further in terms of scientific cooperation and consensus. The study explored the complex economic, environmental, administrative, and legal dimensions of a U.S.–Canada cross-border cap-and-trade program of emissions of SO₂ and nitrogen oxides (NOₓ), the pollutants that contribute to fine particulate (PM)
pollution, smog, regional haze, and acid rain in the transboundary region. To establish whether cap-and-trade could be feasible in a cross-border format, the study completed economic and air quality modelling using Canadian and U.S. data and models, along with review and analysis of each country’s administrative and legal frameworks. Scientific cooperation and the ability to achieve consensus had advanced sufficiently that the feasibility study was able to advise the two governments that a cross-border emissions cap-and-trade program could be possible if each country met certain conditions.4

A Bilateral Framework
The fundamental characteristics of collaborative action have been that both countries, persuaded by the evidence presented, agreed on the nature of the problem and how and when it should be solved—typically in the form of differentiated targets and timetables for achieving them and in line with the goal of preventing damage to the health and property of the neighboring state. In recognition of the reality of the different traditions, constitutions and legislation of each country, then both countries would propose their own unique measures that would contribute to the common goal, and each country would be prepared to commit to achieving them.

In situations where a transboundary pollution issue has been managed effectively by national governments working together, the governments have been able to cooperate through formal frameworks, such as agreements and implementing committees. Such mechanisms allow for reviewing scientific and technical evidence and for making policy recommendations to governments. The existence of these frameworks is crucial in transboundary cooperation.

The 1979 LRTAP Convention created the Executive Body where representatives of the Parties to the Convention could make recommendations to governments on priority transboundary issues based on the consensus of scientific and technical advice.

Within the context of the Agreement Between the Government of Canada and the Government of the United States of America on Air Quality, the creation of the bilateral Air Quality Committee was intended to carry out similar functions. It has been the forum at which the United States and Canada have been able to discuss, explore, and address their common transboundary air pollution concerns. Not only has this committee made recommendations to the Canadian and U.S. governments concerning the addition of new annexes to the agreement in order to address transboundary smog, it has also overseen bilateral cooperative work where one country has expressed concern about pollution from the other. For instance, under the Air Quality Committee, the Boundary Dam Power Plant in Estevan, Saskatchewan became the site of U.S.–Canada and North Dakota-Saskatchewan cooperation when power plant emissions became a concern to residents of North Dakota. When residents of Windsor, Ontario became concerned about the prospect of pollution if an old coal-fired power plant in Detroit was allowed to reopen, the committee again provided the framework for bilateral discussion.

A Decision to Act
Even when the scientific evidence is clear and the international body whose responsibility it is has called for governments to act, the decision by governments to move forward is a crucial and separate element in effective transboundary cooperation.

In addition to governments, scientists, and policymakers, there are other players involved in effective transboundary cooperation whose influence can be critical in relation to governments making a final decision to act. During the acid rain debates of the 1970s and 1980s, private sector interests in both

![Figure 2. Distribution of acidification-related deposition in kilograms per hectare per year (kg/ha/yr) in eastern North America, 1996-2001.](image)

*Environment Canada and U.S. Environmental Protection Agency. “Canada–United States Transboundary PM Science Assessment”. (2004). Figure 3.22.*
the United States and Canada were effective in pressuring governments to delay making decisions to reduce SO$_2$ emissions. At the time, although small in number, Environmental Non-Governmental Organizations (ENGOs) wielded considerable influence on the transboundary acid rain discussion, at least in Canada. Now, ENGOs enjoy a legitimacy that gives their positions on issues significant weight, particularly with respect to public opinion. That fact has meant that ENGOs are often in demand as participants on pollution issues, including those issues where there are transboundary concerns.

Obtaining the support of political leaders for action on a transboundary issue is essential and irreplaceable. Prime Minister Mulroney of Canada was a champion for action on acid rain during his term in office from 1984 to 1993. Only the direct engagement of the Prime Minister was able to ensure that policies, resources of people, money, and diplomacy could be directed toward the goal of a bilateral agreement. He raised the issue during his address to the U.S. Congress in 1988, where he asked "...what would be said of a generation that could fly to the stars and allow our lakes and rivers to languish and die?" By the time Canada and the United States finally negotiated the bilateral Air Quality Agreement in 1991, it was Prime Minister Mulroney and President Reagan who signed the agreement. When the Great Lakes Water Quality Agreement was signed in 1972 under the auspices of the Boundary Waters Treaty, it was signed by Prime Minister Trudeau and President Nixon. Students of politics will appreciate the competition there is to get on to a Prime Ministerial or Presidential agenda and to stay there for the duration.

### Key Events in the Bilateral Timeline of Actions to Address U.S.–Canada Transboundary Air Pollution

- **1980** Canada and the United States sign a Memorandum of Intent on acid rain and commit to complete a bilateral air quality agreement.
- **1991** President Reagan and Prime Minister Mulroney sign the Agreement Between the Government of Canada and the Government of the United States of America on Air Quality.
- **1995** A Regional Ozone Study Area (ROSA) project, under the purview of the Air Quality Agreement, initiates regional modeling to evaluate regional controls for ozone pollution in a transboundary area in eastern North America.
- **1997** Canadian Environment Minister Marchi and EPA Administrator Browner sign the Agreement to develop a “Joint Plan of Action for Addressing Transboundary Air Pollution”.
- **1998** Administrator Browner and Canadian Environment Minister Stewart endorse a timetable and strategy for addressing transboundary ground-level ozone and particulate matter.
- **1999** Canadian and U.S. governments recommend negotiation of an Ozone Annex to the Air Quality Agreement on the basis of conclusions of joint scientific analysis on ground-level ozone.
- **2000** United States and Canada negotiate and sign the Ozone Annex to the Air Quality Agreement.
- **2004** The bilateral science assessment “Canada–United States Transboundary PM Science Assessment” leads to recommendations to negotiate a PM Annex to the Air Quality Agreement.
- **2007** Canada and the United States have the first negotiating session on a new PM Annex to the Air Quality Agreement and intersessional work continues into 2010.
Performance Monitoring
Once transboundary cooperation has evolved to the extent that an international agreement has been put in place, regular monitoring to review progress by governments to meet targets and timelines has proven essential. Under the Air Quality Agreement, public progress reports are published every two years to describe what Canada and the United States are doing to meet their respective commitments. The LRTAP Convention reports annually on the national emissions for every pollutant that any party to the Convention has committed to reduce.

Although there are no international courts through which to set penalties for noncompliant parties, public reporting has encouraged the perception that the “court of public opinion” is an important incentive to meeting commitments. Many international agreements address noncompliance concerns, in part, by requiring signatories to “ratify” or confirm their commitment to implement their international commitments. Before becoming parties to an agreement, the ratification process requires that signatories provide evidence that the instruments are in place domestically to implement the agreement and meet the commitments.

A Feedback Loop to Ensure Lessons Learned
When transboundary cooperation successfully generates an international agreement to take action on a common issue of concern, the agreement will almost certainly become outdated in time. Scientific knowledge and understanding, as well as methods to monitor and interpret the environment, all change and improve, and with these changes may come the need to do more.

Under the Air Quality Agreement, the need to go beyond acid rain to address transboundary smog became clear as scientific understanding grew and the costs to human health of the current levels in the air were better understood. The negotiation in 2000 of the Ozone Annex to the Air Quality Agreement established new bilateral goals and emission
reduction commitments to meet these goals, and renewed and updated the Air Quality Agreement.

The completion in 2004 of the U.S.–Canada Transboundary PM Science Assessment began the second stage of the Air Quality Agreement’s renewal. In recognition of the fact that large regions of Eastern Canada and Northeastern United States continue to receive acidifying emissions of SO2 and NOx, as Figure 2 demonstrates, and that these emissions also contribute to PM pollution, the binational Air Quality Committee charged its Subcommittee on Scientific Cooperation to “summarize and understand the current knowledge of the transboundary transport of PM and PM precursors between Canada and the United States in a scientific assessment.” The resulting recommendation to governments to negotiate a PM Annex to the Agreement will mean that the Air Quality Agreement will be renewed again with a third transboundary dimension once PM Annex negotiations have been completed.

Conclusions

More than a century of experience in the management of transboundary issues suggests some “winning conditions” if effective solutions are to be secured:

1. The evidence defining the nature of the problem and its solution should be developed collaboratively by the two countries. Typically, this should include the assembly of scientific, social, and economic knowledge in a form that assists decision-making by the parties.

2. The two countries should be clear and transparent concerning the national interests at stake and such considerations should be incorporated in any agreement negotiated by the parties.

3. Complementary systems of governance should be established to manage both the collaborative binational and separate domestic aspects of the issue. The governance systems should include auditing performance against commitments, continuous scientific research and information exchange, feedback to allow lessons to be learned and continuous improvements achieved, and the means of resolving disputes that may arise.

Finally, to achieve success requires an informed and supportive public from all sectors and a high quality of political leadership supported by capable officials. These approaches are derived from a century of experience and are applicable to current transboundary issues, including measures that will be required to adapt to and mitigate the effects of greenhouse gases.

References


