



THE CONSERVER



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FALL EDITION

A 2008-2010 Water/Energy Connections Project Quarterly Newsletter published by:
The NCWC Education Fund & The National Council of Women of Canada with funding from:
The Walter & Duncan Gordon Foundation

LETTER FROM THE EDITOR

Dear National Council of Women of Canada and NCWC Education Fund members and supporters,

I know that you and many other Canadians are very concerned about our fresh water resources and wish to help protect them from the threats of climate change overuse, and extremely damaging energy sources such as nuclear, the tar sands, large dams and river diversions. You are also aware I'm sure, that "soft" water and energy paths which enhance water and energy conservation and renewal will create a sustainable future, and you, like myself wish to know more about how we can help.

That is why I am very pleased to introduce you to the first edition of THE CONSERVER, through which we intend to bring to your attention a wide variety of issues related to the many synergies between water and energy; potential common programs that you could present to the public over the next two years, with suggested experts to help you; information sources such as books, articles and essays, web sites, reports; a water/energy conservation survey; and, environmental networks to work with.

It is hoped that this project can help our members, the general public and the legislators understand the many connections and challenges of the water/energy nexus and help shape a more sustainable future for Canada's freshwater resources – and our environment generally.

So I cordially invite members of all affiliated Nationally Organized Societies, Provincial and Local Councils of Women, as well as our Honorary Life Members, and Individual Members to join with us in our ongoing efforts to 'make a difference' by taking part in this very important project.

Gracia Janes, Project Co-ordinator & President NCWC Education Fund

THE WATER/ENERGY CONNECTIONS PROJECT 2008 – 2010

Funded by: The Walter & Duncan Gordon Foundation

- 2008 AGM in Ottawa – Launch of the project with panel members Ralph Pentland, John Jackson, Tony Maas and Dr. Gordon Edwards.
- Quarterly newsletters circulated to our many members across Canada and posted on the web site.
- 10-15 Common Programs held by Local and Provincial Councils of Women over the two year period, with financial help from the grant to provide expert speakers on a variety of water/energy issues, and a target audience of members, the public and the press.
- A survey on personal water/energy use and opinions on government programs and legislation distributed to 3,000 Canadians. A report to the Federal Government with recommendations for change.
- Flash sheets and articles by researcher Dr. John Bacher and our expert advisory group e.g. Ralph Pentland, John Jackson, Tony Maas and others on the web site and in the newsletter.
- 2009 AGM in Prince Albert Saskatchewan, with speakers on western water/energy connections.

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NCWC Education Fund Inc.
205 – 251 Bank Street, Ottawa, Ontario
Phone: 613 232 5025 Fax: 613 232 8419
Email: ncwc@magma.ca

Quotables



21st Century Energy and Water Policies – Ralph Pentland Lead Speaker at NCWC’s AGM in Regina, May 30th, 2008

Early in the 21st century, the pattern of human conflict is being fundamentally reshaped by uneven growth and consequent migration pressures, geopolitical tensions linked to energy insecurity, widespread regional freshwater shortages, and irreversible climate change. Those realities must be recognized in designing 21st century Canadian energy and water policies. The following dozen topics are suggested for consideration by NCWC as it begins its energy/water connections project.

National Vision

Look to Europe for Inspiration

Europeans are already living the energy and water future we should be striving for. The average European supports his or her very good lifestyle with less than half as much water use and less than half as much energy use as the average North American. He or she also produces less than half of the quantity of greenhouse gas emissions.

Climate Change

Jim Bruce, one of Canada’s climate experts, suggests that Canada should be much more aggressive in considering options such as: a cap and trade strategy for large industries; a revenue neutral carbon tax; quotas on the proportion of electricity provided from renewable sources; and subsidies for green energy. Those options would also go a long way towards addressing imminent energy security issues.

Energy Security

The world has already entered a period of energy supply-demand imbalance, which will only intensify over time as the four BRIC countries (Brazil, Russia, India, China) industrialize. North America cannot achieve energy self-sufficiency without major policy shifts. Those shifts must necessarily include moving to a "softer" energy path; diversifying away from non-renewable sources; and taking advantage of potentially important synergies between energy and water policy.

Public Interest Constraints

Smart Regulation

Since about 1990, as an inevitable outcome of globalization and declining voter influence, North America has gone through a process of deregulation and the eroding of public interest regulations in an attempt to become more competitive. Aside from the regulatory process losing its rigor, enforcement has virtually evaporated. The NCWC may want to take a very close look at how we develop and enforce health, safety and environmental regulations in this country.

Safe Drinking Water

In Canada we operate under a system of national drinking water guidelines. Unfortunately, only two of the provinces have fully adopted the national guidelines: the requirements for the monitoring of contaminants vary from province to province; few provinces have regulations in place to deal with source water protection; and a majority of provinces still do not require mandatory reporting on performance. There is now a need to seriously consider nationally enforceable standards.

Public Trust

We do not have public trust laws in Canada, even though they have them in every U.S. state. They are based on the assumption that certain natural resources – like air, fresh water, oceans and the living things dependent on those resources – are so critical to human survival, that governments have a fiduciary duty to preserve their essence for the use and enjoyment of the entire populace, not just the privileged.

Living Within Nature’s Limits

As more of our energy sources become renewable, their control will shift to more local entities. At the same time, the energy –water linkages will also become clearer, and the need to keep water within its natural watersheds and deal with its many uses in an integrated fashion will also become obvious. The Canadian Water Issues Council and the Munk Centre at the University of Toronto have developed a Model Act aimed at keeping water within its major natural basins.

Quotables



Incentives and Opportunities

Soft Paths

David Brooks, who has worked a lot on soft path approaches for both energy and water, points out that we have no shortage of opportunities to reduce demand. As we reduce energy use we would save enormous amounts of water and very significantly improve our aquatic ecosystems, as well as move towards a more responsible climate policy. And as we reduced water use, we would save enormous amounts of energy which are now used to extract, store, pump, transport, heat and treat that water.

Incentives and Disincentives

Pure Economic theory suggests that all environmental costs should be included in energy royalty and taxation regimes. Of course it is impossible to calculate all the environmental costs. What governments tend to do instead is to use various economic incentives and disincentives as proxies. Unfortunately, Canada has been very slow to do even that, and as a result we are missing out on a lot of green industry opportunities.

Science

In the more global, industry-dominated economy, Canadian environmental science has been seriously degraded. There is an urgent need to both rebuild our national science capacity, and to find institutional models that allow publicly funded scientists to speak out honestly and without fear of reprisal. One possible model is something akin to the former Fisheries Research Board. It did outstanding, world class research and its independence was never in doubt.

International Assistance

Many less developed countries are suffering from a combination of civil strife, malnutrition, water shortages, declining sources of wood for burning and desertification. We need to recognize that it is in our rational interest to place a high priority on these kinds of water and low level energy problems. Those investments would not only improve world-wide health, but they would at the same time reduce the risk of political conflict, and contribute to global security and stability."

A Precious Resource We Take For Granted

With permission from:

St Catharines Standard, Ontario, Canada

In a country blessed with so much fresh water, Canadians can perhaps be forgiven for taking it for granted.

Or Can We?

We know others are not so lucky. We know the planet, let alone our economy, cannot survive without it. We've been told the next world war will be fought not over land or oil, but over water.

And yet Canadians are squandering water at a rate that is unforgivable, especially compared to other nations. As a Sun Media series pointed out, we're second only to the U.S. as the world's highest consumers of water, and too few of us know our supply is finite.

We believe the Great Lakes are bottomless, ground water is infinite, tap water is cheap and plentiful. Until recently, too many municipalities charged a flat rate for taxpayers which hardly encourages conservation. Even today, Canadians pay less for water than in most other developed countries. But in fact, Canada's supply of fresh water is not nearly as plentiful or secure as most of us have been led to believe.

Politics, geography, lack of reliable data, the media and myth have conspired to overestimate the amount of water that is truly usable in this country. Meanwhile, government policy on water and water conservation is out of date, unco-ordinated or non-existent.

Once, Canada had water research departments that were admired around the world and attracted the best minds from across the globe, but budget cuts have taken their toll, and water research in Canada today is woefully underfunded. Water is no longer a priority for government, and research is grinding to a halt just at the time when the work is most critical. We must reverse the trend and there's little time to lose. **(Continued on page 6)**

Can Canada Avoid

Can Canada Avoid a Water Crisis ?

Excerpts from *The Hill Times*,
Ottawa, July 2008

Freshwater supports our social fabric, underpins our country's remarkable biodiversity and contributes up to \$23 billion to the Canadian economy every year. Spending time in, on, or close to water defines what it means to be Canadian. But Canada is facing a looming water crisis and Canadians are looking for leadership.

Despite growing concerns, the last federal strategy for freshwater was drafted over two decades ago – the 1987 federal Water Policy. This cutting-edge policy was shelved in the early 1990s and since then national capacity to deal with the impending water crisis has dramatically declined.

Canadian Water Concerns

- *Canada's water resources are experiencing some of the earliest impacts of climate change*
- *untreated sewage flushed into Canadian waterways, and toxic pollutants detected at increasing concentrations*
- *the shocking 1,859 boil water advisories in communities across the nation*
- *declining great lakes water levels, retreating glaciers and decreased summer flows in prairie rivers*
- *wasteful water use – Canadians are second to only the U.S. citizens in per capita water consumption*
- *water siphoned for energy production – every barrel of oil produced in Alberta's oil sands requires 2-4 barrels of water*



A Blueprint for Federal Action on FRESHWATER

In twenty years, if current trends continue, we could find western Canada crippled by water scarcity, national water infrastructure beyond repair, and drinking water tragedies such as Walkerton and Kashechewan becoming commonplace. Fortunately, governments can achieve an entirely different future by working together and empowering communities to protect and conserve our watersheds.

With this positive vision in mind, a group of concerned scientists and citizens came together last fall under the name of Gordon Water Group to devise a blueprint for the consideration of federal legislators. This comprehensive plan would reinvigorate the federal role, respect and support other levels of government, and enable all Canadians to move toward a common freshwater vision.



A Water Crisis

Pollution Probe has called for a new approach to water management in Canada.

The Canadian Chamber of Commerce has urged the federal government to make water a high priority.

The National Council of Women of Canada has emphasized the need to develop a national water strategy.

The Insurance Bureau of Canada has called for a national plan to improve water and wastewater infrastructure.

The Council of Canadian Academies will soon release recommendations for sustainable groundwater management.

The Canadian Water Issues Council has developed a Model Act for keeping water within Canada's major drainage basins.

The Canadian Water Resources Association has proposed process for developing a Canada-wide consensus on water policy.

The Canadian Water Network is facilitating national coordination of water knowledge to ensure the best science underpins Canadian water policy.

Key themes and priorities include:

- **Enhancing National Capacity for Freshwater Protection**
Facilitate development of a national freshwater strategy.
- **Responding to the Impacts of Climate Change and Energy Production**
Assist communities in preparing for droughts and floods.
Mainstream climate change into water Policies.
- **Securing Safe Drinking Water For All Canadians**
Legislate enforceable drinking water protection across Canada.
Fund infrastructure renewal and facilitate multi-barrier protection.
- **Protecting Aquatic Eco-systems and Aboriginal Water Rights**
Develop effective frameworks to protect instream flow needs.
Recognize and respect Aboriginal water Rights.
- **Promoting a Culture of Water Conservation**
Stimulate a strong commitment to reducing water demands.
- **Preventing Interjurisdictional Conflicts and Bulk Water Exports**
Prevent bulk water exports and prohibit inter-basin diversions.
- **Developing World Class Science**
Make long-term investments in strengthening scientific capacity.

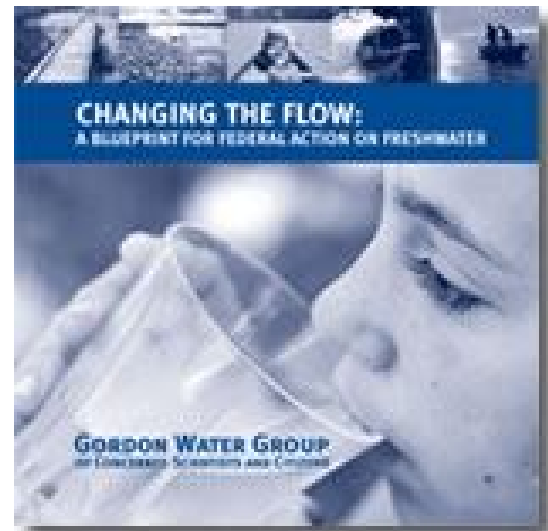
CHANGE THE FLOW

Implement a

Federal Water Strategy

In last fall's Speech from the Throne, the Government of Canada made a commitment to a new water strategy. Canadians should welcome that commitment and encourage government and parliamentarians to develop and implement that strategy as soon as possible. The challenges facing our water resources are mounting –

It is time to change the flow!





Rays of Light Across the Country

Increase in Hand Lawn Mowing

Environmentalists have pointed out for many years how gas powered lawn mowers are a easily replaceable source of pollution. A hopeful sign, presumed to be caused by higher oil prices, is the increased sales of hand powered lawn mowers. One American manufacturer, American lawn Mower Corporation, has reported that sales have gone up by 60 to 70 per cent over last year. Sales administrator Ted McLain told Associated Press that "I think gas prices are playing a part in this."

Jonna Smith, Toronto Star, July 6, 2006

Sault College Encourages Wind Power

A new, 30K wind turbine located at Sault College in Sault St Marie has come to symbolize this community college's commitment to education in renewable energy. Iron worker apprentices will be lowering the tower for maintenance, process automation students will be creating a data acquisition system to display how much power it is generating, civil engineering students will be inspecting it on a regular basis, and wildlife students will examine its environmental impacts.

Northwatch

Quebec Plans Major Expansion of PV

The Renewable Energy Corporation of Norway has decided to build a massive PV manufacturing facility in the Quebec community of Becancour, which will employ 300 "green collar" workers. Premier Jean Charest announced that, "We are bolstering our position as the North American leader of renewable energy."

Solar Power Growing in Canada

The growth of solar power photovoltaics (PV) has been increasing at an average in Canada since 1983 of 25%. Despite its wet climate, solar resources in British Columbia are better than Germany and Japan which are world leaders in this technology. PV can capture up to 80% of light reflected off of snow. Hot warm days are actually the peak demand time for electricity because of demand for air conditioning. The largest PV facility in North America is being constructed in Sarnia, which by 2010 will provide 50MW_ enough electricity for the use of 20,000 homes.

Vivian Song, Toronto Star, June 22, 2008



Bits and Bytes

Keynote Speaker at Energy & Water nexus Conference Warns of Impact on Water in Canada by Global Warming

Participants at the May 4th – 6th, 2008 Energy & Water Nexus Conference, held at the Old Mill Inn in Toronto, heard a dire warning from Dr. John Smol, a Queen's University Professor, about the impacts of global warming on the future of the nation.. These he indicated will over time have similar consequences in more southerly locations, as the dramatic drying out of wetlands he observed in the Canadian Arctic.

For 15 years every summer professor Smol has journeyed to the Canadian Arctic, originally seeking to better understand previously poorly researched pond ecosystems, which support a range of rare and unusual species. The initial thrust of his research dramatically changed however, when during the summer months, ponds that had once had an abundance of open water right up to the autumn freeze in October, now had completely vanished by July. This has moreover not just been an episodic change, but a consistent and disturbing trend.

Bev Yee, of the group Water for Life, followed up Smol's warnings with her account of Alberta's water use projections, which indicated that the province was "in a pickle". She noted that new technologies must be developed which would dramatically reduce the need for water to extract and refine the tar sands of Alberta. The province's difficulties are compounded by legal challenges that give farmers who had water rights prior to 1920 the first claim on the province's water resources.

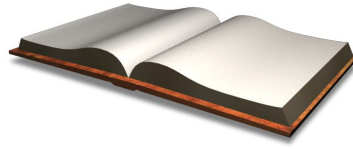
(continued from page 3

A Precious Resource)

We need a national water strategy. We need more research. We need more tools. We need more information and data that provinces and the federal government can share, and we need to stop treating this precious resource as something to sprinkle on the grass or spray on the family car.

Canada's fresh water supply isn't as plentiful or secure as many believe.

From the Pages of



"Green Urbanism:

Learning From European Cities",

by: Timothy Beatley,

Island Press,

Washington, DC, 2000

Reviewed by John Bacher

In his May 30, 2008 keynote address to the National Council of Women's annual general meeting, on the topic of "2¹st Century Energy and Water Policies", Ralph Pentland stressed the need to first "Look to Europe for Inspiration". Here he stressed "Europeans are already living the energy and water future we should be striving for. It's obviously difficult to compare the quality of life in different countries. But, as I travel around Europe and North America, I don't perceive any perceptible difference in quality of life, except Europeans seem to enjoy life a bit more than North Americans."

What Pentland found was that, "The average European supports his or her very good lifestyle with less than half of as much water use and less than half as much energy use as the average North American. He or she also produces less than half the quantity of greenhouse gas emissions. It would take very little for use to match that performance-just a few lifestyle changes."

In his keynote address, Pentland touched upon a few of the reasons for Europe's green advance. He notes that, "The Danish government has been taxing CO2 emissions since 1991, and it has offered tax incentives to the wind industry since the 1970s. The results range from Denmark's global leadership in renewable power generation and wind turbine manufacturing, to a majority of the chilly climate's heat being produced by hyper-efficient combined heat and power schemes, to substantial CO2 emissions reductions during a period of robust economic growth."

Germany likewise, Pentland stressed, has vaulted "to the global forefront in renewable energy. Through "feed in tariffs", a type of subsidy which properly puts green energy in the "avoided costs" (ie. damage from climate change) category, and the outcome has been "a near spectacular boom in German solar energy production."

Timothy Beatley's "Green Urbanism", shows how Europe's green successes, are as a result of that fortunate continent doing what North American environmentalists would like to do. And while they have been ridiculed by powerful politicians and their media allies, as being impractical dreamers, in Europe the same ideas are being efficiently implemented with a resulting rampaging reduction in carbon emissions.

Beatley shows how Europe's mix of green measures such as tough zoning to preserve farmland, prohibitions on new suburban shopping centres, massive clean ups of polluted brownfields, draconian car restraint policies and heavy investment in transit, subsidized non-profit housing, pedestrian and cycling infrastructure, achieve good results in terms of curbing green house gas emissions. What is astonishing is how ideals which would be scorned in North America as crazy environmental extremism are implemented in Europe without much fuss or bother. None of the measures praised by Beatley have resulted in a right wing backlash.

Of all the green measures compiled by Beatley my favourite is that of the King of Norway getting tough on shopping malls. In Norway he notes on page 56, "the government by royal decree, banned new shopping malls located outside of city-centres for a period of five years. Seen as a bold and necessary move to prevent further auto traffic and economic undermining of downtowns, the decree applies to malls of 3,000 square meters or larger. Similar restrictions have been place on out-of-town shopping complexes in other European countries." (con't page 8)

From the Pages of

(Continued from page 7)

One of the surprising features of green urbanism in Europe is a respect for grass swales, which engineers and their reactionary political allies in North America seek to turn into concrete curbs and gutters. One of the charming medieval features of the German city of Freiburg was its grass swales running through most of the historic core of the city, which when operated by guilds, provided clean water into the city. Freiburg reconstructed this ancient system, and they have become "*the object of active delight, for example by children playing in them.*" They have helped make the city's streetcar system safer, by imposing barriers to pedestrian movement in otherwise potentially dangerous situations.

The Dutch are also zealous believers in grass swales which they call wadis. In the city of Leiden, neighbourhoods have a close-loop system of wadis, with natural reedbed filtration which results in water pure enough for residents to swim in them. In parts of Enschede, swales have completely eliminated conventional storm sewers. Within the swales are perforated drain-pipes, surrounded by a cocoon of clay pellets that encourage good bacteria that treat the collected stormwater. This has helped to reverse previously declining levels of ground water.

Europeans also have respect for green roofs. They are encouraged throughout the continent as a form of insulation, a stimulant to bio-diversity, (being loved for instance by butterflies), a source for growing food, a treasured means to reverse the urban island heat zone and an important measure to reduce water pollution.

The city of Linz in Austria has some of the most aggressive measures to promote more green roofs. It has spent over \$3 million on this goal, which has created 300 such roofs in the city, even over the roof of a gas station. Any developer who harms green space is forced to pay for a green roof.

Another European passion is for green walls, and the covering over of buildings with vegetation. Studies have found this shields against UV rays, provides shading and cooling during the summer and as insulation that

reduces heat expenses by 30 per cent in the winter months. Such green covering, usually by Virginia Creeper and Wisteria, provides protection to buildings against chemical weathering, reduces noise and gives positive humidifying effects. One of the most impressive examples of a green wall can be found in the new police station in Leusden, the Netherlands, where it provides protection from the weather and as a measure to prevent graffiti.

Greenery is even used as part of the Europeans' efforts to improve their rapidly expanding network of streetcars, which in North America, except in Toronto, were largely dismantled. Green strips are now commonly planted in between streetcar tracks, and separated rights of way are commonly demarcated by rows of trees.

My favourite photograph in "Green Urbanism" indeed is worth a thousand words of praise. It is of the bicycle-expressway that encircles the city of Munster, Germany. This tree-lined expressway speeds mobility for cyclists getting around the city avoiding automotive traffic jams, and is fed by feeder trails. This grand promenade is the jewel in the crown of the city's 550 kilometres of bikeways.

One of the most stimulating examples cited by Beatley is his description of how the city of Arhus, Denmark, with financial assistance from the country's Environment Ministry, combated the problem of car addiction. A group of 175 car addicts were selected to change their mobility behaviours in favour of cycling and transit. Participants were given a new bicycle, which they could choose from a local shop, and which they had the option of purchasing later. They were also given unlimited maintenance, rain gear, and a one-year transit pass. Participants agreed to keep trip diaries and monitor and record travel by different modes. The result was a great success. The former "*habitual car drivers*", reduced their automotive use by half.

Readers of "Green Urbanism" will be inspired with hope, knowing that our own, and government, actions, can make a huge difference in reducing carbon emissions and that our environmental dreams are not impractical, but definitely achievable.