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# Water in the West: Under Pressure

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Fourth Interim Report  
of the  
Standing Senate Committee on  
Energy, the Environment and Natural Resources

The Honourable Tommy Banks, *Chair*  
The Honourable Ethel Cochrane, *Deputy Chair*

November 2005

Ce rapport est aussi disponible en français

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# MEMBERS OF THE STANDING SENATE COMMITTEE ON ENERGY, THE ENVIRONMENT AND NATURAL RESOURCES

The Hon. Tommy Banks – Chair

The Hon. Ethel Cochrane – Deputy-Chair

The Hon. Willie Adams

The Hon. Colin Kenny

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The Hon. Lorna Milne

The Hon. Ione Christensen

The Hon. Mira Spivak

The Hon. Leonard J. Gustafson

The Hon. Claudette Tardif

Ex-officio members of the Committee:

The Honourable Senators: Jack Austin, P.C. (or Bill Rompkey, P.C.) and Noël A. Kinsella (or Terry Stratton).

In addition, the Honourable Senators Chaput, Cook, Cowan, Dawson, Di Nino, Forrestall, Fraser, Gill, Finnerty, Harb, Hubley, Loisier-Cool, Moore, Oliver, Peterson and Ruth were members of the Committee or participated from time to time during this study during that Session.

Staff of the Committee:

Ms. Lynne C. Myers, Research Analyst, Science and Technology Division, Parliamentary Research Branch, Library of Parliament;

Mr. Frédéric Beauregard-Tellier, Research Analyst, Economics Division, Parliamentary Research Branch, Library of Parliament;

Ms. Keli Hogan, Clerk of the Committee, Committees Directorate, The Senate;

Ms. Lori Meldrum, Administrative Assistant, Committees Directorate, The Senate.

## ORDER OF REFERENCE

Extract from the *Journals of the Senate* of Tuesday, October 19, 2004:

The Honourable Senator Banks moved, seconded by the Honourable Senator Ferretti Barth:

That the Standing Senate Committee on Energy, the Environment and Natural Resources be authorized to examine and report on emerging issues related to its mandate:

- a) The current state and future direction of production, distribution, consumption, trade, security and sustainability of Canada's energy resources;
- b) Environmental challenges facing Canada including responses to global climate change, air pollution, biodiversity and ecological integrity;
- c) Sustainable development and management of renewable and non-renewable natural resources including water, minerals, soils, flora and fauna;
- d) Canada's international treaty obligations affecting energy, the environment and natural resources and their influence on Canada's economic and social development;

That the papers and evidence received and taken during the Third Session of the Thirty-seventh Parliament be referred to the Committee; and

That the Committee report to the Senate from time to time, no later than June 30, 2006, and that the Committee retain until September 1, 2006 all powers necessary to publicize its findings.

After debate,

The question being put on the motion, it was adopted.

Paul C. Bélisle  
*Clerk of the Senate*



# WATER IN THE WEST: UNDER PRESSURE

## INTRODUCTION

### Water in the West

It is an incontrovertible fact that we cannot live without water. Like air, water is a basic need. Water is sometimes described as “the provider of the infrastructure for life.”<sup>1</sup> It is fundamentally important.

As Canadians, we generally don’t spend much time thinking about water because we assume that there is plenty of it in this country to which we have ready access. Because most of us don’t pay very much for water, we tend to take it for granted. We don’t think we have a problem.

The fact is that certain regions of Canada, notably in the prairies, face important water challenges. Some parts of the prairies are semi-arid. In certain areas water consumption now matches or possibly exceeds what is renewed every year. Your Committee heard from reputable scientists who consider that Alberta is the area of greatest concern because “in addition to being an extremely arid part of the country, it is developing rapidly.”<sup>2</sup>

Demand for water typically rises in tandem with population growth and economic expansion. Rapidly growing cities and municipalities, as well as ranchers, farmers and industrial users, such as oil and gas producers, all compete for access to water. Scarce prairie water is used to grow feed for cattle, flush toilets, and, increasingly, to extract oil and gas. It is also used to extract and upgrade bitumen.

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<sup>1</sup> Dr. Dennis Fitzpatrick, Vice-President, Research, Water Institute for Semi-arid Ecosystems, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, March 8, 2005.

<sup>2</sup> Dr. David Schindler, Killam Memorial Professor of Ecology, Faculty of Science, University of Alberta, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, December 9, 2004.

Such expansion in the scale and scope of human activities contributes to the destruction of wetlands and other sources of natural capital, which further jeopardizes nature's ability to reliably provide water for life.

### Climate Change and Water

Scientists long have known about the threats that economic activity and population growth pose to water availability and quality in western Canada. Climate change is further compounding the problem.

It is apparent to most scientists that climate change is fundamentally disturbing the water cycle. Climate change means that precipitation is becoming less reliable, and more of it is expected to come as rain rather than as snow. What snow there is will melt sooner. There are likely to be more big storms and more severe droughts, thereby surcharging the physical infrastructure in urban areas and putting the rural economy at risk.<sup>3</sup> Glaciers will continue their retreat.<sup>4</sup> Evapotranspiration is expected to increase.<sup>5</sup> As a result of these changes, river flows will become increasingly variable. Dr. Schindler, one of Canada's foremost scientists, has noted that summer flows in many of Alberta's rivers are already down by about 40% when compared to what they were a century ago.<sup>6</sup>

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<sup>3</sup> "Extreme weather conditions are surcharging our physical infrastructure, which may have been designed for a 1-in-100-year flood event, except that these are now occurring once every 10 years." Duncan Ellison, Executive Director, Canadian Water and Wastewater Association, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, February 10, 2005.

<sup>4</sup> "In 1850, there were 150 glaciers in Glacier National Park; now, there are only 35 left...There is a prediction that by 2030 there will not be any glaciers left [in Glacier National Park]. Maybe then we will have to change the name of Glacier National Park because there will not be any glaciers left." Dr. Hester Jiskoot, Assistant Professor, University of Lethbridge, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, March 8, 2005.

<sup>5</sup> Evapotranspiration is defined as the loss of water from a land area through evaporation from the soil and through plant transpiration. [http://www.ec.gc.ca/water/en/info/gloss/e\\_gloss.htm](http://www.ec.gc.ca/water/en/info/gloss/e_gloss.htm).

<sup>6</sup> Dr. David Schindler, (December 9, 2004).



This is the new reality. And it is why your Committee believes that decision-makers must pay urgent attention to water, especially in the semi-arid regions of western Canada where these impacts are already being felt.

Dr. Carey pointed out to the Committee some of the ways in which climate change will affect water availability in western Canada. His observations are worth repeating.

*We are saying that climate change will affect source waters in reducing flows in some rivers, reducing the recharge of groundwater, and also altering the water availability in, say, glacier fed rivers. In the eastern slopes of the Rockies, for example, we are seeing higher spring flows and lower summer flows. Altering the seasonal distribution of flow in a river can be quite serious. If we build a dam on that river and completely alter it, then some of the natural flooding that normally would flood lakes in the Athabasca Delta, for example, will not occur. We are also concerned about climate variability because the models also predict lower annual rainfall, but more storms and, therefore, more peak rainfall. When we talk about climate variability we mean less rainfall overall in many areas, but the rain that does come will fall in intense events, according to these models. You might characterize the problem as: what we will face is too much water and too little water — too much in specific times and too little most of the time. We are saying that prairie droughts will be more persistent, and climate change may increase floods in duration and severity, which seems like a paradox, but that is related to the instability of climate rather than the climate itself.<sup>7</sup>*

The impact of climate change will not be the same across the country. According to Dr. Carey, “the big threat...is trying to understand the changes in geographical and seasonal distribution of water in different regions of Canada in light of our changing climate.”<sup>8</sup>

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<sup>7</sup> Dr. John Carey, Director General, National Water Research Institute, Environment Canada, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, November 23, 2004.

<sup>8</sup> Dr. John Carey, (November 23, 2004).

It continues to be the position of this Committee that we must all take action in response to climate change. For,

*While we argue about the degree to which mankind is influencing the climate, the fact is if you look at regional trends in Canada, [the] climate is changing. Aquifers and springs are disappearing, and there are the seasonal patterns. Why are we arguing over whether we are causing that or not to the extent that we are, and not getting ready to consider where it will hit us? If this trend continues, are we ready? If we suddenly have bigger floods in cities, do we have the infrastructure to help us to deal with that?*<sup>9</sup>

### Water Under Pressure

As Dr. Schindler succinctly illustrated in his testimony before your Committee, climate change is likely to amplify the burgeoning problems having to do with water availability in Alberta:

*The scenario that I see developing is a huge increase in population and industrial development in Alberta. The periodic droughts that I think we can expect, if we return to anything like pre-20th century conditions, and the accelerated evaporation from climate warming, at some point in [this] century will come together. My guess is, earlier rather than later in the century. We will know what water shortage is all about in Alberta. I think that through the late 1990s, many people are beginning to realize that already.*<sup>10</sup>

This is an ominous warning. We cannot ignore it; water is much too precious. As Dr. Mark Servos explained, “Water touches every aspect of our lives and directly influences the economic prosperity and the quality of life of Canadians. It will be the key issue of the next decade.”<sup>11</sup>

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<sup>9</sup> Dr. John Carey, (November 23, 2004).

<sup>10</sup> Dr. David Schindler, (December 9, 2004).

<sup>11</sup> Dr. Mark Servos, Scientific Director, Canadian Water Network, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, November 30, 2004.

The cost of not responding to emerging water challenges would likely dwarf the cost of addressing them, and failure to respond will jeopardize life as we know it, particularly in Alberta and other prairie provinces.

In seeking to shed light on this important issue, the Committee came to the shocking realization that very little is currently known about Canada's water resources. Throughout our study we asked questions such as: Are our aquifers being depleted? Is the quality of our water adequately protected? Are we using the resource in a sustainable fashion? Too often the answer was, "we just don't know."

Witnesses who appeared before the Committee were remarkably candid. Time and again we heard this message from the scientific community:

*we are simply not doing enough or collecting enough information to allow us to manage water better. Many people are doing the best they can with the information that they have. However, that information is incomplete....we could do a much better job of managing the resource.<sup>12</sup>*

This information gap is more than regrettable; it is unacceptable. This stems in large part from the Government of Canada's retreat from water management issues and from funding relevant research.

In order to make informed decisions about how best to respond and adapt to the new realities having to do with water, we need knowledge. We need information. We need the facts. We need research. We need to thoroughly understand our most precious resource using our best scientific minds, methods and tools.

As Dr. John Carey of Environment Canada pointed out:

*With the best will in the world, if you do not actually know what it is you are managing and how much you have, you will not be able to identify areas in need of immediate attention. We would not manage our bank accounts without monitoring what was in them*

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<sup>12</sup> Dr. John Carey, (November 3, 2005).

*and trying to do some planning, but we attempt to manage natural resources without a real good understanding of how much we have, how much is renewable and whether we are spending capital or living off the interest. The very first thing I would do is develop better information and trend monitoring of the state and the status. That is, better indicators that would allow us to say what is happening with this resource.<sup>13</sup>*

Dr. Carey's testimony underscores the urgent and fundamental necessity of significantly increasing the resources devoted to water research and monitoring. We must do it now. This issue is much too important to ignore. The more we know and understand, the more likely it is that we will be able to adapt and respond intelligently to the growing pressures on our water resources.

This report offers five recommendations that, once implemented, will help us better understand, and ultimately protect, our most precious natural resource for the benefit of all Canadians.

## CLOSING THE GAP

“We know very little about our water resources and ecosystems.”<sup>14</sup>

This must change.

Clearly we cannot manage and protect that which we do not properly understand. When it comes to water, there are still too many questions to which we do not yet have satisfactory answers. Are our aquifers being overexploited? Is climate change affecting the rate at which they are being recharged? Which water-borne contaminants are a real threat to ecosystems and human health? How much water can you take out of rivers for irrigation and other consumptive uses and still have a sustainable ecosystem?

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<sup>13</sup> Dr. John Carey, (November 3, 2005).

<sup>14</sup> Dr. Mark Servos, (November 30, 2004).

These are some of the key questions that remain largely unanswered because of insufficient scientific research in Canada. As a society we are largely forging ahead blindly when it comes to our management of water. We are in essence gambling with our most precious, but often under-appreciated, natural resource. We are doing things that could be having a large impact on our environment (e.g. overexploiting aquifers, paving over recharge areas in urban areas, destroying wetlands) but because we don't have the necessary scientific data, we do not know exactly what impact our actions are having, nor do we know what policy responses would be most appropriate.

Our lack of understanding of Canada's aquifers is symptomatic of the larger problem. Dr. Carey stated pointedly that "we do not have the information we require to manage the water resource...even just finding our major regional aquifers, which ones are used, tapped into, and which are not, and the levels and the quality of water. [sic]"<sup>15</sup>

In one of his appearances before the Committee, Dr. Carey was asked whether we know if and how aquifers are connected to one another across the Canada-U.S. border. He replied:

*I do not know the answer to that. I do not know the degree to which aquifers in Saskatchewan are connected to the Ogallala Aquifer.<sup>16</sup> I would not rule it out. I just do not know. You can use the word "stunning." I think our level of knowledge about some of our major aquifers is pitiful, frankly.<sup>17</sup>*

Pitiful indeed.

This lack of knowledge is stunning. It prevents progress, as far as water is concerned, on the Government of Canada's sustainability agenda. How can any government decide what to do about a situation when they don't have a good understanding of that situation? As Dr. Carey

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<sup>15</sup> Dr. John Carey, (November 23, 2004).

<sup>16</sup> The Ogallala aquifer is one of the world's largest aquifers. It lies beneath the U.S. Great Plains.

<sup>17</sup> Dr. John Carey, (November 23, 2004).

pointed out, “We are exploiting our groundwater aquifers but we have incomplete information about that. I would not call that ‘good management practice.’”<sup>18</sup>

Dr. Carey’s conclusion was echoed by Dr. Jan Boon of Natural Resources Canada (NRCan) who acknowledged that: “Ground water information in Canada is pretty sparse.”<sup>19</sup>

The Government of Canada recognizes that “a healthy environment depends on a safe and reliable water supply”<sup>20</sup> and acknowledges that “our understanding of how much groundwater is available for use in Canada is limited.”<sup>21</sup> We can’t live without it, and we don’t know anything about it? This is a contradiction! We must find out about it. We must ensure that our understanding is not limited. How? Reinvigorate research funding, for example. We have a list. But these things inexplicably do not appear to be a pressing priority for the government, despite repeated commitments.

In its 2001 Sustainable Development Strategy (SDS), NRCan committed to generating a national groundwater database by 2003. This was an excellent and timely initiative. The only problem is that it wasn’t done. In 2004, NRCan reiterated the commitment, but extended the target date to 2006.<sup>22</sup>

NRCan also now hopes to have about 20% of Canada’s “key regional aquifers” mapped by 2006. This information will be collected in the national groundwater database. Twenty percent? This is a pressingly urgent problem. Would Canadians be satisfied if a government were to announce that it is preparing over the next year or so to obtain 20% of the

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<sup>18</sup> Dr. John Carey, (November 3, 2005).

<sup>19</sup> Dr. Jan Boon, Director General, Earth Sciences Sector, Geological Survey of Canada, Sedimentary and Marine Geoscience Branch, Natural Resources Canada, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, December 9, 2004.

<sup>20</sup> Natural Resources Canada, 2001 Sustainable Development Strategy.

<sup>21</sup> Natural Resources Canada, 2004 Sustainable Development Strategy.

<sup>22</sup> Natural Resources Canada, 2001 Sustainable Development Strategy and 2004 Sustainable Development Strategy.

information on a potential pandemic? On economic projections? Your Committee thinks not.

Why draw the line at 20%? A fragmented analysis of Canada's aquifers will leave a huge void in our understanding and management of groundwater.

### **Recommendation 1**

**The Government of Canada should take the necessary steps to ensure that all of Canada's major aquifers are mapped by 2010. This data should be made available in the national groundwater database and supported by a summary document assessing the risks to groundwater quality and quantity.**

The provinces have expressed a clear need for this information. In the course of its hearings in Alberta in the spring of 2005, your Committee heard the following from David Trew, a Government of Alberta official:

*From our perspective, groundwater is the issue of the day. We need to have a much enhanced understanding of aquifer delineation and depth of usable groundwater....I can clearly say that that would be our number one priority in terms of data needs.<sup>23</sup>*

The provinces, including Alberta, are looking to the Government of Canada to show leadership when it comes to basic science and research. According to Keith Leggat:

*One way that the federal government can help Alberta and help Albertans with respect to water is by partnering regarding information knowledge, research. That has been a real strength. In many instances, federal government involvement in those activities has helped Alberta and Albertans deal with water issues, and we would like to see that continue. If*

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<sup>23</sup> David Trew, Water Section Manager, Environmental Policy Branch, Alberta Environment, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, March 9, 2005.

*there are opportunities to increase or expand that role of the federal government related to water, we would encourage that.*<sup>24</sup>

Clearly, it is time for the federal government to step up to the plate.

## IMPROVING THE QUALITY OF WATER-RELATED DATA

During its study the Committee heard from several witnesses from the scientific community who suggested that water-related databases, both within and outside government, are not always readily available, are not necessarily well integrated, and are information poor.

If scientists are to provide policy makers and legislators with well-informed forecasts and recommendations they need reliable, accessible and up-to-date information. It is difficult to argue with Dr. Schindler's assertion that: "Without a database, scientists are no better than anyone else in guessing what would happen."<sup>25</sup> Dr. Schindler informed the Committee that "the scientific databases on which we base our predictions are becoming poorer."<sup>26</sup> Dr. Hester Jiskoot, a glaciologist at the University of Lethbridge, expressed a similar concern to the Committee by noting that: "We scientists cannot predict things any better than anyone on the street can if we do not have the data. Even though we have a number of good scientists, we need a great deal more data."<sup>27</sup>

Your Committee believes that Canada would benefit from leading scientists such as Dr. Schindler and Dr. Jiskoot having access to comprehensive information on water quality and availability. Their scientific findings, in turn, would help governments, industry and, ultimately, individuals, manage and preserve a vital part of Canada's natural capital.

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<sup>24</sup> Keith Leggat, Director of Environmental Policy Branch, Alberta Environment, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, March 9, 2005.

<sup>25</sup> Dr. David Schindler, (December 9, 2004).

<sup>26</sup> Dr. David Schindler, (December 9, 2004).

<sup>27</sup> Dr. Hester Jiskoot, (March 8, 2005).



In certain respects there already exists a great deal of data on water in Canada. For example the geological work performed by Canada's extractive industries reveals important information about Canada's water resources. Unfortunately, these findings are not widely disseminated. This is due in part to the fact that there are no national standards and requirements for data reporting. Nor is there a centralized depository for water statistics.

As Dr. Servos noted in his appearance before your Committee, not only do we need to put additional emphasis on understanding water, we absolutely need to share this knowledge more effectively if we are to deal with current and emerging water-related issues. Many of these do not respect provincial or national boundaries. The decision makers who often need the information most are the provinces and municipalities. The Government of Canada is uniquely positioned to bring all of the information together and ensure that it is easily accessible.

## **Recommendation 2**

**The Government of Canada should work with industry and with other orders of government to develop a standard methodology for the collection and reporting of water-related data. The Government of Canada should take on the responsibility for the creation of a centralized depository for water statistics.**

## **INVESTING IN WATER RESEARCH**

The impetus behind this report is that water is simply too important to be ignored. Yet over the past 10-15 years, water issues have essentially fallen off Ottawa's radar screen. The Government of Canada needs to boost its funding for water research and monitoring in order to equip Canadians with knowledge and options for responding and adapting to the emerging challenges outlined at the beginning of this report.

The federal government historically paid close attention to water issues, and allocated commensurate resources to the scientific study of water. Your Committee learned that this has changed. Wayne Clifton testified that the Government of Canada "has been retreating

from that activity at a very high pace in the last two decades by closing monitoring stations, reducing data collection activities and turning it largely to the provinces. As a result, in many watersheds and sub-basins, very little data are being collected at this time.”<sup>28</sup> Dr. Schindler indicated that: “Some of the ground water records were monitored up until 1993, and they have not been monitored since because of government cutbacks.”<sup>29</sup> Dr. Carey likewise informed the Committee that approximately 2,500 sites across the country are now monitored for water quantity, down from about 4,000 in previous years.<sup>30</sup>

Dr. Carey further testified that due to federal budget cuts over the years, Environment Canada’s National Water Research Institute (NWRI), of which he is the director general, has become increasingly reliant on outside sources of funding to support research projects. This, he argued, increases the Institute’s administrative burden and forces its staff to spend more time developing new funding models and finding new partners.

The NWRI has taken on important projects such as a national groundwater assessment program (in partnership with NRCan). NWRI is undertaking this particular project “with our existing resources as we do not have new resources for this”.<sup>31</sup>

When asked what it would take in terms of resources to properly assess the state of Canada’s aquifers, Dr. Carey replied:

*I do not want to say that the sky is the limit, but we would like to have a program funded at about \$10 million a year. With that, we could make three to four times the effort that we do now. We do not have that right now, so we are putting a few million dollars in per year and doing it over a longer time period.*

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<sup>28</sup> Wayne Clifton, President, Clifton Associates Ltd., Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, October 20, 2005.

<sup>29</sup> Dr. David Schindler, (December 9, 2004).

<sup>30</sup> Dr. John Carey, (November 3, 2005).

<sup>31</sup> Dr. John Carey, (November 3, 2005).

Can we afford to wait?

In a context of rapid growth and climate change, waiting is not only dangerous but also clearly irresponsible. Quite simply, if we do not adequately monitor our water resources, we could one day find ourselves in trouble. The Government of Canada has cut back its support for water research and monitoring to a dangerous degree.

Dr. Schindler's pointed analysis is also instructive:

*There has been so much cutting back [provincially and federally] that instead of the threatened duplication of minding the water store, we have no one minding it. Somebody has to step in and take responsibility for getting the databases we need to make some of these predictions.... In the 1970s, we had the best federal government programs and in some provinces we had strong programs...they have suffered from budget cuts and increasing bureaucracy....The cuts were not made to the layers of bureaucracy but to working scientists and technicians. Currently, I have colleagues in federal departments who have lower budgets for their research than my graduate students.<sup>32</sup>*

This is unacceptable.

It is also inconsistent with the Government of Canada's own sustainability agenda. As noted in this Committee's last report, the transition to sustainable development requires ongoing scientific research and monitoring to ensure that we are headed down the right path.<sup>33</sup>

Federal institutions such as Environment Canada and the Geological Survey of Canada have historically played a critical role within the scientific community when it comes to the collection of data sets over long periods of time. Academic funding programs are rarely flexible enough to allow for very long-term projects. The federal government is thus uniquely positioned to undertake these long-term studies. Scientists, both within and outside

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<sup>32</sup> Dr. David Schindler, (December 9, 2004).

<sup>33</sup> Standing Senate Committee on Energy, the Environment and Natural Resources, *Sustainable Development: It's Time to Walk the Talk*, June 2005.

government, benefit from these data. This information is used to monitor environmental change, make predictions and recommend policy options. Many data collection programs have been cut over the years. Today, scientists find that “the scarcity of data is limiting. The government programs, both federally and provincially, that were lost in the 1990s need to be resurrected.”<sup>34</sup>

### **Recommendation 3**

**The Government of Canada must restore funding for longitudinal water studies. Such studies are essential to ensuring the sustainability of Canada’s water resources.**

A return to federal leadership in the area of water is not only needed, it would be most welcomed, particularly in western Canada. As Mr. Clifton observed: “It was welcomed in that region during the settlement years; the need is as critical now as it was then and we think it would be welcomed again.”<sup>35</sup>

The Government of Canada has a long history of involvement in research and program delivery in the area of water planning and monitoring. Federal institutions such as Environment Canada’s National Water Research Institute (NWRI) and Agriculture Canada’s Prairie Farm Rehabilitation Administration (PFRA) are well respected throughout Western Canada. They should be the cornerstones of a renewed federal government focus on western water issues.

### **Recommendation 4**

**The Government of Canada should bolster its support for the National Water Research Institute and the Prairie Farm Rehabilitation Administration so that these institutions can better address Western Canada’s growing water challenges.**

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<sup>34</sup> Dr. David Schindler, (December 9, 2004).

<sup>35</sup> Wayne Clifton, (October 20, 2005).

Nineteen federal departments share the approximately \$750 million a year that the Government of Canada spends on activities directly or indirectly connected with water. Your Committee heard evidence suggesting that their activities are generally uncoordinated, and that cooperation across these departments is still in its infancy, owing in part to the silo mentality that is unfortunately still prevalent in federal departments.

In 2004, the Interdepartmental Assistant Deputy Ministers' Water Committee unveiled a Federal Water Framework aimed at improving interdepartmental cooperation. Richard Arseneault, a principal in the Office of the Auditor General of Canada, told the Committee that to date this Water Framework "is going nowhere. They spent money, time and effort on producing something that is a good first step in terms of where the federal government is going with water issues, but it is now becoming stagnant."<sup>36</sup>

Despite this setback, communication between departments is ongoing and some progress has been made in moving forward with a federal water research agenda. Individual departments, however, continue to be wary of programs managed jointly with other departments due to financial management and accountability issues.

The resulting continued lack of focus on water issues is lamentable. It is high time for the Government of Canada to provide leadership and focus, in a coordinated fashion, on what matters most. Water matters.

The task of renewing the federal government's approach to water is a critical one. The time has come to embrace a truly co-operative, national approach that transcends interdepartmental squabbles and interjurisdictional boundaries.

## **Recommendation 5**

**The Government of Canada should create a National Water Council. This Council, composed of representatives from industry, research institutes and all**

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<sup>36</sup> Richard Arseneault, Principal, Office of the Auditor General of Canada, Proceedings of the Standing Senate Committee on Energy, the Environment and Natural Resources, October 18, 2005.

**orders of government, would be tasked with identifying the key water issues that require attention from the federal government and proposing strategies for addressing them.**

## CONCLUSION

Water is too critical a resource to be ignored. The threats to water availability and quality are real and are particularly evident in the West. Population growth, economic expansion and climate change all contribute to putting western Canada's water resources at risk.

These emerging challenges need to be addressed head on, and soon. There is no more time to waste. The longer we wait, the more it will cost to respond and adapt.

It is your Committee's view that the Government of Canada has not been paying appropriate attention to the emerging water crisis in western Canada. Years of neglect coupled with budget cuts to scientific research and monitoring programs have eroded the ability of policymakers to analyze and respond to the water issues that affect the lives of millions of Canadians. As one witness remarked, "if you do not collect information, you do not understand the resource and if you do not understand the resource, you cannot manage the resource."<sup>37</sup> Ignorance is not bliss.

It is time for the Government of Canada to reinvest in water. Scientists universally decry the federal government's retreat from water research and data collection.

Canada's scientific institutions are second to none. The Government of Canada was once a well-respected leader in advancing the scientific study of water. The time has come for the Government of Canada to take up that leadership role once again.

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<sup>37</sup> Dr. John Carey, (November 3, 2005).

# RECOMMENDATIONS

## Recommendation 1

The Government of Canada should take the necessary steps to ensure that all of Canada's major aquifers are mapped by 2010. This data should be made available in the national groundwater database and supported by a summary document assessing the risks to groundwater quality and quantity.

## Recommendation 2

The Government of Canada should work with industry and with other orders of government to develop a standard methodology for the collection and reporting of water-related data. The Government of Canada should take on the responsibility for the creation of a centralized depository for water statistics.

## Recommendation 3

The Government of Canada must restore funding for longitudinal water studies. Such studies are essential to ensuring the sustainability of Canada's water resources.

## Recommendation 4

The Government of Canada should bolster its support for the National Water Research Institute and the Prairie Farm Rehabilitation Administration so that these institutions can better address Western Canada's growing water challenges.

## Recommendation 5

The Government of Canada should create a National Water Council. This Council, composed of representatives from industry, research institutes and all orders of government, would be tasked with identifying the key water issues that require attention from the federal government and proposing strategies for addressing them.

## APPENDIX A:

### Witnesses heard

November 16, 2004

**Office of the Auditor General of Canada:**

Johanne G elinas, Commissioner of the Environment and Sustainable Development;  
John Reed, Principal;  
Neil Maxwell, Principal;  
John Affleck, Principal;  
Richard Arseneault, Principal.

**Environment Canada:**

The Honourable St ephane Dion, P.C., M.P., Minister of the Environment  
Nick Macaluso, Policy Manager, Climate Change Economics Directorate, Policy and Communications;  
Steve McCauley, Director, Oil, Gas and Energy Branch, Environmental Protection Service.

November 23, 2004

**Environment Canada:**

John H. Carey, Director General, National Water Research Institute, Environmental Conservation Service;  
Jennifer E. Moore, Director General, Water Policy and Coordination Directorate, Environmental Conservation Service.

November 30, 2004

**Canadian Water Network:**

Mark Servos, Scientific Director;  
Bernadette Conant, Executive Director.

December 7, 2004

**Natural Resources Canada:**

The Honourable John Efford, P.C., M.P., Minister of Natural Resources Canada;  
George R. M. Anderson, Deputy Minister of Natural Resources;  
Howard Brown, Assistant Deputy Minister, Energy Policy Sector;  
Margaret McCuaig-Johnson, Assistant Deputy Minister, Energy Technology and Programs Sector;  
Jan Boon, Director General, Earth Sciences Sector, Geological Survey of Canada (GSC) — Sedimentary and Marine Geoscience Branch;



Richard Davies, Manager, Office of Coordination and Technical Information, CANMET Energy Technology Centre, Energy Sector.

December 9, 2004

**As an individual:**

David Schindler, Killam Memorial Professor of Ecology, Faculty of Science, University of Alberta.

February 3, 2005

**Green Budget Coalition:**

Pierre Sadik, Program Manager.

February 10, 2005

**Canadian Water and Wastewater Association:**

Duncan Ellison, Executive Director;  
Catherine Jefferson, Director of Government Relations;  
André Proulx, Past President and Member Association Representative.

February 24, 2005

**International Joint Commission:**

The Right Honourable Herb Gray, P.C., C.C., Q.C., Chair;  
Nick Heisler, Senior Advisor and Executive Assistant.

March 7, 2005

**Pembina Institute:**

Marlo Reynolds, Executive Director.

**Canadian Hydro Developers:**

Steve O'Gorman, Manager, Business Development & Marketing.

**Vision Quest:**

Theresa Howland, Manager, Green Energy Marketing, 2005 Chair of the Canadian Wind Energy Association;  
Jason Edworthy, Managing Director, External Relations.

**Suncor:**

Jim Provias, Vice-President, Renewable Energy and Business Development.

**EPCOR:**

David A. Lewin, Senior Vice-President, Sustainable Development;  
Tim Boston, Director, Government Relations.

**Alberta Energy Research Institute:**

Duke du Plessis, Senior Research Manager, Clean Power and Petroleum Technologies;  
Eddy Isaacs, Managing Director.

**Canadian Association of Petroleum Producers:**

Stephen Ewart, Manager, Media Relations and Communications;  
Brian Maynard, Vice-President, Public Affairs.

**As an individual:**

Andrew Nikiforuk.

**Parks Canada:**

Gaby Fortin, Director General, Western and Northern Canada;  
Terry McGuire, Director, Western Asset Management Services.

March 8, 2005

**TransCanada Pipelines:**

Harold Kvisle, President and Chief Executive Officer.

**Northern Gas Project Secretariat:**

Brian Chambers, Executive Director.

**Mackenzie Valley Aboriginal Pipeline:**

Robert J. Reid, President.

**Environmental Impact Screening Committee:**

Bill Klassen, Chair.

**Water Institute for Semi-arid Ecosystems:**

Dennis Fitzpatrick, Vice-President, Research.

**As individuals:**

Hester Jiskoot, Assistant Professor, University of Lethbridge;  
Kurt Klein, Professor, University of Lethbridge.

March 9, 2005

**As an individual:**

Steve Hruddy, Professor, University of Alberta.

**Alberta Chamber of Resources:**

John Zahary, President;  
Brad Anderson, Executive Director.

**Clean Air Strategic Alliance:**

Donna Tringley, Executive Director;  
John Donner, Board Alternate representing Alberta Environment;  
Linda F. Duncan, Board Alternate representing Lake Wabamun Enhancement and Protection Association.

**Alberta Research Council:**

Ian Potter, Director, Sustainable Energy Futures;  
Phil Murray, Vice-President, Energy.

**Alberta Environment:**

Keith Leggat, Director of Environmental Policy Branch;  
David Trew, Water Section Manager, Environmental Policy Branch;  
Robert Harrison, Partnerships and Strategies Manager, Environmental Partnerships and Education Branch;  
Kathleen Rich, Water for Life Implementation Coordinator, Environmental Policy Branch.

June 7, 2005

**Privy Council Office:**

Alex Himelfarb, Clerk of the Privy Council and Secretary to the Cabinet;  
Simon Kennedy, Assistant Secretary to the Cabinet, Economic and Regional Development Policy.

June 14, 2005

**Foreign Affairs Canada:**

Peter Fawcett, Deputy Director, U.S. Relations Division;  
Bruce Levy, Director, U.S. Relations Division.

**Environment Canada:**

John H. Carey, Director General, National Water Research Institute;  
David Whorley, Senior Advisor, Water Coordinator and Transboundary Water Issues.

October 18, 2005

**Office of the Auditor General of Canada:**

Johanne G linas, Commissioner of the Environment and Sustainable Development;  
John Affleck, Principal;  
Richard Arseneault, Principal;  
Neil Maxwell, Principal.

October 20, 2005

**Saskatchewan Agrivision Corporation Inc.:**

C.M. (Red) Williams, Agrologist, President.

**Clifton Associates Ltd.:**

Wayne Clifton, President;  
Graham Parsons, Vice-President, International Development.

November 3, 2005

**Environment Canada:**

John H. Carey, Director General, National Water Research Institute, Environmental Conservation Service;  
Donald Renaud, Director, Water Priorities Branch, Water Policy and Coordination Directorate.