

**Water Day Websites
Geography Awareness Week 2007
Canadian Association of Geographers**

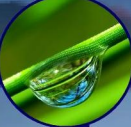
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The significance of water in Canada's past, present, and future could not possibly be over-stated. Under-appreciated, yes, but over-stated, no. For thousands of years water has shaped the physical and human geography of this country, and it is highly likely that for many generations to come water will continue to play a critical role in the evolution of Canada's economic geography, transportation geography, urban geography, physical geography, agricultural geography, cultural geography, social geography, industrial geography, medical geography, and tourism geography.

By way of brief explanation about the importance of water to Canada, and why water has such a profound impact on every aspect of this country's geography, it is necessary to reflect only for a moment about two aspects of the water situation in Canada.

First, there is the massive presence of water throughout many parts of the nation. We have oceans on three coasts -- (Atlantic (east), Arctic (west), Pacific west) --, the Great Lakes in the middle, a number of huge rivers flowing north, south, east, and west (e.g., St. Lawrence, Mackenzie, N. Saskatchewan, S. Saskatchewan, Saskatchewan, Fraser, Ottawa, Churchill, Columbia, Liard, Red, Nelson, Assiniboine, Albany, Severn, Athabaska, Skeena), thousands of smaller rivers, and many, many thousands of lakes of all sizes, including the world's largest freshwater lake on an island in a freshwater lake.

Those water bodies affect where we live, where we work, where we grow food, where we obtain fish and seafood, where we go on holidays, where we travel, where we get rain and snow, where we get our water to drink, where we get water for industrial and commercial activities, where we 'dump' water from sewage treatment plants, where we skate on lakes and rivers, where trees and grass grow, and where frogs, ducks, geese, and other creatures hang out.



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Second, there are growing concerns about both the continuing quantity and quality of Canada's water supply at the regional level, and the many known and unknown geographical effects that could arise as a result of the changes in water supply and water demand. By way of illustration, climate change and especially global warming and variations in weather patterns will cause many changes, increased demand for water in the U. S. could be problematic, overdrawn of water from aquifers could be seriously damaging, and increased urbanization along with loss of wetlands has major implications for increased demand for water on the one hand, and increased water runoff, flooding, and loss of water quality on the other.

As suggested above, it seems impossible to over-state the importance of water to Canada's social, economic, and environmental well-being. In addition, however, it also seems impossible to over-state the intimate connection between water and geography in towns, cities, and in the transportation, fishing, agricultural, extractive, tourist, energy, and forestry sectors in regions across Canada.

I believe that the websites featured for Water Day do an excellent job of discussing and demonstrating the connection between water and geography. I wish to thank Professor Nick Novakowski from Sir Wilfred Grenfell College at Memorial University, for assistance in selecting the websites and writing the descriptions of website contents. These summaries provide a context and frame of reference for choosing which websites to visit, and perhaps for deciding which ones to view in which order.

Selected Water Websites Water Day 2007

Canadian Water Resources Association (<http://www.cwra.org/>)

The Canadian Water Resources Association (CWRA) is a national organization of individuals and organizations interested in the management of Canada's water resources. The membership is composed of private and public sector water resource professionals including managers, administrators, scientists, academics, students and users. CWRA has branch organizations in eight provinces and members throughout Canada and internationally.

The Canadian Water Resources Association has its roots in the Western Canada Reclamation Association (WCRA) established in 1947. The WCRA was formed to promote the development, control, conservation, preservation and utilization of the water resources of Western Canada. Later, the scope of the organization became national and CWRA was the result.

Activities undertaken by the Association include the following: organizing conferences, developing symposiums and workshops dealing with a wide range of water management issues, publishing the quarterly *Canadian Water Resources Journal* and a newsletter (*Water News*), as well as publishing papers and reports, and providing scholarships.

City of Kawartha Lakes

(<http://72.14.205.104/search?q=cache:xL8sSyxxWd0J:www.city.kawarthalakes.on.ca/Community/Roads/124%2520EPW%2520010%2520Roadway%2520Level%2520of%2520Service%2520Policy%2520%2520Winter%2520Maintenance%2520-%2520%2520Roads.doc+city+of+kawartha+lakes+winter+roads&hl=en&ct=clnk&cd=2&gl=ca&client=firefox-a>)

Perhaps it is because the City of Kawartha Lakes receives more snow than a number of other localities, or perhaps it is testimony to good public administration, but in any event this municipality goes to great lengths to spell out the why's, when's, how's and where's of dealing with the task of moving and removing snow. This page is a very practical description of what is involved in dealing with snow on roads, sidewalks, and elsewhere on public rights-of-way, and in my experience is a text to be read by vehicle operators, cyclists, and pedestrians in every town and city in Canada that experiences snow.

A primary reason for recommending that Canadians read this text, and compare it to similar texts of their own municipalities, is that there has to be a logic behind the selection of snow-related street and sidewalk maintenance standards, and this statement from the City of Kawartha Lakes is a good place to start. That said, I must emphasize that all municipalities are not alike, and that one set of standards for dealing with snow will undoubtedly not suit them all, or even most of them.

Conservation Authorities of Ontario

(<http://www.conservation-ontario.on.ca/>)

Conservation Authorities are created by the Province of Ontario to ensure the conservation, restoration and responsible management of Ontario's water, land and natural habitats through programs that balance human, environmental and economic needs. A big part of what Conservation Authorities do is called watershed stewardship. Watershed stewardship involves the responsible care of our natural resources and wildlife on a watershed basis, and is essential to balancing human and economic needs against the needs of the natural environment. Among their various tasks, Conservation Authorities:

- Develop technical tools to monitor and assess the state of our watersheds.
- Provide advice and technical assistance.
- Promote community involvement.
- Build partnerships with all levels of government, environmental groups, businesses, residents and landowners.

Conservation Authorities provide many publications, including guides to the conservation areas themselves, undertake class environmental assessment for projects, and are also sources of advice on well-water, and water scarcity. The website also mentions that videos on the Conservation Authorities are coming soon.

Ducks Unlimited Canada (<http://www.ducks.ca/index.html>)

Ducks Unlimited Canada (DUC) has been committed to wetland conservation for more than 65 years. Despite this on-going commitment, wetland loss continues across Canada. As much as 70 per cent of Canada's original wetlands have been lost in some areas of the country. DUC is a national, private, non-profit organization. In essence, the organization is concerned with the conservation of habitat that is suitable for ducks and other migrating birds.

DUC's conservation efforts take many forms. On-the-ground work is guided by the wetland and environmental research of DUC's scientists. DUC works to change policy in favour of wetland and habitat conservation. DUC also delivers wetland and environmental education programs to teach Canadians about wetlands and the need to conserve them. As a non-profit organization, DUC relies on the support of Canadians from across the country and its dedicated volunteers, members and staff work very hard to help DUC achieve its conservation mission and vision.

Wetland habitat conservation means different things to different people. Ducks Unlimited has many different activities within its purview: For example, DUC:

- Supports conservation.
- Undertakes fundraising to finance conservation.
- Works hand-in-hand with landowners to make land use more sustainable and profitable.
- Conserves wetlands and associated habitats through charitable donations, long-term or permanent land use agreements (conservation easements, restrictive covenants, etc.).
- Educates Canadians about the value of wetlands and conservation. Part of this effort involves provided free lesson plans and environmental education resources for teachers. And,
- Conducts wetland and environmental research that can be used to guide conservation work and increase credibility.

DUC maintains a research library in Winnipeg with a full-time librarian. The library contents can be searched and sometimes borrowed on-line. DUC also has one of North America's most extensive video stock library collections specializing in waterfowl, birds, wildlife, landscapes, natural habitat, people and the environment. This exclusive video collection is now available for worldwide professional and broadcast use. Proceeds from the sale of all stock video footage are directed toward Ducks Unlimited's habitat conservation programs in Canada. This footage has been featured in many of DU award winning (Emmy, International Wildlife Festival) productions.

Evergreen Canada ([Evergreen - Urban Impacts on Water Percolation](#))

The important topic of water percolation in urban areas is the focus of this grade 11 lesson in geography (Ontario curriculum). As stated in the lesson description, "In this activity, students will investigate the impact of urbanization on water percolation by examining the layout and construction of their school site. This is especially applicable in more urban settings where school facilities and campuses are crowded amongst other important urban land uses such as

residential, commercial and industrial. Students are required to measure or estimate the size of their school campus and then, through observation, estimate how much is covered by pavement or the school building. This activity could be completed in conjunction with the GPS activity, "Mapping My Community."

For anyone wondering why urban areas in Canada and throughout the world are subject to catastrophic flood conditions, this lesson is a very good primer for understanding a cause-effect relationship between geography and water. That is, the greater the proportion of an urban area that is covered in asphalt, concrete and other impermeable surfaces, and the more the rains come down, the greater the volume of run-off water there is to flood basements, underground utility corridors, and other low-lying areas.

This grade 11 geography lesson is a very good read while watching Weather Channel reports on flooded urban areas, and listening to experts try to explain why very expensive houses get washed down hillsides, viaducts get filled with a metre of water, or sewage treatment plants have to divert storm sewer water directly into rivers, untreated.

National Water Research Institute (<http://www.nwri.ca/nwri-e.html>)

The National Water Research Institute is run by Environment Canada's Environmental Conservation Service and is Canada's preeminent freshwater research facility (and has over 300 staff). The Institute has two primary locations: the Canada Centre for Inland Waters in Burlington, Ontario and the National Hydrology Research Centre in Saskatoon, Saskatchewan. The Institute also has other staff members working with other governmental departments, with universities, and other research organizations.

The Institute's staff includes physical geographers, aquatic ecologists, hydrologists, toxicologists, environmental chemists, limnologists, and research technicians. The over-arching goal of the Institute is to link water science to environmental policy. In that capacity, NWRI conducts a comprehensive program of ecosystem-based research and development in the aquatic sciences, generating and disseminating scientific knowledge needed to resolve environmental issues of regional, national or international significance to Canada, and to sustain Canada's natural resources and freshwater ecosystems.

The Institute has a strong media presence and can even work with the media to develop water-related stories. As well, the Institute has a very strong publishing arm with many annual and periodic publications in its library. The Canada Centre for Inland Waters in Burlington maintains a central library.

Natural Resources Canada

(<http://atlas.nrcan.gc.ca/site/english/learningresources/facts/rivers.html>)

There are a number of very important links to access at this site, but for Water Day the pick of the bunch is [Atlas of Canada - Rivers](#). The **Explore Our Maps** link provides an excellent introduction to and overview of the connection between water (rivers) and geography on the topics of environment, people and society, economy, history, climate change, freshwater, and health, and also discusses reference maps, map archives, and topographic maps. This website is loaded with facts and figures about rivers, and is an outstanding example of a website that is extremely well designed, has an important message to convey, and uses text, numbers, and maps to great effect in making the connection between water and geography.

Parks Canada (http://www.pc.gc.ca/docs/v-g/pingo/sec3/natcul1_e.asp)

Canadians are familiar with ice from such activities as skating, curling, playing hockey, slipping on sidewalks, sliding into ditches in their vehicles, etc. Further, many of them have seen images of glaciers and ice fields, and are aware of concerns about these massive amounts of ice turning into water. However, how many Canadians know about pingos? And how many know that Canada's geography is a leading breeding ground for these extraordinary features of a permafrost landscape?

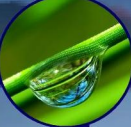
Want to know more? Then read this next statement and then click onto the Parks Canada website. "The Tuktoyaktuk Peninsula represents one of the most unusual landscapes in the Northwest Territories and Canada. In this region, 1350 conical hills called pingos dot the lake-strewn tundra like miniature volcanoes. Striking features on the otherwise relatively flat landscape, these ice-cored hills are unique to permafrost environments. Approximately one quarter of the world's pingos are concentrated in the Tuktoyaktuk Peninsula area."

Toronto Waterfront Revitalization Corporation

(<http://www.towaterfront.ca/index.php?home=true>)

The revitalization of Toronto's waterfront provides the city and the province with an excellent opportunity to ensure that Toronto remains among the best places in the world to live, work and visit. Revitalization of the Toronto waterfront is a significant key to the city's future prosperity.

The creation of the Toronto Waterfront Revitalization Corporation (TWRC) was spearheaded in 2001 to oversee and lead the renewal of Toronto's waterfront.



WATER

The development of successful waterfront projects in other cities such as London, New York, and Barcelona has shown that a separate corporation with a strong mandate to coordinate and oversee an integrated strategy is crucial to making waterfront revitalization a reality. The TWRC was formally established in the fall of 2001 and was up and running in February, 2002.

The mission of the TWRC involves working with the community and public and private sector partners to create waterfront parks, public spaces, cultural institutions and diverse and sustainable commercial and residential communities. More specifically, the TWRC plans to foster communities that offer a high quality of life for residents and visitors alike, to attract innovative, knowledge-based industries to the Port lands, to engage the community as an active partner in revitalization, and to develop strategic partnerships to attract private sector investment. All this must be done within an environment that respects water as the most important element of a waterfront in terms of quality, aquatic-related uses and environmental planning.

The website currently provides a waterfront audio tour available through a link on the home page.

