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The Evolution of Canadian Water Law and Policy:  
Towards the Conservation of Sustainable Abundance

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Amidst unmistakable indications of the renewed importance of water policy in Canada<sup>1</sup> and a proliferation of reform proposals,<sup>2</sup> comparatively little attention has been devoted to the long-established legal and institutional framework that constitutes the foundations of contemporary decision-making. These complex arrangements – the accumulated product of gradual evolution and accretion - are now firmly rooted in law, practice, assumptions and attitudes that will continue to influence new policy proposals . Or, as recently expressed in a wide-ranging collection of essays on Canadian water politics, “...institutional arrangements for water develop and change over time, but earlier decisions and rules set limits on what can happen.”<sup>3</sup>

The objective of this paper is to survey the evolution of Canadian water law, policy and institutions with the hope that an understanding of the back-drop may facilitate and enrich discussion of future options in a vital area of public policy. The paper follows a chronological path from

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<sup>1</sup> Provincial Policy Statements and National Water Policy announcement in Speech from the Throne 2006

<sup>2</sup> PRI, Polis, Owen Saunders et al, Pollution Probe, Conference Board, Eau Canada, the Royal Bank of Canada whose Bluewater Project is intended to “foster a culture of water stewardship in Canada and abroad.” <http://www.rbc.com/environment/bluewater/index.html>

<sup>3</sup> Carolyn Johns and Ken Rasmussen, “Institutions for Water Resource Management in Canada,” in Mark Sproule-Jones, Carolyn Johns and B. Timothy Heinmiller eds. *Canadian Water Politics*, (McGill-Queens UP, 2008), 63.

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Confederation to the present decade, an approach that reflects water law and policy as the cumulative result of historic decisions whose continuing influence will not readily be overcome or eliminated by the next generation of innovation.

### ***1860s: The Confederation Era***

The nineteenth century rafts and timber slides of the Ottawa River valley and other forest regions of central and eastern Canada symbolized the continuing contribution of Canadian waterways to transport and the economy.<sup>4</sup> Fisheries, already extensively regulated prior to the *British North America Act*,<sup>5</sup> also became the subject of important federal legislation very shortly after Confederation. The *Fisheries Act* of 1868 addressed both the regulation of fishing and the protection of fisheries, with the latter goal achieved through such means as prohibitions on “prejudicial or deleterious substances” that could result in injuries to fishing grounds or river pollution.<sup>6</sup> Both subjects, navigation and fisheries, found their place in the confederation arrangements and have been a persistent source of conflict in the legal order.<sup>7</sup> A proposal attached to the federal stimulus budget of 2009 to exempt certain waterways from environmental assessment by revising the notion of navigability, for example, not only provoked severe critical

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<sup>4</sup>A.R.M. Lower, *Great Britain's Woodyard: British North America and the Timber Trade, 1763-1867* (McGill-QueensUP 1971) Sandra J. Gillis, *The Timber Trade in the Ottawa Valley, 1806-54* (Parks Canada: Manuscript Report No. 153, 1975); Graeme Wynn, *Timber Colony: A Historical Geography of Early Nineteenth Century New Brunswick* (UTP, 1981).

<sup>5</sup> Margaret Beattie Bogue, *Fishing the Great Lakes: An Environmental History, 1783-1933* (University of Wisconsin Press) 179-180.

<sup>6</sup> An Act for the Regulation of Fishing and Protection of Fisheries, S.C. 1868, c. 60, s. 14.

<sup>7</sup> LaForest, *Water Law*

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reaction but reminded us of the enduring legal, cultural, and economic significance of traditional water uses.<sup>8</sup>

### ***1870s: Sawmills and Waterworks***

Nineteenth-century industrial activity was concentrated around waterways. These not only facilitated transportation, but also provided mechanical power. Water power sites, (though not yet utilized for hydro-electric power production,) were particularly controversial, with access to the flow regulated on the basis of riparian rights, a variety of contractual arrangements, and legislative intervention.<sup>9</sup>

Water pollution also attracted attention. Lumber mills were particularly problematic as sawdust and associated debris contributed to three adverse impacts: this material impeded navigation; it interfered with fish and fish habitat; and its decomposition involved public health risks.<sup>10</sup> Even before the relevant scientific processes were understood, a national effort in the form of federal legislation was directed to the water quality problem. In 1873, parliament prohibited the discharge of mill waste, including sawdust, into navigable waterways. To the extent that exemptions were preserved for the benefit of industry, applicants were required to demonstrate that “the public interest would not be unjustly affected.”<sup>11</sup>

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<sup>8</sup> See, Senate hearings on new EA streamlining; or RedChris Mine decisions on mine tailings and fisheries protection

<sup>9</sup> *Miner v. Gilmour*, [1858] 14 E.R. 861. For a classic study of nineteenth-century water power and navigation, see Willard Hurst, *Law and Economic Growth: The Legal History of the Lumber Industry in Wisconsin, 1836-1915* (Harvard University Press, 1964)

<sup>10</sup> John P.S. McLaren, “The Tribulations of Antoine Ratté: A Case Study of the Environmental Regulation of the Canadian Lumbering Industry in the Nineteenth Century,” (1984) 33 *University of New Brunswick Law Journal*, 221

<sup>11</sup> An Act for the Better Protection of Navigable Streams and Rivers, S.C. 1873, c.65, s.4; Flushing,44

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Simultaneously, the 1870s witnessed transformational changes in the provincial legislative framework for municipal water supply and finance, as private water companies were sometimes acquired by local governments. In Toronto, for example, city council acquired control of a water system previously developed by Albert Furniss, a Montreal businessman.<sup>12</sup> Communities elsewhere assumed the civic challenge of delivering water through a network of pipes that replaced wells and other forms of privately-sponsored water systems with public infrastructure. Competing conceptions of water as an economic or public good remain sensitive today, as a Winnipeg initiative to engage the private sector in renewal of aging infrastructure has sparked renewed national debate.<sup>13</sup> And although private wells largely disappeared from the urban landscape, wells, groundwater and legal principles affecting this source of supply continue to influence the policy agenda.

### ***1880s: Confederation re-constituted***

Judicial interpretation of the constitution substantially transformed the original Confederation arrangements during the late nineteenth century, with controversies over liquor licenses and insurance regulation among the most prominent illustrations.<sup>14</sup> But the power of water to erode the constitutional structure should not be over-looked.<sup>15</sup>

Prime Minister John A. Macdonald clashed politically and in the courts with Premier Oliver Mowat over Ontario legislation concerning access to valuable river facilities that had been strategically installed to assist

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<sup>12</sup> Elwood Jones and Doug McCalla, "Toronto Waterworks, 1840-1877: Continuity and Change in Nineteenth Century Toronto Politics," *Canadian Historical Review* 60 (1979), 302; Toronto Water Works Act, S.O. 1972, c.79

<sup>13</sup> "No such thing as free water" *Globe and Mail* 21 July 2009.

<sup>14</sup> Saywell, John T. *The Lawmakers: Judicial Power and the Shaping of Canadian Federalism* (UTP, 2002)

<sup>15</sup> *McLaren v. Caldwell* (1882), 8 S.C.R. 435

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the timber drive. From the water management perspective, even though the legal clash between lumbermen Caldwell and McLaren reflected a significant conflict between private rights and public interests in Precambrian waterways, the limited scope of those public interests is striking. In part because the lumber industry contributed substantially to government revenues, officials typically equated the industry's well-being with the public interest.

With waterways viewed largely as highways in an economic system, hardly any consideration was given to the environmental or ecological implications of forest industry practices. Thus, overlooked and poorly understood, forest operations altered runoff patterns and in-stream flows, while river improvements that accommodated timber drives accelerated the scouring of riverbeds and shorelines. As bark, sunken logs and discarded slabs decomposed, these materials placed heavy demands on the oxygen supplies of inland waterways.<sup>16</sup>

Simultaneously, especially in maritime Canada, judicial decisions concerning fishing rights along non-navigable waterways undermined federal licensing arrangements despite apparently explicit constitutional foundations.<sup>17</sup> Eastern provinces found themselves called upon to establish or re-introduce fisheries regimes alongside the federal program.<sup>18</sup> The federal government, however, consolidated its authority over navigation and shipping both in the courts and by means of the *Navigable Waters*

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<sup>16</sup> Outwater, *Alice Water: A Natural History*, ch. 7 (BasicBooks, 1996).

<sup>17</sup> *R. v. Robertson*

<sup>18</sup> *Globe* 2 May 1882, "The Question of Riparian Rights"

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*Protection Act*, a statute whose constitutional ambit has been repeatedly tested and explored.<sup>19</sup>

***1890s: Fisheries, Irrigation and Water Power***

Continuing uncertainty concerning regulatory control of Canadian fisheries was addressed through an elaborate reference case to the courts. The outcome, confoundingly imprecise in its operational implications, was widely understood to have further extended provincial authority. Commenting on the SCC decision, the *Globe* determined that: “The Dominion gets decidedly the worst of it.” Ottawa could “protect, preserve and propagate fish,” while the Provinces enjoyed “the sole right to catch the fish so preserved and protected.” The durability of this configuration was doubtful, “for the Dominion government can hardly be expected to expend considerable sums in maintaining hatcheries to put fish into the great lakes that become the property of the Province of Ontario whenever they enter the water.”<sup>20</sup>

The Judicial Committee decision simultaneously affirmed provincial proprietary rights in the fisheries while upholding federal legislative jurisdiction.\* The administrative re-organization necessitated by the outcome was effected very shortly afterwards on the basis of a federal-provincial conference. Federal regulatory authority over the manner of fishing, (including times and seasons,) remained intact while the provinces assumed control of leasing.<sup>21</sup>

In the 1890s, as railway building within the framework of the National Policy encouraged western settlement, competition for access to prairie

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<sup>19</sup> Navigable Waters Protection Act

<sup>20</sup> ‘The Fisheries Judgment,’ 15 October 1896

<sup>21</sup> *Globe* 23 June 1898

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water supplies and the introduction of a variety of legal principles by miners, migrants and Mormons, culminated in the *NW Irrigation Act*.<sup>22</sup> By vesting ownership of water in the crown, this legislation, established western Canadian water law on a different footing than in the original federating provinces where a common law riparian regime and its civil law counterpart held sway.<sup>23</sup>

The 1890s also witnessed accelerating efforts to employ emerging technology to secure hydro-electric power from Niagara Falls. Through recognition of state ownership and supervision of water power developments, the Niagara initiative foreshadowed a flurry of new water power leases. Privately-produced power, often under American ownership, remained the norm for some time, although Ontario's Hydro Electric Power Corporation emerged under the leadership of Adam Beck in the early 1900s.<sup>24</sup> Environmentally, hydro power developments profoundly altered the ecological processes of major waterways through damming and diversion, and often generated new conflicts with other river users such as the lumber industry.<sup>25</sup> Ironically, improved technological capacity to transmit hydro-electric power allowed twentieth-century Canadians to live at growing distances from river-based power sites, even as they became more dependent upon those waterways for their domestic comfort and convenience.

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<sup>22</sup> David R. Percy, "Water Law of the Canadian West: Influences from the Western United States," in J.P.S. McLaren et al eds. *Law for the Elephant, Law for the Beaver* (Regina, 1992), 274-291. On the regulation and administration of water within "Dominion Lands," see Chester Martin, *Dominion Lands Policy*, Toronto, 1973, and Kirk N. Lambrecht, *The Administration of Dominion Lands, 1870-1930* (Canadian Plains Research Center, 1991)

<sup>23</sup> Gerard LaForest; Michelle Cumyn

<sup>24</sup> John T. Saywell, "One More River: An Essay on the History of Hydro Electric Construction," (Economic Council of Canada, 1975); Nelles, H. V. *The Politics of Development: Forests, Mines and Hydro-electric Power in Ontario, 1849-1941* (Macmillan, 1974) 32-9. PAO, T.W.Gibson Papers, Luigi Einaudi, "An Example of National Legislation Applied to Water Power."

<sup>25</sup> See, for example, PAO, Attorney General's Papers, RG 4-32, 1921, File 1712, Angus MacMurchy, writing on behalf of the CPR to Attorney General W.E. Raney, 29 September 1920

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***1900s: International Waters, Industry and Irrigation***

International water issues figured prominently alongside federal-provincial controversies on the public agenda of the early twentieth century. The city of Chicago reversed the flow of the Chicago River away from Lake Michigan in 1900, initiating the diversion of Great Lakes waters out of the basin and precipitating a century of multi-jurisdictional challenges. The Chicago diversion, combined with other irritants related to navigational and power concerns elsewhere in the Great Lakes system and disputes over access to the waters of western rivers, notably the Milk/ St. Mary system that worked its way back and forth across the 49<sup>th</sup> parallel between Montana and Alberta, encouraged a more systematic consideration of water management institutions, culminating in the *Boundary Waters Treaty* of 1909<sup>26</sup> and the International Joint Commission.

Meanwhile, the installation of municipal sewerage infrastructure foreshadowed unparalleled transformation of the urban waterfront.<sup>27</sup> Designed to remove organic human wastes, these conduits equally facilitated the waterborne removal of industrial effluent and chemicals from manufacturing establishments with largely unintended consequences in the form of contamination and disease. These impacts prompted severe, yet rarely enforced legislative intervention. One 1906 enactment, for example, introduced a general prohibition: “No garbage, excreta, manure, vegetable or animal matter or filth shall be discharged into or deposited in any of the

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<sup>27</sup> Leo G. Denis, *Water Works and Sewerage Systems of Canada*, (Commission of Conservation, Ottawa, 1916)



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lakes, rivers, streams or other waters in Ontario, or on the shores or banks thereof.”<sup>28</sup>

While prominent waterworks engineers asserted that the diluting effect of the Great Lakes was such that “there is no chance of infection being carried from one of the great cities to another,”<sup>29</sup> former U.S. President Theodore Roosevelt echoed his contemporaries in the progressive era by insisting that “civilized people should be able to dispose of sewage in a better way than by putting it into drinking water.”<sup>30</sup> The International Joint Commission was involved in the pollution file very shortly after its creation. The IJC investigation refuted the engineering complacency while circumventing the President’s challenge. Public health could now be protected by means of water treatment through chlorination, a subject of experimentation from the 1890s and then successfully introduced to North America in 1908 at Jersey City. Two years later, Toronto began chlorination of the municipal supply.<sup>31</sup> The mechanical or chemical protection of drinking water thereafter accommodated contamination of surface waters into which sewage and industrial waste would continue to flow for many decades with only modest attempts at treatment.<sup>32</sup>

### ***1910s: Conservation and Wartime Inventory***

The Commission of Conservation launched by Prime Minister Wilfrid Laurier under the leadership of Sir Clifford Sifton addressed water issues of the Great War era alongside forests, mines, agriculture and resources. What

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<sup>28</sup> Statute Law Amendment Act, S.O. 1906, c. 19.

<sup>29</sup> Allen Hazen, *Clean Water and How to Get It*, 2d. (New York, John Wiley, 1914) 32

<sup>30</sup> “Mr. Roosevelt and the People,” *Outlook* 96 (1910), 1. See generally, Samuel P. Hays, *Conservation and the Gospel of Efficiency* (Harvard University Press, 1959).

<sup>31</sup> Benidickson, *The Culture of Flushing*, 229

<sup>32</sup> On the persistent need for investment in wastewater treatment around the Great Lakes, see Office of the Auditor General of Canada, *Status Report of the Commissioner of the Environment and Sustainable Development*, Ch. 7 Areas of Concern in the Great Lakes Basin (March 2008)

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was the hydro-electric power production potential of Canada?<sup>33</sup> How many Communities had installed municipal water supply systems? How many were sewerred? And, how many of those sewerred communities were treating their wastes? The limitations of local action and the inter-jurisdictional dimensions of water quality and supply were also examined, notably through the work of the Commission's public health committee.

According to one participating engineer, "... Ontario may have the most stringent laws relative to water pollution, and after putting its house in order would be yet dependent upon the action taken by ... Quebec relative to the pollution of the Ottawa River whose banks are interprovincial."<sup>34</sup>

Canada's Commission of Conservation conducted its work with intermittent reference to a businesslike principle equally characteristic of American progressivism: "Each generation is entitled to the interest on the natural capital, but the principal should be handed on unimpaired."<sup>35</sup> The extent to which this insight anticipates sustainable development may be debated, but elements of overlap are certainly in evidence.

In the midst of perilous typhoid outbreaks across North America, Senator Napoleon Belcourt championed amendments to the *Navigable Waters Protection Act* to safeguard Canada's waterways from sewage contamination. In so doing – ultimately without success – Belcourt, (well in advance of the *Universal Declaration on Human Rights* and its derivative instruments,) asserted a powerful claim that is still under advisement: "the

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<sup>33</sup> H.G. Acres, *The Water Powers of Canada: The Province of Ontario* (1915)

<sup>34</sup> T. Aird Murray, *The Prevention of Pollution of Canadian Surface Waters*, (Ottawa, Commission of Conservation, 1912) 7

<sup>35</sup> *Canada's Commission on Conservation (in 1915)*. Samuel P. Hays, *The Gospel of Efficiency*

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individual and the public as well, have an inalienable and indefeasible right to pure water.”<sup>36</sup> [now see UNGA resolution 2010]

Though not elevated to the level of a right, international consideration of water quality and public health occupied the International Joint Commission in its first boundary waters pollution reference, launched in 1912. Each and every Great Lakes municipality, the IJC reported, “avails itself of the opportunity to discharge its sewage untreated into these international waterways.”<sup>37</sup> In addition to urban wastewater, investigators addressed the impact of thousands of vessels navigating the Great Lakes and connecting waters. Sewage discharged from these vessels while in transit or in lakeshore harbours “very materially” contributed to pollution in both Canada and the U.S.<sup>38</sup>

### ***1920s: Pulp and Paper, and Pollution***

Public agencies such as Adam Beck’s HEPC as well as private companies vigorously pursued major water power projects during the 1920s.<sup>39</sup> However, the implications of new power generation facilities for navigational uses accentuated constitutional wrangling with proposed developments involving the Lake of the Woods-Winnipeg River system, the Ottawa River and the St. Lawrence among the most contested.<sup>40</sup> Federal officials sought to establish that legislative impacts on hydro-power were merely ‘incidental’ in constitutional terms to federal authority over

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<sup>36</sup> Canada, Senate Debates, 2 March 1910, 335

<sup>37</sup> IJC, Progress Report of the IJC on the Reference by the United States and Canada in “The Pollution of Boundary Waters” (1914), 21.

<sup>38</sup> IJC Progress Report, 3

<sup>39</sup> H.V. Nelles, *The Politics of Development*; John H. Dales, *Hydroelectricity and industrial development: Quebec, 1898-1940* (Harvard UP, 1957). For federal records concerning western Canadian water powers, see PAC for the Water Power Division Files, 1901-1944 of the Dominion Water Power and Reclamation Service.

<sup>40</sup> Christopher Armstrong, *The Politics of Federalism*, Ch. 8, “Water-power and the Constitution,” (University of Toronto Press, 1981)

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navigation while their provincial counterparts endeavored to secure recognition as ‘owners’ of the water resource in order to insulate themselves against perceived federal interference.<sup>41</sup> In a reference decision firmly anchored in the proposition that “it depends,” Canada’s Supreme Court offered very little illumination: “The extent to which the provincial legislatures may be restricted in, or excluded from, the control of provincial property by the enactment of Dominion laws operative under section 91 cannot be defined in the abstract.”<sup>42</sup>

At the municipal level, the use of chlorination to treat water supply expanded during the 1920s. With this ‘magic bullet’ more generally available, public health officials disengaged from a half-century struggle on the environmental front to protect sources of water supply; it seemed much less necessary to worry about effluent discharges to natural waterways when chemical treatment at the intake valve promised more affordable security. Public health concerns were therefore largely ‘decoupled’ from the issue of ambient water quality, a policy assumption that remained essentially unquestioned until the Walkerton tragedy highlighted the virtues of a multi-barrier approach involving “source to tap” protection of drinking water.<sup>43</sup>

The judiciary, for its part, offered mixed signals. “Pollution is always unlawful,” Justice Rinfret asserted in 1928, “and, in itself, constitutes a nuisance.” Simultaneously, however, the court acknowledged the undeniable necessity of sewers and drains, even confirming that their environmental

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<sup>41</sup> Chris Armstrong, 167

<sup>42</sup> Reference Re Waters and Water Powers, [1929] S.C.R. 200 at 213. Mackenzie King regarded the court’s answer as “to say the least, indecisive;” to other parliamentarians, the reference case had been “futile.” House of Commons, Debates, 27 February 1929, 526; 30 May 1930, 2399.

<sup>43</sup> Gottlieb, Forcing the Spring

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impacts might actually enjoy the protection of authorization where “the statute expressly so states.”<sup>44</sup>

***1930s: Diversion, Depression and Drought***

Drought in western Canada produced desperate economic conditions for those engaged in agriculture, prompting heightened official attention to water shortages. The *Prairie Farm Rehabilitation Act* specifically sought out: “the best methods to be adopted to secure the rehabilitation of the drought and soil drifting areas in the Provinces of Manitoba, Saskatchewan and Alberta, and to develop and promote within those areas systems of farm practice, tree culture, water supply, land utilization and land settlement that will afford greater economic security...”<sup>45</sup>

The response encompassed new programs to enhance water storage or to regularize flows. Moreover, as the Natural Resources Transfer arrangements of 1930 had assigned more direct responsibilities to western provinces for lands and resources, regional legislators became directly involved in water management and allocation.<sup>46</sup> Building upon some of the foundations of the earlier *NW Irrigation Act*, Alberta and Saskatchewan assumed legislative responsibility for establishing a water law framework adapted to local conditions.<sup>47</sup>

For its part, the federal bureau of mines - at the instigation of industrial interests ranging from the pulp and paper sector to soap manufacturing - embarked on a survey of “industrial waters” in 1934. The description reflected understanding that “some waters are much better

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<sup>44</sup> *Groat v. City of Edmonton*, [1928] S.C.R. 522; see also *Fieldhouse v. Toronto*, (1918) 43 O.L.R. 491

<sup>45</sup> *Prairie Farm Rehabilitation Act*, S.C. 1935, R.S.C. 1985, c. P-17, s. 4

<sup>46</sup> On the confirmation of the transfer of waters and water powers in 1938, see Percy, *Water Rights Legislation in Canada*, 11

<sup>47</sup> *Water Rights Act*; *Water Resources Act*.

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adapted for certain industries than others.”<sup>48</sup> Previous disregard was widely attributed to the fact that “water is an abundant and cheap commodity and its impurities, in most cases, are not easily detected except by chemical analysis.”<sup>49</sup> The study sought to identify a wide range of impurities capable of interfering with the quality of manufactured products in such sectors as paper, sugar, textiles and leather goods.<sup>50</sup> Purification and treatment techniques extending from chlorination through aeration to water softening were increasingly sophisticated and widespread. However, good intentions about expanding waste water treatment through the adoption of generally available techniques such as activated sludge were often abandoned, or at least deferred, during the depression era.

Ontario’s energy requirements during the 1930s drew attention to opportunities for power generation along northern rivers, several of which also appeared to be prime candidates for diversion.<sup>51</sup> Viewed through the provincial lens, power generation and river diversion were internal matters. Yet certain possible diversions, because of their implications for flows and levels within the Great Lakes, were inevitably intertwined with boundary waters and existing international power-sharing arrangements.

The broader prospects for economic development along the St. Lawrence presented the overall setting for international negotiations, federal-provincial friction and inter-provincial acrimony. As the depression round of St. Lawrence negotiations foundered, (as had Canada-US efforts to

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<sup>48</sup> Leverin, Harald A. *Industrial Waters of Canada, Report on Investigations, 1934 to 1940* (Ottawa, 1942), 8

<sup>49</sup> Leverin, 8

<sup>50</sup> Leverin, 11-21.

<sup>51</sup> **Error! Main Document Only.**Correspondence and Documents Relating to St. Lawrence Deep Waterway Treaty 1932, Niagara Convention 1929, and Ogoki River and Kenogami River (Long Lake) Projects and Export of Electrical Power (Ottawa, 1938)

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negotiate over water power, pollution, and navigation along the Great Lakes in the previous decade,) Ontario independently pursued diversions of the Kenogami (1939) and Ogoki (1943) rivers in a quest for electricity, access to timber resources, and provincial revenues. Substantially larger diversions were subsequently implemented elsewhere across the country.<sup>52</sup>

The sensitive nature of international water power or hydro-electricity exports also emerged more clearly in the depression era, although the potential for controversy had been recognized from the outset.<sup>53</sup> In 1937, when Montreal Light, Heat and Power offered surplus electricity to the Aluminum Company of America, the Quebec government readily approved the sale subject to conditions regarding allocation of the proceeds and retention of a high proportion of employment opportunities in construction. But when federal approval of the export proposal was not immediately forthcoming, company officials sought authority for “disposing, temporarily, of some surplus power and bringing into the Dominion of Canada a substantial amount of money which would otherwise be lost.”<sup>54</sup> Safeguards in the form of one-year license terms failed to alleviate the national concerns that were clearly articulated in government memoranda: “The fear in Canada was that if an arrangement of this kind were consummated and large blocks of Canadian power from the St. Lawrence were utilized in the United States over an extended period, that international complications would arise

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<sup>52</sup> Day, J.C. and F. Quinn, *Water Diversion and Export: Learning from the Canadian Experience* (Waterloo, 1992); F. Lasserre, “Drawers of Water: Water Diversions in Canada and Beyond,” Ch. 7 in *Eau Canada*, 143-162.

<sup>53</sup> Correspondence and Documents Relating to St. Lawrence Deep Waterway Treaty 1932, Niagara Convention 1929, and Ogoki River and Kenogami River (Long Lake) Projects and Export of Electrical Power (Ottawa, 1938). Legislation addressing power exports dates from early in the century: The Electricity and Fluid Exportation Act, S.C. 1907, c. 16. See generally, A.E. Dal Grauer, “The Export of Electricity from Canada,” in R.M. Clark ed. *Canadian Issues: Essays in Honour of Henry F. Angus* (University of Toronto Press, 1961)

<sup>54</sup> J.S. Norris, President, MLHPC to PM 10 Aug 1937, pp 63-4

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if Canada ever attempted to recover the power.”<sup>55</sup> Later in the decade, proposals to export power from Ontario encountered similar objections which were eventually echoed in the context of water exports.

The twentieth century hydro-electricity boom entailed adverse consequences for waterways, and in many instances for the traditional inhabitants of remote regions of the country. Aboriginal settlements were displaced; harvesting grounds and hunting territories were inundated and destroyed, with much of this activity concentrated in the 1930s when Ontario’s HEPC took advantage of improved transmission technology to expand aggressively into the northeastern region of the province.<sup>56</sup> Litigation over flooding claims persists today.

#### ***1940s: Out of the War and into the Suburbs***

Even before the end of wartime hostilities, public officials were at work on plans for post-war reconstruction. From the water policy perspective this entailed the revival of schemes to enhance the potential of the St. Lawrence for navigation and power. Following pioneering experiments, notably along Ontario’s Grand River, a broader initiative was directed towards watershed-based conservation authorities with a range of responsibilities.<sup>57</sup> And, notwithstanding the anticipated explosion in automobile travel - in fact, largely because of it – policy makers embraced anew the recreational potential of Canada’s lakes, rivers and streams.

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<sup>55</sup> Export of Power, memo accompanying letter from TH Hogg, chairman HEPC to Hepburn, 20 November 1937] pp69-71

<sup>56</sup> Jean L. Manore, *Cross-Currents: Hydroelectricity and the Engineering of Northern Ontario* (Wilfrid Laurier UP, 1999) 95-110; for comparable developments later in western Canada, see James B. Waldram, *As Long as the Rivers Run: Hydroelectric Development and Native Communities in Western Canada* (University of Manitoba Press, 1988).

<sup>57</sup> Conservation Authorities Act, 1946. A.H. Richardson, *Conservation by the People: the history of the conservation movement in Ontario to 1970* (University of Toronto Press, 1974); B. Mitchell and D. Shrubsole, *Ontario Conservation Authorities: Myth and Reality* (University of Waterloo, Department of Geography, 1992).



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Yet that recreational potential was threatened by industrial activity, including – ominously – the burgeoning pulp and paper sector. Fishermen and camp owners along the lower Spanish River vigorously protested the impact of the Kalamazoo Vegetable and Parchment Company paper mill that re-opened in 1946 upstream from their more modest operations and facilities. The manufacturing process rendered Spanish waters unfit for swimming; fish were killed or driven elsewhere, and wild-rice beds were destroyed. Despite strong judicial sympathy for the riparian victims of industrial effluent, the government of Ontario ultimately intervened to facilitate the continued operation of the KVP mill.<sup>58</sup>

Federal-provincial financing enabled dramatic suburban expansion during the 1950s. Generations of rhetoric affirming the responsibility of local governments for water and sewerage services were overlooked in the face of formidable capital costs, and the financial transfer programs that remain controversial in Canada in relation to education and health were then implicated in the massive expansion of water and sewage infrastructure servicing new suburbs across Canada.<sup>59</sup> Post-war appliances – dishwashers and clothes washing machines, for example, – utilized, (perhaps over-utilized,) that infrastructure and furthered the transfer to the environment of domestic ‘residuals’ including phosphate-based detergents. These costs had not been anticipated.

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<sup>58</sup> McKie et al v. KVP Co. Ltd, [1948] 3 D.L.R. 201; KVP v. McKie, [1949] S.C.R. 698; P. Boyer, A Passion for Justice: The Legacy of James Chalmers McRuer (Toronto: Osgoode Society for Legal History, 1994) 228-235. KVP Act; Elizabeth Brubaker; Paul Emond, “Environmental Law and Policy: A Retrospective Examination of the Canadian Experience,” in Ivan Bernier and Adreé Lajoie eds. Consumer Protection, Environmental Law and Corporate Power (University of Toronto Press, 1985) 129-135.

<sup>59</sup> Canada, Royal Commission on Canada’s Economic Prospects, 1957, *Final Report* (Ottawa: Queen’s Printer).

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Between 1947, when heavy-duty detergent formulations came to market, and 1970, annual sodium tripolyphosphate production rose from a hundred thousand tons to over a hundred million tons.\* [Where?] Passing through most treatment facilities and flowing without impediment through the sewerage conduits of communities still lacking treatment plants, phosphates nourished algal growth, stimulating it to excess in a process known as eutrophication. They thus undermined the quality of the aquatic environment, particularly in vulnerable waters such as shallow Lake Erie.<sup>60</sup>

The condition of Lake Erie and other boundary waters prompted the governments of Canada and the United to submit references to the IJ C in 1946 and again in 1948, leading to a comprehensive report on boundary waters pollution in 1950. The document, including recommended “Objectives for Boundary Waters Quality Control,” contributed only modestly, however, to immediate reforms.<sup>61</sup> A valiant effort by Toronto MP Rodney Adamson to protect navigable waters in the aftermath of devastating oil pollution of Lake Ontario during the summer of 1949 was no more successful than Napoleon Belcourt’s earlier foray into water quality. ‘Commendable idea, poor execution’ was the ostensible criticism of several fellow parliamentarians, although a few were sufficiently candid to admit that they were concerned that lakeshore communities would no longer be able to dump sewage if the legislation was enacted.<sup>62</sup>

### ***1950s: Administrative Governance at Mid-Century***

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<sup>60</sup> A.S. Davidsohn and B. Mildwidsky, *Synthetic Detergents*, 7<sup>th</sup> ed. (New York: Wiley, 1987), 4-5; Arnold Reitze Jr., *Environmental Law*, 2 Vols. (Washington, DC, 1972) vol. 1, pt. 4, 26.

<sup>61</sup> L.M. Bloomfield and G.F. Fitzgerald, 1958, *Boundary Water Problems of Canada and the United States* (Toronto: Carswell), p. 36.

<sup>62</sup> “Anti-Pollution Bill Defeated in Commons,” *Globe and Mail* 7 October 1949

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Provincial agencies with responsibility for pollution control were in place across the country by the 1950s, with a number of their forebears pre-dating this era. These were customarily constituted within or in conjunction with departments of health, although organizations dedicated to water quality or management were beginning to appear. Notable examples included British Columbia's Pollution Control Board and the Ontario Water Resources Commission.<sup>63</sup> Quebec's Legislative Assembly, recognizing that "pollution of the water of rivers and lakes is a serious danger to public health," established a committee to investigate the problem in 1955.<sup>64</sup>

No less a figure than Saskatchewan Premier T.C. Douglas urged Prime Minister St. Laurent to take preventive action against future pollution of the North Saskatchewan River. "Had the Criminal Code made adequate provisions for the prevention of the pollution of streams by the careless disposal of waste chemicals it is entirely likely that the present pollution of the North Saskatchewan River would not have occurred." Alternatively, Douglas observed, had there been "an agency... with authority to prevent any industrial plant from putting any effluent into a river, it is again unlikely that this pollution would have occurred or at least unlikely that the pollution would have continued over such a period of time."<sup>65</sup> Despite such entreaties, provincial responsibility for water quality initiatives remained the default position consequent upon the federal government's ongoing disinclination to address the matter comprehensively.

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<sup>63</sup> J.R. Menzies in *Resources for Tomorrow*, 358. Pollution of Waters (Prevention) Act, RSS 1965, ch.352;; Public Health Act, RSA 1955, ch.255; Pollution Control Act, SBC, 1956, ch. 36; Pollution of Waters Prevention Act, RSM 1954 ch.201.

<sup>64</sup> Water Pollution Act, S.Q. 1955-56, ch. 11

<sup>65</sup> PAC, RG 12, Volume 12, File No. 8352-9, "Ad Hoc Interdepartmental Committee on Water Pollution in the Prairie Provinces (1954)," T.C. Douglas to L. St. Laurent, 27 April 1954

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Government officials must be accorded considerable credit for pursuing mid-century water management initiatives, but forerunners of Canada's environmental public interest groups were also already active during the 1950s in promoting political concern. The Conservation Council of Ontario, for example, intervened in the 1955 election to encourage candidates to address water pollution as "a concern of extreme urgency."<sup>66</sup> Such organizations were certainly not alone.

[For Revision: Infrastructure and spending were drivers:

- 1) St Lawrence Seaway – Max Cohen in Shaddock @ notes 16-27
- 2) Gordon Commission; Water and sewerage transfer payments - <sup>67</sup>]

#### ***1960s: Water Resources and the Export Debate***

Environmental awareness and citizen efforts to stimulate laggard governments into action are widely associated with the publication of Rachel Carson's *Silent Spring* in 1962. Popular interest may well have heartened government officials who had been labouring on the environmental file. In this regard prominent remarks of the Hon. Walter Dinsdale, Minister of Northern Affairs and National Resources in the Conservative government of John Diefenbaker, are noteworthy. In 1961 Dinsdale greeted delegates to the Federal-Provincial *Resources for Tomorrow* Conference by noting that they had convened "to seriously discuss the wise management of renewable resources; not with a view to immediate personal gain, but rather in the interest of generations yet unborn..." Dinsdale not only subjected resources management, water included, to scrutiny from the perspective now described

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<sup>66</sup> F.H. Kortright, President, Conservation Council of Ontario, to 'Mr. Candidate' 27 May 1955, Ontario Archives, Pollution Control Board Minutes, 1951-55, RG84-12-0-146 R.C. Box E 196

<sup>67</sup> J. Read, 2000, "Managing water quality in the Great Lakes basin: Ontario border municipalities, Queen's Park, and Ottawa confront sewage pollution control, 1951-60," in L. Chambers and E-A Montigny, eds. *Ontario Since Confederation: A Reader* (Toronto: University of Toronto Press), p. 354

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as inter-generational equity, he also welcomed the public discussion stimulated by the conference as “an encouraging development in the Canadian body politic” on the grounds that “conservation is a moral issue.”

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Proposals to re-allocate water supplies on a continental scale were actively touted during the 1960s in such forms as NAWAPA and the GRAND Canal scheme.<sup>69</sup> U.S. Senator Frank Moss of Utah celebrated the NAWAPA proposal as “a continent-wide plan for the collection, redistribution, and efficient utilization of waters now running off to the seas totally unused or only partially used.”<sup>70</sup> For its part, the GRAND Canal plan called for the conversion of James Bay into a freshwater lake to supply water that would be pumped and channeled southward to reach Lake Huron via the French River. It would serve, accordingly, as “a new mid-continent, water relay and replenishment transfer grid.”<sup>71</sup> The major challenge, according to the chief proponent, lay in the willingness of government representatives “to examine and study the mutual benefits that both of these neighbouring countries can gain from this comprehensive and integrated approach to North American water management.”

There was some political sympathy for these remarkable visions. Indeed, the then-Minister of Northern Affairs and National Resources argued in 1964 that ‘we in Canada are especially fortunate in our water

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<sup>69</sup> Scott, A., J. Olynyk, and S. Renzetti, “The Design of Water Export Policy,” in John Whalley ed. *Canada’s Resource Industries and Water Export Policy* (Toronto, 1986); John K. Grant, “Against the Flow: Institutions and Canada’s Water-Export Debate,” Ch. 6 in *Canadian Water Politics*, 158-162; Marc Reisner, *Cadillac Desert: the American West and it’s Disappearing Water* (Penguin Books, (revised) 1993) 486-495; Richard C. Bocking *Canada’s Water: For Sale?* (Toronto, 1972).

<sup>70</sup> Frank Moss, “Toward a North American Water Policy,” in Claude E. Dolman, ed., *Water Resources of Canada* (University of Toronto Press for the Royal Society of Canada, 1967) 4-7

<sup>71</sup> Thomas W. Kierans, “The GRAND Canal Project – A Large Scale Water Recycling Concept” (paper presented at the Futures in Water Conference, Toronto, 13 June 1984)

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resources; our job now is to redirect these resources before they reach the ocean<sup>72</sup>, while the Leader of the Opposition agreed that ‘these northern rivers... will have to be reversed and their waters brought into those portions of our country which need them.’<sup>73</sup>

It fell to General A.G.L. McNaughton, then in his eightieth year, to reply to a presentation by Senator Moss at the 1966 annual meeting of the Royal Society of Canada. McNaughton denounced NAWAPA as “a monstrous concept, a diabolic thesis.”<sup>74</sup> McNaughton presented an important corollary to the model of resource use that simply assumed an abundant water supply to be some providential and eternal blessing: “It is our responsibility to use these resources with discretion, and to treasure the more basic of them for the generations of Canadian citizens who will come after us is a paramount responsibility.” (at p. 16)

The critical voice of a youthful John N. Turner emerged in the same era. Turner, then a Member of Parliament and Parliamentary Secretary to the Minister of Northern Affairs and National Resources addressed a Washington audience on his assigned topic, “North American water resources development.” Cautioning that the concept of North American water was deceptive, he observed that it “sounds suspiciously like the suggestion that the waters of North America should be considered as a ‘continental water supply.’” Canadians, he insisted, say “there is Canadian water, and there is American water ... but we do not like the new vocabulary which calls our water ‘continental water.’”

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<sup>72</sup> [Commons. Debates 5 May 1964 at 2932](#)

<sup>73</sup> [ibid at 2937](#)

<sup>74</sup> McNaughton, AGL, "A Monstrous Concept, a Diabolic Thesis" in Dolman ed.

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Turner then directly confronted the conventional rationale for water diversion associated with ‘shortages’ in the U.S. West and Southwest: Given extraordinary quantities of water utilized for irrigation in the U.S. southwest, Turner wondered whether there was “a shortage of water - or an excess of consumptive use.” Leaving that question for his American audience to resolve, he voiced suspicion that “much irrigation water is ineffectively used,” and urged careful consideration of the advantages of greater efficiency in irrigation use “in releasing water for household, commercial, or industrial purposes.”<sup>75</sup>

A few years later, Canada’s Science Council did little to discourage the possibility of alleviating limitations in American water supply by stating that Canada “may contain one third” of the world supply of fresh surface water, highlighting the “lavish” per capita supply, and pointing to conditions of “superabundance in many parts” of the country.<sup>76</sup> On the other hand, the Science Council appropriately underlined the need for research – “detailed estimates on future supply and demand” – as one foundation for decision-making about the export of fresh water from Canada.<sup>77</sup>

### ***1970s: National Watersheds***

As the 1960s ended, the *Canada Water Act* was under development. This timely, yet controversial, flagship measure never met the aspirations of its proponents. Its influence, for example, on the continuing challenge of broadening the perspective of decision-makers to the basin or watershed

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<sup>75</sup> John N. Turner, “A Canadian’s View of North American Water Resources Development” Notes for a Speech to the National Water Conference, Washington D.C. 9 December 1965.

<sup>76</sup> Science Council of Canada, *A Major Program of Water Resources Research in Canada*, (Ottawa, 1968),

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<sup>77</sup> *Ibid.* 6

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level has been limited. CWA funding arguably facilitated a transition toward new objectives, including sustaining the functions of freshwater environments.<sup>78</sup> Nevertheless, federal financing flowed disproportionately to conventional water power and infrastructure projects, encouraging a less sympathetic observer to reflect that “an inclement institutional environment” was tending to curtail the promising and innovative measures that might otherwise have been fostered.<sup>79</sup>

The CWA contemplated mechanisms for water quality management, that is, “any aspect of water resource management that relates to restoring, maintaining or improving the quality of water” in parts of the country where water quality management had become “a matter of urgent national concern.” The federal government, in conjunction with a province or provinces – or on a unilateral basis in the case of inter-jurisdictional waters where reasonable efforts had failed to secure agreement – might create agencies with specific responsibility to plan for the restoration, preservation, and enhancement of water quality.<sup>80</sup> Recommendations would address water quality standards, waste treatment and discharges, sampling, and other aspects of a comprehensive plan for the area in question, even including the novel possibility of economic incentives in the form of effluent fees.<sup>81</sup>

To pioneering advocates, discharge fees represented valuable incentives for polluters to identify beneficial alternatives to existing production arrangements. Yet detractors viewed “pay as you go pollution” as

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<sup>78</sup> L. Booth and F. Quinn, “Twenty-five years of the Canada Water Act,” *Canadian Water Resources Journal* 20, (1995) 72

<sup>79</sup> Melville McMillan, “Perspectives on the Restructuring of Environmental Decision-Making Institutions: The Case of the Canada Water Act,” *Canadian Water Resources Journal* 4 (1979), 60

<sup>80</sup> Canada Water Act SC 1970, c.52, ss.9, 11

<sup>81</sup> Canada Water Act, s. 13(1)



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an endorsement of environmental contamination.<sup>82</sup> In the end, whatever the inherent theoretical promise of the CWA's effluent fee proposal, implementation remained dormant.

Coincident with the CWA, changes to historic federal fisheries legislation enhanced its utility as a mechanism for protecting environmental assets. Eschewing the theoretical allure of certain CWA provisions, fisheries officials adopted a less overarching approach to water quality, one also designed, so they must have hoped, to avoid or reduce inter-governmental complications. Jack Davis, the pragmatic federal minister of fisheries who oversaw the 1970 amendments, viewed fish as a "first line of defence" against water pollution. "Anything that harms fish," he asserted ... "may be harmful to man himself." Thus, "a healthy environment and a healthy fishery is undoubtedly the best insurance policy we can buy in our battle against pollution in water."<sup>83</sup>

Davis campaigned to confine environmental pollution to industrial settings: "Pollution must be stopped at the factory fence." In contrast to the CWA, which espoused assimilation and flexibility, Davis envisaged uniform national standards that would override differences in the purported assimilative capacity of natural waterways. This approach was specifically intended to avert the risk that some jurisdictions would sacrifice environmental protection for short-term economic advantage. But succeeding federal governments have generally declined to assert the limits

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<sup>82</sup> "Pay-as-you-go pollution suggestions turned down," *Ottawa Citizen*, 4 November 1969; "Water Act Won't Work in Ontario," *Toronto Globe and Mail*, 30 January 1970; "Greene defends fees in Canada Water Act as Incentives to Firms," *Toronto Globe and Mail*, 3 February 1970

<sup>83</sup> Canada, House of Commons Debates, (20 April 1970), quoted in Thomas Conway and G. Bruce Doern, *The Greening of Canada: Federal Institutions and Decisions* (Toronto: UTP, 1994), 213

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of their environmental powers<sup>84</sup> and courts have been vigilant in confining federal safeguards to the constitutional ambit of commercial fisheries.<sup>85</sup>

Neither of these initiatives offered immunity against the devastating impact of mercury. As the *New York Times* lamented in 1970, the possibility of harmful effects had been largely disregarded on the assumption “that mercury was insoluble and would lie forever quietly and inertly at the bottom of any body of water it reached.”<sup>86</sup>

The tragedies at White Dog and Grassy Narrows in northwestern Ontario that resulted from pulp and paper manufacturing undermined the well-being of aboriginal communities and destroyed valuable fisheries.<sup>87</sup> A decade and a half was required to devise acceptable compensation for those along the English-Wabigoon River system who had been injured by mercury poisoning through the contamination of a food source, the loss of livelihood, or the destruction of established communities.<sup>88</sup> But the lengthy process of identifying and evaluating water-related environmental services was at last underway.

Even explicit legislative initiatives failed to safeguard the interests of the general population from mercury. When mercury contamination forced the suspension of commercial fishing in parts of Manitoba, the province distributed roughly two million dollars in compensation. In December 1970, Manitoba sought an injunction to prohibit further discharges while attempting to recover the financial loss from those responsible. One of these parties, Dryden Chemicals Limited, operated in northwestern Ontario, while

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<sup>84</sup> Kathryn Harrison, *Passing the Buck: Federalism and Canadian Environmental Policy* (Vancouver: UBC Press, 1996), 4

<sup>85</sup> Fowler; *Northwest Falling*; Macmillan-Bloedel

<sup>86</sup> *New York Times*, 25 July 1970

<sup>87</sup> A. Skilnyk *A poison stronger than love*

<sup>88</sup> Sharpe; Faieta et al

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the other, Interprovincial Cooperatives Limited, was located in Saskatchewan. Each of the polluters had chlor-alkali plants, discharging industrial mercury into the waters of the Wabigoon and South Saskatchewan Rivers, respectively, on the basis of permits to do so from the relevant provincial governments.

Manitoba's claim was grounded on the *Fishermen's Assistance and Polluters' Liability Act*, provincial legislation that imposed liability on any person who discharged a contaminant "into waters in the province or into any waters whereby it is carried into waters in the province." Moreover, the Manitoba act declared that it was no lawful excuse "that the discharge ... was permitted by the appropriate regulatory authority having jurisdiction at the place where the discharge occurred, if that regulatory authority did not also have jurisdiction at the place where the contaminant caused damage to the fishery."\*

In striking down the Manitoba statute, three Supreme Court of Canada judges, insisted that Manitoba's legislative authority was territorially-limited. Manitoba's statute, accordingly, could not operate so as to undermine the effect of legislation passed in neighbouring jurisdictions, even in an obvious attempt to safeguard the interests of its own residents, and even in the context of a pollution problem acknowledged as "truly interprovincial" in scope. These judges rejected Manitoba's assertion that the *Fishermen's Assistance and Polluters' Liability Act* operated locally.<sup>89</sup> A judicial preference for clean jurisdictional boundary lines over poorly-designed watersheds was firmly in evidence.

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<sup>89</sup> WWR at 385; Justices Ritchie, on the basis of conflict of laws principles, reached a conclusion that supported the defendant industries

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Chief Justice Laskin, writing in dissent, nevertheless appreciated the situation from Manitoba's downstream perspective. "It is plain enough," he asserted with characteristic clarity, "that a province having rights to property therein is entitled to protect those rights against injury, and, similarly, to protect the interests that others may have in that property, by bringing or authorizing actions for damages, either as at common law or under statutory provision."\* [WWR 413] As Laskin explained, Manitoba law applied to the Ontario and Saskatchewan pulp and paper companies only because their operations "caused damage to a fishery in Manitoba by discharging a contaminant into waters flowing into Manitoba." Although local licenses authorized the discharges, these permits could not "entitle each of them with impunity to send their pollutants into the waters of another province," in effect creating "an extraterritorial privilege." [WWR 416-8]<sup>90</sup>

The impact of phosphates on Great Lakes water quality was among factors underlying the Water Quality Reference leading to the Great Lakes Water Quality Agreement between Canada and the United States. The language of eutrophication entered the public domain as Lake Erie, in particular, came under scrutiny. Here, 137 thousand pounds of phosphorus were being added daily, some 72% of which came from municipal wastes, two thirds of that amount attributable to detergents.<sup>91</sup>

Further indication of the significance of underlying legal norms as determinative influences on water use and development was provided by the protest of James Bay Cree communities under the leadership of Chief Billy Diamond. A decision by Justice Albert Malouf in 1973 to award an

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<sup>90</sup> For an effective analysis of the divergent opinions, see Michael Terry Hertz, "Interprovincial, the Constitution, and the Conflict of Laws," (1976) 26 University of Toronto Law Journal, 84

<sup>91</sup> Reitze, Arnold *Environmental Law* Vol 1, Pt. 4, 26

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injunction against a massive river diversion and power development proposal in northern Quebec severely constrained the immediate ambitions of Hydro Quebec and Premier Robert Bourassa.<sup>92</sup> Following that landmark judgment, the attractions of hydro-electric power development became increasingly subject to question on social and environmental grounds, even if the momentum behind very significant projects persisted across the country.<sup>93</sup>

### ***1980s: Looking for Policy***

Prescient, despite its imperceptible impact, the *Globe and Mail* anticipated “jolting news” on the water front. “By being almost criminally negligent about looking after our fresh water, we are headed for long-range, deep trouble.”<sup>94</sup> Domestically, this insight coincided with the commencement of a wide-ranging Federal Water Inquiry<sup>95</sup> into the use and protection of water resources. At the international level, similar considerations were implicated as the World Commission on Environment and Development (WCED) analysed the challenge of accommodating environment alongside development.

For its part, the inquiry, completed in 1985 under the chairmanship of Dr. Peter Pearse, foreshadowed a statement on Federal Water Policy during the tenure of Tom McMillan as Minister of the Environment.<sup>96</sup> Twenty-five

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<sup>92</sup> Gros-Louis et al v. La Société de développement de la baie James [1974] Que.P.R. 38; La Société de Développement de la baie James v. Kanatewat [1975] Que. C.A. 166; leave to appeal dismissed [1975] S.C.R. 48. For description and commentary, see Roy Macgregor, *Chief: The Fearless Vision of Billy Diamond* (Penguin Books, 1990); Boyce Richardson, *Strangers Devour the Land* (Macmillan, 1975); Hans M. Carlson, *Home is the Hunter: the James Bay Cree and their Land* (UBC Press, 2008).

<sup>93</sup> See, for example, Karl Froschauer, “Peace, Pulp and Power Hungry” (British Columbia) ch 7 in *White Gold: Hydroelectric Power in Canada* (UBC Press, 1999)

<sup>94</sup> 30 January 1984

<sup>95</sup> Peter H. Pearse, F. Bertrand and J.W. MacLaren, *Currents of Change: Final Report of the Inquiry on Federal Water Policy*, (Ottawa, 1985)

<sup>96</sup> Canada. Department of the Environment, *Federal Water Policy* (Ottawa, 1987)

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specific policy statements were formulated in conjunction with five strategic directions: water pricing, science leadership, integrated planning, public awareness, and legislation. In proposing to “renew, consolidate or otherwise strengthen the application of existing federal legislation,” the legislative strategy affirmed “a clear need to modernize the legislative base to make it more anticipatory and comprehensive and, to protect the health and safety of Canadians and the many values of water and related resources which have heretofore been taken for granted.”<sup>97</sup>

The (re-)introduction of sustainable development to Canada’s national agenda following publication of the WCED Brundtland Report was immediately signaled in policy-making, most explicitly perhaps in the Science Council of Canada report *Water 2020: Sustainable Use for Water in the 21<sup>st</sup> Century*.

In the aftermath of the Brundtland Report and the 1992 Rio conference on environment and development, several Canadian legislatures aligned themselves - at least rhetorically - with the sustainable development principle. Neither the full implications, nor the applicability of sustainability to water management would have been well understood. In the years to come, however, sustainability began to assume a more definite place in the framework for water governance as analysts and observers re-visited popular assumptions concerning water availability.

As Alberta’s longstanding plans for irrigation development along the Oldman River approached fruition, historic dimensions of water law figured prominently in constitutional analysis of the scope and applicability of

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<sup>97</sup> Federal Water Policy, 8. Legislative challenges included interjurisdictional issues relating to levels, flow and quality; life-cycle management of toxics; water quality standards and guidelines to protect human and ecosystem health; institutional mechanisms to manage water conflicts; and appropriate enforcement and compliance measures.

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federal arrangements for environmental assessment.<sup>98</sup> Justice LaForest reviewed the evolution of the still-serviceable *Navigable Waters Protection Act*, linking its origins to early controversies over the constitutionality of provincially-authorized interference with the public right of navigation, but pointedly noting the environmental character of disputes over sawmill and lumber wastes. As he observed, “some provisions of the *Navigable Waters Protection Act* are aimed directly at biophysical environmental concerns that affect navigation.” LaForest's argument was that the NWPA, as a consequence of the common law context in which it was enacted “has a more expansive environmental dimension.”

One issue, at least – acid rain with its devastating impact on forest lands and water quality – was sufficiently alarming, documented and wide-ranging in its implications to engage public and official attention in remedial action. Through a series of international and federal-provincial agreements, successful measures were implemented to reduce damaging emissions of sulphur dioxide and nitrogen oxides dramatically, even if the actual process of recovery of both lakes and landscapes has been more prolonged than originally anticipated.<sup>99</sup>

### ***1990s: Water Traders***

Free trade negotiations, initially on a bilateral basis between Canada and the U.S., and then involving Mexico at the North American level, served to renew Canadian anxiety about the prospect of bulk water exports. John

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<sup>98</sup> Jack Glenn, *Once Upon an Oldman: Special Interest Politics and the Oldman River Dam* (UBC Press 1999)

<sup>99</sup> G.B. Doern and T. Conway, *The Greening of Canada: Federal Institutions and Decisions* (University of Toronto Press, 1994) 158-63. Agreement between the Government of the United States of America and the Government of Canada on Air Quality, 13 March 1991, 30 I.L.M. 678

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Crosbie offered vigorously inconclusive reassurances: "..."<sup>100</sup> Nevertheless, concern was only heightened later in the decade by a series of false steps almost amounting water export by inadvertance: Ontario actually issued a permit authorizing the removal of Lake Superior water for export, while Quebec and Newfoundland ruminated more or less enthusiastically about offshore sales prospects.<sup>101</sup> British Columbia's on again off again approach to exports also provoked a potentially costly trade dispute (Sun Belt Water).

In a singularly dismissive intervention, the *Globe and Mail* scoffed at public apprehension, declaring "the fuss" over water exports to be "truly strange." Editorialists, possibly influenced by an elevated perspective overlooking Lake Ontario, observed that "Canada has lots and lots of water." If other places wanted to buy some, "Why shouldn't they?" For water which "falls from the sky" constitutes "the ultimate renewable resource." To calm domestic fears, the paper emphasized, that "Exporting some of the water from our brimming lakes and rushing rivers will not cause anyone in Canada to go thirsty. If, for some unimaginable reason, it does, there is a simple solution: Turn off the tap."<sup>102</sup> Turning off the tap had appeared more problematic to earlier generations when hydro-electricity exports were under consideration, while, unimaginably (one can only imagine), water shortages in Ontario – though unrelated to exports – compelled production of a provincial low-water response plan later the same year.<sup>103</sup>

A casual almost cavalier attitude toward exports and potential shortages would soon be mirrored with respect to drinking water quality where the risks of complacency were soon brought to public attention.

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<sup>100</sup> John C. Crosbie, "The Canada-U.S. Free Trade Agreement and Water: Setting the Record Straight,"

<sup>101</sup> Nova; Gisborne Lake

<sup>102</sup> *Globe and Mail*, 13 February 1999

<sup>103</sup> Ontario Low Water Response Plan



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An IJC Reference examined these matters, calling attention to the importance of ecosystem integrity in the Great Lakes and underscoring the linkages between surface and groundwater management on the policy agenda. Our appreciation of groundwater supplies is less certain, although initiatives to map and inventory Canadian groundwater resources have recently been renewed.<sup>104</sup> Recent studies highlight persistent limitations in groundwater regimes relating, for example, to the lack of integration between quality and quantity considerations or continuing disregard for ecosystem and in-stream flow protection. [Council of Canadian Academies, 99-101; see also 192-4 and 13-30. See also Manitoba audit][ at pp. 16-17 the Council of Canadian Academies sets out groundwater sustainability considerations]

“Sustainability requires that groundwater and surface water be characterised and managed as an integrated system within a drainage basin or groundwater basin. Groundwater and surface water are both inherent components of basin-wide water budgets, and they are inextricably interconnected as components of the hydrological cycle. Furthermore, withdrawal limits set by groundwater management policies need to consider the societal and economic impact on the surrounding area. In other words, each of these five goals is necessary and no one in itself is sufficient. The overall achievement of sustainability will rely on a careful analysis and balancing of the five goals.”  
[Council of Canadian Academies, 18]

### ***2000s: Drinking Water Safety***

Public health and safety, aspects of water supply long regarded as entirely resolved virtually across the country, dishearteningly re-emerged in the new century, with Walkerton, North Battleford and Kachechewan

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<sup>104</sup> Government of Canada, Canadian Framework for Collaboration on Groundwater (2003); Linda Nowlan, Buried Treasure: Groundwater Permitting and Pricing in Canada, (Walter and Duncan Gordon Foundation, March 2005).

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spawning public inquiries.<sup>105</sup> For their part, legislators responded with new regulations, technological changes, and investments intended to enhance drinking water safety. Drinking water quality guidelines, for example, were re-formulated as enforceable regulations in several jurisdictions<sup>106</sup>; interest grew in source water protection initiatives with implications for land-use and planning<sup>107</sup>; reporting and accountability regimes were enhanced; and lines of responsibility strengthened.

Even before the widely-publicized experience of Kashechewan in 2005, concerns about serious vulnerabilities in aboriginal water supply systems were being expressed.<sup>108</sup> Justice O'Connor, in the Walkerton Report, commented specifically on First Nations water systems, insisting that: "There can be no justification for acquiescing in the application of a lesser public health standard on certain residents of Ontario than that enjoyed by others in the province."<sup>109</sup> From a national perspective, the Commissioner of the Environment and Sustainable Development reported that "residents of First Nations communities do not benefit from a level of

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<sup>105</sup> Report of the Walkerton Inquiry (Hon. Dennis R. O'Connor, Commissioner) (Queen's Printer for Ontario, 2002); Report of the Commission of Inquiry into matters relating to the safety of the public drinking water in the City of North Battleford (Hon. Robert D. Laing, Commissioner) (2002); Swain Task Force

<sup>106</sup> Drinking Water Protection Regulation, B.C. Reg. 200/2003; Potable Water Regulation, A. Reg. 277/2003; Quebec Drinking Water Regulation, c.Q-2, r. 4.1; Potable Water Regulation – Clean Water Act, N.B. Reg., 93-203; Safe Drinking Water Act, 2002, S.O. 2002, c. 32 and Ontario Drinking Water Quality Standards, O.Reg. 169/03; Drinking Water Safety Regulation, Man. Reg 40/2007; Water and Wastewater Facilities and Public Drinking Water Supplies Regulation, N.S. Reg. 186/2005

<sup>107</sup> Drinking Water Protection Act, S.B.C. 2001, c.9; Clean Water Act, S.O. 2006, c.22; Règlement sur la qualité de l'eau potable, L.R.Q., c. Q-2, r.18.1.1

<sup>108</sup> Indian and Northern Affairs Canada, "National Assessment of Water and Wastewater Systems in First Nations Communities," (May 2003). Health Canada's Drinking Water Safety Program for Native People was underway at least as early as 1991. See The Ontario Pilot Project: A First Nations Water Treatment Plant Operations Training Program, (Final Report, June 1996) 3.

<sup>109</sup> Walkerton, Para 15.2

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[drinking water] protection comparable to that of people who live off reserves.”<sup>110</sup>

The situation was at least partly attributable to the absence of formal legal and regulatory requirements.<sup>111</sup> Although departmental policies and administrative guidelines did address the provision of safe drinking water in First Nations communities, this approach “does not cover all the elements that would be found in a regulatory regime for drinking water, and it is not implemented consistently.”<sup>112</sup> An expert panel on aboriginal drinking water systems subsequently proposed measures directed at operational shortcomings and financial constraints in a manner that would be consistent with considerations of self-government.<sup>113</sup>

In connection with World Water Day in May 2008, the Minister of Indian Affairs and Northern Development reviewed developments pursuant to a Plan of Action for Drinking Water in First Nations Communities (21 March 2006), itself the successor to a First Nations Water Management Strategy (2003). The number of high risk First Nations water systems had been brought down from 193 to 85; in addition, from the list of 21 priority communities (i.e. high risk plus drinking water advisory), only six remained outstanding. Notwithstanding ongoing financial allocations,<sup>114</sup> aboriginal

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<sup>110</sup> CESD 2005

<sup>111</sup> See Protocol for Safe Drinking Water in First Nations Communities developed by Indian and Northern Affairs Canada, and updated periodically at <http://www.ainc-inac.gc.ca/enr/wtr/pubs/sdw/sdw-eng.pdf>

<sup>112</sup> Office of the Auditor General, Report of the Commissioner of the Environment and Sustainable Development, 2005, Chapter 5, “Drinking Water in First Nations Communities,” 2.

<sup>113</sup> Report of the Expert Panel on Safe Drinking Water for First Nations. For subsequent developments, see Ontario First Nations Technical Services Corp. discussion of INAC Water and Wastewater Legislative Framework, [www.ofntsc.org/news/proposed-inac-water-and-wastewater-legislativ](http://www.ofntsc.org/news/proposed-inac-water-and-wastewater-legislativ). OFNTSC newsletter also contains a description of the negotiation process up to 2007 at p.4-5, [www.ofntsc.org/files/Spring07News-ForWEB.pdf](http://www.ofntsc.org/files/Spring07News-ForWEB.pdf).

<sup>114</sup> The 2008 federal Budget announced \$330 million over two years for continuing improvements, while the Plan of Action was being extended to add 30 or 40 operator trainers, roughly a doubling of the existing number. The January 2009 federal budget outlining stimulus spending and establishing Canada’s Economic

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drinking water and sanitation systems continue to present significant challenges related to financing, inter-governmental co-ordination and governance, and to the comparatively isolated location of a number of the communities in question.<sup>115</sup>

The broader drinking water safety issue re-engaged discussion about appropriate roles for the public and private sectors in municipal water supply. In this context, some commentators wondered whether consumer enthusiasm for bottled water would compromise the quality of public supply. Vigorous criticism of bottled water in Canadian churches and on university campuses also reflected linkages to concerns about water access on a global basis, and to persistent pressure for some form of recognition of a human right to water.<sup>116</sup>

Export proposals continue to surface elsewhere with particular prominence in Quebec where the argument has been advanced that: “It is our duty, as exceptionally well endowed holders of freshwater resources, to study realistically and openly the various options regarding their

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Action Plan included \$165 million for drinking water and wastewater systems in 18 aboriginal communities, including several in the NWT where the investment is intended to achieve consistency with Canadian drinking water guidelines. See Bruce Campion-Smith, “Aboriginal Spending” 28 January 2009: [www.thestar.com/article/578389](http://www.thestar.com/article/578389); [www.nationtalk.ca/modules/news/article.php?storyid=19347](http://www.nationtalk.ca/modules/news/article.php?storyid=19347)

<sup>115</sup> Commanda, Earl [for the Assembly of First Nations], “First Nations Water Management Strategy Success Stories and Challenges,” (Presented at First Nations Water Symposium, Niagara Falls, 18&19 March 2008); Department of Indian Affairs and Northern Development, Plan of Action for Drinking Water in First Nations Communities – Progress Report (Ottawa: Public Works and Government Services, 2008); Expert Panel on Safe Drinking Water for First Nations, Final Report, (Ottawa: Public Works and Government Services Canada, 2006); Ross, Peter, “Procedure for Addressing Drinking Water Advisories in First Nations Communities South of 60” (Presented at First Nations Water Symposium, Niagara Falls, 18&19 March 2008); Standing Senate Committee on Aboriginal Peoples, Safe Drinking Water for First Nations, 39<sup>th</sup> Parl. 1<sup>st</sup> sess., (May 2007). Federal legislation in the form of a Safe Drinking Water for First Nations Act was recently introduced in the Senate of Canada as Bill S-11 (26 May 2010).

<sup>116</sup> The United Church of Canada voted at the 39th General Council to “discourage the purchase of bottled water starting within its courts and congregations where possible” as stated as part of the Church’s Social Policy Positions, Water: Life before Profit (2006), <http://www.united-church.ca/beliefs/policies/2006/w143>

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development.”<sup>117</sup> A broader Canadian approach to exports and the ecological integrity of water basins was recently formulated by independent experts and contributed in 2010 to the introduction of bulk water export legislation – Bill C-26 – to the House of Commons.<sup>118</sup>

National reflection stimulated by the drinking water inquiries and the continuing export debate extended well beyond the public health perspective on tap water to inspire a wave of water policy proposals. Before outlining new policy initiatives, however, it is appropriate to consider key aspects of the overall context within which Canadian water management decisions are being made.

#### Institutional Legacy and Intellectual Foundations

A very considerable volume of water in Canada has been allocated on the basis of well-recognized commitments reflected in legislative arrangements, public and private investments, and the expectations of dependent communities. If the existing pattern is deeply-entrenched on this basis, it may also be said to be very broadly grounded, for assumptions about the availability of water are central to social and economic activity ranging through energy, transportation, recreation, agriculture and so on. Thus, a long-established legal and institutional framework will continue to guide or channel water-related decision-making for some time to come because “...institutional arrangements for water develop and change over time, but

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<sup>117</sup> Boyer, Freshwater Exports for the Development of Quebec’s Blue Gold (Montreal Economic Institute Research Paper, August 2008, 26. For a less elaborate proposal in the Manitoba context, see Daniel Klymchuk, Water Exports-The 1% Solution, (Backgrounder No. 62, Frontier Centre for Public Policy, 2008).

<sup>118</sup> “To block exports of water in bulk,” Globe and Mail 11 February 2008; Library of Parliament Seminar: A Model Act to Preserve Canada’s Water, 16 May 2008 [www.powi.ca/index\\_transboundary.php](http://www.powi.ca/index_transboundary.php); Bill C-26 An Act to Amend the International Boundary Waters Treaty Act and the International Rivers Improvement Act

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earlier decisions and rules set limits on what can happen.”<sup>119</sup>. The framework is subject to change, of course, but that change is likely to be incremental in nature rather than sudden, comprehensive and dramatic. Short of catastrophic upheaval in response to some profound and unanticipated disruption, any lasting change in a deeply-rooted and broadly-based framework will require shifts in very fundamental assumptions.

A cluster of assumptions traditionally underpinned water use and management decisions in Canada. Firstly with regional exceptions water was considered to be unlimited in terms of availability. It could, accordingly, be taken largely for granted as an essentially free resource to be allocated, utilized or even degraded at no cost or charge. Management arrangements were designed with a virtually exclusive focus on accommodating human preferences and ‘needs’ that were effectively unlimited. Environmental considerations were subordinated, if not entirely disregarded. In addition, the frame of reference for establishing those arrangements was overwhelmingly local and domestic. Canadian water policy, in other words, was unencumbered by considerations emanating from beyond national borders.

Within a relatively brief time period, these underlying assumptions around the availability of water, the precedence of human uses over environmental considerations, and the purely domestic nature of Canada’s water agenda are being called into question, with consequences still to be determined.

The Availability of Water

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<sup>119</sup> Carolyn Johns and Ken Rasmussen, “Institutions for Water Resource Management in Canada,” in Mark Sproule-Jones, Carolyn Johns and B. Timothy Heinmiller eds. *Canadian Water Politics*, (McGill-Queens UP, 2008), 63.

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Casual interventions about “the ultimate renewable resource” along the lines of the *Globe and Mail’s* 1999 remarks are not unique. Over the past quarter century, popular and widely circulated estimates have suggested that Canada has somewhere between 20% and two thirds of the world’s fresh water supplies.<sup>120</sup> Yet vigorous challenges are now directed against what is termed the “myth of abundance.” The limnologist John B. Sprague attributes a pattern of overestimation to reliance on data regarding the volume of fresh water contained in Canadian lakes, an amount that is approximately 20% of the water in all of the world’s lakes. He cautions, however, against confusion between that water and the *renewable supply*.

“The renewable supply is what falls from the sky and runs off in rivers, often passing through lakes as it moves to the sea. Some goes underground, replenishing aquifers that can be tapped by wells. These flows are renewed every year and count as the *water supply*.”<sup>121</sup>

Noting the supply of renewable water resources originating in other well-supplied countries, and taking into account that about 60 percent of Canada’s water flows northward and is therefore unavailable to the bulk of the population, Sprague suggests that “the number that should spring to the minds of Canadians when they contemplate the country’s water resources” is 2.6% of world supply.<sup>122</sup>

Notwithstanding aggregate supplies at a national level, Canadians have experienced local or regional shortages and more are anticipated, notably in parts of Western Canada where climate change impacts are

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<sup>120</sup> Dixon Thompson, “Water for Sale? A Look at the Complex Issue of Bulk Water Export,” *Horizons*, Vol. 9 No. 1, May 2006, 28 at 29.

<sup>121</sup> John B. Sprague, “Great Wet North? Canada’s Myth of Water Abundance” in Karen Bakker, ed. *Eau Canada* (UBC Press, 2007) 23.

<sup>122</sup> Sprague, 25

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expected to lessen the availability of melt-water.<sup>123</sup> Today, therefore, it is more common to acknowledge uncertain availability particularly on a regional level.

#### The Internationalization of Water

International observers, increasingly interested in the Canadian situation, emphasize different numbers. Viewed from a distance, Canada: “houses less than 2% of the world’s population but contains 23 per cent of its fresh water, compared to Asia, which is home to 60 per cent of the world’s population and has access to less than 37 per cent of global freshwater supplies.”<sup>124</sup> Somewhat more provocatively, Victor Lichtinger, formerly head of the Commission on Environmental Cooperation, is reported to have remarked: “You know you have 27 percent of the world’s water supply. What makes you think that the world will allow you to keep it?”<sup>125</sup> Such observations underpin the observation that “Canadian water will become a source of global envy.”<sup>126</sup> As the century began, deliberations associated with the Stockholm Water Symposium, (2001) were expected to involve discussion of arrangements for sharing Canada’s water and food produced with it on a global basis.<sup>127</sup>

Possible recognition of a human right to water has been of considerable interest to segments of Canadian society for its international

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<sup>123</sup> D.W.Schindler and W.F.Donahue, “An impending water crisis in Canada’s western prairie provinces,” [www.pnas.org/cgi/doi/10.1073/pnas.0601568103](http://www.pnas.org/cgi/doi/10.1073/pnas.0601568103) ; Fang, X. and J.W. Pomeroy, 2007. Snowmelt runoff sensitivity analysis to drought on the Canadian Prairies. *Hydrological Processes*, 21, 2594-2609

<sup>124</sup> Carolyn Johns, Mark Sproule-Jones and B. Timothy Heinmiller, “Water as a Multiple-Use Resource and Source of Political Conflict,” in Sproule-Jones, Johns and Heinmiller eds. *Canadian Water Politics: Conflicts and Institutions* (McGill-Queen’s UP, 2008) 22-3, citing the World Water Development Report, 2003.

<sup>125</sup> Policy Options p 7

<sup>126</sup> Paul Muldoon and Theresa McClenaghan, “A Tangled Web: Reworking Canada’s Water Laws,” in Karen Bakker ed. *Eau Canada*, 245 at 257.

<sup>127</sup> Allana Mitchell, “Canadian water on tap for future trade talks,” *Globe and Mail* 13 August 2001



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and humanitarian importance.[Barlow; WaterCan; UN GA resolution 28

July 2010] Indeed, it has even been suggested that the endorsement of such a right might serve, instrumentally, to inspire domestic water management reform: “Adopting water as a basic human right .... would offer a unifying theme, which will drive and compel us to organize our thinking and resources in a collaborative manner.” This collaboration, it is suggested, would extend to data systems, policy formation and the re-structuring of relevant organizations, as well as new forms of governance. Canadian commitment to a human right to water could even be expected to promote discussion of “the financing of water supply and treatment systems, demand-side management, and watershed planning and management.”<sup>128</sup>

Adding Water to the Environment

Another important re-conceptualizing of water centres on the proposition that it might legitimately be needed for purposes other than the direct satisfaction of human consumptive preferences. Largely,( if not entirely,) purged from conventional discourse are popular laments about the waste of water that flows uselessly into the oceans. Instead, we observe a far greater willingness to acknowledge ecological services and to accept environmental baselines - however poorly these may be understood. This awareness is, of course, associated with an understanding that human demands for water must be moderated to respect those underlying natural requirements in various settings across the country.

At a national level, the contribution of water to the natural environment is also associated with a re-framing of historic perceptions of abundance , and simultaneously responds to international claims on

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<sup>128</sup> [Ashton, Horizons,15]

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Canadian water. Water policy specialist Ralph Pentland, for example, addresses the proposition that the availability of water in Canada is somehow unfair or inequitable: “...7 percent of the world’s renewable water supply meets the ecological needs of about the same proportion of the world’s landmass, so from an ecological perspective, we have no water to spare.”<sup>129</sup>

In sum, the attitudinal shift encompasses several elements: that water supplies available to Canadians are not so unlimited as might once have been imagined; that others have an interest in the nature of Canadian water stewardship; and that underlying environmental needs for water can no longer be disregarded. The influence of these shifts is becoming apparent in water law and policy.

#### 21<sup>st</sup> Century Allocation Policies

A team of prominent water specialists recently explored water policy challenges, elaborating an historic western Canadian concern with security that has taken on broader significance. The concept of water security the researchers described as “multi-dimensional,” a perspective that recognizes that “good quality water is needed for social, economic and cultural uses while, at the same time, adequate water is required to sustain and enhance important ecosystem functions.”<sup>130</sup> The report identified seven aspects of water security associated with allocation arrangements: ecosystem protection, economic productivity, equity, the integration of water quantity and water quality considerations, conservation, climate variability and change impacts, and the co-ordination of trans-boundary allocation

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<sup>129</sup> Policy Options, 61

<sup>130</sup> Rob de Loe, Jeji Varghese, Cecilia Ferreyra, Reid Kreutzweiser *Water Allocation and Water Security in Canada: Initiating a Policy Dialogue for the 21<sup>st</sup> Century* (Walter and Duncan Gordon Foundation, 2007) iii

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decisions. This thoughtful and well-documented report ultimately encourages a course of action that may be condensed – somewhat crudely – as follows: With conscientious regard for the indispensable ecological foundations of the sustainable (productive) livelihoods they seek to pursue fairly, Canadians must simultaneously be attentive to the availability and quality of water, bearing in mind that water supply is not unlimited, is subject to climatic impacts and in certain circumstances must be managed on a trans-boundary basis.

Future risk of shortages and threats to water quality are currently addressed through the inter-connected cluster of laws, policies, institutions and practices whose evolution has been reviewed above. This framework is subject to continuing adaptation and development, but recognition of its essential firmness and continuity is a reminder that no panacea, quick-fix, or magic bullet will independently resolve emerging challenges. In the less certain future that is the consequence of climate change, “Fair risk distribution” has been identified as “the most promising adaptation strategy which water law can achieve.”<sup>131</sup> There are indications, though, that certain initiatives are having an impact on the overall water policy framework in response to changing assumptions and the acknowledgement of uncertain risks. These are oriented generally around three themes – sustainability, conservation and watersheds.

#### Sustainability

As incorporated within Canadian legislation, sustainable development commonly appears as a rather general benchmark. The federal *Auditor General Act* presents it as “a continually evolving concept based on the

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<sup>131</sup> A. Dan Tarlock, “Global Climate Change and the Law of the Great Lakes Diversion, Ch. 5 in Stanley Changnon ed. 90 at 91

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integration of social, economic and environmental concerns.”<sup>132</sup> More specific attempts have been made elsewhere to refine sustainability as it applies to water.

The Canadian Water Sustainability Index (CWSI) (modelled to some degree on the U.K. Water Poverty Index,<sup>133</sup>) represents a composite profile of some central water issues in a manner that allows for comparison between communities and over time. Five key components, each further divided into more measurable indicators, constitute the framework. The five key components address freshwater resources directly; then ecosystem health; infrastructure; human health and well-being, and community capacity. More detailed information is then assembled for each. In the case of Ecosystem Health, for example, the CWSI reports on Ecosystem Stress, Ambient Water Quality and Native Fish Populations.<sup>134</sup> The CWSI may contribute to policy-making by raising awareness of the overall state of fresh water, by providing a standardized means of comparison between different communities, and thereby helping to identify priorities between and within those communities; and by facilitating progress towards integrated water resources management.<sup>135</sup>

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<sup>132</sup> Sustainability may be achieved, the statute explains, in a variety of ways: the integration of the environment and the economy; protecting the health of Canadians; protecting ecosystems; meeting international obligations; promoting equity; an integrated approach to planning and making decisions that takes into account the environmental and natural resource costs of different economic options and the economic costs of different environmental and natural resource options; preventing pollution; and respect for nature and the needs of future generations. *Auditor General Act*, R.S.C. 1985, c.A-17, s.21.1

<sup>133</sup> The Water Poverty Index: A tool for monitoring and prioritization in the water sector:  
<http://ocwr.ouce.ox.ac.uk/research/wmpg/wpi/>

<sup>134</sup> Canadian Water Sustainability Index, Table 1, *Horizons*, Vol.9 No.1 May 2006, 51.

<sup>135</sup> PRI Project, *Sustainable Development, Canadian Water Sustainability Index Project Report* (February 2007) 2. The PRI proposal was preceded by the wide-ranging work of the NRTEE on sustainability indicators (NRTEE, *Environment and Sustainable Development Indicators for Canada* (Ottawa, 2004)) which led to a new data series from Environment Canada, Health Canada and Statistics Canada including water sustainability measures [Statistics Canada, *Canadian Environmental Sustainability Indicators*, 2008.

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In 2003, water was identified as a federal sustainable development priority and became the focus of an inter-ministerial policy framework project setting out as its vision, “clean, safe, and secure water for people and ecosystems.”<sup>136</sup> Endorsement of sustainability as a goal or objective, raises complex issues concerning how this end will be achieved and performance measured.<sup>137</sup> Appropriate human uses and their relationship to background or “instream” water requirements, increasingly in the context of additional uncertainty associated with climate change impacts on water availability require careful consideration. Whether goals are formulated around ecological health and integrity, or protection of the aquatic environment, or as source protection in relation to drinking water supplies, scientific information and insight is engaged in the decision-making process, and, occasionally, in response to uncertainty the precautionary principle is engaged.<sup>138</sup>

Conservation, Efficiency [And Economic Incentives?]

Urban and residential water conservation initiatives are increasingly featured in contemporary approaches to sustainability. These are being encouraged through regulatory, economic and voluntary measures in numerous settings across Canada and have been under more systematic

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National level information of a general nature may be found at <http://ec.gc.ca/indicateurs-indicators/default.asp?lang=en&n=68DE8F72-1> For discussion of the utility of various existing data sets in connection with sustainability measurement, see Tri-Star Environmental Consulting, Canadian Water Sustainability Index: Data Study (Canada, PRI, Working Paper Series 013, February 2006)].

<sup>136</sup> CESD, 2005, Ch. 4 “...” para. 4.58

<sup>137</sup> Arlene J. Kwasniak, “Water Scarcity and Aquatic Sustainability: Moving Beyond Policy Limitations,” (2010) 13 University of Denver Water Law Review, 321

<sup>138</sup> For discussion of Alberta’s statutory water conservation objectives as ultimately science-based criteria relating to protection of a natural water body, protection of tourism and other uses, and fish or wildlife management, see Nigel Bankes, “Policy Proposals for Reviewing Alberta’s Water (Re)Allocation System” (2010) 20 JELP, 81. For illustration of the precautionary principle in the context of water allocation, see *Dillon v. Ontario* (2001), 36 CELR (N.S.) 141 (Ontario Environmental Assessment Board).

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study by the CCME [see Research/ Water Policy]. Requirements for low-flush toilets and urinals are promoted through regulation in British Columbia,<sup>139</sup> a province that is also proceeding to implement mandatory water efficiency advances through reforms to the Building Code.<sup>140</sup> Other municipalities promote reduced consumption through subsidy or rebate arrangements on bathroom fixtures.<sup>141</sup> In the commercial and industrial building sector, green certification programmes recognize water conservation in the assignment of credits towards certification.<sup>142</sup> More appropriate conservation practices are now also integrated within water permit regimes, notably within the Great Lakes Basin.<sup>143</sup>

To promote conservation, water pricing and economic instruments are becoming more common in some parts of the world,<sup>144</sup> and have not been entirely neglected in Canada as means to encourage conservation. The use of appropriate charges for water services was highlighted as a key strategic direction in the formulation of the Canadian federal water policy a quarter century ago. As of 2001, roughly 60% of households had meters.

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<sup>139</sup> The mandatory installation of low flow (6 litres or less) toilets in all new construction and renovations in British Columbia is located in the Plumbing Services 2006, Part 7 of the British Columbia Building Code 2006, [www.crd.bc.ca/water/conservation/rebates/documents/water-lowflow-brochure.pdf](http://www.crd.bc.ca/water/conservation/rebates/documents/water-lowflow-brochure.pdf).

<sup>140</sup> BC, Ministry of Housing and Social Development, News Release, "Green Standards for Buildings Come into Effect," 26 August 2008: <http://www.livingwatersmart.ca/news/docs/2008HSD0047-001283.pdf>

<sup>141</sup> E.g., Saskatchewan Provincial Toilet Replacement Rebate Program, [www.swa.ca/WaterConservation/ToiletRebateProgram/Default.asp](http://www.swa.ca/WaterConservation/ToiletRebateProgram/Default.asp)

<sup>142</sup> [Canada Green Building Council, \*LEED Green Building Rating System: Rating System & Addendum\*, \(Canada: Canada Green Building Council, 2004\).](#)

<sup>143</sup> Water Taking and Transfer Regulation, O.Reg. 387/04 s. 4 (2) 3. i.

<sup>144</sup> According to the second U.N. World Water Assessment Report, "Although previously, water was widely regarded as a public good to be made available to all without charge and financed from general public revenues, increasingly, policy is changing to one of full cost recovery, except where poverty is an issue...." *Water: A Shared Responsibility*, Ch. 4 "Valuing and Charging for Water," 414

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However, the introduction of polluter pay and market-based instruments remains limited.<sup>145</sup>

The Walkerton Inquiry report re-invigorated discussion of an appropriate economic framework for water infrastructure. There, in conjunction with his more general investigation of water security arrangements, Justice O'Connor noted the importance of ongoing finance, renewal, and upgrading – all elements of the constant vigilance over drinking water he hoped to encourage. Ontario responded with legislation outlining arrangements for financing that were intended to meet the full cost of water and sewerage services, with the full cost of providing water services defined to include: “source protection costs, operating costs, financing costs, renewal and replacement costs and improvement costs associated with extracting, treating or distributing water to the public...”<sup>146</sup> The legislation – though still awaiting detailed regulation – calls for the preparation of reports that would provide an inventory and management plan for the necessary water services infrastructure accompanied by an assessment of the full cost of those water services and the revenue obtainable for that purpose. Given empirical indications that something between 10% and 55% of costs are currently excluded or under-estimated, the challenge of closing the full-cost gap in Ontario is a substantial one.<sup>147</sup>

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<sup>145</sup> [For a detailed study, see](#) Steven Renzetti, “Are the Prices Right? Balancing Efficiency, Equity, and Sustainability in Water Pricing,” in Karen Bakker ed. *Eau Canada*, 263 at 264. As assessed by the OECD in *Environmental Performance Review: Canada (2004)*, 70, “Many price signals are inappropriate and subsidisation is pervasive.”

<sup>146</sup> *Sustainable Water and Sewage Systems Act* S.O. 2002 c. 29, s. 3 (7).

<sup>147</sup> Renzetti, Steven and Joseph Kushner, “Full Cost Accounting for Water Supply and Sewage Treatment: Concepts and Case Application,” [(2004) 29 *Canadian Water Resources Journal* 13-22]

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In January 2009, designated industrial and commercial users in Ontario became subject to an administrative cost recovery charge.<sup>148</sup> The stated purpose of the regulation is: “to recover a portion of the costs the Government of Ontario incurs in the administration of the Act and any other Act for the purpose of promoting the conservation, protection and management of Ontario's waters and their efficient and sustainable use.”<sup>149</sup> Relevant expenditures include monitoring, data-gathering and research, the administration of water-taking permits, and so on. Set initially at \$3.71 per million litres per annum, the modest administrative charge is not considered to represent a significant incentive towards conservation.<sup>150</sup>

A leading analyst of water pricing offers a sharply critical assessment of municipal and provincial water pricing practices: “They do not generate the revenues needed to support water agencies; they do not inform consumers of the full costs of their water use decisions; they do not contribute to protecting environmental ecosystems; and they do not satisfy basic principles of fairness.”<sup>151</sup> A more subtle but equally damning assessment was advanced by the OECD in the context of a 2004 environmental performance review: “In a country where the public often regards water as a limitless resource and a gift of nature, the notion that

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<sup>148</sup> O.Reg. 450/07 – Charges for Industrial and Commercial Water Users - applies initially to seven categories of water-users: water-bottling facilities, beverage manufacturing facilities; fruit and vegetable canning and pickling facilities; ready-mix concrete manufacturing facilities; non-metallic mineral product manufacturing facilities; pesticide, fertilizer and other chemical manufacturing facilities; and inorganic chemical manufacturing facilities.

<sup>149</sup> Ibid. s. 1.

<sup>150</sup> Environmental Commissioner of Ontario, “The Water Taking Charge Regulation,” Getting to K(N)ow: ECO Annual Report, 2007-2008 (Toronto: Queen’s Printer, 2008) 94-7.

<sup>151</sup> Renzetti, “Are the Prices Right?” 277.



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water is also an economic good with social and ecological functions is not yet readily accepted.”<sup>152</sup>

The broader array of market-based instruments (MBIs), including trading of water rights<sup>153</sup> or water quality (pollution credits), is expected to offer cost effectiveness and enhanced flexibility in terms of compliance while simultaneously promoting innovation. Again, however, implementation and hence understanding of their implications remains limited in Canada. Thus, a federal policy investigation of MBIs reported that “surprisingly limited efforts” have been devoted to assessing these initiatives.<sup>154</sup> The study concluded on an interim basis that data limitations preclude informed decision-making; that the evaluation of policy effectiveness and communication of relevant learning is generally lacking; and, indeed, that clear objectives against which market-based instruments need to be assessed are rarely established.

At the international level, within the Great Lakes context, at least, extended negotiations and deliberations following the Nova Group incident eventually resulted in basin-wide agreement involving Canadian and U.S. jurisdictions. New procedures governing withdrawals, diversions and consumptive uses of Great Lakes waters provide some indication of the growing significance of efficiency and conservation in water allocation and management.<sup>155</sup> Within an overall framework founded upon a general

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<sup>152</sup> OECD, *Environmental Performance Review: Canada* (2004), 70.

<sup>153</sup> [In Alberta, subject to authorization in an approved management plan or pursuant to an order of the Lieutenant Governor in Council, certain licenses water allocations may be transferred following administrative review and approval. Water Act, RSA 2000 c. W-3, Part 5, Division 2.](#)

<sup>154</sup> Bernard Cantin, “Market-Based Instruments for Water Management,” *Horizons*, Vol.9 No. 1 May 2006, 38.

<sup>155</sup> For background, see Peter Annin, *The Great Lakes Water Wars* (Island Press, 2006).

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prohibition against new or increased diversions, provision is made for exceptions. Applicants for such exceptions are required to demonstrate that

a. The need for all or part of the Exception cannot be reasonably avoided through the efficient use and conservation of existing water supplies;

b. The Exception shall be limited to quantities that are considered reasonable for the purposes for which it is proposed.<sup>156</sup>

Participating jurisdictions on both sides of the border have been proceeding to implement decision-making arrangements consistent with the new framework agreement.<sup>157</sup>

The agricultural sector, a substantial consumer of water resources, also offers opportunities for conservation, although initiatives to date remain fairly isolated. [Elaborate with reference to soft path. Milk- St Mary allocation renewal. Pentland + Bankes/ Kwasniak, Don Lemmen]

When climate change is factored in the potential significance of conservation measures is often enhanced. Scenarios variously forecast the prospect of too much water here and too little water there. [Statistics Canada, Water Management on Canadian Farms, (by Julie Grimard) (Ottawa: Minister of Industry, 2007) online: Statistics Canada [www.statcan.ca/Gun/spray](http://www.statcan.ca/Gun/spray) systems least-efficient, drop systems most for plants.] This subject encourages us to move the concept of integrated water management up a notch or two. Water policy must be integrated not only

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<sup>156</sup> Great Lakes Basin Sustainable Water Resources Agreement, 13 December 2005, Article 201, 4.

<sup>157</sup> Relevant amendments to the *Ontario Water Resources Act* were introduced by the *Safeguarding and Sustaining Ontario's Water Act, 2007*, S.O. 2007 C.12 (Bill 198). U.S. Interstate Compact...

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within itself, but with the wider issues of public policy that will shape it, as those issues always have.

Climate change for some suggests water shortages, while for others it suggests the virtues of water-generated energy in comparison with carbon-based energy sources i.e. use more water. But apprehension about accelerated hydro either because of loss of habitat, landscape destruction, or GHG resulting from flooding forest lands is sometimes urged as a reason to go nuclear. Here again, substantial water requirements are called for. [on the water/ energy linkage see Scientific American? Or, see Lemmen et al p19 re lower water levels in Great Lakes]

#### Watershed Management

Once popular in association with the objective of maximizing water resource use, watershed management has experienced a revival alongside emerging concern with ecosystem health and sustainability, with implications for both water quality protection and supply. As explained by A. Dan Tarlock, contemporary watershed management shifts attention towards pollution prevention in an 'ecorealistic context,' reflecting awareness that "we can only sustain biodiversity by managing entire ecosystems."<sup>158</sup> From a legal perspective, an ecosystem orientation represents a particularly noteworthy shift in so far as "it collapses all conventional conceptual and jurisdictional boundaries and potentially integrates public and private lands and water in a single functional

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<sup>158</sup> A. Dan Tarlock, "Putting Rivers Back in the Landscape: The Revival of Watershed Management in the United States," (2000) 6 Hastings W. & Envt'l L. & Policy, 167

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management unit.”<sup>159</sup> In-stream flow protection and minimum ecosystem requirements, alongside measures to safeguard drinking water sources become key considerations for general planning and decision-making.<sup>160</sup>

The process of policy integration around watersheds is underway in the Canada-U.S. context through the IJC’s Watershed Initiative and in several jurisdictions. In Alberta, where provision was made for watershed planning in conjunction with a major statutory overall a few years ago, the provincial “Water for Life” strategy envisages a 30% reduction in usage over 2005 levels by 2015 and articulates three key objectives: (1) safe, secure drinking water supply; (2) healthy aquatic ecosystems; and (3) reliable, quality water supplies for a sustainable economy.<sup>161</sup> Each goal is complemented by short, medium and long-term milestones or deliverables. For ecosystems, specifically, initial goals concern information gathering and public engagement, while for sustainable economic uses, again the goals reflect informing the public about the value of water. Watershed planning and advisory councils are proposed or being implemented in Alberta for the Milk, Oldman, Bow, Red Deer, Battle, North Saskatchewan, Cold Lake-Beaver River, and Lesser Slave Lake watersheds.<sup>162</sup>

Performance measures have been adopted to monitor the effectiveness of the Alberta strategy. In connection with drinking water safety, the indicator addresses the performance in delivering safe drinking water and

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<sup>159</sup> Tarlock, 189. This important observation does not, however, obviate the need for a more refined understanding of the manner in which ecosystems or ecoregions are to be delineated and of an appreciation of their relationship to watersheds. See James M. Omernik and Robert G. Bailey, “Distinguishing Between Watersheds and Ecoregions,” (1997) 33 *Journal of the American Water Resources Association*, 935

<sup>160</sup> [In Ontario, an inter-secting series of water management provisions contributes to this result. OWRA s. 34; Clean Water Act](#)

<sup>161</sup> See Strategy <http://www.waterforlife.gov.ab.ca/>

<sup>162</sup> Alberta, Water For Life, 18. In 2006, the South Saskatchewan River, Bow River and Oldman River basins became closed to new water allocations. Alberta, Water Act, Regulation 171/2007, [www.canlii.org/en/ab/laws/regu/alta-reg-171-2007/latest/alta-reg-171-2007.html](http://www.canlii.org/en/ab/laws/regu/alta-reg-171-2007/latest/alta-reg-171-2007.html) .

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calls for continuous improvement of facilities and their operations. With reference to water quality, the strategy employs an index based on total loading on a river reach or basin basis for point source discharges. In order to assess water use efficiency and productivity, monitoring compares water consumption with productivity, population levels and economic growth.<sup>163</sup> The overall effectiveness of Water for Life remains to be established, and there are concerns that steps taken to date fail to emphasize the need for greater efficiency in irrigation, controls on water use in the oil and gas sector, and a continuing lack of coordination amongst local, provincial and federal water agencies.<sup>164</sup> Nevertheless, goals oriented around sustainability with implementation pursued through efficiencies at the watershed level are in evidence.

Manitoba, in 2003, became the first province in Canada to designate a stand-alone department of Water Stewardship with sole responsibility for protecting and managing water. Here, too, the role of watersheds is more explicitly highlighted. The new Ministry's mandate encompasses the protection of fisheries and aquatic ecosystems, drinking water safety, water and sewerage for rural communities, flood protection and the role of water in sustainability.<sup>165</sup>

Manitoba Water Stewardship is responsible for the development and administration of several pieces of legislation, notably the *Water Protection Act*<sup>166</sup> whose preamble declares that "Manitobans recognize that many human activities... may impair the

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<sup>163</sup> Alberta, Water For Life, 23.

<sup>164</sup> Keith Brownsey, "Enough for Everyone: Policy Fragmentation and Water Institutions in Alberta," in *Canadian Water Politics*, 133.

<sup>165</sup> Manitoba Water Stewardship, Annual Report, 12.

<sup>166</sup> *Water Protection Act*, C.C.S.M. c. W65.

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quality and quantity of our water resources, and that stewardship of these invaluable resources is a responsibility shared by all.” The legislation provides for water quality standards, objectives or guidelines<sup>167</sup> and for the designation of water quality management zones.<sup>168</sup> An administrative structure including a director or directors of water protection and the Manitoba Water Council oversee implementation of the legislation and perform advisory functions.

The Act recognizes the importance of comprehensive watershed planning and the contribution of science. Where a watershed plan is required, it must “identify issues relating to the protection, conservation or restoration of water, aquatic ecosystems and drinking water sources in the watershed.” In addition, the plan is expected to address by means of objectives, policies or recommendations such issues as:

- (i) the protection, conservation or restoration of water, aquatic ecosystems and drinking water sources,
- (ii) water pollution, including wastewater and other point-source discharges, and non-point sources of pollution ...
- (iv) activities in water quality management zones, riparian areas, wetlands, flood areas, flood plains and reservoir areas ...
- (vi) the supply, distribution, storage and retention of water, including ... access to clean potable water...<sup>169</sup>

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<sup>167</sup> *Water Protection Act*, s. 4.

<sup>168</sup> *Water Protection Act*, s. 5.

<sup>169</sup> *Water Protection Act* s. 16(1).

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Ontario's *Clean Water Act* represents another watershed-based measure to safeguard sources of drinking water supply on a more comprehensive basis. The *Clean Water Act* is implemented through the actions of local committees to develop source protection plans based on identified threats to drinking water.<sup>170</sup> Approximately forty source protection areas and regions, generally corresponding with the configuration of longstanding watershed-based Conservation Authorities, are established.<sup>171</sup> Source protection committees representative of municipalities, of the agricultural, commercial and industrial sectors, and of general public interests, including environment and health have been constituted.<sup>172</sup> Once approved, source protection plans will take precedence over municipal land-use plans and zoning bylaws. With particular reference to the water quality impacts of nutrients including nitrogen, phosphorus, and potassium, Ontario has also instituted measures to improve land-use practices affecting water quality in the agricultural sector.<sup>173</sup>

Roughly comparable initiatives may be found across Canada,<sup>174</sup> including Quebec, where measures to reform water governance on a watershed basis have been underway since the adoption in November 2002

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<sup>170</sup> *Clean Water Act*, S.O. 2006, c.22.

<sup>171</sup> Source Protection Areas and Regions Regulation, O.Reg. 284/07.

<sup>172</sup> Source Protection Committees Regulation, O.Reg. 288/07

<sup>173</sup> *Nutrient Management Act, 2002*; General Regulation Under the Nutrient Management Act, O.Reg. 267/03

<sup>174</sup> Environment Canada offers convenient access to core provincial statements and reports: [www.ec.gc.ca/water/en/links.cfm?category\\_id=8&sub\\_section\\_id=23](http://www.ec.gc.ca/water/en/links.cfm?category_id=8&sub_section_id=23). For example, New Brunswick, Watershed Protection Program (Clean Water Act, Watershed Protected Area Designation Order), [www.gnb.ca/0009/0371/0004/0001-e.asp](http://www.gnb.ca/0009/0371/0004/0001-e.asp); Manitoba, Nutrient Management Strategy (2000-2001), [www.gov.mb.ca/waterstewardship/water\\_quality/nutrmgt.pdf](http://www.gov.mb.ca/waterstewardship/water_quality/nutrmgt.pdf); Québec, Québec Water Policy, Integrated water management at the watershed level, [www.mddep.gouv.qc.ca/eau/bassinversant/index\\_en.htm](http://www.mddep.gouv.qc.ca/eau/bassinversant/index_en.htm); Alberta, Water for Life: Alberta's Strategy for Sustainability, [www.waterforlife.alberta.ca](http://www.waterforlife.alberta.ca).

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of the Quebec Water Strategy, *Water: Our Life, Our Future*.<sup>175</sup> Observers of the Quebec experience to date underscore the complexity of effective watershed governance as well as some ultimate limitations associated with inter-jurisdictional considerations and long-range air-borne pollution, for example.<sup>176</sup>

## Conclusion

Developments intended to channel water to meet human needs and which have been characteristic of Canadian water management throughout the country's history will undoubtedly continue, but the future should see far more significant efforts to consider the social dimensions of water policy and perhaps increasingly to discipline human uses in relation to more realistic expectations. Derrick Sewell outlined the importance of this more comprehensive approach several decades ago:

“flood control schemes may fail to reduce flood losses unless measures are also taken to restrict further occupation of the flood plain; the provision of electric-power may not result in predicted industrial expansion unless accompanied by appropriate pricing policies, tax policies, and the development of an infrastructure; and a plan for water development may merely gather dust on the planner's shelf if it is formulated without reference

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<sup>175</sup> For a five year review of implementation, see Bilan Synthèse sur la mise en oeuvre de la politique nationale de l'eau, 2003-2007: [http://www.mddep.gouv.qc.ca/eau/politique/bilan/bilan\\_synthese0307.pdf](http://www.mddep.gouv.qc.ca/eau/politique/bilan/bilan_synthese0307.pdf)

<sup>176</sup> See, for example, Alain Létourneau, « Gouvernance et gestion intégrée de l'eau par bassins versants : Problématique et requêtes d'une communication consensuelle" and « Suzanne Beaulieu, Les organismes de bassins versants : une entité en quête de légitimité » in Catherine Choquette and Alain Létourneau eds. Vers une gouvernance de l'eau au Québec (Editions MultiMondes, 2008).



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to the social, legal, and administrative factors on which it will depend for its implementation.”<sup>177</sup>

The incorporation of water within the evolving Canadian formulation of sustainability is underway. Modest accumulations in policy headwaters have nourished intermittent academic and media-based freshets, insufficient as yet to support a deep and wide current of attitudinal transformation. The perception of abundance remains widespread and may even be further encouraged as northern Canada warms through climate change. One can imagine, however, the eventual resumption of a steadier flow of sustainability thinking in the post-stimulus era that will ultimately reach the widespread and richly diverse delta where the inter-mingled streams of sustainability will again pursue separate channels to promote conservation of the multitude of watersheds and communities across this complex hydro-nation.

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<sup>177</sup> W.R. Derrick Sewell, “The Contribution of Social Science Research to Water Resource Management in Canada,” in J.P. Bruce and D.E.L. Maasland, *Water Resources Research in Canada*, Science Council of Canada, Special Study No. 5, (Ottawa, 1968)128