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## Emerging Legal Issues in the Great Lakes Such as the Public Trust Doctrine, Subterranean Rights and Municipal Regulatory Arrangements

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# EMERGING LEGAL ISSUES IN THE GREAT LAKES SUCH AS THE PUBLIC TRUST DOCTRINE, SUBTERRANEAN RIGHTS AND MUNICIPAL REGULATORY ARRANGEMENTS

*Session Chair – Kendra Fogarty*  
*Canadian Speaker – David Brooks*  
*United States Speaker – Chris A. Shafer*  
*United States Speaker – David Ullrich*

## INTRODUCTION

*Kendra Fogarty*

MS. FOGARTY: Good morning. My name is Kendra Fogarty. I work for the Canadian Department of Foreign Affairs,<sup>1</sup> but I am a United States citizen. I work on Great Lakes issues, and I also work for the consulate in Chicago, Buffalo, Detroit, and Minneapolis.<sup>2</sup> I have a long history of working on issues involving the Great Lakes, and I have known many of you for years.

Yesterday and this morning, we focused largely on the bi-national relationship between Canada and the United States. Specifically, we focused on the federal governments and treaties, including the Great Lakes Water Quality Agreement. However, much of the implementation, decision-making, and resources are expended at the local level. So, we will focus in this panel on some of the issues at the local level. We will start with three excellent speakers. We want to try to wrap up at noon, so please hold your questions until the end and we will try to address them all at once.

Our first speaker is Dr. David Brooks. Dr. Brooks has a background in geology and economics.<sup>3</sup> He recently retired, but only after working fourteen years with the International Development Research Center.<sup>4</sup> Dr. Brooks is

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<sup>1</sup> See CANADA-UNITED STATES LAW INSTITUTE, 2009 ANNUAL CONFERENCE PROGRAM 7, available at [http://cusli.org/conferences/annual/annual\\_2009/documentation/CUSLI\\_2009\\_program.pdf](http://cusli.org/conferences/annual/annual_2009/documentation/CUSLI_2009_program.pdf).

<sup>2</sup> See *id.*

<sup>3</sup> See *id.* at 8.

<sup>4</sup> See *id.*

now a senior advisor to Friends of the Earth in Canada on fresh water issues.<sup>5</sup> Dr. Brooks published quite a few books, which are listed in the program under his biography. He was also elected to the International Water Academy in Oslo, Norway.<sup>6</sup> He will start by discussing an overview of Canadian water law.

## CANADIAN SPEAKER

*David Brooks*<sup>\*</sup>

### WHITHER (OR WHETHER) WATER POLICY IN CANADA?<sup>7</sup>

#### *Getting the Numbers Right*

Most Canadians believe they live in one of the most water-rich nations on earth. Many politicians and much of the media perpetuate this view. They

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<sup>5</sup> See *id.*

<sup>6</sup> See *id.* at 9.

<sup>\*</sup>

Dr. David B. Brooks is a natural resource economist. Formerly the founding director of the Canadian Office of Energy Conservation in 1973, he subsequently worked for six years with Energy Probe and Friends of the Earth Canada, and for several years served as President of the Board for the latter. Then for five years Dr. Brooks was a principal with the firm of Marbek Resource Consultants, during which time he also served on the Board of Directors of Ontario Hydroelectric Corporation. Between 1988 and 2002, Dr. Brooks worked with Canada's International Development Research Centre. He held several positions including that of Acting Director of the Program for Environment & Natural Resources Management. After retiring from IDRC in May 2002, Dr. Brooks became Senior Advisor - Fresh Water for Friends of the Earth - Canada on a part-time basis. Dr. Brooks was educated in geology at MIT (SB 1955) and Cal Tech (MS 1956), and in economics at the University of Colorado (PhD 1963). Dr. Brooks is author of *Zero Energy Growth for Canada* and *Water: Local-Level Management*. He is co-author of *Life After Oil: Renewable Energy Policies for Canada*; *Water: The Potential for Demand Management in Canada*; and *Watershed: The Role of Fresh Water in the Israeli-Palestinian Conflict*. He has also edited several books on resource issues and on water demand management including *Water Balances in the Eastern Mediterranean*. Most recently he directed the study of water soft paths in Canada, the first such study undertaken anywhere in the world. The results have been published by Earthscan Press under the title, *Making the Most of the Water We Have: The Soft Path Approach to Water Management*. Dr. Brooks has been elected to The International Water Academy, based in Oslo, Norway.

<sup>7</sup> The following paper was substituted by Dr. Brooks for publication in lieu of his remarks.

emphasize that Canada has twenty percent of the world's fresh water,<sup>8</sup> a number that is not so much wrong as misleading. Canada does have twenty percent of the world's *stock* of fresh water, water held in lakes, aquifers and glaciers; but its share of *renewable* fresh water that is replenished each year is only seven percent, which is roughly equal to Canada's seven percent share of the world's land mass.<sup>9</sup> Professor David Schindler<sup>10</sup> from the University of Alberta and winner of the first Stockholm Water Prize<sup>11</sup> describes the situation best: "While Canada has a large freshwater 'bank account,' the interest rate is very low."<sup>12</sup>

As far as water resources are concerned, Canada is a middle class country. Canada may start with a moderate amount of water on a continental basis, but less than half of the renewable supply is located close to that belt of populated land in the south of the country where eighty-five percent of Canadians live.<sup>13</sup> More than half of Canadian rivers flow and drain northward, emptying into either the Arctic Ocean or Hudson Bay.<sup>14</sup> An estimated twelve percent of Canada is covered by lakes and rivers, but only three percent in southern Canada.<sup>15</sup> The Great Lakes are among the fifteen largest lakes in the world,<sup>16</sup> but the bulk of their volume is a stock left over from the melting of continental glaciers;<sup>17</sup> only about one percent is renewed each year from precipitation on the Lakes or on tributary rivers.<sup>18</sup>

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<sup>8</sup> See *Selling Canada's Water*, CBC NEWS ONLINE, Aug. 25, 2004, <http://www.cbc.ca/news/background/water/> (last visited Oct. 11, 2009).

<sup>9</sup> See John B. Sprague, *Great Wet North? Canada's Myth of Water Abundance* in EAU CANADA: THE FUTURE OF CANADA'S WATER 25 (Karen Bakker ed., UBC Press 2007).

<sup>10</sup> See David Schindler - Biography, [http://www.biology.ualberta.ca/faculty/david\\_schindler/](http://www.biology.ualberta.ca/faculty/david_schindler/) (last visited Dec. 20, 2009).

<sup>11</sup> See David Schindler - Degrees and Awards, [http://www.biology.ualberta.ca/faculty/david\\_schindler/?Page=1021](http://www.biology.ualberta.ca/faculty/david_schindler/?Page=1021) (last visited Dec. 20, 2009).

<sup>12</sup> David W. Schindler, *Foreword* to EAU CANADA: THE FUTURE OF CANADA'S WATER, at xiv (Karen Bakker ed., UBC Press 2007).

<sup>13</sup> See ROBERT DE LOË AND REID KREUTZWISER, CHALLENGING THE STATUS QUO: THE EVOLUTION OF WATER GOVERNANCE IN CANADA IN EAU CANADA: THE FUTURE OF CANADA'S WATER 85 (Karen Bakker ed., UBC Press 2007) (stating that eighty-five percent of the population lives within 300 kilometres of the Canada-United States border).

<sup>14</sup> STATISTICS CANADA, HUMAN ACTIVITY AND THE ENVIRONMENT: ANNUAL STATISTICS 2003, Map 1.2, available at <http://www.statcan.gc.ca/pub/16-201-x/16-201-x2003000-eng.pdf>.

<sup>15</sup> See generally *id.* at 3 (stating that only three percent of the area covered by water in Canada is located in inhabited regions).

<sup>16</sup> *Id.* at 8.

<sup>17</sup> See Grahame Larson & Randall Schaetzl, *Origin and Evolution of the Great Lakes*, 27 (4) J. OF GREAT LAKES RESEARCH 518 (2001) (noting that the origins of the Great Lakes watershed are a product of multiple glaciations and drainage).

<sup>18</sup> See generally Sprague, *supra* note 9, at 25 (identifying that most of the lakes and rivers are stock water supply and not renewable water supply).

Canada is not water rich, but neither is it water poor. Canada receives nearly three thousand cubic kilometers of renewable fresh water every year,<sup>19</sup> about the same as China or Indonesia,<sup>20</sup> but dwarfed by Russia's five thousand or Brazil's eight thousand.<sup>21</sup> The United States is not far behind Canada with nearly twenty-five hundred.<sup>22</sup> Both countries are ecologically diverse, and each has large areas, southwestern United States and south central Canada, that are chronically short of water.<sup>23</sup> However, certainly both Canada and the United States are better off than much of the rest of the world.

One statistic that does distinguish Canada from the United States is the proportion of "gross annual availability" of water that is withdrawn for human use: 1.5% for Canada versus 19.2% for the United States.<sup>24</sup> Though explained in part by the huge volumes of water in the Canadian north, the difference also reflects somewhat lower rates of per capita water use in Canada compared with the United States: fourteen hundred cubic metres per person-year versus sixteen hundred.<sup>25</sup> However, both nations rank among the highest per capita users of water in the world,<sup>26</sup> and well above other countries in the Organisation for Economic Co-Operation and Development (OECD) other than Australia.<sup>27</sup> Moreover, given the much higher share of water use for agriculture in the United States and Australia when compared with Canada, respectively forty-one percent, seventy-five percent, and twelve percent,<sup>28</sup> it is fair to conclude that, for their own use, Canadians are probably the greatest water users in the world.

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<sup>19</sup> PETER GLEICK ET AL., *THE WORLD'S WATER: THE BIENNIAL REPORT ON FRESHWATER RESOURCES* 240-243 (Peter Gleick ed., Island Press 2002-2003) (2003).

<sup>20</sup> *Id.*

<sup>21</sup> *Id.*

<sup>22</sup> *Id.*

<sup>23</sup> See generally National Aeronautics and Space Administration, *Western Prairies Face Impending Water Crisis*, <http://earthobservatory.nasa.gov/Newsroom/view.php?id=29828> (last visited Nov. 5, 2009) (noting that Canadian prairies are facing a water crisis as well as the United States southwest).

<sup>24</sup> See ORGANISATION FOR ECONOMIC CO-OPERATION AND DEVELOPMENT, I.A.: *SELECTED ENVIRONMENTAL DATA 1* (2008), available at [www.oecd.org/dataoecd/11/15/24111692.pdf](http://www.oecd.org/dataoecd/11/15/24111692.pdf).

<sup>25</sup> See GLEICK, *supra* note 19, at 243.

<sup>26</sup> See UNITED NATIONS ENVIRONMENT PROGRAMME, *GLOBAL ENVIRONMENT OUTLOOK YEAR BOOK* 2003, Figure 14, available at <http://www.unep.org/geo/yearbook/yb2003/fig71.htm> (table showing per capita use of water by world region).

<sup>27</sup> See generally *id.* (Showing that the United States, Canada and Australia are among the highest per capita users of water in the world and other OECD countries such as Mexico, Japan, and many Western European countries are some of the lowest per capita users of water in the world).

<sup>28</sup> See GLEICK, *supra* note 19, at 205-211.

*Getting Away from the Numbers*

To a considerable degree, all of the preceding discussion regarding the question of water endowment is beside the point. The real question is not how much water a country has, but rather how it manages its water and the answer to that question depends on its intellectual rather than its physical resources.<sup>29</sup> Many nations in the world manage to create prosperous and democratic societies with far less water per capita than either Canada or the United States.<sup>30</sup> It is the policies of a nation, and the institutions created to implement the policies, that determine whether water is extracted in an ecologically sustainable way, used in economically efficient ways, and distributed in socially equitable ways. To quote from the United Nations Human Development Report (HDR) for 2006:<sup>31</sup>

There is more than enough water in the world for domestic purposes, for agriculture and for industry . . . scarcity is manufactured through political processes and institutions that disadvantage the poor.<sup>32</sup>

Let us therefore turn our attention to water policy in Canada, and in particular to federal water policy.

*Federal Water Policy in Canada*

The Federal Government of Canada does have on record a modern water policy. In 1985, the Inquiry on Federal Water Policy published its report and recommendations, entitled *Currents of Change*.<sup>33</sup> Two years and many hours of work later, the report of an Interdepartmental Committee with over one hundred specific commitments for action on behalf of the federal government was tabled in Parliament by the Minister of Environment.<sup>34</sup> It is a remarka-

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<sup>29</sup> See THOMAS HOMER-DIXON, *THE INGENUITY GAP: HOW CAN WE SOLVE THE PROBLEMS OF THE FUTURE* 21 (Vintage Canada 2002) (explaining that the “Ingenuity Gap” concept focuses on intellectual, not physical resources).

<sup>30</sup> See generally Michael Sullivan, *Australia Turns to Desalination Amid Water Shortage*, NPR, June 18, 2007, <http://www.npr.org/templates/story/story.php?storyId=11134967> (noting that Perth, Australia continues to prosper despite water shortages and because of their commitment to exploring other means of producing water, like desalination).

<sup>31</sup> UNITED NATIONS DEVELOPMENT PROGRAMME, *HUMAN DEVELOPMENT REPORT 2006*, available at <http://hdr.undp.org/en/media/HDR06-complete.pdf>.

<sup>32</sup> *Id.* at 3.

<sup>33</sup> See generally PETER PEARSE ET AL., *CURRENTS OF CHANGE: FINAL REPORT OF THE INQUIRY ON FEDERAL WATER POLICY* (Environment Canada 1985).

<sup>34</sup> See ENVIRONMENT CANADA, *FEDERAL WATER POLICY* (1987), available at [http://www.ec.gc.ca/water/en/info/pubs/fedpol/e\\_fedpol.pdf](http://www.ec.gc.ca/water/en/info/pubs/fedpol/e_fedpol.pdf).

ble document, and one of the first in the world to state that water is needed as much to protect the nation's ecology as to promote its economy.<sup>35</sup>

Unfortunately, after tabling its policy, federal action on water policy stalled. Most of the specific commitments were never implemented, and most of those implemented were never enforced.<sup>36</sup> The main agency for delivering the policy, the Inland Waters Directorate of Environment Canada was disbanded; budgets for water policy were drastically cut back.<sup>37</sup> In retrospect, it appears that acceptance of the myth of water abundance was unhappily combined with the neo-liberal political climate to permit withdrawal of the federal government from the field of water policy. For nearly twenty years, only a few water specialists spoke up to point out developing water problems. Even fewer people asked serious questions about how policies limiting the role of a central government would apply to water, which flows across, along, and under boundaries, and which is used many times between its source and its return to the sea.

Of course, dispersion of power is inherent to a federal state. Though there is plenty of disagreement about federal and provincial roles in water management,<sup>38</sup> the general rule is that provinces have primary power in most of Canada, whereas the federal government has primary power in the three territories that cover northernmost Canada, on First Nations reserves, and for trans-boundary issues.<sup>39</sup> There are also many areas of shared responsibility. For example, the *Fisheries Act*<sup>40</sup> and the *Canadian Environmental Protection Act*<sup>41</sup> give the federal government wide powers to protect water quality.<sup>42</sup> However, by the mid-1990's, there was so little evidence of its role that the federal government had to create a "Where's Water?" task force to determine

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<sup>35</sup> See Environment Canada, Canada Water Act Annual Report, 1999-2000, [http://www.ec.gc.ca/water/en/info/pubs/ar/e\\_ar99-00.htm](http://www.ec.gc.ca/water/en/info/pubs/ar/e_ar99-00.htm) (last visited Oct. 18, 2009) (stating that the 1987 document set a milestone as a comprehensive federal water policy).

<sup>36</sup> See generally P. Pearse and F. Quinn, *Recent Developments in Federal Water Policy: One Step Forward, Two Steps Back*, 21 CANADIAN WATER RESOURCES J. 329-339 (1996) (stating that many commitments were not implemented or enforced because the agency that delivered the policy disbanded).

<sup>37</sup> See *id.*

<sup>38</sup> See generally Karen Bakker, Alice Cohen, Kathryn Furlong and Carey Hill, *Harmonization Versus Subsidiarity in Water Governance: A Review of Water Governance and Legislation in the Canadian Provinces and Territories*, 33 CANADIAN WATER RESOURCES J. 315-332 (2008) (reporting on the conflicting principles of harmonization and subsidiarity as related to federal and provincial government).

<sup>39</sup> See generally CANADIAN STUDIES IN THE NEW MILLENNIUM 65-97 (Patrick James and Mark Kasoff eds., UTP 2008) (showing a broadening of provincial power in the 21st century).

<sup>40</sup> Fisheries Act, R.S., 1985, ch. F-14 (Can.).

<sup>41</sup> Canadian Environmental Protection Act, 1999, ch. 33 (Can.).

<sup>42</sup> See *id.* at s. 6; see also Fisheries Act, *supra* note 40, at s. 5 (identifying the broad powers given federal officials in both statutes).

who was doing what.<sup>43</sup> Still today, the Canadian government is more reluctant to intervene in water policy than central governments in other federal states or regional governments around the world.<sup>44</sup>

Clearly, there is ample room for federal action on fresh water in Canada, and, it does seem that the federal government is bestirring itself to, once again, take national water policy seriously. If a date has to be set for evidence of that turn around, it might be publication of a report from Environment Canada's National Water Research Institute<sup>45</sup> that showed, among other things, that a quarter of Canadian communities were already facing water problems, with the percentage rising year by year.<sup>46</sup>

Climate change has also been a stimulus for a return to federal involvement on water policy.<sup>47</sup> Federal initiatives are reviewing, among other things, the changing flow regimes of the large glacier-fed rivers that flow from west to east across the prairie provinces and that provide water for Canada's grain belt.<sup>48</sup> In 2008, the National Round Table on the Environment and the Economy initiated a program to study the long-term effects of climate on water use in Canadian agriculture, forestry, mining, and energy.<sup>49</sup>

Of course, just as nature abhors a vacuum, so too does political policy. In the past ten or fifteen years, provincial, municipal, and even some community groups have filled gaps left by the absence of federal initiatives.<sup>50</sup> "River Keepers" are now active in several provinces to give the public a role in managing waterways.<sup>51</sup> Conservation Authorities in Ontario have received

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<sup>43</sup> DE LOË, *supra* note 13, at 92.

<sup>44</sup> See generally J. Owen Saunders & Michael M. Wenig, *Whose Water? Canadian Water Management and the Challenges of Jurisdictional Fragmentation in EAU CANADA: THE FUTURE OF CANADA'S WATER* 120 (Karen Bakker ed., UBC Press 2007) (noting that in other federal states, for example the United States and Australia, there is a much greater acceptance of the appropriateness of federal initiatives in water management).

<sup>45</sup> National Water Research Institute, <http://www.ec.gc.ca/INRE-NWRI/Default.asp?lang=En&n=7CE9E3AC-1> (last visited Oct. 9, 2009).

<sup>46</sup> ENVIRONMENT CANADA, *THREATS TO WATER AVAILABILITY IN CANADA* (2004), available at [http://www.ec.gc.ca/INRE-NWRI/0CD66675-AD25-4B23-892C-5396F7876F65/ThreatsEN\\_03web.pdf](http://www.ec.gc.ca/INRE-NWRI/0CD66675-AD25-4B23-892C-5396F7876F65/ThreatsEN_03web.pdf).

<sup>47</sup> See NATIONAL ROUND TABLE ON THE ENVIRONMENT AND THE ECONOMY, *CHARTING A PATH: WATER AND CANADA'S NATURAL RESOURCES SECTORS* (2009), available at <http://www.nrtee-trnee.com/eng/publications/water-discussion-paper/200902-Charting-a-Path-Discussion-Paper-Final-English.pdf> (evidencing federal involvement in water policy in response to the effects of climate change).

<sup>48</sup> See generally Natural Resources Canada, *Enhancing Resilience in a Changing Climate*, [http://ess.nrcan.gc.ca/ercc-rrcc/a\\_stories\\_e.php](http://ess.nrcan.gc.ca/ercc-rrcc/a_stories_e.php) (last visited Nov. 7, 2009) (discussing Natural Resources Canada's response to the issue of melting glaciers and increased water flow).

<sup>49</sup> NATIONAL ROUND TABLE ON THE ENVIRONMENT AND THE ECONOMY, *supra* note 47.

<sup>50</sup> See generally DE LOË, *supra* note 13, at 89 (reporting community, provincial and local group involvement in water governance).

<sup>51</sup> See generally Ottawa Riverkeeper, <http://ottawariverkeeper.ca/about> (last visited Nov. 5, 2009) (explaining the mission of the Ottawa Province "riverkeeper" organization).



considerable scope to manage the province's new Source Water Protection law.<sup>52</sup> A Ministry of Water Stewardship in Manitoba has become the only cabinet-level water ministry in Canada.<sup>53</sup> Alberta has developed an extensive Water for Life program.<sup>54</sup> Nova Scotia has initiated a wide public consultation as it prepares to review and probably revise its water policies.<sup>55</sup>

As well, several non-governmental and quasi-governmental organizations have prepared impressive reports urging stronger federal commitment to water policy.<sup>56</sup> Almost all these documents recognize the value of the 1987

<sup>52</sup> See generally Conservation Authority Programs, <http://www.conservation-ontario.on.ca/about/programs.html> (last visited Oct. 9, 2009) (noting that the development of Source Protection Plans involve Conservation Authorities who are responsible for delivering a variety of watershed management plans programs).

<sup>53</sup> See generally Legislative Assembly of Manitoba, Cabinet Ministers, <http://www.gov.mb.ca/legislature/members/cabinet.html> (last visited Oct. 18, 2009) (showing the Manitoba Water Stewardship as a cabinet office).

<sup>54</sup> See Government of Alberta, Water for Life, <http://www.waterforlife.alberta.ca/> (last visited Oct. 9, 2009).

<sup>55</sup> See GOVERNMENT OF NOVA SCOTIA, ENVIRONMENTAL GOALS AND SUSTAINABLE PROSPERITY ACT: ANNUAL PROGRESS REPORT 5 (2009), available at <http://www.gov.ns.ca/nse/egspa/docs/EGSPA.2009.Annual.Report.pdf> (stating that a comprehensive water-resource management strategy will be developed by 2010).

<sup>56</sup> See D. R. BOYD, ET AL., CHANGING THE FLOW: A BLUEPRINT FOR FEDERAL ACTION ON FRESHWATER, THE GORDON WATER GROUP OF CONCERNED SCIENTISTS AND CITIZENS (2007), available at <http://www.waterquality.ec.gc.ca/web/Environment~Canada/Water~Quality~Web/assets/PDFs/WQI/ChangingtheFlow.pdf>; EAU CANADA: THE FUTURE OF CANADA'S WATER (Karen Bakker, ed., UBC Press 2007); see also ECONOMIC INSTRUMENTS FOR WATER DEMAND MANAGEMENT IN AN INTEGRATED WATER RESOURCES MANAGEMENT FRAMEWORK: SYNTHESIS REPORT. POLICY RESEARCH INITIATIVE (2005), available at [http://www.policyresearch.gc.ca/doclib/SR\\_SD\\_EconomicInstruments\\_200502\\_e.pdf](http://www.policyresearch.gc.ca/doclib/SR_SD_EconomicInstruments_200502_e.pdf); see also JOHN FITZGIBBON, BRUCE MITCHELL AND BARBARA VEALE, SUSTAINABLE WATER MANAGEMENT: STATE OF PRACTICE IN CANADA AND BEYOND, PROCEEDING OF THE ANNUAL CONFERENCE OF THE CANADIAN WATER RESOURCES ASSOCIATION (June 2006) 195-228; see also ROB DE LOË, TOWARD A CANADIAN NATIONAL WATER STRATEGY (FINAL REPORT), PREPARED FOR CANADIAN WATER RESOURCES ASSOCIATION (2008) available at [http://arquivos.ana.gov.br/wfa/na/CNWS\\_Report\\_Final\\_2008\\_06\\_18.pdf](http://arquivos.ana.gov.br/wfa/na/CNWS_Report_Final_2008_06_18.pdf); see also ROBERT SANDFORD AND HENRY VAUX JR., ROSENBERG INTERNATIONAL FORUM ON WATER POLICY: PROGRAM SYNOPSIS AND LESSONS FOR CANADA AND ALBERTA (2006), available at <http://rosenberg.ucanr.org/forum5.cfm?displaysection=7>; see also O. M. BRANDES, ET AL., AT A WATERSHED: ECOLOGICAL GOVERNANCE AND SUSTAINABLE WATER MANAGEMENT IN CANADA, POLIS PROJECT ON ECOLOGICAL GOVERNANCE: UNIVERSITY OF VICTORIA (2005), available at <http://www.polisproject.org/PDFs/AtaWatershed.pdf>; see also *Toward a Vision and Strategy for Water Management in Canada: Final Report of the Water Policy in Canada: National Workshop Series*, Pollution Probe (2007), available at <http://www.pollutionprobe.org/Reports/WPWS%20Final%20Report%202007.pdf>; see also *Water for Sustainability – A Strategy*, Canadian Chamber of Commerce (2006), available at [http://www.chamber.ca/images/uploads/Proposed\\_resolutions/2009/E-31-Water.pdf](http://www.chamber.ca/images/uploads/Proposed_resolutions/2009/E-31-Water.pdf) (for reports calling for heightened federal involvement in water policy).

water policy; none recommends a completely new policy.<sup>57</sup> At the same time, they point out that many parts of the 1987 policy need to be brought up to date, and some new parts added.<sup>58</sup>

The remainder of this paper will express my views about what should be among the high priorities for resurrecting federal water policy in Canada. To stay within space limitations, I will divide my remarks into three sets of three recommendations: first, those actions that are really modifications of the 1987 policy and should be implemented quickly; second, those actions that involve a shift in direction from the 1987 policy and need to be developed over the coming decade; and, third, some troubling issues in Canada-United States water policies.

### *Three Issues That Require Immediate Attention*

#### *Research and Monitoring Capabilities*

The federal government has not only neglected those areas where there is clear federal responsibility but has significantly cut research and monitoring budgets for water.<sup>59</sup> What was a world-class set of institutions in the 1980s is no longer capable of tracking water quantity and water quality issues to the extent needed by a modern and environmentally conscious society.<sup>60</sup> The number of laboratories dealing with water issues has dwindled, the network of hydrometric monitoring stations has been cut by one-fifth, and the world-renowned Experimental Lakes Area, a contiguous region of fifty-eight small lakes and their drainage basins located on the Canadian shield near Kenora, Ontario, has been severely hurt by cut backs in dollars and staff.<sup>61</sup>

During the late 1990s when the federal government acted strenuously to eliminate chronic budget deficits, Environment Canada,<sup>62</sup> which has much of

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<sup>57</sup> See generally *id.*

<sup>58</sup> *Id.*

<sup>59</sup> See Parliament of Canada, *Water in the West: Under Pressure*, Fourth Interim Report of the Standing Senate Committee on Energy, the Environment and Natural Resources, <http://www.parl.gc.ca/38/1/parlbus/commbus/senate/com-e/enrg-e/rep-e/rep13nov05-e.htm> (last visited Oct. 18, 2009) (stating that the Government of Canada needs to boost its funding for water research in order to equip Canadians with knowledge necessary to respond to water-based problems).

<sup>60</sup> See *id.*

<sup>61</sup> See David W. Schindler, *The Cumulative Effects of Climate Warming and Other Human Stresses on Canadian Fresh Waters in the New Millennium*, 58 CANADIAN J. OF FISHERIES AND AQUATIC SCIENCES 18, 24-25 (2001) (stating that lack of funding and staffing have strangled freshwater research programs).

<sup>62</sup> See Environment Canada, Environment Canada's Homepage, <http://www.ec.gc.ca/default.asp?lang=En&n=FD9B0E51-1> (last visited Dec. 20, 2009).

the mandate for federal water policy,<sup>63</sup> was not so much attacked as committed suicide. In a misguided attempt at self-protection, it announced that it was a scientific ministry, not a policy one.<sup>64</sup> The department failed to realize that the budget cutters might take the view that any scientific activities worth doing should result in profitable activities for the private sector and should therefore be funded by private, not public, sources.

If it is to manage water effectively, Canada must restore its water monitoring and water research capabilities. Particular attention needs to be given to ground water. Thanks to past research, we know quite a lot about surface water in Canada, but much less about ground water, even though a quarter of us depend on it for drinking water, and many farms and industries pump large volumes every day.<sup>65</sup> We do not know how much water is there, nor how much is pumped. All we know under most provincial regulations is how much their licenses permit them to pump, and that only for the larger users.<sup>66</sup> The recently revised agreement for managing the Great Lakes<sup>67</sup> made it clear that any policy conclusions on boundary and trans-boundary waters must be tentative until groundwater basins are mapped with something approaching the accuracy of surface water basins.

### *National Household Water Act*

Experience over the past few years shows that Canada needs a nationally legislated household water act, it should not focus just on drinking water, based on federal-provincial agreement and backed by procedures for enforcement. Some people have died and hundreds have been sickened as a result of tainted water, notably in Walkerton, Ontario, and North Battleford, Saskatchewan.<sup>68</sup> Many will suffer lifetime effects. The problems stemmed mainly from ideologically based devolution of power without adequate time

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<sup>63</sup> See generally Environment Canada, About Us, <http://www.ec.gc.ca/default.asp?lang=En&n=ECBC00D9-1> (last visited Oct. 8, 2009) (explaining that part of Environment Canada's mandate is to conserve and protect Canada's water resources, enforce rules relating to boundary waters, and coordinate environmental policies and programs).

<sup>64</sup> See generally *id.* (stating that 60% of Environment Canada's workforce and eighty percent of its budget is for science and technology activities).

<sup>65</sup> See LINDA NOWLAN, WALTER AND DUNCAN GORDON FOUNDATION, BURIED TREASURE: GROUNDWATER PERMITTING AND PRICING IN CANADA ix (2005), available at [http://www.buriedtreasurecanada.ca/Buried\\_Treasure.pdf](http://www.buriedtreasurecanada.ca/Buried_Treasure.pdf) (stating the importance of raising awareness about Canada's groundwater use).

<sup>66</sup> See generally *id.* at 28 (reporting that most groundwater use is unlicensed).

<sup>67</sup> See Great Lakes Basin Compact, <http://www.glc.org/about/pdf/Compact.pdf> (last visited Jan. 30, 2010).

<sup>68</sup> See *Walkerton Residents Still Suffering from E. coli Health Issues: Study*, CBC NEWS, Oct. 26, 2007, <http://www.cbc.ca/health/story/2007/10/26/walkerton-study.html> (last visited Oct. 18, 2009).

or money to prepare local governments for their increased responsibilities. For example, the laboratory that tested samples of water from Walkerton's treatment plant did identify the presence of the deadly strain of *E. coli* bacteria, but it was under no obligation to alert anyone, so it did not.<sup>69</sup>

We also need to develop systems to ensure that we neither waste potable water nor neglect the potential of grey water.<sup>70</sup> It is economically and ecologically foolish to use drinking water to flush toilets, and equally so to ignore the potential for using rain water for clothes washing and grey water for lawns and gardens. This is exactly the sort of measure that might be included in the stimulus packages that are being considered to help our economies extract themselves from the current depression. The household water act could also be extended and adapted for use in commercial and institutional buildings, most of which use water in ways only slightly different from that in a home and which can go even further in toward implementing efficient and ecologically preferable water and waste water systems.<sup>71</sup>

The national household water legislation should also respond to the deplorable conditions around in many First Nations communities, Inuit, Indian, and Métis. Far too many of these communities live with chronic water problems and boil-water advisories.<sup>72</sup> The problem is not insufficient federal funding to build the necessary infrastructure but lack of funding for local management and supervision: training local staff to operate their water supply and treatment plants, to maintain them, and to monitor inputs and outputs for quality on a real-time basis.

### *Getting Prices Up Where They Should Be*

Though mainly a provincial responsibility, it is foolish that water prices in Canada barely cover pumping costs. Subsidized water promotes neither efficiency nor equity.<sup>73</sup> It may be hard politically to argue for water priced at its marginal value, as an economist might suggest, but there is little resistance to

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<sup>69</sup> See generally *Canada's Worst-Ever E. coli Contamination*, CBC NEWS, Dec. 20, 2004, <http://www.cbc.ca/news/background/walkerton/> (last visited Oct. 18, 2009) (reporting that the Walkerton Public Utilities Commission knew of problem days before public was informed).

<sup>70</sup> Household waste water other than that from the toilet.

<sup>71</sup> Hospitals and laboratories are obvious exceptions to this rule.

<sup>72</sup> See The Council of Canadians, *Safe Water for First Nations*, [http://www.canadians.org/water/issues/First\\_Nations/index.html](http://www.canadians.org/water/issues/First_Nations/index.html) (last visited Oct. 9, 2009) (reporting that eighty First Nations communities are currently under "boiled water advisories").

<sup>73</sup> See generally Steven Renzetti, *Are the Prices Right? Balancing Efficiency, Equity and Sustainability in Water Pricing in EAU CANADA: THE FUTURE OF CANADA'S WATER* 272 (Karen Bakker ed., UBC Press 2007) (noting that it is neither fair nor efficient to allow industry, public utilities and farming operations free access to water resources as it is an implicit and poorly understood redistribution of wealth).

pricing water to cover its full delivery cost, including capital costs for infrastructure to deliver fresh water and to remove and treat waste water. Evidence shows clearly that water is used more carefully when it carries a price based on the volume used.<sup>74</sup> One regression analysis showed that the introduction of water meters leads to a fifty percent reduction in water use.<sup>75</sup> To the extent that there is an equity issue in pricing water, it is easily overcome by providing, say, ten cubic metres per household every quarter at a special low price, or "social tariff" as it is called in many countries. Losses incurred in providing this water can be recouped by imposing higher prices on those who consume in excess of this amount of water. Subsidizing larger consumers can be avoided by charging the higher price on the full volume used, not just the amount in excess of that allowed by the social tariff.

Federal leadership in setting model codes for water and wastewater pricing is long overdue. Much as with other codes in Canada, they could then be adopted in whole or in part by the provinces and territories. A major incentive to improve pricing of water could be introduced by making the codes, or a provincial equivalent, mandatory before receipt of any federal funding of water and wastewater infrastructure.

### *Three New Directions For Federal Water Policy*

What policies should Canada develop now for managing its water in the future? The 1987 federal water policy document<sup>76</sup> provides a good base from which to start. Some parts do need to be updated, and this can be rather easily accomplished. The bigger task is to consider changes that would take the policy in new directions.

### *Shifting Policy Focus from Supply to Demand*

Since the earliest days of digging canals to bring irrigation water to farms, and construction of aqueducts and qanats to bring drinking water to cities, water policy has focused overwhelmingly on supplying extending pipelines, constructing dams, building reservoirs, and drilling deeper.<sup>77</sup> Though remarkably successful at getting water to people who need it, this approach

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<sup>74</sup> See *id.* at 274 (discussing marginal cost pricing as an option in reforming water costs).

<sup>75</sup> See Ian Campbell, *Toward Integrated Freshwater Policies for Canada's Future*, 9 HORIZONS 1 (2004).

<sup>76</sup> See ENVIRONMENT CANADA, FEDERAL WATER POLICY, *supra* note 34.

<sup>77</sup> See Environment Canada, Water and Sustainable Development Around the World, [http://www.ec.gc.ca/Water/en/info/pubs/wwf/e\\_chap3.htm](http://www.ec.gc.ca/Water/en/info/pubs/wwf/e_chap3.htm) (last visited Nov. 5, 2009) (noting that the International Development Research Centre began its water activities in the 1970's with a focus on supply technologies; the water focus today has shifted to demand management and devolution of water management).

shows signs of reaching a limit. Capital costs per cubic meter of new supply are doubling every decade, environmental effects are more severe, and the adverse effects on indigenous peoples are no longer acceptable. The real opportunities now lie with activities on the demand side, something that should come as no surprise, given the high rates at which Americans and Canadians use water.<sup>78</sup>

Both Canada and the United States need to shift the emphasis in their water policies and programs from increasing supply to reducing demand. There is no shortage of opportunities.<sup>79</sup> Low-flow toilets cut water use per flush by three-fourths,<sup>80</sup> and automated irrigation systems that turn water on and off in accord with soil-moisture probes cut typical water use by half.<sup>81</sup> Payback periods depend of course on prices and costs, but most efforts to increase water use efficiency are far cheaper than new sources of supply, they can be installed far more quickly, and they are less risky.<sup>82</sup> Dams, for instance, are particularly susceptible to cost overruns, and, in a time of changing climate, their benefits over time are likely to diminish. Careful studies of specific areas and sectors typically find cost-effective savings of one-third or more, even in California where water has been managed carefully for longer than in most parts of the continent.<sup>83</sup>

Despite low water prices, statistics show that Canada has made some progress toward greater water efficiency in the last decade.<sup>84</sup> For example, the number of Canadian households with low-flow showerheads increased by

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<sup>78</sup> See UNITED NATIONS ENVIRONMENT PROGRAMME, *supra* note 26 (indicating that Americans and Canadians are among the highest per capita users of water in the world).

<sup>79</sup> See David B. Brooks & Roger Peters, *Water: The Potential for Demand Management in Canada*, SCIENCE COUNCIL OF CANADA (1988) (discussion paper); see Donald M. Tate, *Water Demand Management in Canada: A State-of-the-Art Review*, Social Science Series 23, Inland Waters Directorate, ENVIRONMENT CANADA (1990), available at <http://ncrweb.ncr.ec.gc.ca/water/en/info/pubs/sss/ss23.pdf>; see also AMY VICKERS, HANDBOOK OF WATER USE AND CONSERVATION (WaterPlow Press 2001).

<sup>80</sup> Natural Resources Canada, Better Water Use Means Bigger Savings, <http://oee.nrcan.gc.ca/residential/personal/new-homes/water-conservation.cfm?attr=4> (last visited Oct. 9, 2009).

<sup>81</sup> See State Government of Victoria, Waterwise Watering and Irrigation Systems, [http://www.gvwater.vic.gov.au/Publications/WaterWise\\_watering\\_&\\_irrigation.pdf](http://www.gvwater.vic.gov.au/Publications/WaterWise_watering_&_irrigation.pdf) (last visited Nov. 5, 2009) (stating that irrigation systems can cut outside water use by 50%).

<sup>82</sup> Peter H. Gleick & Gary Wolff, *Soft Path for Water in THE WORLD'S WATER: THE BIENNIAL REPORT ON FRESHWATER RESOURCES 22* (Peter H. Gleick, ed., Island Press 2002).

<sup>83</sup> H. Cooley, Peter H. Gleick & D. Groves, *California Water 2030: An Efficient Future*, PACIFIC INSTITUTE FOR STUDIES IN DEVELOPMENT, ENVIRONMENT, AND SECURITY 26 (2005), available at [http://www.pacinst.org/reports/california\\_water\\_2030/ca\\_water\\_2030.pdf](http://www.pacinst.org/reports/california_water_2030/ca_water_2030.pdf).

<sup>84</sup> See Statistics Canada, Households and the Environment Survey, <http://www.statcan.gc.ca/daily-quotidien/070711/dq070711b-eng.htm> (last visited Oct. 18, 2009) (showing a big increase in the number of households practicing water conservation with water-saving devices).

fifty percent, and the number with low-flow toilets tripled.<sup>85</sup> Despite a common misstatement, prices do affect water use. A comparison of Canadian cities showed that people living in cities that charge a flat rate for water use seventy percent more than do people living in cities that pay per unit of volume.<sup>86</sup> A typical Calgarian, who was not likely to be metered, used about three hundred and fifty litres each day, whereas a typical Edmontonian, who probably did have a meter, used less than two hundred.<sup>87</sup> Water utilities, many of which are looking ahead to shortages, are taking notice.<sup>88</sup>

There is much to be gained from improvements in water use efficiency, but greater efficiency alone will not suffice; we must also conserve. Efficiency refers to reductions in the quantity of water to achieve a given task, as with watering lawns with low-flow sprinklers; conservation refers to changes in the nature of the task, as with planting greenery that does not require watering.<sup>89</sup> Generally, water efficiency can be evaluated by cost effectiveness compared with the next increment of supply; conservation in contrast must be evaluated by a wider range of measures, including equity and ecological sustainability.<sup>90</sup>

Apart from the fifty to one hundred liters required for each person every day for drinking, cooking, washing and sanitation, there are many substitutes for human uses of water. We can cool our machines with air; we can grow food with advanced rain-fed techniques; we can use grey water to flush our toilets. We can also change our habits, as, for example, by shifting toward vegetable rather than animal sources of protein. For the most part, the demand for water is not for water itself, but for the services it provides: cooling, cleaning, growing. Drinking water is an obvious but quantitatively small exception to this rule. If we regard water as a bundle of services rather than as a need in itself, we typically find many more options to satisfy the demand. This approach, which goes by the name of water soft paths, and which represents a true paradigm shift in water management,<sup>91</sup> is gradually gaining attention in North America.<sup>92</sup>

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<sup>85</sup> *Id.*

<sup>86</sup> See OLIVER M. BRANDES AND K. FERGUSON, *FLUSHING THE FUTURE: EXAMINING URBAN WATER USE IN CANADA* 33 (1999).

<sup>87</sup> *Id.* at 48.

<sup>88</sup> See generally KAREN BAKKER AND KATHRYN FURLONG, *WATER GOVERNANCE IN TRANSITION: UTILITY RESTRUCTURING AND WATER EFFICIENCY IN ONTARIO*, 10 (2007) (stating that improved water efficiency corresponds with the economic goals of utility companies).

<sup>89</sup> David Brooks, *Beyond Greater Efficiency: The Concept of Water Soft Paths*, 30 CANADIAN WATER RESOURCES J. 1, 2 (2005).

<sup>90</sup> See generally *id.* at 3 (stating that water efficiency can be measured by the water produced per unit cost and conservation evaluated by many things, including sustainable water management).

<sup>91</sup> See Peter H. Gleick, *The Changing Water Paradigm: A look at Twenty-first Century Water Resources Development*, 25 WATER INTERNATIONAL 127 (2000) (identifying the chang-

### *Instituting the Public Trust Doctrine*

The public trust doctrine emerged from English common law at the time of the Magna Carta,<sup>93</sup> but it has roots that go back to Roman law.<sup>94</sup> The ancient Romans considered the air, rivers, sea and seashore as common property for the use of all citizens provided that person A's use did not interfere with person B's use.<sup>95</sup> Though English tradition promoted private ownership as a way of supporting the upper classes, it reserved waterways and shorelines for the Crown, with the rights of the Crown conditional on granting the public a right of use for such common purposes as fishing, loading and unloading cargos, and transportation.<sup>96</sup> A similar development also occurred under French Civil law.<sup>97</sup> In both countries, a public right existed even if title to the land was held by a private person.

The concept of a public trust began to appear in American court decisions in the middle of the 19th century. As in England, the idea was that lands, shorelines, air, sea, and seabed were held by government as a public trust for the benefit of the whole community.<sup>98</sup> A century later, when the public trust doctrine was well established in several states of the United States, it came to play a major role in environmental legislation. Ralph Pentland,<sup>99</sup> who played a central role in development of the 1987 water policy in Canada,<sup>100</sup> and who has become an advocate for application of the public trust doctrine in Canada,<sup>101</sup> writes:

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ing processes for managing freshwater resources as "the changing water paradigm").

<sup>92</sup> See Oliver B. Brandes & David B. Brooks, *The Soft Path for Water in a Nutshell*, FRIENDS OF THE EARTH CANADA and POLIS PROJECT ON ECOLOGICAL GOVERNANCE (2007); Gleick & Wolff, *supra* note 82; LIVING WITH THE WATER YOU HAVE: THE SOFT PATH APPROACH TO WATER MANAGEMENT (David B. Brooks et al. eds., Earthscan 2009) (all of these publications looking at water management differently than the traditional models do).

<sup>93</sup> P.B. SAHASRANAMAN, *HANDBOOK OF ENVIRONMENTAL LAW* 35 (Oxford UP 2009).

<sup>94</sup> *Id.* at 34.

<sup>95</sup> John C. Maguire, *Fashioning an Equitable Vision for Public Resource Protection and Development in Canada: The Public Trust Doctrine Revisited and Reconceptualized*, 7 J. OF ENVIRONMENTAL L. AND PRACTICE 1 (1996) (discussing the ancient Roman origins of the public trust doctrine).

<sup>96</sup> Joseph Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. REV. 471, 476 (1970).

<sup>97</sup> See RALPH PENTLAND, *THE PUBLIC TRUST DOCTRINE: POTENTIAL IN CANADIAN WATER AND ENVIRONMENTAL MANAGEMENT* 3 (2005) (stating that the French Civil Code perpetuated the notion of common property with respect to navigable rivers and streams, beaches, ports and harbors).

<sup>98</sup> Sax, *supra* note 96, at 476.

<sup>99</sup> See Ralph Pentland - Biography, <http://www.gordonwatergroup.ca/page/memberbios> (last visited Dec. 20, 2009).

<sup>100</sup> *Id.*

<sup>101</sup> PENTLAND, *supra* note 97.



The public trust doctrine/ has been used not only to preserve the right of the public to use of water and other resources, but also to challenge the action or inaction of various levels of government with respect to the protection of the public interest in certain lands and resources.<sup>102</sup>

The modern version of the public trust doctrine is most fully described in an article written about forty years ago by Joseph Sax.<sup>103</sup> Sax emphasized that, under the concept of public trust, the public must be granted some form of legal right that is enforceable against the government.<sup>104</sup> To add a modern note, Sax also emphasized that the concept must recognize both quantity and quality dimensions of natural resources.<sup>105</sup> As Pentland notes, the "real power of the public trust doctrine lies not in the laws themselves, but in the creativity of the courts and those arguing cases before them."<sup>106</sup> The subtitle of Sax's essay is instructive: "Effective Judicial Intervention."<sup>107</sup> For example, a public easement can be used to guarantee access to trust resources, or the court may insist that ways be found to protect public use when some portion of the resource is alienated for private use. The doctrine can also be invoked by citizens to challenge political or administrative decisions, or the lack of them, by governmental bodies.

Despite its origins in English common law, the public trust doctrine is still largely unknown and unused in Canada. If the public trust doctrine were adopted for water management in Canada, it would make explicit the responsibility of both provincial and federal governments to manage renewable natural resources within their respective areas of authority in such ways as to support the long-term use and enjoyment of them for the whole public. As one example, such a doctrine would make it very difficult to adopt currently proposed amendments to the Navigable Waters Protection Act,<sup>108</sup> which are buried inside the Budget Implementation Act of 2009,<sup>109</sup> that would grant the federal government authority to identify waterways deemed worthy and unworthy of federal protection, and therefore to limit the public's right to use the latter. On the other hand, such a doctrine would benefit Canadians when dealing with the growing number of cross-border issues involving protection of water quantity and water quality.

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<sup>102</sup> *Id.* at 3.

<sup>103</sup> Sax, *supra* note 96.

<sup>104</sup> *Id.* at 474.

<sup>105</sup> *Id.*

<sup>106</sup> PENTLAND, *supra* note 97, at 4.

<sup>107</sup> Sax, *supra* note 96.

<sup>108</sup> Navigable Waters Protection Act, R.S., 1985, ch. N-22 (Can.).

<sup>109</sup> See Bill C-10 (2009), available at [http://www2.parl.gc.ca/content/hoc/Bills/402/Government/C-10/C-10\\_1/C-10\\_1.PDF](http://www2.parl.gc.ca/content/hoc/Bills/402/Government/C-10/C-10_1/C-10_1.PDF).

Pentland suggests that the timing is appropriate for introduction of the public trust doctrine in Canada:

A number of changes have taken place in Canada over the past few decades that suggest the time may be right to move the public trust concept, or at least something akin to it, forward in the Canadian context. These developments include a more activist role being played by the judiciary in response to the *Canadian Charter of Rights and Freedoms*, the development of broad fiduciary duties that do not depend on a traditional trust relationship, the introduction of public trust language into a few statutes, and recent musings by the Supreme Court of Canada on the topic . . . It seems inevitable that the public trust doctrine or something akin to it will eventually be embraced by Canadians. The only question that remains is whether policy-makers or the judiciary will take the lead.<sup>110</sup>

### *Water for Ecosystems*

Most water policies in Canada continue to be designed as if all available water can be extracted for human uses, with little recognition that much of the water in lakes, rivers, and underground must be left in place to provide natural services ranging from fishing and transportation at one end (of the commercial spectrum) through waste dilution and flood control in the middle to habitat protection and cultural preservation at the other end.<sup>111</sup> Across southern Canada, wetlands have been filled in, critical ecosystems degraded, and many cubic kilometers of water lost to inefficient agricultural, industrial, commercial, and household practices.<sup>112</sup> Not all these problems are directly a result of failings in federal water policy, but many of them are.<sup>113</sup> The issue is not just establishing minimum water levels but also requiring rates of flow that emulate, as closely as possible, the high periods and low periods that would occur under natural conditions.

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<sup>110</sup> PENTLAND, *supra* note 97, at 7.

<sup>111</sup> See M. FALKENMARK AND J. ROCKSTRÖM, STOCKHOLM INTERNATIONAL WATER INSTITUTE, RAIN: THE NEGLECTED RESOURCE (2005), available at [http://www.siwi.org/documents/Resources/Policy\\_Briefs/PB2\\_Rain\\_the\\_neglected\\_resource\\_2005.pdf](http://www.siwi.org/documents/Resources/Policy_Briefs/PB2_Rain_the_neglected_resource_2005.pdf); Sandra Postel & Borton H. Thompson, *Watershed Protection: Capturing the Benefits of Nature's Water Supply Services*, 29 NATURAL RESOURCES FORUM 98 (2005).

<sup>112</sup> See generally Environment Canada, Threats to Water Availability in Canada, <http://www.ec.gc.ca/INRE-NWRI/default.asp?lang=En&n=0CD66675-1&offset=4&toc=show> (last visited Nov. 7, 2009) (Discussing the need for better research priorities and resource management in order to sustain and protect the freshwater supply in Canada).

<sup>113</sup> See generally *id.* (noting that these problems also result from freshwater being a limited resource, climate change, urbanization, etc).

The objective of a federal water-for-ecosystems program would be to maintain ecosystems in a state healthy enough to continue to provide natural services. Intact ecosystems typically provide economic values for society well above the private values achieved after land is converted to purportedly "more productive" uses.<sup>114</sup> The problem is to determine how much diversion or withdrawal of water is too much. Quantification of environmental services is difficult on an ecological basis, and even more so when those services have to be monetized for economic comparisons. However, methods are being developed that show how evaluation and comparison can be accomplished.<sup>115</sup>

Discussions about water use either within Canada or between Canada and the United States will always be truncated so long as only human uses of water are considered. Rather than trying to reach a series of independent decisions, the Government of Canada should create a federal-provincial task force, and perhaps a bilateral one as well, to review the literature on analytical methods for establishing the levels and patterns of water that must remain in place to maintain healthy ecosystems. The resulting report would recommend a methodology capable of identifying over a range of conditions the volume and timing of water withdrawals that seem likely to be acceptable. Somewhat different methods or, perhaps, more and less restrictive criteria, may be appropriate for new projects or where dams or diversions already exist. Presumably the analytical results would be subject to administrative or judicial review, but, provided that the process is transparent, such review is always needed as a counterweight to scientific recommendations for public policy. The methodology would of course have to be updated every decade or so, as experience and research indicates that improvements are possible.

### *Bilateral Issues with the United States*

Canada and the United States share the longest border in the world and, inevitably, they share lakes and river systems too. There was an evident need for some way to manage these areas jointly and without resort to lengthy legislative or judicial processes. Therefore, exactly one century ago, the two countries passed the Boundary Waters Treaty Act of 1909,<sup>116</sup> and that in turn allowed for the creation of the International Joint Commission (IJC)<sup>117</sup> as the

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<sup>114</sup> WORLD RESOURCES INSTITUTE, ECOSYSTEMS AND HUMAN WELL-BEGIN: WETLANDS AND WATER SYNTHESIS 2 (2005), available at <http://www.millenniumassessment.org/documents/document.358.aspx.pdf>.

<sup>115</sup> See SANDRA POSTEL AND BRIAN RICHTER, RIVERS FOR LIFE: MANAGING WATER FOR PEOPLE AND NATURE 59-60 (Island Press 2003).

<sup>116</sup> International Boundary Waters Treaty Act, R.S., 1909, ch. I-20, s. 1.

<sup>117</sup> See International Joint Commission, Welcome, [http://www.ijc.org/en/home/main\\_accueil.htm](http://www.ijc.org/en/home/main_accueil.htm) (last visited Nov. 7, 2009) (stating that the International Joint Commission prevents

body tasked with responsibility for managing Treaty provisions.<sup>118</sup> The Act has been a great success. It is difficult to conceive of how disputes might have been resolved and shared waters managed in its absence. However, one hundred years after its passage, there remain a number of fresh water issues that trouble Canada-United States relationships. Some observers suggest that the number and intensity of such issues is increasing.<sup>119</sup>

### *The International Joint Commission*

The IJC is often praised in discussions on water policy, and there are proposals to emulate it in areas where water rights are more highly contested than they are in North America.<sup>120</sup> However, in recent years the IJC seems to have been sidelined by the Canadian and the United States governments in a number of trans-border disputes about water development and use. In this centennial year of the Boundary Waters Treaty,<sup>121</sup> we should re-establish the IJC as the centrepiece of its implementation. The Devil's Lake controversy, which affects the Province of Manitoba and the States of North Dakota and Minnesota,<sup>122</sup> illustrates the need for an effective IJC.

Devil's Lake is a shallow body of water in the farmlands just west of Grand Forks, North Dakota.<sup>123</sup> Because it is shallow, and because farmers in the area like to drain their fields in the spring to permit planting as early as possible, Devil's Lake tends to overflow its banks during the spring runoff.<sup>124</sup> In 2005 the State of North Dakota avoided United States federal environmental assessment requirements by using its own funds to build artificial drains that take up to one hundred seventy cubic metres per minute of water from the lake, and siphons that take the water under wetlands to avoid other Unit-

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and resolves disputes between the United States of America and Canada under the 1909 Boundary Waters Treaty).

<sup>118</sup> *Id.*

<sup>119</sup> See PROGRAM ON WATER ISSUES, RISING TENSIONS: CANADA/U.S. CROSS-BORDER WATER ISSUES IN THE 21<sup>ST</sup> CENTURY 4 (2004), available at [http://www.factswater.org/PDFS/scientificresearch/Schindler\\_Hurley\\_04.pdf](http://www.factswater.org/PDFS/scientificresearch/Schindler_Hurley_04.pdf).

<sup>120</sup> See, e.g., FRIENDS OF THE EARTH MIDDLE EAST, SUSTAINABLE MANAGEMENT OF DEAD SEA BASIN WATER RESOURCES – A COMPARATIVE ANALYSIS WITH NORTH AMERICAN EXPERIENCE IN ADVANCING CONSERVATION AND SUSTAINABLE DEVELOPMENT OF THE DEAD SEA BASIN – BROADENING THE DEBATE ON ECONOMIC AND MANAGEMENT ISSUES 44-45 (2004), available at [http://www.foeme.org/index\\_images/dinamicas/publications/publ22\\_1.pdf](http://www.foeme.org/index_images/dinamicas/publications/publ22_1.pdf).

<sup>121</sup> International Boundary Waters Treaty Act, *supra* note 116.

<sup>122</sup> See Sheryl A. Rosenberg, *A Canadian Perspective on the Devils Lake Outlet: Towards an Environmental Assessment Model for the Management of Transboundary Disputes*, 76 N. DAK. L. REV. 817, 817-823 (2000) (stating that the Devil's Lake controversy concerns the proposal to build an outlet from Devil's Lake into the Sheyenne River).

<sup>123</sup> See *id.* at 820 (stating that Devil's Lake lies in north-eastern North Dakota).

<sup>124</sup> See *id.* at 817 (discussing whether residents each spring will face a crisis of higher and higher lake levels).

ed States legislation, and discharge it via the Sheyanne River to the Red River, which flows northward along the border with Minnesota and across the international border into Manitoba.<sup>125</sup> Clearly, the drains change the rate and timing of flows across the border, but that fact in itself is not grounds for a reference to the IJC. In the early years of the last century, when the Boundary Waters Treaty was being negotiated, Canada saw the economic potential of dams on trans-boundary rivers in the western provinces. It therefore insisted that changes in *quantity* of water flows be treated differently from changes in *quality* of water flows.<sup>126</sup> As a result, the Manitoba government and the environmental groups that oppose the Devil's Lake drains are forced to search for quality effects to make their case, even though the quantity change is obvious.

At one point in the history of the Devil's Lake imbroglio, the United States suggested to Canada that the issue be referred to the IJC.<sup>127</sup> Joint references are not explicitly required by the Treaty, but they have become the accepted way to proceed.<sup>128</sup> Canada felt the reference was premature because of lack of information, but, in retrospect, should probably have accepted and allowed the IJC to develop the necessary information and then make recommendations to the two governments. It is probably too late now for Canada to urge a joint reference, but the federal government could support Manitoba and Minnesota by insisting that all measures taken in the 2005 Safeguard Agreement<sup>129</sup> signed by both countries be implemented. To now, it has not done so. Given the number of proposals that are already, or shortly will be, on the table for projects affecting trans-boundary water flows in the central part of the continent, the failure to refer tough cases to the IJC is disturbing.<sup>130</sup>

Even if Devil's Lake and other such issues were referred to the IJC, and a determination of harm obtained, it is not clear what could be done on the American side of the border. In contrast to Canada, the United States has

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<sup>125</sup> See generally Government of Manitoba, Potential Transboundary Water Projects, [http://www.gov.mb.ca/waterstewardship/water\\_info/transboundary/potential.html#a2](http://www.gov.mb.ca/waterstewardship/water_info/transboundary/potential.html#a2) (last visited Nov. 7, 2009) (reporting that North Dakota rejected a proposal from the United States Army Corps of Engineers and proceeded with construction of its own outlet proposal).

<sup>126</sup> See generally International Boundary Waters Treaty Act, *supra* note 116 (The IJC resolves and prevents disputes concerning both water quality and water quantity along the United States and Canada boundary).

<sup>127</sup> See Rosenberg, *supra* note 122, at 825 (reporting that the United States and Canada agreed to refer the problem to the IJC in October, 1975).

<sup>128</sup> International Boundary Waters Treaty Act, *supra* note 116, at Article VIII.

<sup>129</sup> See Government of Manitoba, *supra* note 125 (explaining the 2005 Safeguard Agreement between the United States and Canada).

<sup>130</sup> See *id.* (reporting on the numerous potential transboundary water projects involving the United States and Canada).

never passed legislation to implement the Boundary Waters Treaty.<sup>131</sup> For this and other reasons, some Canadians have begun to ask if political figures in the United States are dissatisfied with the Boundary Waters Treaty itself. Perhaps they do not like the key clause of the Treaty, which divides boundary waters on the basis of an "equal and similar right to use," rather than a formulation based on population or economic size, which would of course favour the United States.

### *Major Water Diversions*

In the past, Canada has been cavalier in approving large-scale water diversions, with little regard for their environmental effects or their implications for First Nations communities. Canada is the biggest diverter in the world of water within its own boundaries. Mega-projects in eastern Canada and in British Columbia have focused on the generation of hydroelectricity, and, in the Prairie provinces, on providing water for irrigation. Once considered the epitome of progress, high dams and the associated infra-structure are increasingly challenged for their limited economic benefits and high environmental costs. The criticism is intensified because much of the hydro-power, aluminum, and agricultural crops are sold to corporations and electrical utilities in the United States, an economic exchange that does leave a lot of money in Canada but also keeps the nation in its traditional role of primary producer with few of the benefits that come from value-added activities and secondary industry.

A number of such mega-projects are currently under consideration, including at least two that involve a series of dams. The first proposal would erect four dams with a total capacity of 1,500 MW to provide hydroelectricity for an aluminum smelter.<sup>132</sup> The other is Agrivision Corporation's proposals to "drought-proof" Saskatchewan with a series of dams and to provide a huge increase in available irrigation water.<sup>133</sup> Neither proposal is moving rapidly beyond planning to construction, and, no doubt, the current economic crisis has slowed down the search for capital. Serious objections have been raised to both projects, and neither is likely to pass easily through either economic evaluations or environmental and social assessments.<sup>134</sup> As well, there

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<sup>131</sup> See Noah D. Hall, *Transboundary Pollution: Harmonizing International and Domestic Law*, 40 J. OF L. REFORM 681, 722 (2007).

<sup>132</sup> See Office of the Premier, Alcoa to Study Feasibility of New B.C. Aluminum Smelter (Feb 25, 1998), available at [http://www.llbc.leg.bc.ca/public/PubDocs/bcdocs/317757/prem\\_alcoa.asp.pdf](http://www.llbc.leg.bc.ca/public/PubDocs/bcdocs/317757/prem_alcoa.asp.pdf).

<sup>133</sup> See SASKATCHEWAN ENVIRONMENTAL SOCIETY, A CRITICAL ANALYSIS OF AGRIVISION'S REPORT (Sept. 21, 2006), available at [http://www.environmentalsociety.ca/issues/water/SES\\_AV\\_CRITIQUE.pdf](http://www.environmentalsociety.ca/issues/water/SES_AV_CRITIQUE.pdf).

<sup>134</sup> See *id.*

are precedents in which adverse public sentiments scuttled such projects. In 1994 a cross-border campaign focused on the adverse social and environmental effects of the Great Whale complex that had been proposed by Hydro-Québec to produce power to sell to the New York State Power Authority.<sup>135</sup> Eventually, public pressure led the Power Authority to cancel its purchase contract, and, of course, without a purchase contract Hydro-Québec could not raise capital for construction.<sup>136</sup>

Perhaps a similar campaign might slow down the excessive rate of tar sands development in Alberta. With current technology, two to four barrels of water are required for every barrel of synthetic crude produced,<sup>137</sup> and most of this water is unrecoverable; it is left to evaporate in tailings ponds.<sup>138</sup> In addition, over eighty-five kilograms of carbon dioxide are released for every barrel of synthetic crude produced.<sup>139</sup> Synthetic crude oil derived from tar sands is the dirtiest of all common forms of liquid hydrocarbons,<sup>140</sup> and, in this case, concern about buying "dirty oil" is being heard at senior political levels as well as from the public.<sup>141</sup>

### *Bulk Exports of Water*

Last year the Montréal Economic Institute published a research paper that suggested that there are big profits to be made in Québec from bulk sales of the province's water to other countries.<sup>142</sup> This report is only the latest of many to make such claims. However, careful research finds little possibility that the export of water would even pay back its costs.<sup>143</sup> The only people

<sup>135</sup> See DAWN ANDERSON AND DESMOND ELLIS, *CONFLICT RESOLUTION: AN INTRODUCTORY TEXT* 151 (Emond Montgomery Publications Ltd. 2005).

<sup>136</sup> *Id.* at 153.

<sup>137</sup> See THE PEMBINA INSTITUTE, *HEATING UP IN ALBERTA: CLIMATE CHANGE, ENERGY DEVELOPMENT AND WATER* 13 (2009), available at <http://pubs.pembina.org/reports/heating-up-in-alberta-report.pdf>.

<sup>138</sup> See *id.* at 38 (stating that only some of the wastewater in tailings ponds is recyclable).

<sup>139</sup> THE PEMBINA INSTITUTE, *OIL SANDS FEVER: THE ENVIRONMENTAL IMPLICATIONS OF CANADA'S OIL SANDS RUSH* 46 (2005) available at <http://pubs.pembina.org/reports/OilSands72.pdf>.

<sup>140</sup> See generally No Dirty Energy, *The Dirt on Tar Sands*, [http://www.nodirtyenergy.org/index.php?option=com\\_content&task=view&id=41&Itemid=76](http://www.nodirtyenergy.org/index.php?option=com_content&task=view&id=41&Itemid=76) (last visited Oct. 11, 2009) (stating that extraction of tar sands oil generates carbon dioxide emissions 5 to 10 times greater than conventional oil.)

<sup>141</sup> See generally THE PEMBINA INSTITUTE, *supra* note 139, at 2-5 (reporting on global recognition Alberta's tar sands operations are attracting).

<sup>142</sup> MONTRÉAL ECONOMIC INSTITUTE, *FRESHWATER EXPORTS FOR THE DEVELOPMENT OF QUÉBEC'S BLUE GOLD* (2008), available at [http://www.iedm.org/uploaded/pdf/cahier0808\\_en.pdf](http://www.iedm.org/uploaded/pdf/cahier0808_en.pdf).

<sup>143</sup> See J. Owen Saunders & Michael M. Wenig, *Whose Water? Canadian Water Management and the Challenges of Jurisdictional Fragmentation* in EAU CANADA: THE FUTURE OF

who really need more water are farmers, and they require vast quantities, and expect to get it cheaply. Given that it is expensive to pump water, and that it takes about one thousand tonnes of water to produce one tonne of grain,<sup>144</sup> whether from rain or irrigation, sensible people will think about shipping grain, not water. The only logical exceptions are small-scale exchanges of water between communities on opposite sides of the international border and well-defined emergencies such as fighting forest fires.

The notion of exporting Canadian water, particularly to the United States, has little public support. According to a 2004 IPSOS-Reid poll, eighty per cent of Canadians do not want their water sold in bulk.<sup>145</sup> Given this overwhelming political sentiment, one wonders why the Canadian government, which seems to have constitutional authority to deal with the issue, does not just pass legislation to forbid bulk exports. One reason is the ambiguous status of bulk water sales under the North American Free Trade Act (NAFTA). In contrast to bottled water, which is clearly a commodity, bulk water is neither included in nor excluded from NAFTA.<sup>146</sup> However, in 1998 the Canadian government did step in to block a proposed deal to export water by tanker from Lake Superior to Asia, and there were no evident consequences.<sup>147</sup> The whole question about international trade rules for bulk water can be avoided if the federal government were to make the broader declaration that it will oppose any inter-basin transfer of water. Given the geography of the continent, such a position would all but preclude bulk exports, and it would be a giant step toward protecting the natural environment.

### Conclusions

Water use used to grow more or less in step with economic growth. However, since about 1980, total, not just per capita, water withdrawals in the United States have been stable or even declining.<sup>148</sup> Canada seems to be following a similar pattern: water withdrawals did not increase during the first half of the 1990's, after which, in another cost-cutting measure, surveys of national water use were halted. In 2002, a task force created by the IJC concluded that consumptive use of water in the Great Lakes basin had been

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CANADA'S WATER 119-42 (Karen Bakker, ed., UBC Press 2007).

<sup>144</sup> Lester R. Brown, *How Water Scarcity Will Shape the New Century*, 43 WATER SCIENCE AND TECHNOLOGY 17, 18 (2001).

<sup>145</sup> Ipsos Newscenter, *Canadians Agree Canada Should Adopt A Comprehensive National Water Policy That Recognizes Clean Drinking Water As A Basic Human Right*, <http://www.ipsos-na.com/news/pressrelease.cfm?id=2193> (last visited Oct. 9, 2009).

<sup>146</sup> North American Free Agreement, Can.-Mex.-U.S., Dec. 8-Dec.17, 1992, 32 I.L.M. 605.

<sup>147</sup> See Saunders & Wenig, *supra* note 143.

<sup>148</sup> See Gleick & Wolff, *supra* note 82.



“consistently and significantly” overstated for at least thirty years.<sup>149</sup> Despite governmental neglect and low water prices, a more efficient, equitable, and environmentally satisfactory water future seems within reach for both Canadians and Americans.

Canada must build on the 1987 water policy and ensure that it helps the nation achieve a sustainable regime for water in this new millennium. The changes required are not that many, but they are significant. What is getting in the way of improved water policies? The same thing that gets in the way of any policy reform: institutional barriers that inhibit more satisfactory policies, along with the vested interests and power relationships that support those barriers. Canadian water policies continue to be based on an assumption of huge water resources and are thus heavily biased toward supply-side approaches. It is time, indeed, long past time, that we confronted those barriers and turned toward a demand-side water policy as soon as possible.<sup>150</sup>

MS. FOGARTY: Thank you, Dr. Brooks. Next we have Professor Chris Shafer from the Thomas M. Cooley School of Law. He joined the faculty in December 1996 as a visiting professor, and prior to that he served as an adjunct professor teaching classes in water and environmental law.<sup>151</sup> He primarily teaches constitutional law now, but he also teaches water and natural resources law.<sup>152</sup> I especially want to point out that in the summer of 2003, he served as co-counsel for the citizens group that was attempting to stop the groundwater diversion in Mecosta County, and this is quite well reported on the case, and it involved the Nestlé Corporation, a three-week trial, and a victory including a permanent injunction against the groundwater diversion preventing the company from proceeding.<sup>153</sup> He wrote and filed two amicus curiae briefs in cases that are currently pending before the Michigan Supreme Court.<sup>154</sup>

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<sup>149</sup> INTERNATIONAL JOINT COMMISSION, PROTECTION OF THE WATERS OF THE GREAT LAKES 15 (2004), available at <http://www.ijc.org/php/publications/pdf/ID1560.pdf>.

<sup>150</sup> Conclusion of David Brooks' Paper.

<sup>151</sup> See Chris A. Shafer - Biography, <http://www.cooley.edu/faculty/shafer.htm> (last visited Dec. 20, 2009).

<sup>152</sup> See *id.*

<sup>153</sup> See *id.*

<sup>154</sup> See *id.*

## UNITED STATES SPEAKER

Chris A. Shafer\*

MR. SHAFER: Thank you. It is a pleasure to be here today and speak on a subject that is near and dear to my heart, the Public Trust Doctrine. What I want to try to do is give you an overview of the Public Trust Doctrine, which I understand and fully realize, is primarily an American common law doctrine, but I was relieved to hear Dr. Brooks reference it.

It was always a mystery to me, how despite our common origins from English common law Canada and the United States went in two such different directions in terms of the Public Trust Doctrine. First, I will trace the historical origins and the geographic migration of the Doctrine, and then I will illustrate why the Public Trust Doctrine is an important tool for individual states in the United States when asserting their authorities under the Coastal Zone Management Act in terms of controlling their submerged lands and bottomlands.

I think many of you have a vague understanding or recollection of the Public Trust Doctrine. It traces its roots back to Roman law in the Codes of Justinian or the Institutes of Justinian, 600 A.D., which provided that the shores of the Mediterranean were considered common grounds available for fishermen to remove their catch and mend their nets.<sup>155</sup> The Doctrine was incorporated in English common law during the fifteenth or sixteenth century. The Doctrine was written extensively about by Lord Hale in treatises on admiralty and maritime law,<sup>156</sup> making it clear that it was well established

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\* Chris Shafer joined the Cooley staff in December 1996 as a Visiting Professor. Previously, from 1993–1996, he served as an adjunct professor teaching classes in Water Law and Environmental Law. Professor Shafer primarily teaches Constitutional Law and Water Law, but has also taught Property II and Federal Administrative Law. Prior to joining the Cooley staff, Professor Shafer supervised the Great Lakes Shorelands Section in the Michigan Department of Natural Resources for sixteen years. Since joining the faculty at Cooley, Professor Shafer served as an expert witness and legal consultant on water law and federal jurisdiction in Michigan's first death penalty case since 1943. During the summer of 2003, Professor Shafer served as co-counsel for the citizens group attempting to stop the Ice Mountain groundwater diversion in Mecosta County. This case, *Michigan Citizens for Water Conservation v. Nestle Corp.*, involved a twenty-one day trial, after which the trial court issued a permanent injunction against the groundwater diversion. Professor Shafer serves as a contract Administrative Law Judge for the Michigan Department of Environmental Quality and has authored Proposals for Decision in 4 contested case hearings.

<sup>155</sup> See Sax, *supra* note 96, at 475 (discussing the origins of the Public Trust Doctrine in Roman Law).

<sup>156</sup> See generally *Shively v. Bowlby*, 152 U.S. 1, 13 (1894) (Stating that in England, from

in English common law. It was first recognized and incorporated in American jurisprudence in an oyster dispute in New Jersey,<sup>157</sup> which turned out to be a contentious place because the first two cases in the United States where the Public Trust Doctrine was adopted involved the same geographic location, Raritan Bay.<sup>158</sup>

A state court decision in New Jersey first recognized the Public Trust doctrine in America.<sup>159</sup> Then just a few years later in 1842 the United States Supreme Court officially embraced the Public Trust Doctrine in the *Martin* case.<sup>160</sup> The basic concept is that when the fledgling United States defeated the British in the Revolutionary War, the states stepped into the shoes of the King of England and became the trustees of the submerged lands resources.<sup>161</sup> There is virtually no federal public trust common law in the United States at all.<sup>162</sup>

Originally, it was tidal oriented, because it was strictly limited to tidal submerged lands, which is exactly the same as in English common law. However, when the United States started its inland migration up the Mississippi River making it as far as Iowa in 1876,<sup>163</sup> and then the United States Supreme Court decided the landmark case, *Illinois Central Railroad* in 1892 extending the Public Trust Doctrine to the Great Lakes region.<sup>164</sup>

The Great Lakes, at least under American admiralty and maritime law, were already recognized as fully navigable waters in the *Genesee Chief* case in 1851.<sup>165</sup> Chief Justice Tawny, in writing the opinion in that case, said that due to the level of maritime commerce on the lakes, and the fact that two wars were fought there, the Great Lakes certainly qualified as admiralty jurisdiction.<sup>166</sup> Thus, the Supreme Court extended the Public Trust Doctrine into the Great Lakes as well.

The basic idea behind the Public Trust Doctrine is relatively simple: certain public resources, navigable waters and submerged lands are of such importance to the general public that they are incapable of purely private own-

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the time of Lord Hale, "it has been treated as settled that the title in the soil of the sea, or of arms of the sea, below ordinary high water mark, is in the King . . . and that this title . . . is held subject to the public right, *jus publicum*, of navigation and fishing").

<sup>157</sup> *Arnold v. Mundy*, 6 N.J.L. 1, 10 (N.J. 1821).

<sup>158</sup> *Id.*; *Martin v. Waddell*, 41 U.S. 367, 410 (1842).

<sup>159</sup> See *Arnold*, *supra* note 157.

<sup>160</sup> See *Martin*, *supra* note 158.

<sup>161</sup> See *id.* at 410 (stating that the people of each state inherited the public trust rights).

<sup>162</sup> *Id.*

<sup>163</sup> See *Shively*, *supra* note 156 (stating that in English common law, title to the soil of the sea below high-water mark belongs to the King for public use).

<sup>164</sup> *Barney v. Keokuk*, 94 U.S. 324 (1876).

<sup>165</sup> *Illinois Central Railroad Co. v. Illinois*, 146 U.S. 387 (1892).

<sup>166</sup> *Propeller Genesee Chief v. Fitzhugh*, 53 U.S. 443 (1851).

ership or control.<sup>167</sup> There is a famous quote from *Illinois Central Railroad* describing the nature of the trust and the state's responsibility to the trust. The submerged lands and the trust resources are held in a different capacity than resources that states hold just for proprietary purposes. This truly is a trust situation, a fiduciary responsibility, and the states have a duty to protect those resources.<sup>168</sup> It was further stated that the citizens "have liberty of fishing rights therein free from the obstruction and interference of private parties."<sup>169</sup> This is probably the most famous quote from *Illinois Central Railroad*, talking about the nature of the trust. The states cannot ignore it. They cannot abdicate their public trust responsibility any more than they can their police power in protecting public safety or liberty interest. It is an important and sacred obligation and duty of the states to protect and enforce that trust.<sup>170</sup> One of my favorite quotes is from a Michigan Supreme Court decision, "In this right, they are protected by a *high, solemn, and perpetual* trust, which is the duty of the state to forever maintain."<sup>171</sup> This case extended the Public Trust Doctrine into inland navigable rivers and away from the Great Lakes.

The Public Trust Doctrine in *Illinois Central Railroad* was fixed in terms of the resources and uses that are protected: commerce, fishing and navigation.<sup>172</sup> After this decision the Public Trust Doctrine went into a period of hibernation, lasting for about forty to fifty years, during which there was not a lot of development or evolution in the Public Trust Doctrine. Then a professor at the University of Michigan, Joe Sax, published a law review article that resurrected the Public Trust Doctrine.<sup>173</sup>

It may be surprising that there actually is a rating system for the influential nature of law review articles.<sup>174</sup> This article was considered one of the top ten most influential law review articles ever written, and it is primarily because it resurrected this concept. Joe Sax's article made the convincing argument that there was not any other common law doctrine besides the Public Trust Doctrine that provided the breadth of remedies or the opportunity for citizens, states, and governments to assert their rights to protect the Great Lakes and its submerged lands resources.<sup>175</sup> Keep in mind that this is at the

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<sup>167</sup> *Id.* at 457.

<sup>168</sup> *Illinois Central Railroad*, *supra* note 165, at 452-453.

<sup>169</sup> *Id.*

<sup>170</sup> *Id.* at 452.

<sup>171</sup> *Id.* at 453.

<sup>172</sup> *Collins v. Gerhardt*, 211 N.W. 115, 118 (Mich. 1926).

<sup>173</sup> *Illinois Central Railroad*, *supra* note 165.

<sup>174</sup> See Joseph Sax, *The Public Trust Doctrine in Natural Resource Law: Effective Judicial Intervention*, 68 MICH. L. R. 471 (1970).

<sup>175</sup> See generally Fred R. Shapiro, *The Most-Cited Law Review Articles*, 73 CAL. L. REV. 1540, 1548 (1985) (ranking Sax's article as one of the 50 most-cited law review articles).

beginning of the environmental movement in the United States,<sup>176</sup> Earth Day was just established and a number of federal statutes were soon to be enacted.<sup>177</sup>

In the *Marks v. Whitney* case, California became the first state to apply the Public Trust Doctrine to modern ecological values.<sup>178</sup> The case involved a quiet title dispute over property on San Francisco Bay.<sup>179</sup> For the first time a court specifically recognized ecological values and habitat values for fish and wildlife as important characteristics of the Public Trust Doctrine.<sup>180</sup> The two authorities cited by the California Supreme Court were *Illinois Central Railroad*<sup>181</sup> and Joe Sax's article.<sup>182</sup> It is not an accident that this case happened in such close proximity to Joe Sax's article. The very next year the state of Wisconsin extended the Public Trust Doctrine to wetlands adjacent to lakes and streams and navigable resources.<sup>183</sup>

The Doctrine continued to evolve in California. Even today, California continues to recognize that the Public Trust Doctrine is an important ongoing duty for states, and that it trumps the Appropriation Doctrine,<sup>184</sup> which is quite remarkable because the Appropriation Doctrine used to be king and still is to some extent in the western states.<sup>185</sup>

In *National Audubon* the key concept to take away is the idea the states have a duty to protect wetlands, lakes, streams and other aquatic habitat areas; only surrendering those resources under very rare circumstances when the use of the resources are consistent for that purpose.<sup>186</sup> In *Phillips Petroleum*, the United States Supreme Court reaffirmed the Public Trust Doctrine

<sup>176</sup> See Sax, *supra* note 174, at 474 (stating that of all the concepts known to American Law, only the Public Trust Doctrine has the breadth to be useful in dealing with resource management problems).

<sup>177</sup> See U.S. Environmental Protection Agency, Earth Day '70: What It Meant, <http://www.epa.gov/history/topics/earthday/02.htm> (last visited Nov. 19, 2009) (reporting on the number of statutes enacted in response to Earth Day).

<sup>178</sup> *Marks v. Whitney*, 491 P.2d 374 (Cal. 1971).

<sup>179</sup> *Id.*; *Marks*, *supra* note 178, at 377.

<sup>180</sup> See *id.* at 380 (stating that one of the most important uses of the Public Trust Doctrine is the preservation of the habitat for birds and marine life).

<sup>181</sup> *Id.* at 379.

<sup>182</sup> *Id.* at 378.

<sup>183</sup> *Just v. Marinette County*, 201 N.W.2d 761 (Wis. 1972).

<sup>184</sup> See *National Audubon Society v. Superior Court of Alpine County*, 658 P.2d 709, 728 (Cal. 1983) (stating that "once the state has approved an appropriation, the public trust imposes a duty of continuing supervision over the taking and use of the appropriated water").

<sup>185</sup> See generally Chennat Gopalakrishnan, *The Doctrine of Prior Appropriation and Its Impact on Water Development: A Critical Survey*, 32 A. J. OF ECON AND SOC'Y 61 (1973) (discussing the appropriation doctrine as used in some western states).

<sup>186</sup> *National Audubon Society*, *supra* note 184, at 724.

and extended it to cover forty-two acres of shallow wetlands adjacent to the Gulf of Mexico in Mississippi.<sup>187</sup>

Then, in *Glass v. Goeckel*, the most recent and notable case for the Great Lakes region, the Michigan Supreme Court applied the Public Trust Doctrine to the issue of lateral beach access along the Great Lakes.<sup>188</sup> The court held that walking along the shoreline is a full right that is incident to traditional commerce, fishing, and navigation uses and is therefore protected under the Public Trust Doctrine.<sup>189</sup> The right of passage is an extension of the traditional uses of the Great Lakes, and the court rejected a taking claim, where the resources are protected by the pre-existing Public Trust Doctrine.<sup>190</sup> Consequently, there is no taking when the government asserts preeminent ownership and trust responsibility.<sup>191</sup>

Next I want to move on to a more contemporary issue, offshore energy facilities, particularly wind turbines. I will discuss how offshore wind turbines and wind farms are fully consistent with the modern view of the Public Trust Doctrine. I will take the Public Trust Doctrine, to an extent, back to its roots in emphasizing commerce as a traditional value as the United States Supreme Court cited in *Illinois Central*.<sup>192</sup> In the United States, there is no question that energy production is fully part of the commerce laws. There are four federal statutes that deal with all kinds of energy facilities, hydroelectric facilities, oil and gas leasing on the outer continental shelf, gas pipelines, interstate commerce, and most recently, with renewable resources in the coastal area.<sup>193</sup> Therefore, energy production is clearly a part of commerce.

There is also significant potential for offshore wind generation.<sup>194</sup> The experience with wind power, particularly in Denmark, has been best in offshore facilities.<sup>195</sup> Wind power is experiencing a dramatic rate of growth.<sup>196</sup>

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<sup>187</sup> Phillips Petroleum Co. v. Mississippi, 484 U.S. 469 (1988).

<sup>188</sup> *Glass v. Goeckel*, 703 N.W.2d 58 (Mich. 2005).

<sup>189</sup> *Id.* at 62.

<sup>190</sup> *Id.* at 78.

<sup>191</sup> See *id.* (stating that “no taking occurs when the state protects and retains that which it could not alienate: public rights held pursuant to the public trust doctrine”).

<sup>192</sup> *Illinois Central Railroad*, *supra* note 165.

<sup>193</sup> Energy Policy Act of 2005, 43 U.S.C. § 1337(p) (2007); Federal Power Act, 16 U.S.C. § 791(a) (2000); Natural Gas Act, 15 U.S.C. § 717 (1997); Outer Continental Shelf Lands Act, 43 U.S.C. § 1331 (2007).

<sup>194</sup> See U.S. Department of Energy, Offshore Wind Technology, [http://www1.eere.energy.gov/windandhydro/offshore\\_wind.html](http://www1.eere.energy.gov/windandhydro/offshore_wind.html) (last visited Nov. 19, 2009) (stating that offshore wind energy installations have the potential to meet a significant portion of the future energy needs of the United States).

<sup>195</sup> See generally Copenhagen 15, World’s Largest Offshore Wind Farm Opens in Denmark, <http://en.cop15.dk/news/view+news?newsid=2117> (last visited Nov. 19, 2009).

<sup>196</sup> See U.S. Department of Energy, History of Wind Energy, [http://www1.eere.energy.gov/windandhydro/wind\\_history.html](http://www1.eere.energy.gov/windandhydro/wind_history.html) (last visited Nov. 19, 2009).

It is the most rapidly increasing form of energy production that we have worldwide and also in the United States.<sup>197</sup> There was a study done by the United States Department of Energy estimating that twenty percent of the Nation's electric production could be provided by wind power and specifically about a sixth of that could be generated by offshore facilities.<sup>198</sup> At least twenty-six states and the District of Columbia have developed their renewable portfolio standards that require somewhere in between ten and twenty percent of the electric energy production in their states to be from renewable sources.<sup>199</sup>

A recently published Michigan State University study found that offshore wind energy potential around the Great Lakes from wind turbines would be three to six times the magnitude of onshore wind energy.<sup>200</sup> In fact, New Jersey was recently awarded a billion-dollar contract for developing a large wind farm off its coast.<sup>201</sup> There is no question that, in the United States, the eight Great Lakes states have a lot of authority to deal with offshore energy facilities. The Canadian Provinces also have a lot of authority. In Canada, the Great Lakes submerged lands are considered crown lands that the provinces can regulate and control.<sup>202</sup> They do not follow the Public Trust Doctrine, but they do have management authority over those areas. The states can directly regulate and control the location of the wind farms and the connections, which gives the states a tremendous amount of leverage to steer where offshore energy facilities are located.<sup>203</sup> In the United States it is clear that the states have a duty to protect submerged lands resources, and not just

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(stating that wind energy is the world's fastest-growing energy source).

<sup>197</sup> *Id.*

<sup>198</sup> See U.S. DEPARTMENT OF ENERGY, 20% WIND ENERGY BY 2030: INCREASING WIND ENERGY'S CONTRIBUTION TO U.S. ELECTRICITY SUPPLY 10 (July 2008), available at <http://www1.eere.energy.gov/windandhydro/pdfs/41869.pdf>.

<sup>199</sup> See generally U.S. Department of Energy, States with Renewable Portfolio Standards, [http://apps1.eere.energy.gov/states/maps/renewable\\_portfolio\\_states.cfm](http://apps1.eere.energy.gov/states/maps/renewable_portfolio_states.cfm) (last visited Jan. 2, 2010) (listing different renewable portfolio requirements across the United States); see also Jen Gambee, *Alternative Renewable Energy in Michigan: Focus Wind Energy*, PLAN & ZONING NEWS, May 2008, at 5, 5-7; see also Kathy Barks Hoffman, *New Energy Package for Michigan Signed by Governor Granholm*, LANSING ST. J., Oct. 7, 2008.

<sup>200</sup> LAND POLICY INSTITUTE, MICHIGAN'S OFFSHORE WIND POTENTIAL 12 (2008), available at [http://www.landpolicy.msu.edu/modules.php?name=Documents&op=viewlive&sp\\_id=812](http://www.landpolicy.msu.edu/modules.php?name=Documents&op=viewlive&sp_id=812).

<sup>201</sup> See Ken Belson, *New Jersey Grants Rights to Build a Wind Farm About 20 Miles Offshore*, N.Y. TIMES, Oct. 4, 2008, at B2.

<sup>202</sup> See Government of Nova Scotia, Crown Land in Nova Scotia, <http://www.gov.ns.ca/natr/land/default.asp> (last visited Nov. 20, 2009).

<sup>203</sup> See generally GREAT LAKES WIND COLLABORATIVE, OFFSHORE SITING PRINCIPLES AND GUIDELINES FOR WIND DEVELOPMENT ON THE GREAT LAKES 5 (2009), available at [http://www.glc.org/energy/wind/pdf/Offshore-Siting-Principles-and-Guidelines-for-Wind-Development-on-the-Great-Lakes\\_FINAL.pdf](http://www.glc.org/energy/wind/pdf/Offshore-Siting-Principles-and-Guidelines-for-Wind-Development-on-the-Great-Lakes_FINAL.pdf) (listing the factors states should consider in selecting site locations for offshore wind facilities).

to protect the habitat but also to ensure a fair economic return to the states for the use of the public resources and the submerged lands.<sup>204</sup> I also want to discuss how offshore energy makes sense environmentally. To quote Al Gore, “we are borrowing money from China to buy oil from the Persian Gulf to burn in ways that destroy the planet.”<sup>205</sup> This makes no sense. Basically his message was that we have to change that scenario in every way.

There are three huge environmental advantages in terms of wind energy. First, wind turbines do not generate any greenhouse gases.<sup>206</sup> The carbon dioxide savings as a result of using clean renewable energy are dramatic. Twenty-eight million tons of carbon dioxide has already been saved in 2000 from the existing capacity, and the future would show that over eight hundred twenty-five million metric tons of carbon dioxide could be saved.<sup>207</sup>

Second, reference has already been made to mercury generation in the Great Lakes. Burning coal is the main source of mercury generation in our region,<sup>208</sup> and atmospheric deposition of mercury into the Great Lakes from coal accounts for seventy-five percent of these highly toxic compounds.<sup>209</sup> So, using wind power could greatly help reduce that as well.

Finally, the amount of water intake is dramatically reduced with the usage of wind turbines. They do not require cooling water,<sup>210</sup> so the twenty percent wind energy scenario would result in about four trillion gallons less water used. An even more significant environmental benefit for the Great Lakes is the saving of larval fish and small aquatic organisms that are sucked into the cooling systems of the electric generating plants, especially for entrainment and entrapment purposes.<sup>211</sup> Another advantage of offshore wind turbines is

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<sup>204</sup> See National Audubon Society, *supra* note 184, at 727-28.

<sup>205</sup> See David Stout, *Gore Calls for Carbon-Free Electric Power*, N.Y. TIMES, July 18, 2008, available at <http://www.nytimes.com/2008/07/18/washington/18gorecnd.html?hp>.

<sup>206</sup> See U.S. Department of Energy, Advantages and Disadvantages of Wind Energy, [http://www1.eere.energy.gov/windandhydro/wind\\_ad.html](http://www1.eere.energy.gov/windandhydro/wind_ad.html) (last visited Nov. 2, 2009).

<sup>207</sup> See generally British Wind Energy Association, Offshore Wind, <http://www.bwea.com/offshore/round2.html> (last visited Nov. 20, 2009) (stating that offshore wind farms could generate carbon dioxide savings of 1.3 million tons).

<sup>208</sup> See R. Artz, M. Cohen, D. Deslauriers, R. Draxler, M. Duval, R. Laurin, J. McDonald, P. Miller, T. Nettesheim, D. Niemi, L. Poissant, D. Ratte, and J. Slotnick, *Modeling the Atmospheric Transport and Deposition of Mercury to the Great Lakes*, 95 ENVTL RES. 247, 262-263 (2004) (stating that coal combustion in the United States is the most significant source category contributing to the mercury content of the Great Lakes).

<sup>209</sup> *Id.* at 247.

<sup>210</sup> See generally American Wind Energy Association, How Much Water Do Wind Turbines Use Compared With Conventional Power Plants, <http://www.awea.org/faq/water.html> (last visited Nov. 2, 2009) (stating that wind turbines use .002% of the amount of water that conventional power plants powered by electricity and coal use for cooling).

<sup>211</sup> See James R. May and Maya K. van Rossum, *The Quick and the Dead: Fish Entrainment, Entrapment, and the Implementation and Application of Section 316(b) of the Clean Water Act*, 20 VT. L. REV. 373, 381 (1995).



the faster and more consistent wind speed, which results in a fifty percent increase in generating capacity from offshore facilities versus on-land facilities.<sup>212</sup>

After six years of monitoring the Danish offshore wind farms it appears that there is very few, if any, ecological impacts.<sup>213</sup> The one I found most astonishing is about bird strikes. Apparently, the large turbines and fans turn slow enough that the birds are able to avoid the offshore wind facility. The bottom line is I think there is a fairly convincing case that if the state exercises its public trust responsibility and permits or authorizes an offshore energy facility, that this would be consistent with both the traditional view of the Public Trust Doctrine and a more modern ecological view.

I am going to skim through the Coastal Zone Management Act<sup>214</sup> because it is not relevant to the Canadians, but it is a big advantage for the United States, because it aids states in using the Public Trust Doctrine. There are three recommendations that I have for states and provinces to consider when using their public trust responsibilities to govern, manage, control and design energy facilities in the coastal area. First, states and provinces should proactively identify sensitive areas, such as ecological habitats, fisheries habitats, and other areas that should not be developed, and mark them as off limits.<sup>215</sup> Second, states and provinces should develop appraisal methods to ensure that citizens receive a fair return for the use of the offshore areas. To achieve this in the United States, states can use their federal consistency authorities under the Coastal Zone Management Act.<sup>216</sup> Finally, states and provinces should anticipate eventually decommissioning these facilities and therefore should build in terms of the bonding requirements or a building fund for removing obsolete structures.

In conclusion, the Public Trust Doctrine is a dynamic common law doctrine that is alive and well in the United States Great Lakes Region. Unfortunately, it was rejected in 1972 or 1973 by the Ontario provincial court in the only Canadian court case expressly analyzing the applicability of the Public Trust Doctrine.<sup>217</sup> However, the Canadian Supreme Court in *Canfor* did talk about the Public Trust Doctrine having some future potential.<sup>218</sup> In the United States, it provides states with strong authority and affirmative duty to protect public trust resources. The Public Trust Doctrine is certainly

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<sup>212</sup> See Bent O.G. Mortensen, *International Experiences of Wind Energy*, 2 ENVTL AND ENERGY L. AND POL'Y J. 179, 207 (2008).

<sup>213</sup> See *id.* at 187-89.

<sup>214</sup> Coastal Zone Management Act, 16 U.S.C. § 1451 et seq. (2000).

<sup>215</sup> See Submerged Lands Act, 43 U.S.C. §§1301, 1311 (2002) (stating that title and rights to submerged lands belong to the states).

<sup>216</sup> See Coastal Zone Management Act, *supra* note 214.

<sup>217</sup> See *Green v. R.*, [1972] 34 D. L. R. [3d] 20 [Ont. H. C.].

<sup>218</sup> *British Columbia v. Canadian Forest Products Ltd.*, [2004] 2 S.C.R. 74 (Can.).

broad enough to encompass habitat and ecological protection and other environmental concerns.<sup>219</sup> It is a key enforceable policy under the federal Coastal Zone Management Act on the United States side to give states authority over federal licenses and permits.<sup>220</sup>

Lastly, as Professor Hall mentioned regarding importance of citizen suits, it is useful to hold governmental agencies accountable. The Public Trust Doctrine is one of the preeminent common law doctrines that allow citizens to hold their state agencies, and federal agencies accountable as well.<sup>221</sup> Thank you.

MS. FOGARTY: Our last speaker this morning is Dave Ullrich. Dave is the Executive Director with the Great Lakes and St. Lawrence Cities Initiative,<sup>222</sup> which is a group of United States and Canadian mayors from throughout the region.<sup>223</sup> Dave served for three decades at the United States Environmental Protection Agency,<sup>224</sup> for Region Five in Chicago, and was employed as Acting Regional Administrator, Deputy Regional Administrator, Waste Management Division Director, Deputy Regional Counsel, Air Enforcement Chief, and Water Enforcement Attorney.<sup>225</sup> He was also appointed in 2006 by President George W. Bush to the Great Lakes Fisheries Commission.<sup>226</sup>

#### UNITED STATES SPEAKER

*David Ullrich\**

MR. ULLRICH: Thank you, Kendra. I appreciate the opportunity to speak here and thank the Canada-United States Law Institute for this opportunity.

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<sup>219</sup> Marks, *supra* note 178, at 380.

<sup>220</sup> See Coastal Zone Management Act, 16 U.S.C. § 1456(c)(3)(A) (2000).

<sup>221</sup> See National Audubon Society, *supra* note 184, at 728.

<sup>222</sup> See Press Release, Great Lakes Fishery Commission, President Bush Appoints David A. Ullrich To Great Lakes Fishery Commission (April 26, 2006), available at <http://www.glfc.org/pressrel/pr060426.pdf>.

<sup>223</sup> See *id.*

<sup>224</sup> See *id.*

<sup>225</sup> See *id.*

<sup>226</sup> See *id.*

\* David Ullrich is the Executive Director and point of contact for the Initiative. Before heading the Initiative, Mr. Ullrich was deputy regional administrator for the Great Lakes region of the United States Environmental Protection Agency (EPA) from 1992 until 2003. During his 30 years with EPA, he had been acting regional administrator, director of the Waste Management Division, acting regional counsel, and chief of Air Enforcement.

We are in very interesting and dynamic times. After thirty-seven years in the business, I think as long as I continue in this work, that it will continue to be very interesting and dynamic. In fact, my guess is it will become more interesting in the future. I will speak about local government today. I worked for the federal government for thirty years and I went to local government very quickly after. I must confess that during my thirty years with the federal government, I did not have anywhere near the level of appreciation and understanding for what local government can bring to the table. I think it is particularly helpful in the context of this conference to talk about it because we are discussing governments being involved in things, and I think there is a tendency to forget about local government, and even more so, First Nation and tribal government, which I think is a mistake.

There are some things that are happening that will improve the situation. The primary purpose of the Great Lakes and Saint Lawrence Cities Initiative is to bring local government together. There is also the book *Hot, Flat and Crowded* by Thomas Friedman.<sup>227</sup> I believe that we are facing a crisis that would be a terrible thing to waste, as the Chief of Staff to the President has said.<sup>228</sup> But at the same time, as Thomas Friedman says, it is one of the greatest opportunities to transform the way and provide clean electrons that we need to survive, grow, thrive, and to maintain some level of biodiversity that provides a better quality of life for everyone.<sup>229</sup>

I mentioned local government. There is a tremendous amount of variety in local government. We have big, medium, and small cities. Canada really fascinates me in terms of the towns, townships, cities, regional governments, metropolitan communities, conservation authorities and counties. Obviously there is a lot of variety. I maintain that what the local governments can bring to the table has been tremendously undervalued. That is what we have been trying to do for almost six years in the Great Lakes and Saint Lawrence Cities Initiative. It was a dark and stormy night in November of 2005, in the Hancock building, when Mayor Daley called a group of mayors together from the United States and Canada to emphasize the importance of the Great Lakes.<sup>230</sup> He argued that no one was asking them what should be done to protect the Great Lakes long-term, so he suggested that they get together and invite themselves to tables in order to let people know what they thought. Not a big surprise. All of them agreed. So they obtained a grant from the Joyce Foundation in Chicago. Quite symbolically, my last day with the

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<sup>227</sup> THOMAS FRIEDMAN, *HOT FLAT AND CROWDED* 7 (Farrar, Straus and Giroux 2008).

<sup>228</sup> See Jeff Zeleny, *Obama Weighs Quick Undoing of Bush Policy*, N.Y. TIMES, Nov. 9, 2008, available at <http://www.nytimes.com/2008/11/10/us/politics/10obama.html>.

<sup>229</sup> See FRIEDMAN, *supra* note 229 at 7.

<sup>230</sup> See Press Release, City of Chicago, Daley, U.S., Canadian Mayors Push Great Lakes Protection Plan (Nov. 7, 2002).

United States Federal Government was on Independence Day in 2003, and on Bastille Day, July 14, 2003, the Great Lakes and Saint Lawrence Cities Initiative opened its doors, and it has been an exciting ride ever since. We have sixty-two United States and Canadian cities; thirty-eight in Canada and twenty-four in the United States, which represents about thirteen million people.<sup>231</sup> Chicago and Toronto are thought of as the flagships.<sup>232</sup> Mayor Daley got things going. Mayor Miller's first week in office was in December of 2003,<sup>233</sup> but he was in Chicago at our midyear meeting and made a major commitment to it.

The pillars defining the organization from the outset were to develop and share the best practices and be strong advocates for the protection and restoration of the Great Lakes and the Saint Lawrence.<sup>234</sup> In the early years we focused on water quality by working with Dave Naftzger and the Council of Great Lakes Governors. We typically were the only local government representative. There were a few others along the way but not on water quantity and waterfront vitality. Now, we are evolving our agenda to develop an integrated and compensative look of how we will achieve sustainability across the basin to the Great Lakes and St. Lawrence, and how to integrate the economic, environmental, and social aspects of working on these issues.

Cities have been around a long time, a lot longer than a lot of countries, states, and provinces. We know a lot more about Rome, Florence, Venice, Athens and Sparta, well before there were nation states. I am not an expert of history or long-term municipal law, but the general concept that I learned in law school is that cities are either a creature of states and provinces or a creation of nations. I, however, think that this is not a very sound concept. Obviously, we operate within a system of tribes, First Nations, cities, states, provinces, and federal governments, but I think it is important to recognize that it is a little more indicative of what these various orders of government can bring to the table.

Clearly, we need all of these orders of government: federal, state, provincial, local, tribal, First Nation. I think the real question is how to best allocate authority and responsibility among the different orders of government, so that the right entities are doing the things that they are best suited to do. I learned to talk about orders of government and not levels of government, particularly when speaking about Canada. If you were to speak to Mayor

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<sup>231</sup> See Great Lakes and St. Lawrence Cities Initiative, Members, <http://www.glslcities.org/members.htm> (last visited Nov. 20, 2009).

<sup>232</sup> See Great Lakes and St. Lawrence Cities Initiative, About Us, <http://www.glslcities.org/aboutus.htm> (last visited Nov. 20, 2009) [hereinafter Cities Initiative, About Us] (stating that Chicago and Toronto are the founding members).

<sup>233</sup> See David Miller - Biography, [http://www.toronto.ca/mayor\\_miller/mayor\\_miller\\_bio.htm](http://www.toronto.ca/mayor_miller/mayor_miller_bio.htm) (last visited Dec. 20, 2009).

<sup>234</sup> See Press Release, City of Chicago, *supra* note 230.

Miller in Toronto, about the City of Toronto being a "lower level of government," you should head for the exit relatively quickly. He has some very strong feelings about this, and the large cities in Canada have come together on it.<sup>235</sup>

There is no question that there is plenty of work to do, and it is really a question of this allocation and doing a much better job of working together as governments and interacting with the non government community and the broader and general public, agricultural community, and the industrial community as well.

One of the concepts that we have tried to bring to the Great Lakes and the Saint Lawrence is the idea that we are mayors without borders, that is, to reduce the significance of the political boundaries,<sup>236</sup> whether they are international, state, provincial, or municipal. The Great Lakes and the Saint Lawrence are what count, and I always remember the mayor of Quebec City looking over to Mayor Daley on a dark and stormy night in 2005 saying "Mayor Daley, what makes us neighbors? We are a thousand miles apart, but what makes us neighbors is the water in front of your city is the same water eventually in front of our city." That is a concept that we have tried to cultivate.

In terms of what local government can bring to the table, I believe that there is no substitute for its proximity to the resource, the issues, and the people. I live less than a mile from Lake Michigan, and I am out there pretty much every day for one reason or another. I love and appreciate the Canadian Rockies, Yosemite, the Grand Canyon, but I cannot understand and appreciate it as well as the people who see it and live there with much more frequency. It does not mean others do not care about it, but there is something about that physical proximity that can create a better understanding. I maintain a better sense of urgency in terms of dealing with the issues and the problems and perhaps, most importantly, real accountability of the people. Mayors see their cities virtually every day on the street. I know that certainly in Chicago people generally speak up about what they feel, and if the beaches are closed on a hot summer day, the mayor is going to hear about it. That kind of accountability is important. The other thing in terms of the value of the proximity is being in a position to take action and make sure that issues are dealt with whether it is dealing with combined sewer overflows, rehabilitation of beach front, or restoring a wetland. Dealing with the public health and welfare on a day-to-day basis is something that I think cities do well. On the other hand dealing with water and air has some limitations. Cities can

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<sup>235</sup> See Cities Initiative, About us, *supra* note 232.

<sup>236</sup> See generally *id.* (stating that the Great Lakes and St. Lawrence Cities Initiative is a binational coalition that works together to protect and preserve the Great Lakes).

manage wastewater, drinking water, and storm water,<sup>237</sup> but it gets a little more difficult in terms of regulating industrial discharges.<sup>238</sup> That is why we need federal laws to set effluent discharge and water quality standards in order to provide protective authority, but cities can also do a lot day-to-day.

Air is also complicated. With the major contribution of air pollution from automobiles and impracticality of regulating it at a local level, it is evident why there must be federal standards on automobile and industrial emissions.<sup>239</sup> Further, the fact that air and water pollution do not respect political boundaries, it is essential to have the federal and state regulatory framework to work with, and I think some disadvantages that the cities have is the need to integrate with federal and state authorities. We do not have the luxury of having climate change experts in every city, particularly in smaller cities. Larger cities can develop some levels of expertise. There are some fabulous people doing some excellent things that I think are advancing the work on protection and restoration of the Great Lakes, but there simply is not the ability to have the people and the expertise. Another issue is resources.

We are going through a massive stimulus infusion on the United States side that I think is getting a lot of money out to the state and local government levels,<sup>240</sup> and we are going to do everything we can to get as much as we can and put it to as best use as possible, both in terms of protecting and restoring the resource and creating the jobs. I know as I get ready for April 15th to file my federal return and look at what I send to the federal government versus state, provincial versus local, generally, the local government winds up on the shorter end of the totem pole.<sup>241</sup> I know there is a lot of concern about unfunded mandates at the local level, and I think in Canada it is called downloading or something like that and no money to go along with it.<sup>242</sup> So it is a bit of a short end of the stick type of complex that I think we

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<sup>237</sup> See generally City of Toronto, Toronto Water - Publications, <http://www.toronto.ca/water> (last visited Nov. 5, 2009) (listing the City of Toronto's policies for managing wastewater, drinking water and storm water, among other things).

<sup>238</sup> See generally American City, Environment: A Watershed Moment, <http://americancity.org/magazine/article/environment-a-watershed-moment-burger/> (last visited Nov. 21, 2009) (stating that management of water discharge in a large metropolis is very difficult).

<sup>239</sup> See Natural Resources Defense Council, Global Warming Basics, <http://www.nrdc.org/globalWarming/fl01.asp> (last visited Nov. 10, 2009) (stating that automobiles are the second largest producer of carbon dioxide which is a source of air pollution).

<sup>240</sup> See *Getting to \$787 Billion*, WALL STREET J., Feb. 17, 2009, [http://online.wsj.com/public/resources/documents/stimulus\\_final\\_0217.html](http://online.wsj.com/public/resources/documents/stimulus_final_0217.html) (summarizing the stimulus package and its distribution to state and local governments).

<sup>241</sup> See generally Tax Policy Center, State and Local Tax Policy, [http://www.taxpolicycenter.org/briefing-book/state-local/revenues/state\\_revenue.cfm](http://www.taxpolicycenter.org/briefing-book/state-local/revenues/state_revenue.cfm) (last visited Nov. 21, 2009) (stating that only one-third of state tax revenues come from transfers from the federal government).

<sup>242</sup> See Press Release, Institute for Research on Public Policy, Federal Gas Tax Transfer Discriminates Against Canada's Global City-Regions (June 21, 2005), *available at*

have got at the local level. So given all of this, I do believe that local government has a valid role and is in an excellent position to be involved from start to finish in this whole process of figuring out what we need to do to protect and restore the resource. I also maintain that, particularly on the implementation side, a very specific tangible on the ground is in the water projects, and that we can make a lot more happen in the future.

By the way, if you want to see mayors in action at all, come to Trois-Rivières in Quebec on June 17th, 18th, or 19th. We have our annual conference there.<sup>243</sup> Mayor Miller and Mayor Daley are out on the coffee breaks all the time, and if you always had something that you wanted to say to either one of them and generally twenty or thirty others, they are pretty open and receptive. They will tell you what they think as well, but please join us up there. There are postcards on the table upfront. I think that even though all the time it has been dynamic and exciting and changing, I firmly believe that we are faced right now by some of the toughest challenges we have ever faced. On the economic side, everybody says, you know, this is the toughest since the Depression,<sup>244</sup> and I think that probably is right, but the thing is I think when you look at the whole mix of things in a global sense and the way we are linked, it is a lot tougher now than it even was back then. And I hate to say this, it is going to get tougher because the speed of change, the magnitude of change, and the number of things that change I think are going to continue to increase. The other side of the coin is that the number of us on the planet is still going up.<sup>245</sup> The number of people, particularly in India and China, who want a bigger piece of the pie, that is going up faster, and there is a lot more of them,<sup>246</sup> and we do have a fixed planet and resource.

Those things add up to presenting phenomenal challenges in the future. And as well as we have done on the Great Lakes and to a lesser extent, I think, on the Saint Lawrence, we need a dramatic improvement in government systems. The IJC has done a tremendous job for over a hundred years. However, the structures and systems are not anywhere near sufficient to deal

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<http://www.irpp.org/newsroom/archive/2005/062105e.pdf> (noting that local governments regularly suffer from “unfunded mandates” or “fiscal downloading” from both state and national government).

<sup>243</sup> See Great Lakes and St. Lawrence Cities Initiative, 2009 Annual Member Meeting & Conference, <http://www.glsccities.org/annual2009.htm> (last visited Nov. 16, 2009).

<sup>244</sup> See Jon Hilsenrath, Serena Ng and Damian Paletta, *Worst Crisis Since '30's, With No End Yet in Sight*, WALL STREET J., Sept. 18, 2008, at A1.

<sup>245</sup> See Neil MacFarquhar, *Experts Worry as Population and Hunger Grow*, N.Y. TIMES, Oct. 21, 2009, at A6 (reporting that the world population is estimated to reach 9.1 billion by 2040).

<sup>246</sup> See United Nations, *India Becomes a Billionaire*, <http://www.un.org/esa/population/pubsarchive/india/ind1bil.htm> (last visited Nov. 15, 2009) (Stating that India and China boast the largest populations in the world; by 2016 India will have higher population than Western Europe and the United States combined).

with the kinds of problems we have in the future. I think we can be more successful if we keep a focus on our common interest, keep a focus on problem solving and getting results, and that we all can bring something to the lakes. And this is probably heresy to say this in a law school and as much as I believe in the rule of law and the tremendous value of the Declaration of Independence, which stated that all men were created equal but kind of forgot about the different colored skin, kind of forgot about half the population of a different gender. Finally, you know, we fought a Civil War. We finally gave women the right to vote in 1919. We had a Civil Rights Act. We had a *Brown v. Board of Education*. We finally now have an African American president, but even that, all of the laws and regulations and programs and systems do not make it happen. It is the spirit of the people who come to the table. We have the perfect setting in the Great Lakes and Saint Lawrence with the two countries. We have the provinces, the states, the local governments, and the tribes and First Nations, I think, to create a governance model that ensures the long-term sustainability of this resource like no place else in the world. History and geography have set this up for us, and we better well take full advantage of it. Thank you very much.

DISCUSSION FOLLOWING THE REMARKS OF DAVID BROOKS,  
CHRIS SHAFER, AND DAVID ULLRICH

MR. MOORE: I have a question for Chris. The life span of wind turbines is really not very long; between twenty and twenty-five years before vibration and decay take their toll.<sup>247</sup> So, I would like to know if the Public Trust Doctrine takes into account the takedown and removal of these facilities. In California, we faced that problem with the solar, thermal troughs. Is there anything in the Public Trust Doctrine that mandates the state and federal governments to include a clause for remediation?

MR. SHAFER: Good question, nothing that mandates it, but within the legal authority of the states and I would say the duty of the states is to anticipate that thing, that kind of phenomenon. In my former life, I was the head of the Great Lakes Shoreland section for the Michigan Department of Natural Resources, and we routinely leased facilities for long periods of time, twenty-five and fifty years, and we always had bonding requirements for the removal of those facilities, whether they were marinas or utility pipelines. With the offshore energy facilities, it makes a huge amount of sense to have a fund in which a certain percentage of the revenue that is derived from the wind farms goes into the decommissioning fund. I think it is absolutely required that the states build that kind of decommissioning into the leases and into the agree-

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<sup>247</sup> See generally National Wind, Wind Turbine Facts, <http://www.nationalwind.com/files/NationalWindTurbineFacts.pdf> (last visited Nov. 10, 2009).



ments for the use of the submerged lands. I would think that it would be almost criminal if the state neglected to do that. So, yes, I think the Public Trust doctrine is fully broad enough to allow that and, in fact, to require it.

MS. FOGARTY: There is another question.

MR. CLAMEN: I wanted to complement Dave and the organization, and the organization was created and is doing a great job to highlight the regional and the city's aspect. My question really is, can you provide any guidance, not just for the Great Lakes but maybe in general, when organizations like ours want to get input from a municipal level, if there is organizations like ours, or even if there are not, how can we best take advantage of that? We want to consult with mayors and regional folks. It is very important. So is there any advice or guidance you can give us?

MR. ULLRICH: It is very nuts and bolts, Murray, and the way it has happened already, when you were getting ready to go out and have all of your meetings around the basin on the water quality agreement, John DeVan called me and said, "Hey, Dave, we are a little short of money. Can you help us on ways to air public outrage sessions?" So city halls all across the basin were made available for that kind of outreach, and I think it set a good tone of cooperation.

The other thing I would point to is with the governors and the Compact process. Sam Speck collared me about a month into the job, and he said you start showing up at these meetings because we need to have a local perspective on how this whole Compact is going to work, and we are going to have your new commissioner from Quebec who is going to be at some of the conferences. Your Commissioner Speck was there last year. And honestly, I become more and more convinced all the time that the fundamental first step of solving environmental problems in the broader context is getting the right people together in the same room in the right spirit. And that is the kind of thing when you get people working face-to-face, person to person that I think sets the stage for real long-term problem solving.

MS. FOGARTY: One last question.

MR. PETRAS: Thanks. My question is directed to all the panelists. If someone wants to put wind turbines on the Great Lakes, what type of permit, review, and approval process would you like to see?

MR. SHAFER: Currently, at least on the United States side, the two permits that would be required would be from the United States Army Corps of Engineers, which would be administered under the Clean Water Act<sup>248</sup> and the old Rivers and Harbors Act of 1899,<sup>249</sup> so they would look at both navigability and water quality and ecological impacts,<sup>250</sup> and then, whichever

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<sup>248</sup> Clean Water Act, 33 U.S.C. § 1251 et seq. (2001).

<sup>249</sup> Rivers and Harbors Act, 33 U.S.C. § 403 (2001).

<sup>250</sup> Clean Water Act § 1251(a)(1-7); Rivers and Harbors Act at § 403.

state the offshore facility was located in, if it was in Michigan, it would be under the Great Lakes Submerged Lands Act, which is a state authority for both leasing bottomlands and the permitting authority for placing structures and doing dredging or filling on the Great Lakes.<sup>251</sup> And all of the Great Lakes States and the province of Ontario have similar statutes of that nature to be able to control the construction activities, the leasing activities, the de-commissioning activities. I think the institutional framework is real strong already. I do not think there is a need for any additional legal authority. Three of us did a study three years ago for the Great Lakes Fisheries Commission on this issue to see whether there were sufficient legal authorities in the Great Lakes.<sup>252</sup> We are pretty well organized. We are pretty well ready to handle that issue. There are some more troubling issues on the outer continental shelf in terms of the mixture between federal authorities beyond three miles and then the states' jurisdiction within the three-mile territorial seas, but even that has gotten better than the statute that I made real quick fleeting reference to. In 2005, Congress clarified the authority out there.<sup>253</sup> So I think the legal authority is already pretty strong in terms of permitting leasing and governing the use of that really on both the United States side and the Canadian side.

MR. BROOKS: The only thing I would add to that just briefly, two things: First of all, early consternation with local and tribal governments by state and federal authorities; secondly, in terms of citizen involvement, early, late, and often from beginning to end from the time an application is filed, not when the authority issues the permit or denies the permit. And the other thing is, as much as a lot of people do not like it, citizen suit authority to hold people accountable for complying or not complying with their permits is a very potent thing. So I would suggest those two things.

MR. ULLRICH: And I would just reinforce one thing in Chris' presentation, and that is there is no reason why the state, that is, the public, should not make some money from this permitting. So there should be some good hard bargaining and capture what the economists would call "the risk."

MS. FOGARTY: Okay. I think we are running into lunch hour, so I do not want to keep you all. I just want to thank all our speakers again.

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<sup>251</sup> Great Lakes Submerged Lands Act, 43 U.S.C. § 1301 (2002).

<sup>252</sup> See GREAT LAKES FISHERY COMMISSION, STRATEGIC VISION OF THE GREAT LAKES FISHERY COMMISSION FOR THE FIRST DECADE OF THE NEW MILLENNIUM (2006), available at <http://www.glfc.org/pubs/SpecialPubs/SVReview2005.pdf>.

<sup>253</sup> See, e.g., Marjorie Ann Browne, *The U.N. Law of the Sea Convention and the United States: Developments Since October 2003*, CONG. RES. SERVICE (Oct. 31, 2007), available at <http://www.fas.org/sgp/crs/row/RS21890.pdf>; see also Energy Policy Act of 2005, 43 U.S.C. § 1337(p) (2007).

