WALTER & DUNCAN
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PRESUMED ABUNDANCE
AND REVEALED NEGLECT
IN THE MACKENZIE WATERSHED

NOVEMBER 2011

CANADA'S GREAT BASIN

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The
MACKENZIE RIVER BASIN
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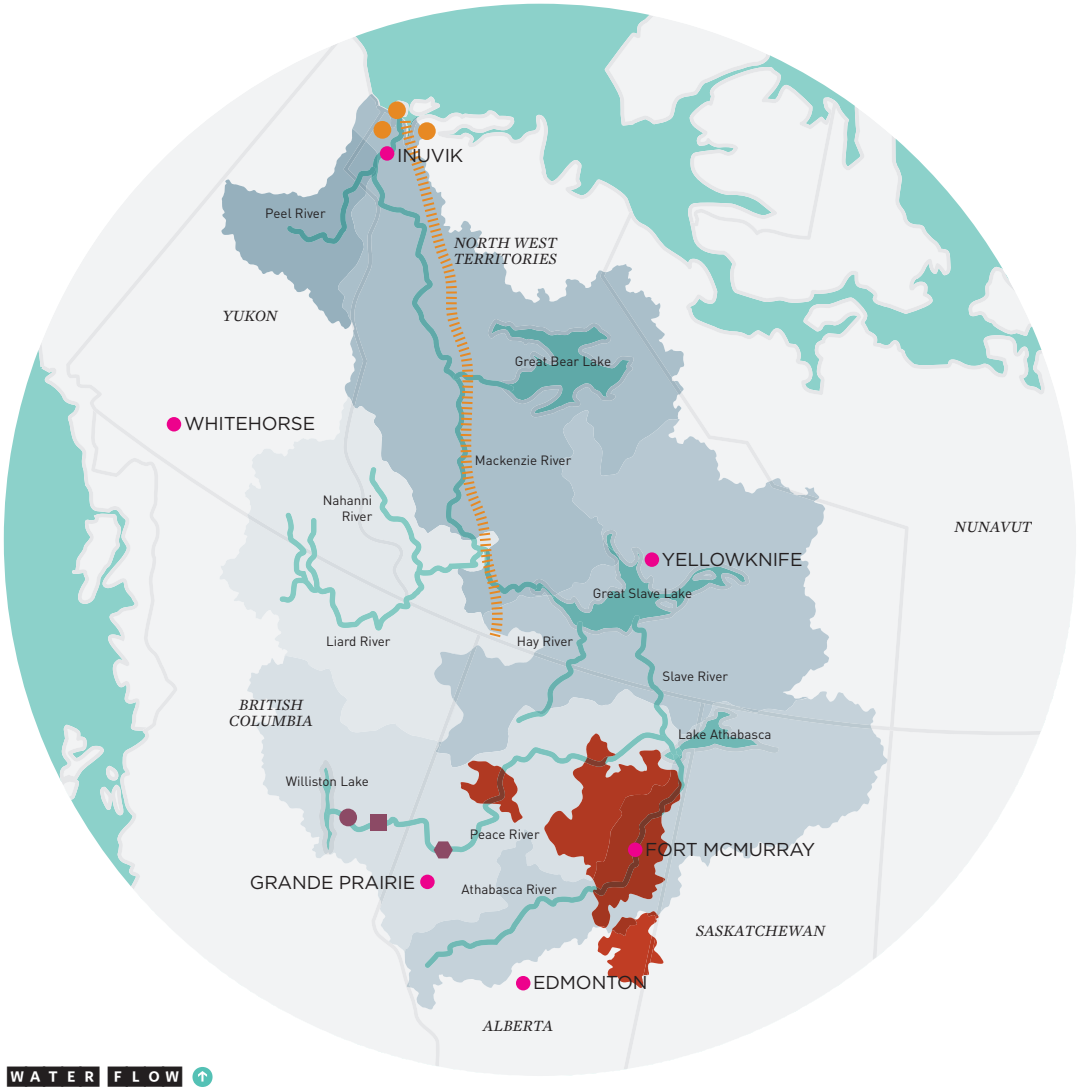
THE MACKENZIE RIVER BASIN



N | WATER FLOW

LEGEND:

SUB-BASINS: PEEL, MACKENZIE MAIN STEM AND GREAT BEAR LAKE, GREAT SLAVE, ATHABASCA, PEACE, LIARD
INDUSTRIAL PRESSURES: MACKENZIE DELTA NATURAL GAS FIELDS, MACKENZIE GAS PROJECT, OIL SANDS, W.A.C. BENNETT DAM, PROPOSED SITE C DAM, DUNVEGAN DAM

EXECUTIVE SUMMARY

If water is spilled on a map of Canada, the water flows down, flows south. Yet most of Canada's freshwater runs north into the Arctic Ocean, and most of this via one grand river – the Mackenzie.

The Mackenzie River Basin is a global treasure. It is one of the world's most spectacular and ecologically significant watersheds, providing enormous life-sustaining, cultural and spiritual value for both the Aboriginal and non-Aboriginal communities that live there. Yet the Mackenzie now faces many threats to its natural state, including the effects of the Alberta oil sands on downstream water quality and quantity and a mega-dam proposed in British Columbia known as "Site C". The impulse to develop natural resources in the North is also very strong, and current legislative policy makes it difficult for local communities to oppose or augment proposed projects. Despite major advances in regulatory frameworks and cooperative management, particularly resulting from land claim agreements in the far north, there are still bound to be negative impacts on communities within the watershed in terms of their well-being and traditional way of life. The difference between north and south of 60° is rather stark in this respect.

The protection of water in the Mackenzie is complicated by the fact that its borders extend into six jurisdictions (three provinces and three territories), and thus its stewardship is shared between several levels of government. Some steps have been taken to improve its management, such as the new Northwest Territories Water Strategy. However, agreements between upstream and downstream jurisdictions that would define a joint framework for its protection have yet to be made. Meanwhile, pressures for further upstream and downstream resource development continue to grow.

This report outlines the major obstacles to maintaining the ecological and community values of the Mackenzie and compiles a series of recommendations for governments, foundations and other non-governmental actors.

KEY RECOMMENDATIONS OF THIS REPORT INCLUDE THE FOLLOWING:

GOVERNMENTS

- All jurisdictions in the basin commit to fair, equitable and binding transboundary agreements on water use in the region.
- The federal government supports implementation of the water stewardship strategy outlined by the Northwest Territories, which outlines concrete initiatives within defined timeframes.
- Government authorities work with Aboriginal governments to strengthen Aboriginal rights and institutions, critical elements of both an effective transboundary framework and implementation of the NWT water strategy.
- The federal government works with jurisdictions in the basin to implement a world class water monitoring program and support credible, independent water research.

FOUNDATIONS AND OTHER NON-GOVERNMENTAL ORGANIZATIONS

- Organizations work to raise public awareness of the importance of the Mackenzie River Basin and Northern water issues among all Canadians, not just Northerners.
- Foundations and NGOs do more to seed and support diverse coalitions while facilitating relationships between Northern Aboriginal groups and other key stakeholders.
- Further appointment of Aboriginal representatives to boards of foundations and NGOs, as well as in advisory positions.
- Foundations and NGOs facilitate and fund research and education, including traditional knowledge and community-based water monitoring initiatives.

INTRODUCTION

"Water and the land is like blood in the body. If you pollute or cut off water, the land will die. Water is fundamental to all life and we must work together to protect it."

— CHIEF CHARLIE FOOTBALL, GAMETI, NWT [1]

"We have a unique opportunity to learn from the mistakes of others, to get things right from the start, to find innovative ways to address the myriad of complex and interrelated issues, and to share those lessons with all Canadians and the rest of the industrialized world."

— RALPH PENTLAND, SPECIAL ADVISOR ON FRESHWATER ISSUES, GORDON FOUNDATION

Much of Canada's fresh water flows north into the Arctic Ocean via one grand waterway. The 1,800-km Mackenzie River, fed by countless tributaries and trickles, is the main artery of a drainage basin that spans one-fifth of the country. Though seemingly abundant and unspoiled, these Northern waters are vulnerable at a time when regional energy projects scale up and global water scarcity looms.

This report illuminates the threats, both physical and political, to the health and integrity of this mega water-system, and proposes some useful and achievable opportunities for government and foundation leadership.

TARGET AUDIENCE

This paper is intended to specifically inform governments, foundations and other non-governmental organizations. The authors hope the paper will also be of interest to other sectors of society and concerned citizens.

METHODOLOGY

Information for this report was gathered from various fresh water policy documents and literature, as well as key informant interviews with 14 experts in water science and policy, Northern governance, resource development and traditional knowledge.[i]

ACKNOWLEDGEMENTS

This paper was compiled by Caitlin Robinson with contributions from Tim Morris, Natasha Sawh, James Stauch, and Feodor Snagovsky. The Foundation is grateful to our interviewees and reviewers, whose insights and knowledge made this paper possible (listed in Appendix B). Particular thanks to Karen Baltgailis, Jasmine Budak, Mike Harlow, Nadia Joe and Merrell-Anne Phare for editing and fact-checking.

NORTHERN WATERS: WHAT'S AT STAKE?

By and large, Aboriginal cultures worldwide share a reverence for and dependence on the land. "People generally ask two questions: is the water safe to drink and is the caribou safe to eat?" says David Livingstone, a consultant with the Northwest Territory's Ministry of the Environment and Natural Resources, and former director of INAC's [Indian and Northern Affairs Canada] Water Resources Division. "Life in the North has always revolved around water in an intimate way that many other jurisdictions have lost. The value of water in the North is the same as the value of water to people who live in deserts: central to life."

Along with its obvious cultural importance, the Mackenzie Basin also offers huge "natural capital" beyond the purely economic value assigned to it by mining and energy companies. A recent study by the Canadian Boreal Initiative points to a range of "ecological goods and services" supported by the basin, such as "water filtration, carbon storage, pest control by birds, climate regulation, cultural benefits to indigenous communities, recreational benefits and opportunities for a wide range of land users".[2] The study values the basin's natural capital at roughly $448.3 billion per year, compared with a GDP of only $41.9 billion for the region.

From a broader geopolitical perspective, protecting "one of the world's final water frontiers" could set an international precedent if Canada plays its cards right, says Ralph Pentland, a fresh water advisor to the Walter and Duncan Gordon Foundation. "We have a unique opportunity to learn from the mistakes of others, to get things right from the start, to find innovative ways to address the myriad of complex and interrelated issues, and to share those lessons with all Canadians and the rest of the industrialized world."

[i] See appendix for a complete list of experts and interview questions.

The Athabasca Falls off of the Icefields Parkway

THREATS AND CONCERNS

"Right now, [in] my town of Fort Smith [in the Northwest Territories], we get Alberta's last flush of the toilet."

— TIM HERON, NORTHWEST TERRITORY MÉTIS NATION [3]

"As Northerners, we have virtually no say about what is put into our water. There is something fundamentally wrong with this."

—JOANNE BARNABY, SPECIAL ADVISOR ON ARCTIC AND INDIGENOUS POLICY, WALTER AND DUNCAN GORDON FOUNDATION (HAY RIVER, NWT)

Dr. David Schindler displays fish pulled out of the lower Athabasca River

ALBERTA OIL SANDS

The oil sands, which span a large portion of north-eastern Alberta, envelop a section of the Athabasca River, one of the Mackenzie's main tributaries. Naturally, this uncomfortable proximity poses a concern to our interviewees, both in terms of the quantity of water required for oil extraction processes, and the effects of such a disruptive mining operation on downstream water quality.

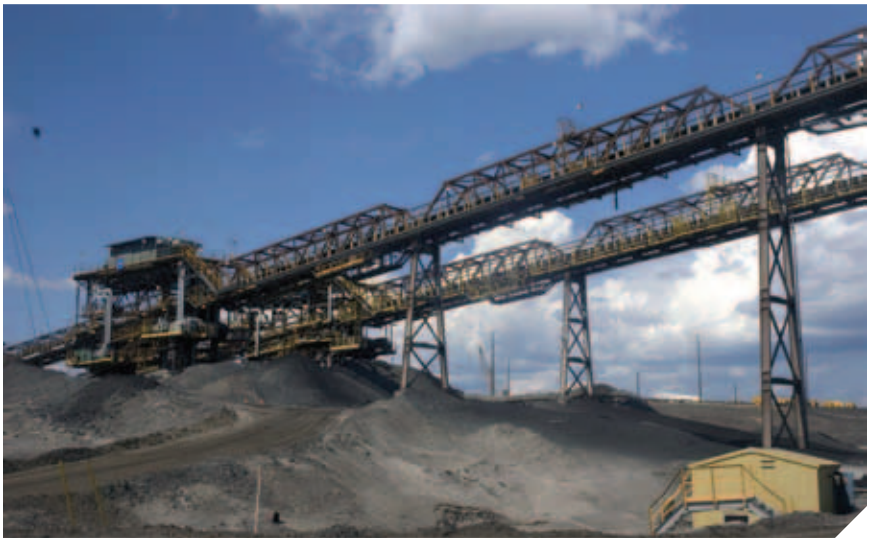
According to a report by the Pembina Institute, between two and four barrels of fresh water (taken from the Athabasca River and groundwater sources) are required to produce one barrel of mined bitumen, the sandy substance from which oil is extracted.[ii] More than a dozen giant tailings ponds (covering some 170 km^2) store this waste-water, which have been found to contain a toxic soup whose levels of arsenic, cadmium, chromium, copper, lead and zinc surpass water-quality guidelines outlined by the Canadian Council of Ministers of the Environment (CCME). [4]

A recent paper documented an annual increase of polyaromatic hydrocarbons (PAHs) – compounds known to cause cancers in fish – in Peace Athabasca Delta sediment over the past decade.[5] The tailings ponds and their safety-recapture systems are not infallible. They have leaked in the past and will likely leak again in the future, seeping into groundwater and river sediments.[6]

In the fall of 2010, Alberta ecologist Dr. David Schindler displayed fish pulled out of the lower Athabasca River that were riddled with deformities, tumours and disease, prompting both the federal and provincial governments to commission independent expert panel reviews of pollution monitoring along the Athabasca.[7:8,iii] The findings of both these reviews echoed comments from our interviewees and from Dr. Schindler, who described the current monitoring program – the Regional Aquatic Monitoring Program – as having "serious defects".[9] Dr. Schindler found that the sampling design was inconsistent, not statistically-robust, and produced monitoring-insensitive responses.[10] Another concern is that the data is currently unavailable to the public and is obscured from regular oversight by scientific bodies.[11] In response to these criticisms, both governments have committed to establishing a "world-class" monitoring program in the region, although at the current time neither government has released specific details of how a new program will operate.

The federal Oil Sands Advisory Panel has recommended that a new program be implemented with input from both the federal and provincial governments, along with the establishment of an "independent external scientific advisory committee of nationally and internationally recognized scientists... to assess the design and effectiveness of the program."[12] The recommendation to create an independent scientific review board was echoed in a report put forth by the Water Matters Society of Alberta, which stressed the need to have "expert scientists who do not rely on oil sands companies for current or future employment or payment, at a minimum." [13] The water monitoring data review committee commissioned by the provincial government of Alberta has produced similar findings, leading

[i] A barrel is 160 litres.
[ii] Several interviewees cited widespread worries over food security within the Mackenzie Basin, specifically about the health of fish and caribou, which are staple "country foods" that have been relied upon for generations.



Mining the Athabasca Oil Sands, Fort McMurray, Alberta

them to conclude that reform is necessary, an external scientific panel is appropriate, and that "the current structure [of RAMP] is totally unacceptable." [14]

In addition to their effects on water quality, oils sands operations are also major emitters of air pollution. They produce both greenhouse gases and a slew of volatile organic compounds (VOCs), sulphur dioxide and nitrogen oxides, which studies have found in surface soils, vegetation, snow and runoff in nearby tributaries.[15] According to a report from the Royal Society of Canada (RSC), air contamination from the oil sands has an impact on a national and international scale, while greenhouse gas emissions "are [also] a major environmental issue".[16]

Fort Chipewyan, a community down-river where the Mackenzie becomes Lake Athabasca, is home to both the Mikisew Cree and Athabasca Dene First Nations. Its residents have long blamed oil sands contamination for what they feel is an inordinate concentration of disease in their community.[17] In 2006, the community's fly-in doctor, John O'Connor, went public with his concerns about seemingly high rates of unusual cancers and diseases that seemed too prevalent for a population of 1,200. The story made headlines. Media attention and persistent community pressure has resulted in a handful of both community- and industry-sponsored studies, which so far dispute each other on the impact of the oil sands on humans and wildlife. Thus, there remains no definitive answer. The RSC's recent report concluded there was "currently no credible evidence of environmental contaminant exposures from oil sands reaching Fort Chipewyan at levels expected to cause elevated human cancer rates." However, the RSC did recommend more focused monitoring of human food and water exposure to contamination, and especially more study on how tailings-ponds chemicals (particularly naphthenic acids) migrate and persist in groundwater.[18]

Meanwhile, oil sands development continues. By 2020, industry analysts project that between 2.0 and 2.9 million barrels of bitumen will be extracted every day – up from today's 1.3 million barrels a day.[19]

SITE C AND OTHER HYDROELECTRIC PROJECTS

Though less widely publicized than the oil sands, hydroelectric projects within the Mackenzie River Basin can have serious and long-lasting impacts on the natural flow of fresh water.

B.C. Hydro is proposing the construction of a controversial 900-megawatt dam and generator on the Peace River in north-eastern B.C. Dubbed **Site C**, the $6.6-billion project will power some 410,000 homes. Over the next two years, the project will undergo an independent environmental assessment and public consultation process. However, it has already garnered heated opposition from downstream First Nations, NGOs and environmental groups.[iv] This past September, representatives from 34 First Nations across B.C., Alberta and NWT penned a declaration officially opposing the dam, citing fears of irreversible ecological damage. The David Suzuki Foundation has also voiced concerns about the project, stating that it "will have serious impacts on the region's forests, fields, and rich agricultural lands, as well as the Peace River itself — an ecologically important area that provides essential ecological benefits, like carbon storage, flood control, and water filtration." [20] The Suzuki Foundation encourages the B.C. government to re-evaluate the ecological value of the region and take the views and opinions of First Nations and local residents into account.[21, 22]

"Unfortunately, developments in jurisdictions [upstream] are occurring in the absence of science-based environmental limits and regional planning. We need these critical gaps to be filled to prevent irreversible damage to the basin – the heart of Canada's North."

—JENNIFER GRANT, PEMBINA INSTITUTE

Further downstream on the Peace River in northern Alberta, TransAlta's proposed **Dunvegan Hydroelectric**

Conceptual drawing of Site C

[iv] Such opposition is not surprising given the irreparable impacts of the W.A.C. Bennett Dam, built on the Peace River in 1968. The dam altered the Mackenzie Basin hydrology by significantly raising the Slave River water level, flooding tributaries and the seasonal habitats of beavers and moose (Wood 2010: 28). Also, a proposed $5-billion hydroelectric project on the Slave River was nixed in October 2010 because of strong opposition by the local Smith's Landing First Nation.

"With each project approved, the growing demands on water and the environment and the absence of any sustainable solution weighs more heavily on the people of the North."

—BILL ERASMUS, NWT REGIONAL CHIEF, ASSEMBLY OF FIRST NATIONS [25]

K'asho Go'tine Drummers, Fort Good Hope, NT

Project is a smaller 100-megawatt hydro facility that will generate power for some 75,000 homes. Generally considered less ecologically disruptive than big dams like Site C, this run-of-river project has been approved by an environmental assessment joint review-panel, citing moderate disturbances on fish, wildlife and water flow.[23] More than the physical impacts however, local advocacy groups worry mainly that a green light for Dunvegan will set a precedent for the more controversial Site C proposal mentioned above.

RESOURCE DEVELOPMENT PRESSURES

Development pressures are not isolated to upstream jurisdictions in the Mackenzie Basin. Both the Northwest Territories [NWT] and Yukon possess major resource deposits. Resource development in the North offers an opportunity for economic development and employment in the region, but often causes simultaneous environmental harm. This can include detrimental impacts on water quality and quantity, and can have negative effects on the traditional ways of life and community well-being of Northerners.

Our Yukon interviewees indicated that residents are generally divided about resource development, which is deeply entrenched in the territory's history. However, when it comes to the **Peel Watershed,** a substantial sub-watershed in the northern reaches of the Yukon and Mackenzie Basin, the majority of Yukoners and First Nations are flatly against any sort of industrial activities. A 2009 independent poll showed that 75% of Yukoners prioritized the protection of the environment, wildlife and wilderness within the watershed. As a

land-use plan is currently being developed for the region, the arms-length **Peel Watershed Planning Commission** (representing six members nominated by the Yukon government and affected First Nations) has officially recommended protecting 80% of the watershed from industrial development and staking (some First Nations want the entire 68,000 km² region protected). However, territorial mining interests are strong, and despite overwhelming endorsement from local communities, NGOs and First Nations, the government recently opposed the Commission's plan. In the meantime, the Yukon has agreed to extend the temporary moratorium on mineral staking by one year until a land-use plan is hammered out.

In the NWT, the Mackenzie Gas Project – the most recent incarnation of a 37-year-old Mackenzie pipeline proposal – was green-lighted in December 2010 by the National Energy Board and received federal cabinet approval in January 2011. The project, led by Calgary's Imperial Oil, has not changed markedly since it was proposed in the early 1970s, shelved in 1977 (in the interest of first settling Aboriginal land claims), and resurrected in 2004. The $16.2-billion pipeline would ferry natural gas reserves from the Beaufort Sea 1,220 km along the length of the Mackenzie River to existing infrastructure in northern Alberta.

Various local and national environmental and social justice groups have voiced concerns about the project's social and ecological disturbances, namely on the boreal forest habitat of Woodland caribou and grizzlies. These mammals depend on the migratory fish population, and maintaining the Mackenzie's riverscapes throughout the region is critical to the life and wellbeing of this aquatic ecosystem.[26] Also, groups like the Pembina Institute have argued that Mackenzie natural gas will feed the energy-hungry oil sands operations, contributing to greenhouse-gas emissions at a time when Canada should be cutting. Local First Nations and Inuit are mostly on board with the project, except the Dehcho First Nation, who want to first settle their land claim and establish an official land-use plan for the region, which covers roughly 40% of the pipeline route. The Inuvialuit, the Sahtu and the Gwich'in - have joined to form the Aboriginal Pipeline Group consortium, which holds a one-third stake in the pipeline. Also, the Inuvialuit, Gwich'in and Sahtu have each signed access and benefit agreements (also known as IBAs) with Imperial Oil.

Following cabinet approval, Imperial Oil must now make a decision to proceed by 2013, though it has requested three more years to decide amidst rising project costs. The National Energy Board has stipulated that construction must begin by 2015.

Also in the NWT, Canadian Zinc is pushing ahead with plans to resurrect the controversial **Prairie Creek zinc-lead-silver mine**, which was developed (though never operated) in the 1980s near the community of Nahanni Butte in the Mackenzie Mountains. In 2009, Nahanni National Park boundaries were expanded to entirely envelop the mine, doing surprisingly little to thwart project plans. The list of concerns outlined by environmentalists regarding the Prairie Creek Mine includes effects on long-term water quality from heavy metal leaching or spills, disturbing local wildlife (Woodland caribou, grizzlies, Dall sheep, moose, waterfowl, etc.) and the park's ancient karst features, such as sinkholes and underground rivers and caves. All the required permitting and environmental assessment processes are well underway, and on January 20, 2011 the local Nahanni Butte Dene Band signed an *Impact and Benefit Agreement* with the mining company. This allows residents to reap some economic benefit from the 14-year project, stipulating terms of employment, training and contracts for local businesses. The previous year, the Liidlii Kue band in nearby Fort Simpson signed a similar agreement.[v] Another plan to resurrect mining operations in a deposit in the vicinity of Pine Point, on the south shore of Great Slave Lake, has been promoted by B.C.'s Tamerlane Ventures Inc. for several years. A feasibility study has deemed the project profitable, and the environmental regulatory process has begun. Mining such as this has the potential to cause serious imbalances in surrounding aquatic ecosystems through acid mine drainage, metal contamination and chemical pollution.

"In the Yukon you can still drink directly out of most of our rivers. And there is a strong desire from Yukoners, especially First Nations, to keep it that way."

—KAREN BALTGAILIS, YUKON CONVERSATION SOCIETY

Drying fish in Gwich'in territory

[v] The content of Impact and Benefit Agreements (IBAs), which are set up as private contracts, are typically not disclosed to the public. There are some notable exceptions, such as those outlined in Gibson, Ginger and O'Faircheallaigh, Ciaran. (2010). IBA Community Toolkit: Negotiation and Implementation of Impact and Benefit Agreements. Walter and Duncan Gordon Foundation. Retrieved from <www.ibacommunitytoolkit.ca>

"Climate change experts are forecasting that the Mackenzie Valley will likely experience the greatest increases in temperature in the world during the coming decades." [27]

CLIMATE CHANGE

As stated by our interviewees, the effects of climate change are apparent throughout the North and particularly acute within the Mackenzie River Basin. One interviewee indicated noticeable changes in ice thickness, water levels, wildlife distribution and migration patterns, as well as permafrost melting and increased soil erosion. Aboriginal communities are especially sensitive to climate change since they are so closely connected to the land and water; even minor changes can have a substantial impact on their food and transportation.

Over the next 100 years, scientists expect climate change to accelerate, and with much larger changes yet to come. Melting of permafrost provides significant challenges in Northern infrastructure, as many buildings, roads and airport runways are built upon a permafrost foundation.[28] Ground movement caused by melting of this foundation presents a breadth of engineering challenges. Remote communities in the NWT who are not connected by all-weather roads often rely on winter roads over lake and river ice to provide residents with supplies. Warming of the Northern climate continues to result in shorter and shorter winter road seasons, despite advances in technology.[29] Weather is more uncertain and ice is more unpredictable and dangerous because of changes in freeze and thaw cycles.[30]

Climate scientists and experts also predict that the Mackenzie Valley will experience temperature increases greater than most other Arctic regions.[31] Internationally, the gradual warming of the Mackenzie Valley could have significant impacts on global climate, as the unique and fragile water-ice nexus in the region currently serves to balance warmer areas of the Earth.[32]

WATER GOVERNANCE

"We don't manage our water; we can [only] manage human activities and developments."

— RICHARD BINDER, INUVIALUIT ABORIGINAL STEERING COMMITTEE MEMBER FOR THE NWT WATER STEWARDSHIP STRATEGY

"We have a unique opportunity to learn from the mistakes of others, to get things right from the start, to find innovative ways to address the myriad of complex and interrelated issues, and to share those lessons with all Canadians and the rest of the industrialized world."

—RALPH PENTLAND, SPECIAL ADVISOR ON FRESHWATER ISSUES, GORDON FOUNDATION

This section explores the various governance challenges and opportunities that will influence how Northern waters are managed. The inter-jurisdictional nature of water governance poses obvious challenges, especially in the Mackenzie River Basin, where our interviewees argued that not all jurisdictions are made equal.

NORTHERN WATER JURISDICTIONS

Canada's constitution does not define water ownership. The provinces have the clearest head of power through a general power of ownership over the resources on their lands, and are therefore the primary managers. But the federal government has a number of important powers that also directly relate to water (including fisheries, shipping, First Nations reserves and resolving inter-jurisdictional water disputes).

In the North, however, water management is complicated by the paternal relationship between the federal government and the territories, where the federal government still controls territorial natural resources and collects royalties on their exploitation. For those First Nations groups that have settled comprehensive land claims agreements, there are various regional boards and panels which allow a degree of participation in resource management decisions. While the federal government still has the final say on most of these decisions, it would be unlikely to approve a proposed project without the consent of the involved Aboriginal government(s), especially where their authority is cemented in a land claim agreement.[vi]

Moreover, the Northern system of regulations and approvals, such as that created under the Mackenzie Valley Resource Management Act (MVRMA), is strong and is getting stronger. However, it needs more time to fully develop as designed, as it has only been 15 years since the MVRMA was put into place, and only 5 years since the last land claim in the NWT was signed.

Unlike the NWT, the Yukon independently oversees its water resources following a *devolution* [vii] agreement with the federal government in 2001 and the subsequent 2003 *Yukon Act*, which conferred water management to the territory. The 1990 *Umbrella Final Agreement* (UFA)[viii] with all Yukon First Nations furnishes their participation in natural resource management and entrenches the right to use water for traditional means.

THE NWT WATER STRATEGY VS. OTTAWA

In May 2010, the GNWT and Indian and Northern Affairs Canada (INAC) – with input from Aboriginal leaders – released a water-management strategy called *Northern Voices, Northern Waters,* which placed a bold new emphasis on water protection.[ix] Notably, the paper acknowledges the needs and priorities of the Inuvialuit and regional First Nations, who "draw their spiritual and cultural integrity from the land and water." The proposed water strategy sets out a mandate for transboundary negotiations and agreements between all jurisdictions served by the Mackenzie River Basin.[33]

Our interviewees generally applauded the lofty goals of this made-in-the-North strategy,

[vi] On Type A water licence applications, the Federal Minister of Aboriginal and Northern Affairs must sign off for the licence to be granted but can only refuse to sign off if the regional Board has overstepped its jurisdiction in arriving at their recommendations. In the recent Western Copper case in the Yukon, the Territorial Supreme Court ruled that a water board can refuse to issue a licence even if the territorial government – to whom formerly federal natural resource management has been devolved - has already given its blessing. This might also imply that a regional NWT water board could do the same, assuming the same would hold vis-à-vis the federal government, as with the territorial in the Yukon case.
On Type B water licence applications the Minister has no role except to hold security for the licence and to employ those that enforce terms and conditions of a licence. The Board, through the signature of the chairperson, has final say on the issuance of a Type B licence.

but also recognized that such an idealized vision will be difficult to implement if the federal government fails to show more leadership and commitment on Northern water issues. Particularly, this concerns activity of the Alberta oil sands. According to the 2009 *Report of the Rosenberg International Forum on Water Policy to the Government of the Northwest Territories*,[x] "forceful evidence was presented by experts at the forum that suggested that existing federal regulations protecting upstream waters were not being enforced. Experts on the panel were surprised by evidence that the *Federal Fisheries Act*, the *Federal Navigable Waters Act*, the *Canadian Environmental Assessment Act*, the *Canadian Environmental Protection Act* and *Treaty 8* all appear to be systematically violated at Alberta's oil sands".[35]

Although the federal government is the ultimate authority on resource decision-making in the North and reaps most financial gain from mining, devolution will shift this long-wielded power. On January 26th, 2011, devolution inched one step closer to reality when NWT premier Floyd Roland signed a devolution Agreement-in-Principle with the federal government, paving the way for territorial control over public lands. Though it may take several years to implement, the agreement will no doubt shake up decision-making on regional freshwater issues. It should be noted, however, that the agreement was signed without support from all but two of the territory's Aboriginal groups, who argued they were not consulted about the agreement, and worry how it will affect their respective land claims settlements or negotiations.

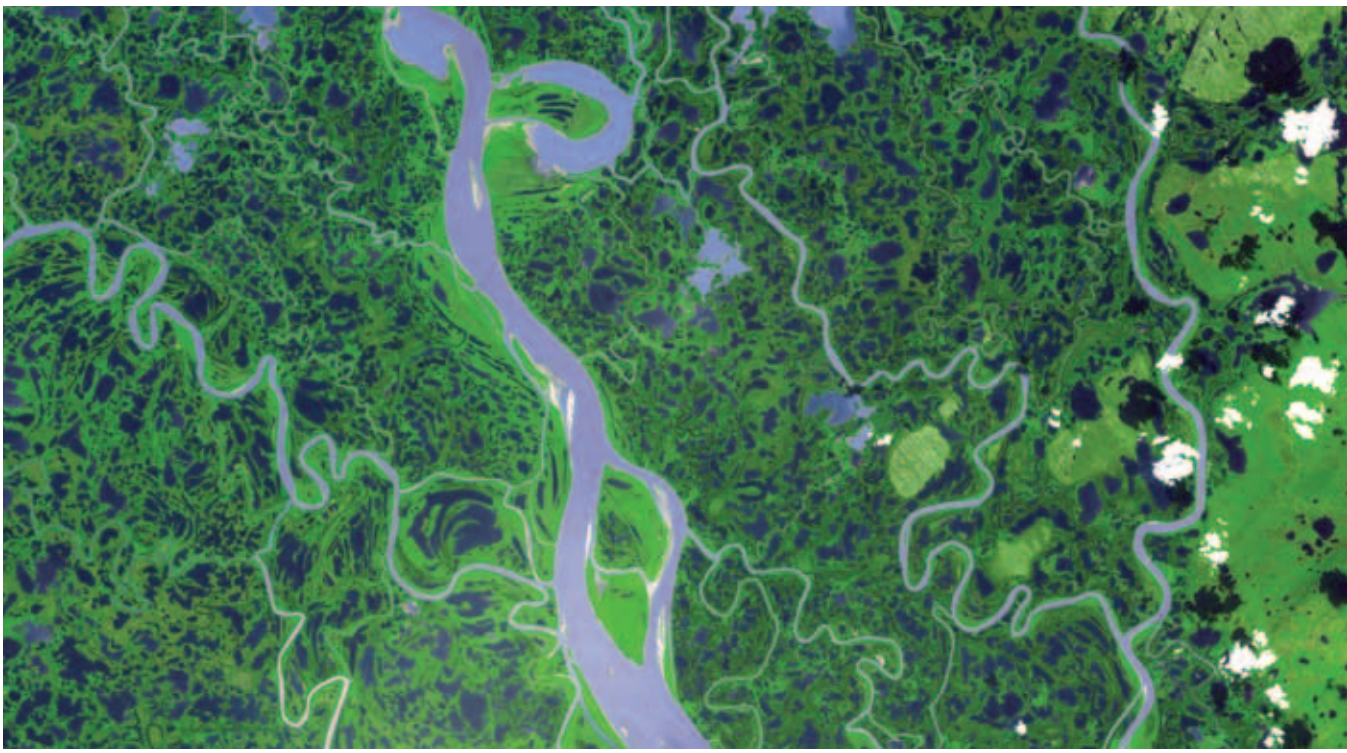
"We know that if we don't look after the land, the animals and the water, then the land, the animals and the water won't look after us."

—HON. MICHAEL MILTENBERGER, MINISTER OF ENVIRONMENT AND NATURAL RESOURCES, NWT

"The Government of the Northwest Territories does not have the luxury of taking ten years to further develop its water strategy."

—ROSENBERG INTERNATIONAL FORUM ON WATER POLICY, AUGUST 2009

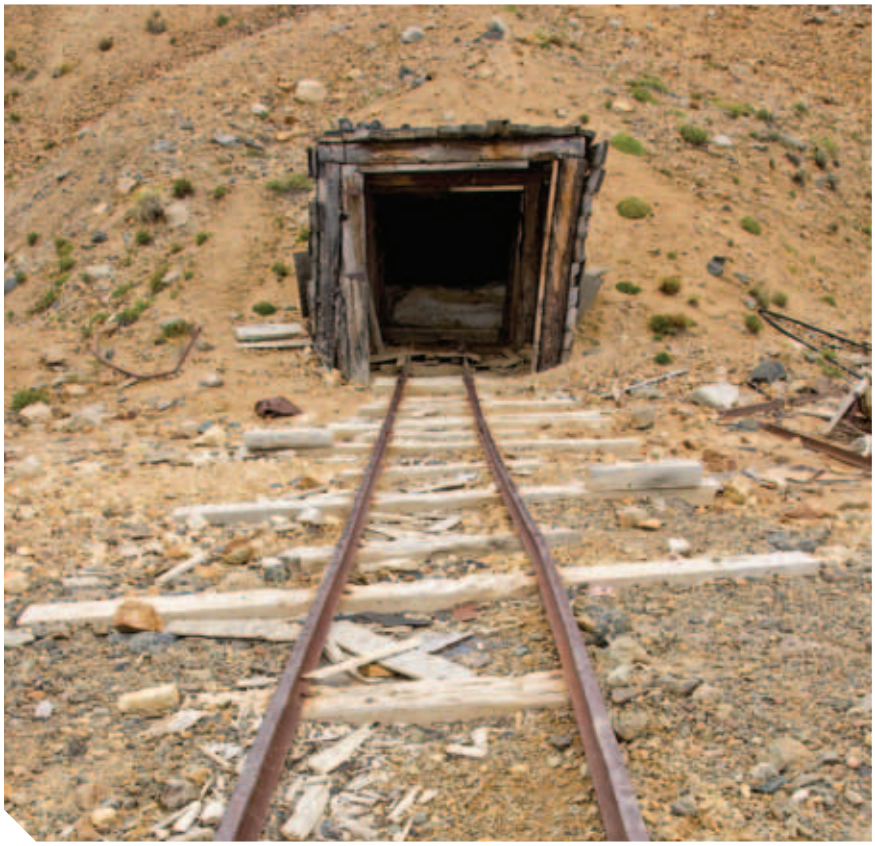
The Mackenzie River in the Northwest Territories, Canada



[vii] *Devolution* refers to the transfer of powers from the federal government to territorial governments, and mainly with regard to authority over natural resource planning, management and revenues.
[viii] The UFA is a (non-legally binding) political agreement between the federal and territorial governments and the Council of Yukon First Nations. It serves as a template for individual land-claim negotiations with Yukon First Nations and sets out provisions around compensation, self-government and resource-management.
[ix] The Strategy calls for water to remain "substantially unaltered in quality, quantity, and rates of flow," and to preserve its "spiritual, cultural, public health, recreational, economic, and ecological values."
[x] The Rosenberg Forum is a biennial event for international water scholars and managers, who meet to discuss issues around managing transboundary water resources.

"Over a century [after the gold rush ended], anyone with the urge, who's 18 years or older, can stake a claim and start mining for gold in the Yukon."

—PAUL WATSON, TORONTO STAR[37]



YUKON GOVERNMENT PRIORITIES

Our interviewees expressed concern about the current government's commitment to land and water protection, noting a bias toward resource exploration and mining. One interviewee took issue with the degree to which individuals, organizations and Aboriginal governments are able to participate in reviewing and intervening in the water-licence applications that are required by resource-development companies.[xi] As well, one interviewee noted "significant challenges" with how water-licence violations are enforced by Environment Yukon. "Increased mineral prices are placing greater demands on water use for mineral extraction while enforcement capacity of water licences remains unchanged."

Yukon history is rich with mining, and today remains the lifeblood of the territorial economy. Reflecting the unambiguously pro-staking spirit of the times, the *Yukon Quartz Mining Act* of 1985 enshrined the Gold Rush-era principle of "free entry" mining tenure, which deems that mining is the highest and best use of land. The Act is still in force today, though it was slightly amended in 2003. This antiquated legislation opened 80% of Yukon land for mineral exploration and, according to a number of our interviewees, makes it difficult for Aboriginal communities to oppose mining on their traditional land. As one interviewee said, if mining companies jump through all the required regulatory hoops, in most cases their claims will be approved. One interviewee said that if land-use plans are not already firmly in place (as in the case of the Peel Watershed) existing mining claims can thwart future land protection.

Another issue of great concern to our interviewees is the Yukon government's seeming lack of respect for the spirit and intent of the *Umbrella Final Agreement* with First Nations. One interviewee indicated that despite the current staking moratorium in the Peel Watershed, the government has allowed 2,300 mining claims to be renewed without a fee as

[x] Licensing for water use or to "deposit waste into water" is administered by the Yukon Water Board, an independent tribunal created under the Yukon Waters Act.

a kind of compensation to mining companies. The interviewee further argued that the Yukon government should be engaging in a balanced and sincere discussion with all parties about future resource development, but in reality only seems to be throwing up roadblocks.

PARTICIPATION OF ABORIGINAL GOVERNMENTS

In the NWT, four (of seven) Aboriginal groups – the Inuvialuit, Tlicho, Gwich'in and Sahtu – have settled comprehensive land claims agreements with widely varying powers of self-government. In the Yukon, 11 of 14 First Nations have agreements. Generally speaking, our interviewees agreed that Aboriginal governments are working well together and have a strong collective voice. Currently, their stewardship role is limited to the various resource boards and panels that were born out of their settlements, such as the Gwich'in or Sahtu Land and Water Boards.

However, if the current trend (and federal push) toward regulatory streamlining holds, NWT's regional land and water boards would be eliminated, their duties absorbed by the larger, regional-scale Mackenzie Valley Land and Water Board.[38,xii] This could dilute Aboriginal decision-making, and as such will not likely happen without considerable controversy and conflict. According to last spring's Speech from the Throne, this is part of a larger federal plan to "reform the Northern regulatory regime so that we can take full advantage of the region's resource potential in a way that not only makes business sense, but also protects the Northern environment".[39] The current controversy over devolution pits Aboriginal governments against the GNWT and does little to create an atmosphere of trust, a necessary precondition for any regulatory streamlining. Interviewees would like Aboriginal governments to play a more meaningful role at the policy-writing stage.[xiii] As one NWT interviewee insisted, Dene and Inuvialuit must be included in any and all discussions concerning the Mackenzie River Basin and its inter-jurisdictional management. Furthermore, it was argued that the regional chiefs must be present during negotiations with southern jurisdictions. According to the *Mackenzie River Basin Transboundary Waters Master Agreement*,[xiv] they must be consulted about freshwater usage in their land.

ASSERTING LEGAL RIGHTS

DOWNSTREAM RIGHTS

Downstream jurisdictions are in an unfortunate position; they exert no physical control over upstream water, but are affected by its use. According to Owen Saunders, executive director of the Canadian Institute of Resources Law at the University of Calgary, the modern legal approach to transboundary agreements seeks to address this imbalance: "Downstream jurisdictions usually acquire moral and legal rights, which it uses to counterbalance the physical reality of being downstream." To complicate the matter, downstream jurisdictions are seeking unconventional rights – such as the right for water not to be used – which, Saunders noted, "hasn't had the same historical recognition, so it is harder to assert."

Peel River, photo by James Stauch

[xii] The MVRMA does not cover the Inuvialuit Settlement Area.
[xiii] According to one of our Yukon interviewees, the Champagne Aishihik First Nation is implementing a water strategy for its traditional territory in southwestern Yukon. Though CAFN falls outside the Mackenzie Basin, its collaboration with the territorial government on freshwater strategycould set a co-management precedent.
[xiv] This 1997 agreement called on the provincial and territorial jurisdictions within the Mackenzie River Basin to work together on resource management.

"All peoples have a fundamental human right to water that must be recognized nationally and internationally, including the development of appropriate institutional mechanisms to ensure that these rights are implemented."

—15TH LEGISLATIVE ASSEMBLY OF THE NWT

"There is a strong ethical argument, as well as a legal argument, that water management should be in the hands of those who have the most at stake in ensuring the ongoing protection of water."

—MERRELL-ANN PHARE, DENYING THE SOURCE

The aforementioned *Mackenzie River Basin Transboundary Waters Master Agreement* (MRBMA) of 1997 established the Mackenzie River Basin Board, which was intended to represent all involved jurisdictions so they could collectively produce binding arrangements that guarantee certain water-sharing and pollution-protection commitments. According to a number of our interviewees, this agreement has remained largely un-implemented. Unsurprisingly, only the downstream jurisdictions (the Yukon and NWT) became signatories in an independent bilateral agreement to further the agenda of the MRBMA.[40] Our interviewees agreed that the jurisdictions have not worked collectively to realize their commitments. Meanwhile, major upstream oil and hydro developments in Alberta and B.C. continue.

Recently, transboundary negotiations have started between the NWT and Alberta, which it is hoped will lead to a binding bilateral agreement. A Memorandum of Understanding has been signed and the parties have now entered the fact-finding stage, the first phase of negotiations. Our interviewees agreed that the federal government should play a constructive role in the development of fair and equitable transboundary arrangements in order to empower the role of downstream jurisdictions. They believe that if this recommendation is taken seriously, the region has the opportunity to set an international precedent for transboundary water management.

WATER RIGHTS ARE BASIC HUMAN RIGHTS

Many of our interviewees argued that first and foremost, access to safe drinking water must be universally recognized as a basic human right. The GNWT assembly passed such a motion in 2007, finally recognizing water as a basic human right. In July 2010, the United Nations officially acknowledged the right to clean drinking water,[41] a decision from which Canada abstained.[42] The UN later affirmed that the "right to water and sanitation is contained in existing human rights treaties," making it a legally binding human rights decision.[43]

One interviewee made note of the Tetlit Gwitchin land claim agreement, which guarantees citizen beneficiaries of the agreement the same water quality and quantity as when their treaty was first signed. They have worked tirelessly to gain control over their traditional territories, and yet they require continued legal support to see these promises fulfilled. According to the interviewee, there currently exists no policy instrument to support the settlement of this treaty, and without the help of concerned supporters, its implementation may fall short.

ABORIGINAL RIGHTS

The 1973 Paulette Caveat (named after Francois Paulette, then Chief of Fort Smith) resulted in a landmark Supreme Court decision which officially recognized Aboriginal rights in the courts. And so, alongside the contemporaneous Calder case, the foundation was laid for future land claim agreements. Water rights fall under this legal framework. Several interviewees agreed that the federal, provincial and territorial governments have not fully recognized this fact, and in many cases have infringed on these rights through its decisions on upstream water-use by industry. Our interviewees maintained that these guaranteed rights should be considered and incorporated in the primary stages of policy development.

Gladys Netro is a member of the Gordon Foundation's Arctic Program Advisory Circle

THE ROLE OF OTHER PLAYERS

As noted in the previous section, power imbalances within such a vast transboundary context occur on various levels including downstream vs. upstream, territorial vs. provincial, Aboriginal vs. territorial and territorial vs. federal jurisdictions. Our interviewees maintained that unless there is a serious attempt to level these disparities, pressure from proposed hydroelectric dams

and increased oil sands activity could become overwhelming challenges for the small Northern communities that must bear the ecological brunt. It only makes sense that all affected parties share equal footing in discussions about the future of the Mackenzie River Basin.

ABORIGINAL GOVERNMENTS AND ORGANIZATIONS

A number of interviewees indicated that the Assembly of First Nations (AFN) is working to attain scientific evidence to support assertions around the misuse of Northern water. They also identified that the Dene Nation and First Nation governments in the region have made water a major priority, having proactively sought to engage southerners, scientists and grassroots organizations. Interviewees concurred that this represents a major step forward, as historically there has been little trust between Aboriginal communities and NGOs. A valuable example is Keepers of the Water, a group comprised of First Nations, Métis and Inuit, who are working alongside environmental groups and concerned citizens on ecological issues affecting the northern reaches of the Mackenzie Basin.

CITIZENS AND COMMUNITIES

Perhaps the North's best example of citizen/community mobilization on water and environmental issues has been with regard to the Peel Watershed planning process. Over the last five years, leadership has emerged on all sides: elders, youth groups, women, as well as from traditional actors (Aboriginal groups and NGOs). Youth involvement, one interviewee explained, is particularly critical since youth will be the ones facing the consequences of today's decisions. Citizen engagement in, and popular support for, protection of the Peel has been critical.

INDUSTRY

Industry is easy to blame, but often holds technical and process solutions that other stakeholders may overlook. Direct engagement with industry, as in the negotiation and implementation of Impact and Benefit Agreements (IBAs), often forestalls difficulties encountered in the regulatory or environmental assessment process.[xv]

ENVIRONMENTAL NGOS AND WATERSHED STEWARDSHIP GROUPS

Our interviewees listed an impressive number of environmental NGOs and watershed groups that are actively involved in, and have made significant contributions to, Northern water policy discussions and planning efforts. Among the recognized leaders are: Water Matters, Yukon Conservation Society, Canadian Boreal Initiative, Forum for Leadership on Water, Ducks Unlimited, Ecology North, World Wildlife Fund, Canadian Parks and Wilderness Society, Pembina Institute, the Rosenberg Forum, and Keepers of the Water.

As well, there are watershed organizations in many other regions of the country, such as the Fraser River and Columbia River Basins in B.C., the Bow River Basin in Alberta, and Grand River Watershed in Ontario, that focus on community-based stewardship and may offer useful lessons and best practices for water governance in the Mackenzie River Basin. Perhaps the most interesting and relevant model to draw from is the Yukon Inter-Tribal Watershed Council, which is constituted by a treaty between the many Alaska Tribal authorities and First Nations in Yukon and BC that live within the watershed.

Our interviewees agreed that improved communication between governments and these organizations is required in order to fully account for the multiple uses and values associated with water.

[xv] While IBAs are private contracts, environmental assessment (EA) is public policy. As such, the two processes should never be confused or conflated. Still, good IBA processes can hugely strengthen regulatory outcomes.

RECOMMENDATIONS

"We can't use old tools and old thinking to solve new problems."

— PARTICIPANT, NWT WATER RESOURCES MANAGEMENT STRATEGY MARCH 22, 2009, WORKSHOP #3 REPORT, YELLOWKNIFE

This section considers how the findings of this report can be best used by governments, foundations and other non-governmental organizations with a stake in the Mackenzie River Basin.

GOVERNMENTS

COMMIT TO BINDING TRANSBOUNDARY AGREEMENTS

Our interviewees noted that voluntary stewardship agreements often fall short on concrete and comprehensive results, so it is imperative that multi-stakeholder talks generate binding commitments around fresh water use in the region. It was argued that the upcoming transboundary negotiations between Alberta and the NWT offer an opportunity to establish a precedent-setting framework for the protection of the Mackenzie River Basin. It was stated that British Columbia should also take part in these negotiations or a parallel process, and that these jurisdictions, with support from the federal government and participation of Aboriginal governments, should commit to binding agreements that are fair and equitable for all parties.

SUPPORT THE NWT WATER STEWARDSHIP STRATEGY

Although the NWT exerts limited influence over upstream decisions that impact the Mackenzie, it can establish moral authority in the basin by implementing its leading-edge water strategy. Currently, implementation is highly dependent on the federal government and many of our interviewees recommended the federal government commit to abide by the framework outlined in "Appendix F" of *Northern Voices, Northern Waters*, which recommends concrete initiatives over a rigorous timeframe. Our interviewees also agreed that jurisdictions across the country could learn from this proactive and forward-thinking strategy.

STRENGTHEN ABORIGINAL RIGHTS AND SUPPORT ABORIGINAL INSTITUTIONS

Until significant changes in legislative policy concerning Aboriginal water-rights are brought into effect, the courts will be forced to make up the difference. Several interviewees agreed that the limitations inherent in the weak legal and political recognition of traditional stewardship and water rights require a focused effort to induce change. Governments, and in particular the federal government, would do well to anticipate the courts and be pro-active in legislating strong Aboriginal water-rights. Present efforts to streamline the Northern regulatory system and the current Agreement-in-Principle on devolution at minimum threaten to severely damage trust, if not *legally* undermine the authority and jurisdiction of Aboriginal institutions. New institutions of co-management and joint regulation of resources take time to resolve imperfections, and there are signs that many of these bodies are working well after initial growing pains: Any attempt to "streamline" this process should wait until these institutions have been given a chance to work out various kinks, including capacity imbalances on boards.

IMPLEMENT A "WORLD-CLASS" WATER MONITORING SYSTEM

Both federal and provincial governments have committed to improving water monitoring in the Athabasca region and strengthen protections against water pollution and overuse from oil sands developments. It is critical that both governments work together to establish a

truly "world-class" water monitoring system to ensure the health and well-being of the people and wildlife of the Mackenzie Basin, as well as maintain Canada's international reputation. Interviewees also emphasized that there is a fundamental need for governments at all levels to support publicly-funded research (both peer-reviewed science as well as traditional knowledge) and stewardship education.

FOUNDATIONS AND OTHER NON-GOVERNMENTAL ORGANIZATIONS

RAISE PUBLIC CONSCIOUSNESS ACROSS CANADA

One interviewee indicated that all interested parties should encourage a greater understanding of Northern water issues among all Canadians, not just Northerners. Interviewees agreed that the contamination and mismanagement of our freshwater sources must be framed as an issue of national pride, requiring a broad range of players. It is also an issue of Arctic security, a concept that is currently de rigueur and a stated federal priority. It was suggested that a sophisticated public communications strategy could have the potential to rouse concern among many Canadians.

CONVENE MULTI-PLAYER MEETINGS AND SEED DIVERSE COALITIONS

Our interviewees asserted that organizations working on these issues should employ new and inventive ways of attracting diverse voices to the water discourse. Water has vital health, cultural, spiritual and recreational aspects, the perspectives of which must be more fully included in all efforts aimed at planning and managing the Basin.

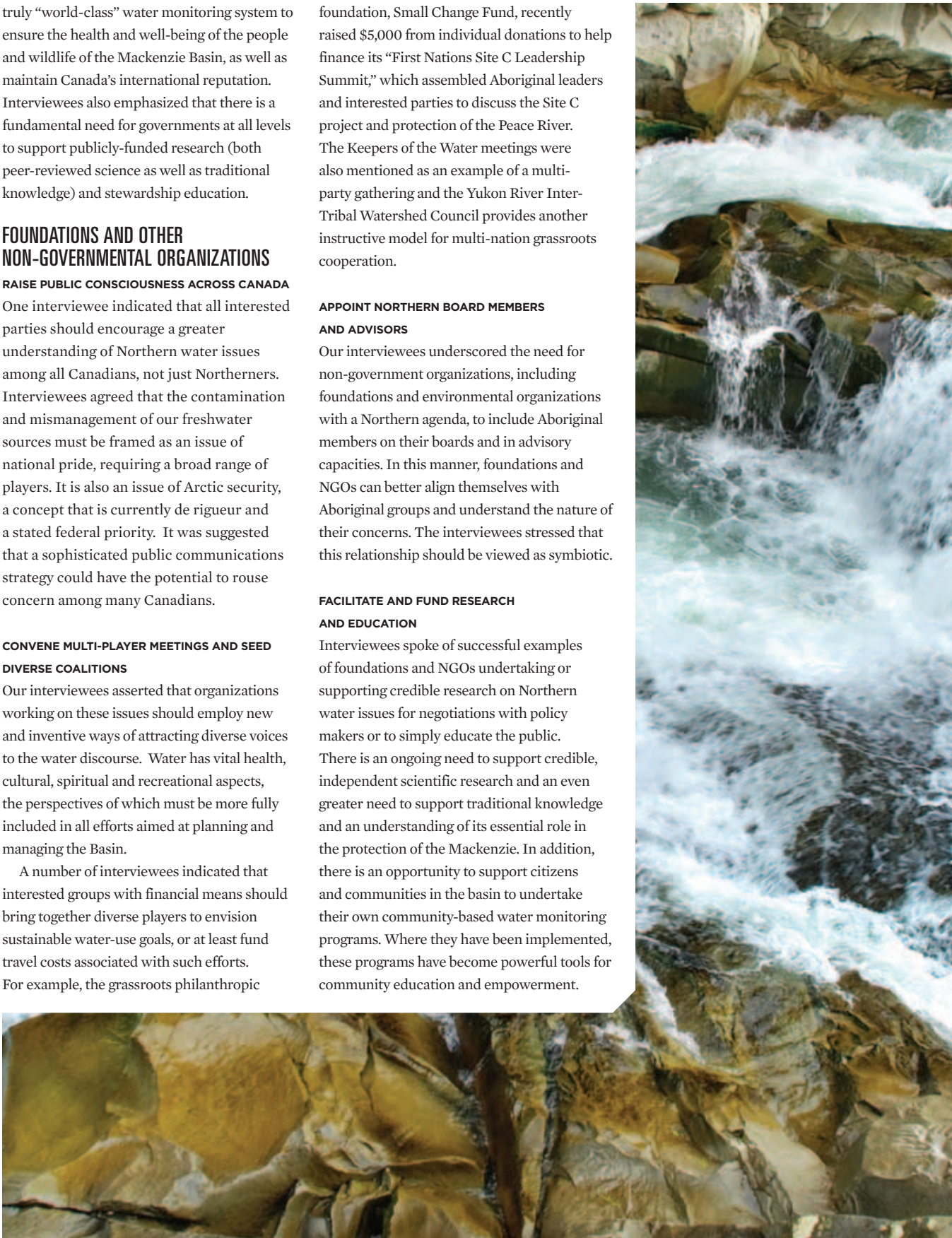
A number of interviewees indicated that interested groups with financial means should bring together diverse players to envision sustainable water-use goals, or at least fund travel costs associated with such efforts. For example, the grassroots philanthropic foundation, Small Change Fund, recently raised $5,000 from individual donations to help finance its "First Nations Site C Leadership Summit," which assembled Aboriginal leaders and interested parties to discuss the Site C project and protection of the Peace River. The Keepers of the Water meetings were also mentioned as an example of a multi-party gathering and the Yukon River Inter-Tribal Watershed Council provides another instructive model for multi-nation grassroots cooperation.

APPOINT NORTHERN BOARD MEMBERS AND ADVISORS

Our interviewees underscored the need for non-government organizations, including foundations and environmental organizations with a Northern agenda, to include Aboriginal members on their boards and in advisory capacities. In this manner, foundations and NGOs can better align themselves with Aboriginal groups and understand the nature of their concerns. The interviewees stressed that this relationship should be viewed as symbiotic.

FACILITATE AND FUND RESEARCH AND EDUCATION

Interviewees spoke of successful examples of foundations and NGOs undertaking or supporting credible research on Northern water issues for negotiations with policy makers or to simply educate the public. There is an ongoing need to support credible, independent scientific research and an even greater need to support traditional knowledge and an understanding of its essential role in the protection of the Mackenzie. In addition, there is an opportunity to support citizens and communities in the basin to undertake their own community-based water monitoring programs. Where they have been implemented, these programs have become powerful tools for community education and empowerment.



CLOSING THOUGHTS

"All the water that will ever be is, right now."

— NATIONAL GEOGRAPHIC, OCTOBER 1993

If water is spilled on a map of Canada, the water flows down, flows south. Subconsciously, we link downstream with southward, yet most of Canada's fresh water is Arctic-bound, flowing north. Much of it flows through the Mackenzie River Basin, a majestic waterway referred to as the "Amazon of the North." The Mackenzie is a basin with true global ecological significance – yet, it has never been more vulnerable to the threats of human abuse and negligence.

Most of the basin lies north of the 60th parallel, where provinces become territories and leaders lack sufficient jurisdiction, clout and resources to protect the waters for future generations. The knowledge, skills and experience of Northerners must be supported to ensure effective stewardship. Key policy windows, including a major provincial-territorial negotiation, are now opening. At the same time, Canadians must be awakened to Arctic water issues and bear a collective responsibility to protect the integrity of this great basin – the only one entirely within our borders.

The eyes of the world are upon us, and while the perceived abundance of fresh, clean water in the North may have rendered some Canadians complacent, the window to make the choices that will ensure the protection of the basin is narrowing. Fortunately, some decisions have to be made. This paper helps us identify some of these choices so that the compass can be set toward a secure future for those communities who depend on this glorious watershed. Water may not have a voice, but that does not mean we cannot help it speak.

APPENDIX A

THE MACKENZIE WATERSCAPE

The Mackenzie River Basin is the largest river system in Canada, draining 60% of the country's freshwater over an area nearly the size of Mexico. The basin includes six major watersheds, three deltas, two national parks, all of the Peace River oil sands and nearly all of the Athabasca oil sands. It spans six jurisdictions: British Columbia, Alberta, Saskatchewan, the Yukon, Northwest Territories and a sliver of Nunavut. Its huge outflow influences global climate and ocean circulation systems, while its waterways, boreal forests and tundra lands support a stunning variety of flora and fauna, including migratory birds, grizzlies and caribou. Some 400,000 people live within the basin, 15% of whom are Aboriginal.

THE ATHABASCA AND PEACE RIVERS

These two mighty rivers are the main headwaters of the Mackenzie Basin. **The Peace** (1,923 km) originates in the Rockies of northern B.C. and cuts across north-western Alberta before pouring into the Slave River. From there, it continues its path into Great Slave Lake and eventually empties into the Mackenzie River. Its size and flow have attracted several controversial hydroelectric project proposals in addition to three existing dams. **The Athabasca River** (1,231 km) begins further south in the Columbia Icefield near Jasper, Alberta, and flows north-east, bisecting the Athabasca oil sands before pouring into the Slave River. Here, it converges with the Peace to form the **Peace-Athabasca delta**, one of the largest, most ecologically significant freshwater deltas in the world and the traditional territory of the Dëne Sųłiné, or Chipewyan people.

GREAT BEAR LAKE AND GREAT SLAVE LAKE

NWT's **Great Bear Lake** spans the Arctic Circle and is renowned as both the largest freshwater lake entirely within Canada, and the world's last pristine great lake (despite years of uranium mining in the 1930s). This giant lake flows into the relatively tiny (113 km) Great Bear River, which plugs into the Mackenzie near the community of Tulita. **Norman Wells**, about 80 km further north along the river, is an historic oil town that first supplied oil for WWII military operations. **Great Bear** is home and territory of the Sahtu Dene, one of the NWT First Nations to have settled a land claims agreement.

NWT's other mammoth is **Great Slave Lake**, North America's fifth largest lake and tenth in the world. It feeds the main stem of the Mackenzie River at Fort Providence, and has been home to the Akaitcho and Tlicho (Dogrib) Dene for millennia. Its shores still sustain several communities, including Yellowknife, a city built on gold mining (including the infamous Giant mine, along with several others). On the south shore, the **Pine Point** mine (and accompanying town of 1,200) quarried lead and zinc for more than two decades before shutting down and clearing the community.

THE PEEL RIVER WATERSHED

Located in the Yukon's northern reaches, the **Peel River** (585 km) is one of its more isolated tributaries. The larger **Peel Watershed** is a substantial sub-basin of the Mackenzie, draining roughly 70,600 km^2 of largely Yukon land. With no permanent human settlements other than Ft. McPherson near its confluence with the Mackenzie, the Peel remains one of the most intact watersheds in the world, and a place fiercely revered by Yukoners. The region's First Nations – the Na-Cho Nyak Dun, Tr'ondëk Hwëch'in and the Vuntut and Tetlit Gwich'in – along with a consortium of NGOs and conservation groups, have backed a recently released land use plan that proposes to protect 80% of the Peel Watershed from mining interests. The territorial government, however, has so far rejected the plan, arguing that it over-emphasizes protection and introduces an unduly rigorous permitting process. Their opposition may also relate to perceived pressure to pay out existing claim holders in compensation.

THE LIARD WATERSHED

The Liard River (1,115 km) originates in the mountainous south-eastern region of the Yukon, dips down into northern B.C.,[xvi] then flows back north through the NWT, where it converges with the Mackenzie River near **Nahanni National Park**. The watershed covers roughly 277,000 km^2 and is the territory of the Kaska (YT and B.C.), Tahltan (B.C.) and Dehcho (NWT) First Nations. Within the Dehcho region, a controversial zinc-lead-silver mine has been proposed in Nahanni Park, a World Heritage Site and revered Canadian landmark.

[xvi] The northern B.C. portion of the watershed is covered by the groundbreaking Muskwa-Kechika Management Area, which protects 6.4 million hectares from unchecked resource-development.

APPENDIX B

LIST OF INDIVIDUALS INTERVIEWED:

DAVID LIVINGSTONE
FORMER DIRECTOR, RENEWABLE RESOURCES AND ENVIRONMENT, INDIAN AND NORTHERN AFFAIRS CANADA – NWT REGION

FRANCOIS PAULETTE
FORMER CHIEF OF FORT SMITH, NWT

GLADYS NETRO
ADVISOR, WALTER AND DUNCAN GORDON FOUNDATION

JENNIFER GRANT
INTERIM ARCTIC PROGRAM DIRECTOR, PEMBINA INSTITUTE

JOANNE BARNABY
SPECIAL ADVISOR ON ARCTIC AND INDIGENOUS POLICY, WALTER AND DUNCAN GORDON FOUNDATION

JOCELYN JOE STRACK
JANE GLASSCO FELLOW

JOE LINKLATER
CHIEF, VUNTUT GWICHIN FIRST NATION, YUKON

KAREN BALTGAILIS
EXECUTIVE DIRECTOR, YUKON CONSERVATION SOCIETY

LARRY INNES
EXECUTIVE DIRECTOR, CANADIAN BOREAL INITIATIVE

MERRELL-ANN PHARE
EXECUTIVE DIRECTOR, CENTRE FOR INDIGENOUS ENVIRONMENTAL RESOURCES (CIER)

NADIA JOE
JANE GLASSCO FELLOW

OWEN SAUNDERS
EXECUTIVE DIRECTOR, CANADIAN INSTITUTE OF RESOURCES LAW (CIRL), UNIVERSITY OF CALGARY

RALPH PENTLAND
SPECIAL ADVISOR ON FRESHWATER RESOURCE ISSUES, WALTER AND DUNCAN GORDON FOUNDATION

TONY PENIKETT
SPECIAL ADVISOR ON ARCTIC SECURITY, WALTER AND DUNCAN GORDON FOUNDATION

INTERVIEW QUESTIONS:

1. Given the quantity of fresh water in the Yukon and Northwest Territories, are fresh water issues important in the North? And if so, why?
2. What are the key fresh water issues facing the North? What are some of the root causes? What needs to be addressed further?
3. What opportunities are present to address these issues?
4. What are the policy windows, both short term and long term?
5. Who are the key players (e.g. governments, organizations, community-based initiatives, foundations, etc.) who are already addressing these issues?
6. Ideally, what roles do you see these different groups playing? What useful role might a foundation like the Gordon Foundation play in helping to advance these issues?

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