Annual Report



PROGRAM ON WATER GOVERNANCE



Sustainable Water Infrastructure Management in Canada Workshop - May 2008

MISSION

The mission of the Program on Water Governance (PoWG) at the University of British Columbia is to conduct basic research on water management, to engage the wider community in outreach and education on water issues, and to facilitate dialogue on water governance between universities, communities, government, NGOs and the private sector. The PoWG is co-hosted by the Department of Geography and the Institute for Resources, Environment and Sustainability.

PROGRAM ON WATER GOVERNANCE ANNUAL REPORT 2008

The past year has been marked by dramatic changes, including increasingly unpredictable weather and the mainstreaming of many environmental issues. The implications of these changes for water governance in Canada have yet to be made clear. One potentially promising outcome is the renewed interest in governmental investment in water infrastructure. With Canada's estimated water infrastructure deficit of \$70 Billion, and the unfolding financial crisis, any new money will undoubtedly need to be spent wisely.

Our Municipal Water Supply Infrastructure Governance in Canada Project wrapped up this year and offers some insights into what a successful investment strategy should include. First off, "the most common concern among municipalities in Canada is related to infrastructure capacity." Population growth and climate change combine to present demand challenges in the near future, and one of the most efficient means for increasing capacity is to view conservation as a new source of supply. Second, sustainable water management in a watershed requires the development of a shared vision between the various water management bodies, and this bigger picture can be used to help optimize infrastructure investments. Third, successful conservation programs require good governance guided by the principles of accountability, fairness, and shared governance. All of these findings are elaborated in policy publications available on the PoWG website

(www.watergovernance.ca/municipal/publications. htm).

With the Supply project coming to a close, our focus has shifted to a new 4-year research endeavour on Water Security. A collaboration of five universities spearheaded by the PoWG, this project aims to improve water security in Canada through the development of a Water Security Framework (WSF). The WSF, which includes a Water Security Index and a toolkit of decision-support tools, strives to increases water security by improving governance for source protection and land use. Information on the project can also be found on the website (www.watergover nance.ca/security/index.htm).

Another significant policy event of 2008 was BC's release of the ambitious Living Water Smart Policy. With aggressive targets across a host of water management issues the policy sets the bar high. Linda Nowlan reviewed the policy and compiled some feedback in *Smarter Water Laws: the key to Living Water Smart* (www.watergovernance.ca/PDF/PoWGSmarterWaterLaws.pdf).

Our outreach activities this year have focused mainly on policy publications, speaking engagements, journal articles, and new web resources. For up to date information please visit our website (www.watergovernance.ca) or sign up for our e-newsletter (by clicking 'Subscribe' on our website and sending us an email).



PEOPLE AND ACTIVITIES



Dr. Karen Bakker, an Associate Professor in the Department of Geography and an Associate of UBC's Institute for Resources, Environment and Sustainability (IRES), is the Director of the Program. Her most

recent book is an edited collection addressing critical Canadian water governance issues (*Eau Canada*, UBC Press, 2007).



Alice Cohen is a doctoral student in the department of Resource Management and Environmental Studies. Her research focuses on transboundary groundwater and the role of regulation in on-the-ground decision-making.



Gemma Dunn is a research associate and policy outreach coordinator for the UBC-led project on water security. Her work focuses on water security indicators, water conservation strategies, infrastructure and privatisation.



Dr. Kathryn Furlong is the post-doctoral researcher who led the Municipal Infrastructure Project. Her research addresses questions related to the neoliberalization of governance and its inter-rela-

tionship with the deployment, uptake and function of municipal service delivery. Kathryn left the Program to take up a post-doctoral position at the University of Manchester in October 2008. We wish to thank Kathryn for all of her contributions to the Program, and wish her the best on the other side of 'the pond'.



Jacquie Belzile is a masters student in the department of Resource Management and Environmental Studies at IRES. Her research focuses on adaptations to water scarcity and opportunities for strategic learning between

Canada's Okanagan region and Australia.



Christina Cook is a doctoral student in the department of Resource Management and Environmental Studies. Her research examines the utility of a water security framework in addressing scalar challenges to municipal water supply governance.



Emma Norman, is a doctoral student in the department of Geography. Her research investigates the rescaling of environmental governance within a borderland area, focusing on the governance of transboundary water

resources at the local level along the Canada-US border.



Linda Nowlan is an environmental lawyer and was a Faculty Research Associate at the Institute for Resources, Environment and Sustainability at UBC. Her work focuses on water governance and groundwater protection.

She is a member of the Canadian Council of Academics' Expert Panel on Groundwater, and the Gordon Water Group. In January 2009 Linda left the Program to begin new projects as an independent consultant. We would like to acknowledge her important commitments to the Program over the past two years, and wish her the best of luck. Linda can be reached at Inowlan@shaw.ca.

WORKSHOPS

May 5, 2008 – Sustainable Water Infrastructure Management in Canada

Leading up to the culmination of the PoWG's Municipal Water Supply Project, a second workshop was held at UBC's Peter Wall Institute for Advanced Studies bringing together experts on sustainable water management from across Canada. Four themes framed the discussion: the "roles of three levels of government in advancing efficiency in demand management, effective programs for sustainable water supply, utility governance at the municipal scale, and principles of good governance as a guide to developing effective programs" (Gardner & Furlong, 2008). The workshop engaged with the findings of the project in a draft report and served as forum for experts to share and explore effective governance strategies for conservation and efficiency in municipal water supply.

May 30, 2008 - Privatization and Public Services

A multi-disciplinary workshop, organised by the Program on Water Governance (and hosted and sponsored by UBC's prestigious Peter Wall Institute), considered critical questions raised by the privatization of public services in relation to individual well-being, collective public health and inclusive polity. Focusing on three sectors (education, health and water supply), the workshop aimed to identify cross-cutting themes and build a network of researchers interested in the evolution of governance in public-services.

Program on Water Governance representatives also participated in a variety of workshops and conferences on water across Canada in 2008, including:

- **1st BC Water Governance Workshop**, Langley, BC, February (Jacquie Belzile)
- Alberta Research Council's Elbow River Groundwater Management Workshop, Bragg Creek, AB, June (Linda Nowlan)
- Canadian Water Network (CWN) Retreat, Victoria,

- BC, June (Karen Bakker, Linda Nowlan, Christina Cook, Gemma Dunn)
- Canadian Association of Political Science
 Conference, Vancouver, BC, June (Karen Bakker, Emma Norman)
- Canadian Association for Studies in Development Conference, Vancouver, BC, June (Karen Bakker)
- CWN Yukon River Basin Workshop, YT, July (Alice Cohen)
- CWRA/OBWB One Watershed, One Water
 Conference, Kelowna, BC, October (Linda Nowlan, Jacquie Belzile)
- CWN Infrastructure Conference, Montreal, QC, October (Christina Cook)
- CWN Effective Communications Workshop, Vancouver, BC, November (Jacquie Belzile)
- BC Ministry of Environment's Indicators
 Workshop, Victoria, November (Gemma Dunn)



Even governance folks sometimes get their feet wet... Alice Cohen at the CWN Yukon River Basin Workshop, a ten-day workshop traveling along the Yukon River in July 2008.

Annual Report 2008 03

WATER SECURITY PROJECT 2008 – 2012

In 2008, the Canadian Water Network (CWN)* awarded the UBC Program on Water Governance (PoWG) a four-year grant to lead a team of researchers from five Canadian universities on a project to improve water security in Canada. PoWG defines water security as: "sustainable access on a watershed basis to adequate quantities of water, of acceptable quality, for human and environmental uses". The overall objective of the project is to create a Water Security Framework (WSF) to improve water security in Canada by improving governance for source protection and land use. The WSF will be a 'toolkit' composed of a Water Security Index (WSI) and associated decision-support tools. The WSF will be user-friendly and use data already available to many communities.

During the first year of the project the PoWG has been compiling an inventory of Canadian indicators related to water security. Given that our project mandate involves extensive consultation with stakeholders, in November 2008, PoWG distributed a Water Security survey to over 500 water practitioners across Canada. Follow-up interviews will commence in the spring-2009.

In 2008, work also began on the Water Security Primer, which will be published late fall-2009. The Primer will include results from our ongoing Canada-wide consultation with end users on the most pressing water security issues that they are facing. In addition, the Primer will include our analysis of the inventory of Canadian water security-related monitoring and governance tools (e.g. indices and indicators). The Primer, targeted at end users such as water managers and policy-makers, will be published after the September 2009 Water Security workshop. This workshop will bring together the team researchers, project partners and targeted end-users, from whom we will be soliciting



input. All of these steps are intended to facilitate the work of our researchers and partners over the next four years of the project.

The research team are Dr. D. Allen (SFU), Dr. E. McBean (UoG), Dr K. Teshcke (UBC), Dr. G. Dabourn (Acadia), Dr. R. de Loë (UoW), Dr. M. Dube (SRC), Dr. J. Issac-Renton, (BCCDC), Dr. M. Journeay (UBC), Dr M. M'Gonigle (UVic), Dr. M. Robin (uOttawa) and Oliver Brandes (UVic) led by Dr. K. Bakker, the Principal Investigator. Our project partners include: Canadian Water Network, Walter & Duncan Gordon Foundation, Environment Canada, Health Canada, Natural Resources Canada, BC Ministry of Environment, Grand River Conservation Authority and the Okanagan Basin Water Board.

For further information on the Water Security Project, please visit our website: www.water governance.ca/security/index.htm

*The Canadian Water Network (CWN), one of Canada's Networks of Centres of Excellence (NCE), builds a network that develops opportunities related to the provision of safe, clean water. In collaboration with universities, government and industry, the CWN has developed a variety of scientific projects and initiatives that address key water-related issues facing Canadians while embracing strong multidisciplinary and multisectoral partnerships. For more information please visit their website at: http://www.cwn-rce.ca/

POLICY PUBLICATIONS

One of the key functions of the Program is to provide substantive policy input as a result of ongoing research. When launched in 2006, the Program on Water Governance focused on four key research areas:

- 1) Innovations in Canadian Water Governance
- 2) Transboundary Water Governance
- 3) Municipal Water Governance
- 4) Water & Development

Innovations in water governance often draw on insights from different regional experiences in Canada to support provincial decision making. As part of the BC Water Governance Project (a partnership of the Fraser Basin Council, BC Ministry of Environment, Fraser Salmon and Watershed Program, Georgia Basin Living Rivers Program and Fisheries and Oceans Canada), Linda Nowlan and Karen Bakker compiled a report bringing together examples of delegated water governance from across Canada to support the BC process of water governance reform. The policy

report provided a starting point for a series of four workshops on BC Water Governance.

Nowlan, L. and Bakker, K. (2007). *Delegating Water Governance: Issues and Challenges in the BC Context*. Vancouver: UBC Program on Water Governance, November 2007.

On the subject of **transboundary water governance**, Emma Norman and Karen Bakker describe the trend towards increasing local stakeholder participation in Canadian-US border relations visible in the emergence of a growing number of local water governance instruments.

Norman, E. and Bakker, K. (2007). "Local Stakeholders Governing Water across the 49th Parallel". In *Border Policy Brief*, 2(6), November 2007. Bellingham: Border Policy Research Institute at Western Washington University. (Available online at: www.wwu.edu/bpri/ files/2007_Nov_Border_Brief.pdf)





Annual Report 2008 05

POLICY PUBLICATIONS (continued)

In 2008, the Program's Municipal Water Supply Infrastructure Governance in Canada project came to a close. The three-year project, sponsored by Infrastructure Canada, the Canadian Water Network, and the Social Sciences and Humanities Research Council of Canada, examined "the relationship between governance and practices of sustainable water management by municipal water supply utilities" (Furlong, Cook, Bakker, 2008). The project combined data from two expert surveys (one national, one in Ontario), interviews in 18 municipalities, archival sources, and two expert workshops. Three policy reports document the findings: the *Primer* outlines key concepts and barriers to water conservation, and the fundamental importance of good governance to successful water conservation implementation. The Policy Report lays out strategies for good governance, grounding the principles of accountability, fairness and shared governance in practical applications for municipal water governance. Finally, the Annotated Bibliography provides a launching pad from which to access key research on municipal water conservation policy and practice.

Furlong, K., C. Cook & K. Bakker (2008). *Good Governance for Water Conservation: A Primer*. Vancouver, BC: UBC Program on Water Governance & Infrastructure Canada. (Available online at: www.watergovernance.ca/municipal/Primer.pdf)

French: Furlong, K., C. Cook & K. Bakker (2008). Bonne gouvernance pour la conservation de l'eau: Guide d'introduction. Vancouver, BC: UBC Program on Water Governance & Infrastructure Canada.

Furlong, K. & K. Bakker (2008). Achieving Water Conservation: Strategies for Good Governance (Policy Report). Vancouver, BC: UBC Program on Water Governance & Infrastructure Canada. (Available online at: www.watergovernance.ca/municipal/48098_UBC_Policy.pdf)

Cook, C. & K. Furlong (2008). Good Governance for Municipal Water Conservation: An Annotated Bibliography. Vancouver, BC: UBC Program on Water Governance & Infrastructure Canada. (Available online at: www.watergovernance.ca/municipal/INFC_AnnotBib_Final.pdf)

Water governance plays an important role in confronting the barriers to sustainable water management in Canada and around the world. Moving beyond the Program's key focal areas, Karen Bakker and Linda Nowlan have each engaged in wider dialogues on water policy in the following publications.

Bakker, K. was a contributing author to Bates, B., Z. Kundzewicz and S. Wu (2008). "Climate Change and Water". *IPCC Technical Paper VI*, Geneva: Intergovernmental Panel on Climate Change. Pp. 68

Nowlan, L. (2008). Smarter Water Laws: the Key to Living Water Smart, BC's New Water Plan.

Vancouver: Program on Water Governance.
(Available online at: www.watergovernance.
ca/PDF/PoWGSmarterWaterLaws.pdf) PoWG
Commentary on the release of BC's Living Water
Smart Policy.

Duncan, L. and Nowlan, L. (2008) Off the Rails: The Environmental Enforcement Challenge of Canada's Railway Industry. 2008 INECE Conference Report (Available online at: http://www.inece.org/conference/8/proceedings/39_Duncan&Nowlan.pdf) A comparison of two rail spills affecting water in BC and Alberta.

Nowlan, L. (2008). "Water Policy for Sustainable Development" in Alternatives Journal, 34(2). The Best in Books issue, book review of Water Policy for Sustainable Development and Design for Water.

ACADEMIC CONFERENCE PRESENTATIONS

PoWG staff have given the following academic presentations over the past year.

Bakker, K. "Private Sector Participation in Public Services Provision: The Case of Networked Water Supply". Paper presented at the Canadian Association for Studies in Development Conference, Vancouver, June 2008.

Bakker, K. "Meeting the Challenge of Water Security". Canadian Water Network Annual Conference. Victoria, June 2008.

Norman, E. "Nature Knows No Borders: But the Managers Certainly Do". **Border Regions in Transition Conference**, Victoria. January 12 - 15, 2008.

Norman, E. "Boundless Nature, Bounded Nations: Governing Transboundary Water Post 9/11". **Association of American Geographers Conference,**Boston. April 15-19, 2008. (Winner of the 3rd place,
Graduate Student Paper Award, Water Resource
Specialty Group.)

Norman, E. (Presenter) and K. Bakker (2008) "Transgressing Scales: Water Governance across the Canada-US border". **Canadian Association of Political Science Conference**, Vancouver. June 2008.

Norman, E. (presenter) and K. Bakker. "Governing Water across the Canada-U.S. Borderland". **Borders and Bridges: Navigating Canada's International Policy Relations in a North America Context Author Workshop**. Ottawa (University of Ottawa). October 16 – 19, 2008.



J. Belzile

PUBLIC SPEAKING ENGAGEMENTS

In keeping with the Program's outreach mandate, Linda Nowlan has spoken about governance, groundwater and water policy at a number of events across western Canada.

Keepers of the Water Conference. Prince George, September 2007. Linda Nowlan acted as resource person about groundwater, aboriginal rights, and unconventional oil and gas development.

Webinar for Bow Riverkeeper on **Groundwater Management**, October 2007

Groundwater Protection Workshop. Kamloops, May 2008

"Best Practices in Water Conservation: How leaders in three different sectors are working to preserve our oceans, rivers and drinking water" with Jay Ritchlin and Tim Stevenson. **EcoArt and Science Symposium**. Vancouver, September 28, 2008

"Delegating Water Governance: Issues and Challenges in the BC Context". Canadian Water Resources Association & Okanagan Basin Water Board: **One Basin One Water Conference**. Kelowna, October 22, 2008

Introductory Presentation on BC Water Act. Waterlution: Water from Sea to Sky Workshop. Squamish, November 7, 2008



I. Belzile

ACADEMIC PUBLICATIONS

Researchers at the Program have published the following articles in academic journals over the past year. The articles address a wide range of topics including: water and development, municipal water governance, innovations in Canadian water governance, and climate risk.

Bakker, K. (2008) "The ambiguity of community: Debating alternatives to water supply privatization" *Water Alternatives* 1(2), 236 – 252.

Bakker, K., Kooy, M., Shofiani, E., and Martijn, E.J. (2008) "Governance failure: Rethinking the institutional dimensions of urban water supply to poor households". *World Development* 36(10), 1891-1915.

Carr, D., Norman, E. (2008) "Global Civil Society? The Johannesburg World Summit on Sustainable Development." *Geoforum* 39(1), 358-71.

Dowlatabadi, H, Cook, C. (2008) "Climate risk management & institutional learning." *Integrated Assessment* 8(1): 151-163.

Furlong, K. (2008) "Hidden Theories, Troubled Waters: Response to Critics". *Political Geography* 27(1), 811-814.

Hill, C., Furlong, K., Bakker, K., & Cohen, A. (2008) "Harmonization versus Subsidiarity in Water Governance: A Survey Water Governance and Legislation and Policies in the Provinces and Territories". *Canadian Water Resources Journal* 33(4), 315-332.

Kooy, M. and Bakker, K. (2008) "Splintered networks: The colonial and contemporary waters of Jakarta" *Geoforum* 39(6), 1843-1858.

Kooy, M. and K. Bakker (2008) "Technologies of Government: Constituting Subjectivities, Spaces, and Infrastructures in Colonial and Contemporary Jakarta". *International Journal of Urban and Regional Research* 32(2), 375 - 391.



Annual Report 2008 09

WEB RESOURCES

Several new resources have been added to the Program's website in the past year to make research findings and water governance information more accessible. Improvements include the introduction of an e-newsletter on water governance issues, published approximately every 6-8 weeks. To sign up for the e-newsletter go to www. watergovernance.ca and click on the SUBSCRIBE button in the right hand column.

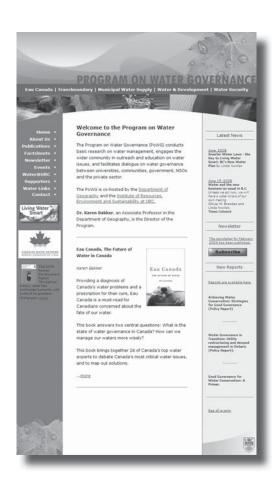
Nowlan, L. (July 2008) Program on Water Governance e-newsletter, 1(1). Available online at www.watergovernance.ca/newsletter/index.htm

To make water research available to a wider audience, Jacquie Belzile summarized research findings primarily from *Eau Canada* (editor Karen Bakker, 2007) into factsheets that can be downloaded from:

www.watergovernance.ca/newsletter/index.htm.

Topics covered in the new Factsheets include:

- Delegated Water Governance
- Drinking Water
- Groundwater Use Regulation
- Independent Power Projects & Run-of-the-river Hydro in BC
- Public/Private Water
- Water & Climate Change
- Water Conservation
- Water Pricing
- Water Rights Across Canada
- Water Use & Consumption in Canada



MEDIA COVERAGE

With environmental issues increasingly making headlines across Canada, the Program on Water Governance has continued to advocate for the central role of governance in sustainable water management.

An Op-Ed co-authored by Oliver Brandes and Linda Nowlan, entitled "Water and the New Business as Usual in BC" appeared in the June 15,2008 edition of the Victoria Times-Colonist. In response to BC's release of the Living Water Smart policy, they call for details on implementation and funding mechanisms, in addition to a governance structure that incorporates non-government stakeholders in the

sustainable management of BC's waters. (Available online: http://www2.canada.com/victoriatimescolonist/news/comment/story.html?id=223c2f94-ad45-462d-a2ca-1c5e7bcbo6a5&k=83709)

In June 2008, the Ottawa Sun ran a 5-part special on "H2O Canada: Canada's water supply drying up?". Part 1, "Explaining the myth of water abundance in Canada", quoting Linda Nowlan and drawing on *Eau Canada* (ed. Bakker, 2007) for information about Canada's water supply. (Available online: www.ottawasun.com/News/National/water/2008/06/27/6014411.html)



ONGOING ADVISORY ROLES

KAREN BAKKER

- Acted as a consultant to the Water Dialogues, an international multistakeholder dialogue, coordinated through the United Kingdom, examining issues of private sector participation in water supply.
- Continues to be a member of the editorial boards of the academic journals Studies in Political Economy and Environnement Urbain, and this past year became a member of the editorial board of the Canadian Water Resources Association Journal.
- Acted as advisor to an international group of NGOs, coordinated by the Council of Canadians, researching new modes of community water supply management and governance.
- Acted as advisor to the Montreal-based Institute for Research on Public Policy on a forthcoming water initiative.
- Acted as advisor to McGill University's Institute for the Study of Canada on a planned national water conference.
- With Kathryn Furlong, acted as advisors to the Union Water Supply System, a water utility serving multiple Ontario communities, on governance issues.

GEMMA DUNN

Is part of the expert advisory group formed during the BC Ministry of Environment (MoE) Indicators workshop in Victoria in the fall of 2008. This group provides advice on indicators to the MoE State of the Environment Reporting Unit. (www.waterbucket.ca/wcp/index asp?sid=28&id=552&type=single)

KATHRYN FURLONG

With Karen Bakker, advises the Union Water Supply System on governance issues.

 Acts as a consultant for the Coalition of NGOs in Water and Sanitation (CONIWAS) in Accra, Ghana through the Canadian Bureau of International Education (CBIE).

EMMA NORMAN

Acts as a Faculty Advisor at Northwest Indian College, Lummi Nation, Bellingham, Washington.

LINDA NOWLAN

- Appointed to Council of Canadian Academies
 "Sustainable Management of Groundwater in
 Canada" Expert Panel. The Panel is preparing a
 report which will support better understanding
 and appropriate management of groundwater
 resources.
- Appointed to federal Commissioner of Environment and Sustainable Development's Advisory Committee on Federal Fresh Water Responsibilities.
- Member, FLOW Canada, (Forum for Leadership on Water) and Co-Author, Changing the Flow: A Blueprint for Federal Action on Freshwater, 2007 (Gordon Group of Concerned Scientists and Citizens: Toronto)
- Member, Elevating Our Efforts to Protect British Columbia's Groundwater and Wild Salmon Resources, a Project of: Watershed Watch Salmon Society, Secwepemc Fisheries Commission, Okanagan Nation Alliance Fisheries Department, Northern Shuswap Tribal Council, Nicola Tribal Association and UBC's Program on Water Governance.
- Member, Technical Advisory Committee for the Okanagan Basin Water Board Groundwater Bylaws Toolkit.
- Member, Abbotsford-Sumas Aquifer Policy Forum Advisory Committee.
- Member, Township of Langley's Water Management Plan Expert Group.

COMING SOON

Look for Karen Bakker's new book in 2009:

Beyond Privatization: Water, Governance,

Citizenship (published by Cornell University Press).

Accessing sufficient amounts of safe water is a long-standing problem in many of the world's large cities, particularly for the urban poor. Many lack in-home connections to the water supply network, and are forced to rely on expensive water of dubious quality and unreliable availability through a variety of other means. These are usually the 'urban poor', although precise definitions of poverty are contested. For the past two decades, the involvement of private, for-profit water companies in water supply has been advocated as a solution, generating fierce controversy.

This book argues that the problem of urban water supply requires us to move 'beyond privatization', both conceptually and practically. This is a controversial argument, so it is important to emphasize that the analysis does not seek to categorically refute private sector involvement in water supply, nor simplistically defend government provision. Rather, the book focuses

on new directions which creatively combine some of the most innovative aspects of emerging alternatives for sustainable urban water supply management."

Water Security Workshop

On 28th & 29th September 2009, the Program on Water Governance will host a Water Security Workshop at the University of British Columbia. The workshop will bring together researchers, water professionals, policy makers and end users to work through key water security challenges facing Canadians. The Program's forthcoming policy publication -- the Water Security Primer -- will also be launched.

Water Security Primer

Water security represents a new way of thinking of water. In the fall of 2009, PoWG will publish a Water Security Primer, which will explain the concept, and illustrate how it can be used in Canada. Targeted at end users such as water managers and policy-makers, it will define basic terms, give examples and references to further work. It will also include results from our survey and interviews with end users.



www.watergovernance.ca

The Program on Water Governance at UBC

conducts basic research on water management, engages the wider community in outreach and education on water issues, and facilitates dialogue on water governance between universities, communities, government, NGOs and the private sector.

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