

# FLOW MONITOR

CANADIAN WATER POLICY WATCH

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## Message from the Co-Chairs

This special edition of the FLOW Monitor looks northward to the innovative approach to water management developed in the Northwest Territories and its potential applicability elsewhere in Canada.

With the support of the RBC Blue Water Project, the Forum for Leadership on Water (FLOW) held a symposium in Yellowknife in January 2011 to evaluate *Northern Voices, Northern Waters: The Northwest Territories Water Stewardship Strategy*. The purpose of the symposium was to examine the principles of the strategy and seek advice related to its implementation from a diverse group of water policy and management experts belonging to and associated with FLOW.

This newsletter contains articles that summarize the lessons and observations from that forum. The first article provides an overview of the strategy and how it was developed. The following four articles review some of the potential implementation challenges as water stewards struggle to meet the strategy's ambitious goals. Finally, we outline FLOW's interest in the strategy and offer our perspective on its potential value in advancing the water policy reform agenda in Canada.

The publication of this edition of the FLOW Monitor is part of a broader program to build awareness around the need to improve water management and governance across Canada. As part of this program, FLOW will embark on a cross-country tour to share our ideas on how the visionary principles in the NWT strategy can be applied more broadly to protect water resources in other parts of the country. For more information on this program, please visit [www.flowcanada.org](http://www.flowcanada.org).

Yours for improving action on water, Bob Sandford and Norm Brandson

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# NORTHERN VOICES, NORTHERN WATERS: RAISING THE BAR IN CANADIAN WATER POLICY

By Nancy Goucher

In May 2010, the Government of the Northwest Territories (GNWT) in partnership with Indian and Northern Affairs Canada (now called Aboriginal Affairs and Northern Development Canada, or AANDC) released *Northern Voices, Northern Waters: The Northwest Territories Water Stewardship Strategy*. This strategy seeks to protect aquatic ecosystems, ensure safe and reliable sources of water for the residents of the NWT, and sustain traditional ways of life in the North.

Anyone with a role in water stewardship in the NWT was considered an essential partner in developing the strategy, including AANDC, the GNWT, Aboriginal and community governments, regulatory boards and agencies, environmental organizations, industry, academic institutions and the general public. Over a period of three years, these partners collaborated on a vision for a common water strategy. They established guiding principles and set goals that outlined a path for achieving the desired outcomes.

A year later, the GNWT and AANDC released *NWT Water Stewardship: A Plan for Action 2011-2015*. This document identified lead water partners, outlined specific action items, and established timetables for implementing the strategy.

The level of collaboration in developing the strategy was no small achievement. While more complicated, expensive, and time consuming, the process GNWT used to reach consensus with a large number of diverse interests can help facilitate active and timely implementation of its water policy goals. Consensus has also meant agreement on some very important matters, such as the need for effective monitoring and research programs, an ecosystem-based, holistic approach to water management, and

agreement on the principles of adaptive management. Co-development of the strategy may ultimately lead to, and even require, co-implementation to catalyze the changes needed in the NWT.

In January 2011, the GNWT and the Government of Canada signed an Agreement-in-Principle to negotiate the devolution of public lands, water, and resources. The strategy is an important step in the devolution process. It provides clear evidence that the GNWT is worthy of assuming the broader powers it will soon be handed by the federal government. The ongoing articulation of Aboriginal rights in some areas of the NWT complicates the strategy's implementation, especially considering that some land claims were not yet settled at the time the strategy was drafted.

*Northern Voices, Northern Waters* articulates the GNWT's moral and political responsibility for water resources in the territory. It is this commitment to a long-term vision for protecting water resources that is truly raising the bar in Canadian water policy. **F**



DOWNLOAD *Northern Voices, Northern Waters: The Northwest Territories Water Stewardship Strategy and NWT Water Stewardship: A Plan for Action 2011-2015* at [www.enr.gov.nt.ca](http://www.enr.gov.nt.ca).

“The Government of Northwest Territories has both a moral and political responsibility to protect northern waters.”

MINISTER MICHAEL MILTENBERGER,  
DEPUTY PREMIER OF THE NORTHWEST TERRITORIES

***Northern Voices, Northern Waters Strategy in a Nutshell***

- **Vision:** “The waters of the Northwest Territories will remain clean, abundant and productive for all time.”
- **Key objective:** “Waters that flow into, within or through the NWT are substantially unaltered in quality, quantity, and rates of flow.”
- **Respect for all ways of knowing:** “Water stewardship decisions are based on accurate and up-to-date traditional, local, and western scientific knowledge.”
- **Adaptive management:** “As knowledge evolves, stewardship decisions evolve accordingly.”
- **Precautionary principle:** “Where there are threats of serious or irreversible damage to aquatic ecosystems, lack of certainty is not used as a reason to postpone effective measures that can avert the potential threat.”



PHOTO COURTESY OF MEANDERWEB ON FLICKR

# CHALLENGES AHEAD: WHERE THE RUBBER HITS THE (ICE) ROAD

PHOTO COURTESY OF R.W. SANDFORD, UN WATER FOR LIFE DECADE, CANADA

In the North, ice roads are vital lifelines for residents. The journey along these roads is fraught with harrowing obstacles: wicked storms, changing ice conditions, and unpredictable delays. But Northerners are strong and determined. They approach such problems cooperatively, with ingenuity and resolve. Similar tenacity and persistence will be required to overcome challenges to implementing *Northern Voices*, *Northern Waters*.

By Bob Sandford and Ralph Pentland

In contemplating the challenges that may be faced in implementing the strategy, it would be instructive to consider the fate of the 1987 Federal Water Policy. In FLOW's foundational document, *Changing the Flow*, we observed that few of the over 100 commitments in the 1987 policy were ever implemented in a meaningful way. Looking back, this should not be surprising considering the drastic global socio-economic changes that occurred during the decade following the document's release.

First, globalism and the competitiveness agenda were leading to widespread deregulation, privatization, and loss of government control over many key public policy issues. Second, there were dramatic declines in senior government scientific and policy capacity as Canada struggled to cope with its fiscal deficit crisis. Third, the constitutional crisis in the mid-1990s magnified the federal government's overly timid inclination to accommodate provincial priorities, even where there were clear federal responsibilities. Concurrently, threats to water security were rapidly evolving, with the introduction of new chemical

pollutants, climate change challenging traditional approaches to water management, intensification of use across sectors, and mounting competition for increasingly scarce water resources in parts of western Canada and in several watersheds shared by Canada and the United States.

One should expect equally unpredictable and complex contextual circumstances to hinder implementation of the strategy:

1. **Interjurisdictional Challenges:** Success will be highly dependent on achieving supportive bilateral agreements with upstream riparian neighbors. It will be very difficult to achieve agreements based on the accepted international principle of securing ecosystem integrity while energy resource demands are increasingly trumping equity and sustainability considerations. Interjurisdictional challenges are likely to be exacerbated by a lack of appreciation in southern Canada for traditional knowledge as a legitimate basis for understanding and decision-making as it relates to experience of place and the cultural needs and expectations of northern peoples.


**2. Institutional Challenges:** The ultimate success of the strategy depends on successfully negotiating the remaining land claims agreements with Aboriginal governments and finalizing devolution agreements with federal agencies to ensure that the GNWT and its co-management partners have the necessary authority over water. It also depends on being able to work effectively with local land and water boards to ensure consistent and effective implementation of the strategy's objectives through on-the-ground development decisions.

**3. The Challenge of Sustaining Meaningful Community Involvement:** Successful engagement with local communities during implementation will be foundational in building full ownership in water management across the territory. However, it will be challenging for the GNWT to meaningfully involve citizens in water decisions, when it has little influence in significant nation-wide issues, such as mitigating climate change, chemicals management, and resource development in neighbouring jurisdictions. Regarding issues within the government's direct control, it will be challenging to reconcile the often-conflicting goals of prosperity, equity and sustainability.

**4. Environmental Assurance vs. Environmental Protection:** Sustainable management of water resources requires a balanced approach to economic growth and the protection of community and ecological health. At some point, meeting the strategy's goals will require restrained development and a different approach to growth. The pace, scale, and cumulative impact of existing and potential development are bound to be central ongoing issues, but these challenges will only become magnified for the GNWT with the absence of adequate science to help determine acceptable threshold levels.

While the road ahead is fraught with challenges, it is not insurmountable due to a number of innovative approaches to water management articulated through the strategy:

- Aboriginal values are incorporated into the decision-making process. Such values stress continuity, perpetuity, and fiduciary obligations – all internationally recognized modern water management concepts;
- A relatively high level of community buy-in due to extensive community engagement during the development of the strategy; and
- Formal recognition of the need to apply basic principles of adaptive management to water management, such as ensuring continuous testing, evaluation, and revision as implementation progresses.

These elements contribute to a solid policy foundation that will prove valuable as Northerners continue on the icy road to clean, abundant, and protected waters for all time. 

# TRANSBOUNDARY MANAGEMENT: MODELS ACROSS CANADA

By Marc Hudon and Norm Brandson

As noted in the adjacent article, success in implementing the *Northern Voices, Northern Waters* is dependent on the GNWT being able to establish effective working relationships with the jurisdictions that share authority over the Mackenzie River Basin: British Columbia, Alberta, and, to a lesser degree, Saskatchewan. Many of the decisions that will affect water quality and quantity in the NWT are beyond the control of the GNWT. This presents a classic upstream-downstream dilemma where the upstream jurisdiction benefits from development, but environmental costs are borne downstream.

While the Mackenzie River Basin Transboundary Waters Master Agreement was designed to address such situations, it has not yet been translated into binding interjurisdictional arrangements. This article discusses two notable interjurisdictional water management situations elsewhere in Canada, and outlines how some of the lessons learned in those cases might be applicable to the Mackenzie River Basin situation.

## Great Lakes-St. Lawrence River Basin

The Great Lakes-St. Lawrence River Basin drains 1.34 million km<sup>2</sup> of land covering two Canadian provinces and eight U.S. states. Over 40 million people live in the basin, which possesses the fourth largest economy in the world. The management of transboundary and interjurisdictional water issues in the Great Lakes-St. Lawrence could instruct future arrangements in the Mackenzie region.

First, the International Joint Commission (IJC), established under the 1909 Canada-United States Boundary Waters Treaty, was instrumental in setting the pace for protection and restoration of basin resources while still accommodating a growing economy. IJC investigations provided the backdrop for bilateral negotiations of the 1972 Great Lakes Water Quality Agreement, as well as state-provincial negotiations leading to agreements dealing with diversions and consumptive uses in 2005. The Mackenzie River Basin Board has

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Rapidly changing climate lends even more urgency to the implementation of a comprehensive plan for the Mackenzie River system as envisioned in *Northern Voices, Northern Waters*. The rate of climate change is intense in northern regions – in the NWT part of the Mackenzie River Basin, winter and spring temperatures have increased by 3°C in Yellowknife and 3.5°C in Inuvik in the four decades up to 2007. Temperatures are projected to increase another 4°C to 5°C by 2050. These are very rapid temperature changes that are undermining the resilience of watersheds and ecosystems in the NWT.

## THE MACKENZIE RIVER BASIN IN A “IF CLIMATE CHANGE IS THEN WATER



By Jim Bruce

### DECLINING FLOWS

Observed trends in flows and levels of rivers and lakes over the past 30 to 40 years are likely good indications of what to expect in the next forty years. On the main stem of the Mackenzie River, flows are greatest in summer, fed primarily by major tributaries arising in western mountainous regions – mainly the Liard and Peace Rivers. Flows on the Peace River are somewhat delayed by storage in the Williston Lake reservoir in British Columbia. High flows and water levels are important to support summer barge traffic for resupplying northern communities. However, this is also the season – from June to November – when flows of the Mackenzie River have been trending downward over the past three decades.

### ICE

Ice jams are important for aquatic ecosystems because they collect water where banks are shallow. This renews shoreline vegetation, but, at times, it also increases bank erosion and siltation of channels.

More ice jam floods may occur in the future with increasingly frequent freeze-thaw cycles.

### WATER QUALITY

The quality of the surface water and groundwater in much of the Mackenzie River Basin, including the Mackenzie Delta, will be affected by climate change and changes in river flows. Adverse impacts to water quality can occur episodically as a result of more frequent, small-scale heavy rain events that wash pollutants from the land into waterways. Heavy rains, which in the past would be equalled or exceeded only once in 20 years, are projected to double in frequency to occur every 10 to 15 years within the next four decades.

On the Athabasca River, hydrologists have noted declining flow levels at Fort McMurray every month of the year<sup>2</sup>, which are of most concern to water quality during the normally low-flow period in the winter months. As a result, discharged contaminants from industrial developments, including the oil sands, are not as significantly diluted and in the near future, flows may become inadequate to safely sustain downstream ecosystems and communities downstream on the Athabasca-Mackenzie system.

A number of persistent toxic compounds are now appearing in aquatic ecosystems of the Mackenzie River Basin. Most of the toxins are derived from air pollution. Dr. David W. Schindler and colleagues at the University of Alberta have shown that atmospheric emissions from oil sands developments in the Athabasca watershed are major contributors to contamination of waters in the Mackenzie River

# CHANGING CLIMATE THE SHARK, IS ITS TEETH.”<sup>1</sup>

Basin. The emitted contaminants are transported by wind and subsequently deposited on snow, land and tree needles, eventually washing into rivers and lakes.

## PERMAFROST

Ice within the soil, known as permafrost, is thawing. This is most prevalent in southern parts of the NWT, but is increasingly evident throughout the whole Mackenzie Valley. When ice layers thaw, land slumps occur discharging sediments to rivers and allowing perched ponds and lakes to drain. Tributary river courses and groundwater flows can be altered, leaving spawning areas disrupted. Melting permafrost can also severely damage drainage facilities, roads, buildings, and pipelines.

## THE DELTA AND SEA LEVEL

The Mackenzie Delta is increasingly subject to storm surges from the Beaufort Sea and salt water intrusion due to three factors: reduced nearshore ice, sea levels rising at accelerated rates, and more frequent severe winter storms. Ecosystems in this productive area will increasingly be affected, and buildings and infrastructure in low-lying areas will be flooded more frequently.

## CONCLUSION

Profound changes due to a warming climate are underway in the Mackenzie River Basin. Upstream development activity in British Columbia and Alberta is exacerbating adverse impacts. Successful measures to better manage the Mackenzie River in the Northwest Territories will require the full cooperation of upstream jurisdictions. Agreements that lead to joint action must take into account the growing regional impacts of climate change and the need for an adaptive management strategy. **F**

been playing a somewhat analogous role to that of the IJC. Interestingly, ecosystem integrity was an important principle underlying the Great Lakes agreements, and is an equally dominant principle in ongoing efforts to improve inter-jurisdictional arrangements in the Mackenzie Basin.

Although the Great Lakes arrangements are far from perfect, and continue to evolve, they demonstrate that with continuing governmental support, multi-jurisdictional cooperation, public involvement, and sound science, considerable progress can be made. The experience of the Great Lakes arrangements is “proof of possibility” and a useful learning model for the Mackenzie Basin.

## Prairie Provinces Water Board (PPWB)

The PPWB agreements provide another useful example, particularly as three of the four parties to the PPWB – Alberta, Saskatchewan and Canada – are also signatories to the Mackenzie Master Agreement (Manitoba is the fourth party). The PPWB arrangements evolved over several decades, beginning with a 1948 agreement to allocate water on a project-by-project basis. The Master Agreement on Apportionment (MAA), outlining specific water apportionment arrangements between the provinces, was agreed on in 1969. Schedules dealing with water quality and groundwater were added in 1992.

What is particularly instructive about the PPWB agreements is that upstream jurisdictions have agreed to several measures that are beneficial to Manitoba, despite their potential to affect future development options in Alberta and Saskatchewan. For example, the apportionment of flows and water quality objectives at the provincial boundaries in the MAA and associated schedules could mean limits to growth in the upstream jurisdictions.

The success of the PPWB relies on a commitment to the principles of sound water management – rather than development politics – meaningful federal technical and financial support and the willingness of the federal government to mediate, facilitate, or lead in addressing issues as required.

Despite the valuable lessons and precedent-setting examples from the transboundary agreements in the Great Lakes–St. Lawrence and Prairies, one should not rule out the possibility that the Mackenzie River Basin negotiations could lead to groundbreaking advances that may serve as lessons for improving the existing situations in southern parts of Canada.

<sup>1</sup> Paul Dickinson, CEO, Carbon Disclosure Project, United Kingdom

<sup>2</sup> Woo, M.K. and Thorne, R. 2003. Streamflow in the Mackenzie Basin, Canada.

# THE MACKENZIE RIVER BASIN AGREEMENT

By Tony Maas

The Mackenzie River is one of the great river systems in the world, the twelfth largest by drainage area, and eleventh in mean annual discharge. It is a critical circumpolar river, and North America's largest north flowing river. The basin harbours three major lakes, two significant freshwater deltas, and the world's tenth largest marine delta, which has important geochemical effects on the Beaufort Sea.

Those facts were set out at the beginning of the 1981 report of the Mackenzie River Basin Committee. The first recommendation of that committee was that the basin's jurisdictions "at an early date conclude an agreement through which trans-boundary water management issues such as minimum flows, flow regulation, and water quality can be addressed at jurisdictional boundary crossings..."

The Mackenzie River Basin is one of the few remaining places in the world where it is still possible to conceive of a truly integrated approach to protecting - rather than restoring - fresh water resources and ecosystems on a large river basin scale. Even though the size and flow of the Mackenzie River rival the world's great rivers, it is unique in that much of the basin still exists in a mostly natural state. The watershed covers 1.8-million square kilometres, draining one-fifth of Canada's land mass. Despite its size, only about 400,000 people live in the Basin (397,000 in 2001), 9% of which live in the NWT.

Responsibility for management of the watershed is shared among five provincial and territorial jurisdictions: British Columbia, Alberta, Saskatchewan, Yukon, and the NWT. The federal government also has a significant responsibility as the main authority responsible for land and water resources in the Yukon and NWT, and for ensuring effective transboundary relations within the basin.





The ecologist's motto reminds us that we all live downstream. For those living in the NWT portion of the Mackenzie Basin, this motto has tangible meaning given the existing and potential impacts of oil sands and hydroelectric developments on upstream tributaries. The fossil energy reserves of the basin are among the largest in the world and the recoverable deposits are predominantly found in Northern Alberta's oil sands. The rate of increase in the output of oil sands has been growing at an unimaginable pace – approximately 7.5% per year for the past ten years.

There are also two major power-generating stations located on the Peace River: G.M. Shrum and Peace Canyon. The operation of these power projects and their dams have affected the seasonal pattern of stream flow in the Peace River – despite some remediation – and the ecology of the Peace – Athabasca Delta. British Columbia is proposing a third dam on the river at Site C, which has the potential to further impact downstream flows.

The necessity of effective transboundary agreements is becoming even more evident with accelerated development activity along the Mackenzie's tributaries which is increasingly threatening the quality of life downstream. After nearly a quarter century of work, the Master Agreement was signed in 1997. It established a set of principles to ensure the Basin is managed in a sustainable way, by protecting ecological integrity and aquatic ecosystems in the interest of present and future generations. It is the only mechanism available that allows downstream jurisdictions, such as NWT, to come to the table with their upstream neighbours. The Master Agreement, however, lacks teeth and requires binding bilateral arrangements to be

effective. To date, only one bilateral agreement has been signed, and it is the least significant one between the Yukon and Northwest Territories.

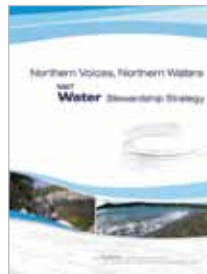
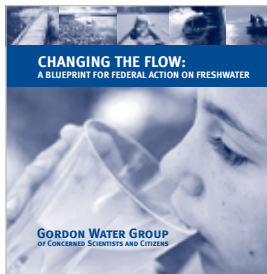
Negotiation of the bilateral agreement between Alberta and NWT is just beginning. There are several elements of the *Northern Voices, Northern Waters* that should be helpful in those negotiations, including:

- A recognition of the implications of ongoing climate change, and the need to provide for adaptive management principles as changing conditions warrant;
- Emphasis on the principle of “ecological integrity” (already established in the Master Agreement);
- Transboundary arrangements which recognize the importance of protecting the ecological integrity of the entire Mackenzie River Basin;
- The need for improving scientific monitoring and knowledge, including building on traditional knowledge;
- The importance of respecting constitutional rights and responsibilities, including those of Aboriginal peoples; and
- The key role that public input and consultation must play, both during the negotiation process and in subsequent transboundary management decisions.

It is important for all Canadians that Alberta and the NWT get this right. Mackenzie River Basin bilateral agreements offer the very real potential of integrating leading Canadian and international experiences into a world-class example of transboundary water governance. **E**

# NORTH OF 60:

## A TERRITORIAL STRATEGY WITH NATIONAL IMPLICATIONS



By Oliver M. Brandes

The Forum for Leadership on Water was established to identify potential solutions for sustainable water management and innovative options for governance across Canada. This work began with a detailed examination of existing federal

water commitments and the largely unimplemented 25-year-old Federal Water Strategy. We outline the basic foundation of a more modern approach in *Changing the Flow: A Blueprint for Federal Action on Freshwater* through seven priority areas for action on water management. Since then, FLOW has worked to elaborate on how those principles could be implemented. *Northern Voices, Northern Waters* offers an opportunity to explore some of those concepts in a practical exercise and provides unique insights and ideas into improving Canadian water management and governance.



LINKING  
BACK TO  
CHANGING  
THE FLOW...

### PRIORITY 1:

#### ENHANCING NATIONAL CAPACITY FOR FRESHWATER PROTECTION

Modernizing the way we govern fresh water is a crucial starting point to improving water management in Canada. This is clearly acknowledged in *Changing the Flow* which also emphasizes the need to strengthen capacity to protect fresh water. The GNWT has also recognized that this is essential and has focused on both building better decision-making processes and the internal capacity to achieve water policy reform within the territorial government. For example, the GNWT overhauled various governance structures as they relate to the management of water and the land-water nexus in the Mackenzie River Basin and beyond.

The GNWT is also integrating core strategy principles related to ecological integrity, shared decision-making and respect for Aboriginal rights into a number of programs and policies that affect or influence water stewardship. Examples include drinking water quality frameworks, hydro-electricity and transmission plans, the Canada-wide Strategy for the Management of Municipal Wastewater Effluent, and strategies for protected areas, fisheries, and greenhouse gas emissions.

**PRIORITY 4:  
PROTECTING AQUATIC  
ECOSYSTEMS & ABORIGINAL RIGHTS**

*Changing the Flow* emphasizes the need to develop policies that protect aquatic ecosystems. Likewise, the GNWT demonstrates its commitment to aquatic ecosystems by manifesting the internationally accepted principles of prioritizing ecological integrity and an ecosystem-based approach to water governance in the strategy. Specific supporting mechanisms include sustainability accounting – a tool that can be used to track how the values of interest change over time – sustained monitoring and ongoing research, and regular audits and evaluations of the process and impacts on the function of ecosystems.

Adaptive management is also viewed as an integral part of building resilience in the strategy. It is characterized by a genuine intention to be self-reflective and embeds a “learn by doing” approach, which is critical in an increasingly uncertain world. Such an approach is fundamental to building resilience, the cornerstone of modern water management and governance.

The strategy is also a genuine example of how to protect Aboriginal water rights. Land claim settlement agreements require that Aboriginal governments in the NWT have the legal right to be involved in decisions regarding water management on their land. As a result, the GNWT had to develop a novel co-governance process whereby Aboriginal governments – and often by extension other community members – were respected as true partners in the development of the strategy. There was no need to “consult stakeholders,” as is usually done in policy development because, in this case, the whole community helped co-author the policy. In the NWT, Aboriginal rights are not just given lip service but are, in fact, protected and even implemented through the strategy.

**PRIORITY 7:  
DEVELOPING WORLD CLASS SCIENCE**

Developing world-class science is outlined as a priority for water management in *Changing the Flow*. The understanding that scientific capacity is essential for informed decision-making is something that is likewise recognized by the strategy. A central element of the strategy is that effective science and ongoing research will allow the GNWT to track and measure changes to water quality, quantity, rates of flow, and biological parameters over time and space. This will allow them to determine what may have caused changes and determine if modifications should be made in the management of human activities. It acknowledges that we do not live in a linear or certain world. Providing continuous monitoring and improving understanding is absolutely fundamental to making sound decisions and taking uncertainty seriously.

With such a vast and remote territory, the GNWT has a great challenge in obtaining the data and knowledge necessary for understanding the thresholds that maintain ecological integrity. One of the approaches to address this gap is to use traditional ecological knowledge to help make decisions. The GNWT was the first jurisdiction in Canada to officially recognize the role of traditional knowledge and attempt to prescribe its application within a broader governing system through the approval of its Traditional Knowledge Policy in the late 1980s. The incorporation of traditional knowledge into the foundation of the strategy further reinforces the value placed on Aboriginal knowledge and collaboration. It ensures that Aboriginal interests are engaged early and throughout the entire process to avoid unnecessary conflict later.

**CONCLUSION**

*Northern Voices, Northern Waters* demonstrates that it is possible to undertake fundamental water policy reform at the provincial or territorial level that incorporates ambitious principles of good water management, such as those outlined in *Changing the Flow*. The strategy demonstrates that it is no longer possible to say that such levels of reform are not possible because of legislative, legal, policy or political obstacles. Governments do not have to be limited to playing around at the edges of reform; they are capable of making real change happen. **■**

# FLOW MEMBERS

The Forum for Leadership on Water (FLOW), a project of Tides Canada Initiatives, is an independent group of water experts from across Canada that encourages government action to protect and steward our critical freshwater resources. We are committed to proposing policy solutions, urging action and tracking progress towards a more sustainable water future.

We believe that all levels of government and broader civil society must work together as part of a Canada-wide strategy that effectively addresses current and emerging threats to freshwater security.



To receive future editions of the FLOW Monitor and to find information on the cross-country tour, visit [www.flowcanada.org](http://www.flowcanada.org).

## **David R. Boyd, POLIS Project on Ecological Governance, University of Victoria**

David is a leading environmental lawyer, a Trudeau Scholar and an adjunct professor at Simon Fraser University. He is a Senior Associate with the University of Victoria's POLIS Project on Ecological Governance.

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Oliver is Associate Director with the University of Victoria's POLIS Project on Ecological Governance, which focuses on watershed governance and legal and institutional reforms for sustainable water management. Oliver provides strategic policy and governance advice to government and non-government organizations. [www.poliswaterproject.org](http://www.poliswaterproject.org)

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Ralph is Acting Chair of the Canadian Water Issues Council and President of Ralbet Enterprises Inc., where he consults on a variety of water and environmental policy issues. He was Director of Water Planning and Management in the Canadian Department of Environment from 1978 to 1991.

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## **Robert Sandford, United Nations International "Water for Life" Decade**

Bob is the EPCOR Chair of the Canadian Partnership Initiative in support of the United Nations Water for Life Decade, a national partnership initiative that aims to advance long-term water quality and availability issues in response to climate change. Bob is also Director of the Western Watersheds Climate Research Collaborative. [www.thinkwater.ca](http://www.thinkwater.ca) | [www.rwsandford.ca](http://www.rwsandford.ca)



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