

Indigenous Water Governance in British Columbia and Canada: Annotated Bibliography

PROGRAM ON
WATER GOVERNANCE 

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Introduction

This annotated bibliography summarizes literature on key topic areas relating to Indigenous¹ water governance, with a primary geographic focus on British Columbia and Canada. This is a critical thematic area to explore for several reasons: First Nations across Canada and British Columbia have clearly identified the significance of water and water governance to their communities; there is increasing legal recognition of Aboriginal rights and title and an accompanying affirmation that First Nations must have a say in decisions that impact their territories; and there are shifts unfolding in water governance in British Columbia which have implications for First Nations across the province, most notably the approval of the new *Water Sustainability Act* in 2014. This bibliography includes additional literature from the USA, Australia, and New Zealand contexts to highlight further theoretical contributions on the subject of Indigenous water governance.

In light of these points, central themes included in this bibliography are Indigenous governance and socio-cultural relationships with water; water allocation and implications for Indigenous water rights; the legal framework for Indigenous territorial and water rights in British Columbia, and drinking water issues on First Nations reserves across Canada. Given a growing focus in British Columbia and Canada on collaborative water governance at the watershed level, we also include a small sample of literature on these themes, mindful that both of these topic areas have large bodies of associated scholarship. This document also includes literature and resources related to research ethics and forming research agreements with Indigenous communities.

¹ The term Indigenous has many nuanced meanings worldwide (Corntassel, 2003). It is used throughout this document in the usage frequent within Canada (referring to First Nations, Inuit, Métis peoples) and internationally (as an inclusive reference to communities which claim a historical continuity with pre-colonial and/or pre-settler societies; self-identify as Indigenous; form non-dominant groups of society; maintain strong links to territories and surrounding natural resources; and maintain distinct social, economic and political systems and distinct language, culture and beliefs (UN Permanent Forum on Indigenous Issues).

This bibliography is not intended to be an exhaustive compilation of the array of literature which considers the multiple dimensions of Indigenous water governance in British Columbia and beyond. We also recognize that in narrowing our framing on water specifically, we exclude other key related issues such as fisheries and biodiversity conservation, which have been identified as linked concerns within broader Indigenous perspectives on water and water governance. However, we hope this document is a relevant and helpful starting point for researchers and others interested in learning more about this topic.

If you have any questions, comments, or recommended additions to this document, please contact water.gov@ubc.ca.

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1. Indigenous water governance & socio-cultural relationships with water

Armstrong, J., & Sam, M. (2013). Indigenous water governance and resistance: A Syilx perspective. In J. Wagner (Ed.), *The social life of water* (pp. 239-253). New York: Berghahn Books.

In this piece, Armstrong and Sam reflect on injustices in colonial water governance for Indigenous peoples in Canada and internationally. The authors document Indigenous resistance against neo-liberal water policy, including the Cochabamba water wars in Bolivia and the legal battles over fisheries and Aboriginal rights and title in BC. The authors suggest that a key issue is that “Canada continues to effectively block any real participation by indigenous people in decision making, and by doing so masks ongoing appropriations of unceded natural resources” (240). This chapter concludes with a short discussion on Aboriginal water rights and the *Water Sustainability Act* in BC, in which Armstrong and Sam argue that the legislation’s development was inherently flawed as the consultation process treated Indigenous peoples as one of many stakeholders rather than as self-determining nations.

Baird, J., Carter, B., Cave, K., Dupont, D., General, P., King, C. et al. (2012). Gaining insights about water: The value of surveys in First Nations communities to inform water governance. *Indigenous Policy Journal*, 23(4), 1-18.

This article draws on research experiences with three First Nations in Ontario to explore the value of surveys as means of collecting information about the ways in which water is perceived, used, and managed in communities. The authors highlight the importance of including Indigenous knowledge in water governance, and suggest that surveys are a valuable way to provide insights into such themes as: the connection of individuals to the land, water and their community; reasons for valuing water; perceptions of water quality and issues surrounding water-related advisories, and degree of satisfaction with water management and governance at different scales. Baird et al. also identify some of the limitations of surveys, including the disjuncture between Western and Indigenous ways of knowing, leading to confusion with some of the meanings and concepts used.

Blackstock, M. (2001). Water: A First Nations’ spiritual and ecological perspective. *B.C. Journal of Ecosystems and Management*, 1(1): 2-14.

Drawing from testimonials from three Elders from Southern Interior BC, this article documents concerns and perspectives about water from Indigenous perspectives. Blackstock suggests that comparing Indigenous and Western ways of knowing can

potentially illuminate new approaches in water management and help to set priorities for ensuring the health and safety of watersheds. The Elders interviewed emphasized the spiritual importance of water and its role as the primary substance within an interconnected web of life and being. Water is seen as a source of power and purity, representing a healing medium. The article problematizes Western conceptions of water as an object or commodity to be exploited.

British Columbia Assembly of First Nations (BCAFN). (2010). Section 3.31: Water. In *BCAFN Governance Toolkit: A Guide to Nation Building* (pp. 443-462).

This report provides information on water governance and water rights to First Nations in British Columbia. It focuses on water allocation, with a lesser focus on water quality issues. This report makes explicit the importance of water within governance more broadly: “Water is an important subject to be considered in rebuilding First Nations governance” (444), where, “...at the outset, the most important point for our Nations is, who owns the water, and who has the right to determine access to water for all the possible uses” (445). The toolkit includes an overview of the history of water licensing in BC and the ongoing implications of the First in Time, First in Right licensing arrangement for First Nations, where, for instance, some reserves still do not have adequate water license allotments. This document further outlines the regulatory framework for drinking water on reserves and the barriers within this framework, including access to source water; the high costs of equipping, constructing and maintaining facilities in remote locations; deficient infrastructure; limited local capacity and ability to retain qualified operators; and lack of resources to properly fund water operations and maintenance. The report reviews how water has been addressed within modern treaties and comprehensive claims agreements in BC, with a helpful comparative chart on page 456. The treaty agreements, for example (with the exception of Tsawwassen) provide for a specific water reservation for the Nation in question under provincial law.

First Nations Leadership Council (2013). *Draft BC First Nations water rights strategy*. Available from http://www.ubcic.bc.ca/files/2013March_BCFN_WaterStrategyandSurvey_DraftforFirstNations.pdf.

This strategy document was developed by the First Nations Leadership Council and was presented and discussed at the March 2013 *BC First Nations' Rights to Water Workshop*. The document provides an overview of the jurisdictional and legal context pertaining to water for First Nations in BC, and lays out a draft Water Action Plan, including political, legal and policy, community support, and education strategies.

First Nations Summit. (2013). *A water sustainability act for BC: Legislative proposal. Comments to the Ministry of Environment, Government of BC.* Available from <http://engage.gov.bc.ca/watersustainabilityact/files/2013/12/First-Nations-Summit.pdf>

This document outlines the First Nations Summits' concerns with the *Water Sustainability Act* legislation. Key issues relate to the provincial assumption of ownership of water; the treatment of First Nations as 'stakeholders' rather than as self-determining nations; the lack of meaningful consultation with First Nations during the legislation's development, and an overall lack of clarity on how First Nations' needs will be met.

Fresque-Baxter, J. (2015). *'Water is life': Exploring the relationship between place identity, water and adaptive capacity In Fort Resolution, Northwest Territories, Canada, (Doctoral dissertation).* Wilfred Laurier University. Available from <http://scholars.wlu.ca/etd/1701/>

This dissertation examines the potential relationships between place identity and adaptation and adaptive capacity, in the context of water resources. In this study, Fresque-Baxter collaborates with the community of Fort Resolution, a Dene-Métis community in the southern NWT. The research documents that community members are experiencing changing water conditions that are felt to be impacting use of, and relationship to, water or places mediated by water. Common experiences of water change were centered on changes in water quantity and flow, concerns about water quality, and changes in weather, precipitation and ice. The author concludes that these community-identified changes in water are impacting the place identity of residents, "through impacts to places that support maintenance and function of place identity and related place-values" (iii).

Indigenous Peoples' Kyoto Water Declaration (2006). In UNESCO, *3rd World Water Forum final report.* Available from http://portal.unesco.org/science/en/ev.php-URL_ID=3886&URL_DO=DO_TOPIC&URL_SECTION=201.html

This document describes Indigenous peoples' relationships and knowledges related to water, Indigenous rights to water and self-determination, and requirements for consultation with Indigenous peoples in decisions about water. It also lays out an international Indigenous action plan for water, including a "resolve to maintain, strengthen and support Indigenous Peoples' movements, struggles and campaigns on water and enhance the role of Indigenous elders, women and youth to protect water," (4) and a challenge to "the dominant paradigm, policies, and programs on water development...which do not recognize the rights of Indigenous Peoples to water" (4)

Joe, Nadia. (2012). *Our water, our life: A new model for water resource management in the Aishihik Drainage*. Walter and Duncan Gordan Foundation. Available from <http://gordonfoundation.ca/publication/571>.

This report compiles the results of interviews with members and elders of the Champagne and Aishihik First Nations discussing concerns and goals for water. Joe documents the vital importance of water, cultural water uses, and principles guiding water use in these communities. The report describes participants' experiences related to changes in water quality and quantity in their territory. Joe proposes three foundational principles of a new water model: shared governance, adaptiveness, and sustainability.

LaBoucane-Benson, P., Gibson, G., Benson, A., & Miller, G. (2012). Are we seeking Pimatisiwin or creating Pomewin? Implications for water policy. *International Indigenous Policy Journal*, 3(3), 1-22.

This is a broad paper that describes the worldview and relationship of Cree people in Alberta to water. Much of the article is dedicated to sharing stories from Elders involved in the various teaching circles, sharing circles, reconciliation circles, and interviews held throughout the research. The paper discusses how colonial policies in Canada, such as residential schools, have created despair and a state of disconnectedness from water in Indigenous communities. A main focus of the article is on research ethics, particularly with respect to the expectations and types of protocol that surround approaching teachers as a 'knowledge-seeker.' Another key concept in the article is building resilience from an Indigenous model, based on reconciliation, reclaiming an interconnected worldview, and self-determination.

Ladner, K. (2003). Governing within an ecological context: Creating an alternative understanding of Blackfoot governance. *Studies in Political Economy*, 70, 125-152.

This article is not specifically about water, but speaks to Indigenous conceptualizations and enactments of governance as these are related to place and ecological context. Lander describes that "Within the parameters of Indigenist thought, governance is "the way in which a people live best together" or a way a people has structured their society in relationship to the natural world" (125). She highlights that there is a relationship between ecological order and Indigenous political traditions, worldviews, and knowledge systems. Ladner delves into this relational concept between politics and ecology in the Blackfoot context, suggesting that through observation a buffalo herd, the foundations of Blackfoot political traditions can be better understood.

McGregor, D. (2009). Honouring our relations: An Anishnaabe perspective on environmental justice. In J. Agyeman (Ed.), *Speaking for ourselves: Environmental justice in Canada*. Vancouver, BC: UBC Press.

This chapter shares some Anishnaabe teachings and understandings of water and environmental justice. McGregor highlights that environmental justice is not a new concept in Anishnaabe culture, where “Natural laws have existed for generation that ensure justice for “all our relations”” (32). She focusses on the importance of relationships and on the responsibility to maintain harmonious relations with all living things, sharing an Anishnaabe creation story to show the ways in which such values and relationships are embedded in the Anishnaabe worldview. MacGregor describes the many ways in which water is vital to Indigenous peoples as a vital life-giving force, highlighting the particular relationship between women and water in Anishnaabe culture as both are life-givers.

McGregor, D. (2012). Traditional knowledge: Considerations for protecting water in Ontario. *International Indigenous Policy Journal*, 3(3), 1-21.

This article highlights current efforts to involve traditional knowledge in water policy and practices in Ontario. McGregor provides an overview of Anishinaabe perspectives on water and of the importance of Anishinaabe knowledge for sustaining appropriate relationships with water. The article advocates for mutually-respectful collaboration between traditional knowledge and Western science for restoration of Indigenous access to traditional territories and ways of life. The article highlights the special role Indigenous women play in the protection of water and details some recent initiatives led by Anishinaabe women to raise awareness and change perceptions surrounding water.

Norman, E. (2015). *Governing transboundary waters: Canada, the United States and Indigenous communities*. New York and London: Routledge Press.

This book explores transboundary water-governance through an examination of six case studies along the Canada-US border, with an emphasis on the leadership and governance of Indigenous actors. Norman emphasizes border-making as an active colonizing act, demonstrating the multiple ways in which the international border has impacted Indigenous communities and water governance. This work explores the rescaling of transboundary water governance and shows how shifting Indigenous governance mechanisms, such as the Coast Salish Gathering, are linked to broader Indigenous decolonization and self-determination efforts.

Norman, E. (2012). Cultural politics and transboundary resource governance in the Salish Sea. *Water Alternatives*, 5(1), 138-160.

This paper explores the cultural politics of water governance through an analysis of the Coast Salish Gathering. The central focus of this article is on the rescaling of governance from the individual tribe to the Nation level and the ways in which this is part of a broader process of self-determination, governance, and creating a shared identity. Norman investigates how the administrative structures and physical boundaries of water governance are both socially constructed and politically mobilized.

Norman, E. (2013). Who's counting? Spatial politics, ecocolonisation, and the politics of calculation in Boundary Bay. *Area Royal Geographical Society*, 45(2), 179-187.

In this article, Norman draws on the concepts of 'ecocolonisation' and the politics of calculation to argue that calculative techniques are a form of colonisation that have significant political impacts on Indigenous communities. This argument is developed through a case study of shellfish regulation and contamination in Boundary Bay, which straddles the Canada-US border on the Pacific Coast. Norman demonstrates that the politics of calculation occur differently on either side of the international border, which has resulted in diverging impacts on the shellfish harvesting practices of the historically connected Indigenous communities living in this region.

Sam, M. (2008). *Okanagan water systems: An historical retrospect of control, domination and change*, (Master's thesis). University of British Columbia Okanagan. Available from <https://circle.ubc.ca/handle/2429/2785?show=full>.

This thesis considers the history of colonial control, domination, and change in water use practices in the Interior Plateau region of BC. Sam discusses how US government water policies influenced *Syilx* peoples in BC, with a focus on impacts stemming from large-scale hydroelectric dam development on the Columbia River. Sam documents oral testimonials from Elders in Penticton recounting the severity of biological loss and negative economic, cultural and political impacts caused by this alteration of the river.

Sam, M. (2008). *Water governance and First Nations*. Paper presented at the Okanagan Water Stewardship Council Workshop, Kelowna, BC. Available from http://www.obwb.ca/fileadmin/docs/080515_presentation.pdf

This short paper describes *Syilx* water governance and the impacts of BC water policies, including the First in Time First in Right licensing system, on Indigenous water access and rights in the Okanagan.

Sam, M. (2013). *Oral narratives, customary laws and Indigenous water rights in Canada*, (Doctoral dissertation). University of British Columbia Okanagan. Available from https://circle.ubc.ca/bitstream/handle/2429/45247/ubc_2014_spring_marlowe.pdf.pdf?sequence=9

Sam's PhD dissertation considers *Syilx* oral narratives to provide evidence of the customary laws and practices that guided (and continue to guide) *Syilx* management practices for water. Sam examines the complex implications of various Supreme Court decisions for the human and Aboriginal right to water.

Sardarli, A. (2013). *Use of Indigenous knowledge in modeling the water quality dynamics in Peepeekisis and Kahkewistahaw First Nations communities. Pimatisiwin: A Journal of Aboriginal & Indigenous Community Health, 11, 55-65.*

Based on work with the Peepeekisis and Kahkewitstahaw First Nations in Saskatchewan, this research project developed an Indigenous knowledge-based method to evaluate water quality and to describe the temporal model of water quality dynamics. The project developed a methodology to convert First Nations' empiric qualitative descriptions of water quality and water quality changes through time into a quantitative equivalent.

Sanderson, C. (2008). *Nipiy wasekimew/clear water: The meaning of water, from the words of the elders: The interconnections of health, education, law, and the environment*, (Doctoral dissertation). Simon Fraser University. Available from <http://www.collectionscanada.gc.ca/obj/thesescanada/vol2/002/NR58519.PDF>.

This dissertation focuses on the meaning of water from Indigenous perspectives, documenting the view of three Cree, Nuu-Chah-Nulth, and Maori elders. It looks at the ways in which the elders' teachings about water can help shape policies in education and health, positing the reclamation of Indigenous languages as a crucial aspect of this process. Sanderson suggests that the meaning of the elders' teachings cannot be fully understood without a strong rooting and education in cultural practices, and sees the revitalization of Indigenous languages as intimately connected to the health and preservation of the environment. The author looks beyond water alone to advocate for significant systemic and structural changes, calling for the recognition of the fundamental human rights and dignity of Indigenous peoples.

Simmons, E. (Ed.). (2013). *Indigenous earth: Praxis and transformation*. Penticton, B.C.: Theytus Books.

This compilation includes several contributions that address broad themes of Indigenous water governance, environmental justice, values of water, and knowledge. Key chapters on these themes include: Indigenous Knowledges and Environmental Ethics: From Guidelines to Governance (McGregor); Indigenous Water Rights: From the Local to the Global Reality (Sam); Use of Indigenous Knowledge in Mathematical Modeling of Water Quality Dynamics (Sardarli); Community Perspectives on Water Resources in the Shuswap Nation Tribal Council, South-Central British Columbia (Mostofi Javid).

Simms, R.B (2014). “*All the water that is in our reserves and in our territory is ours*”: *Colonial and Indigenous governance in unceded Indigenous territories in British Columbia*, (Master’s thesis). University of British Columbia. Available from <http://circle.ubc.ca/handle/2429/51475>

This thesis considers historic and present roles and experiences of First Nations in water governance in British Columbia. The research considers the historical formation of reserves and the colonial water allocation system, exploring how the demarcation of reserve boundaries and water licenses established some fundamental barriers for First Nations in water access and governance that persist today. It also provides a critical discussion of how a collaborative watershed planning model could address, or further entrench, existing water governance challenges.

US EPA. (2002). *How water quality standards protect tribal waters*. Available from http://water.epa.gov/scitech/swguidance/standards/wqslibrary/upload/2003_04_15_tribes_howwqsprotect.pdf.

This short book describes the Water Quality Standards (WQS) program in the USA. It stands as a strong contrast to the situation in Canada. Under the WQS program, tribes can set the water quality goals for all surface water sources on the reservation. Tribes also determine whether activities which require a federal license or permit are consistent with the tribe’s water quality standards.

Wilson, N. (2014). *Indigenous water governance: Insights from the hydrosocial relations of the Koyukon Athabaskan Village of Ruby, Alaska*. *Geoforum*, 57, 1-11.

This study examines how the explicit analysis of hydrosocial relations facilitates conceptualization of Indigenous water governance, based on a case study of the Koyukon Athabaskan people of Ruby, Alaska. Wilson discusses the multiple strategies

through which Indigenous peoples in the Yukon River are asserting their water sovereignty and engaging in water governance. These strategies include recognition-based approaches and Indigenous alternatives without reference to state recognition.

Wilson, N., Walter, M. & J. Waterhouse. (2015). Indigenous knowledge of hydrologic change in the Yukon River Basin: A case study of Ruby, Alaska. *Arctic*, 68, 93-106.

This paper examines the contribution of Indigenous knowledge to understandings of hydrological change in the Yukon River and its tributaries. Based on participatory research approaches, the authors conducted semi-structured interviews with community experts from Ruby Village, Alaska, regarding hydrological change. These Indigenous observations of hydrology were compared with findings from scientific literature to illustrate the commonalities and differences. The authors found that key Indigenous insights pertain to alterations in sediment and river ice regimes.

Wilson, P. (2004). First Nations integrated water management. In D. Shrubsole (Ed.), *Canadian Perspectives on Integrated Water Resources Management* (pp. 69-84). Cambridge, ON: Canadian Water Resources Association.

This chapter considers the ways in which integrated watershed management might align with Indigenous water governance boundaries and goals. Overall, Wilson suggests that integrated watershed management is a 'natural fit' for Indigenous approaches to governing water on the basis that watershed boundaries are well-aligned with the boundaries of Indigenous traditional territories.

2. Water allocation & implications for Indigenous water access and rights

Bartlett, R. (1998). *Aboriginal water rights in Canada: A study of aboriginal title to water and Indian water rights*. Calgary, AB: Canadian Institute of Resources Law.

This book is a helpful (now somewhat outdated) guide to the history and legal context of Aboriginal water rights in Canada. Bartlett considers how water rights were variously dealt with in treaties and federal and provincial government policy across Canada. The book describes the pathways through which an Aboriginal right and title to water may be claimed and/or disproven.

Brandes, O., & Curran, D. (2008). *Water licences and conservation future directions for land trusts in British Columbia*. University of Victoria, B.C.: POLIS Project on Ecological Governance. Available from [http://poliswaterproject.org/sites/default/files/Water Licence Report FINAL2.pdf](http://poliswaterproject.org/sites/default/files/Water_Licence_Report_FINAL2.pdf)

This report documents the current water allocation system in BC in the context of ecosystem health. The authors note several issues in existing water regulation in BC: water scarcity is emerging as a real concern, groundwater regulation is non-existent, Aboriginal rights and title claims have not been factored into water licensing regions, and there is little coordination between the different government bodies responsible for water. The second section of the report provides a detailed description of the prior allocation licensing system. Some key features of the system are the hierarchy of license priority based on date of issue; appurtenance (i.e. licenses must be attached to a specific parcel of land); purpose (licenses can be held for a variety of purposes including conservation); and the use it or lose it principle (license holders must use the full allocated volume for the specific use stipulated in the license or it can be revoked). The third section of the report lays out some options for conservation groups, including holding licenses for conservation purposes and transferring water licenses to the crown.

Brandes, O., Nowlan, L., & Paris, K. (2008). *Going with the flow? Evolving water allocations and the potential and limits of water markets in Canada*. Canadian Water Network & Conference Board of Canada. Available from [http://poliswaterproject.org/sites/default/files/09 going w flow 1.pdf](http://poliswaterproject.org/sites/default/files/09_going_w_flow_1.pdf)

This report describes some of the key mechanisms available to allocate water in times of scarcity, with a focus on markets and market mechanisms. It highlights some of the advantages and disadvantages of water markets and provides excellent summaries of how water allocation and water rights operate in Canada. The report also examines current examples of water allocation policies in action, including Alberta's water

markets. There is no specific focus on implications of water allocation for Indigenous water rights; however this is a helpful piece on the broader Canadian context for water allocation.

Curran, D., & Brandes, O. (2012). *When the water dries up: Lessons from the failure of water entitlements in Canada, the U.S. and Australia* (Discussion paper from Workshop on Water Entitlements). POLIS Project on Ecological Governance & Environmental Law Centre: University of Victoria. Available from http://poliswaterproject.org/sites/default/files/FailureofWaterEntitlements_DiscussionPaper.pdf

This report discusses how fixed water entitlements can inhibit effective and flexible water management, particularly in the face of water scarcity. Section 2.1 of the report discusses Aboriginal rights and title to water, noting that Aboriginal rights have never been factored into BC's water allocation regime and that this creates a great deal of uncertainty in the licensing system. Overall, the authors stress that viewing water allocation as an enforceable legal entitlement is a barrier to efforts to update water management and governance, and may lead to increasing conflict between water users. They highlight the need for collaboration in water allocation planning and the importance of creating flexible and adaptable water entitlements that can respond to changing ecological conditions as well as respond to Aboriginal rights to water.

Jackson, S. (2008). *Recognition of Indigenous interests in Australian water resource management, with particular reference to environmental flow assessment. Geography Compass, 2(3), 874-898.*

This article critically considers the ways in which Indigenous values are being addressed in environmental flow assessment policy in Australia. Australia's national water policy now recognizes a potential need for water to be allocated to meet particular Indigenous requirements. However, Jackson suggests that it is difficult, if not impossible, to adequately capture Indigenous values associated with water in a quantitative system. Jackson challenges the assumption that Indigenous values will be *implicitly* protected through the provision of environmental flows to meet aquatic ecosystem requirements.

Matsui, K. (2005). "White man has no right to take any of it": Secwepemc water-rights struggles in British Columbia. *Wicazo Sa Review, 20(2), 75-101.*

In this article, Matsui provides a historical overview of First Nations' water rights claims in BC, and discusses the social and legal aspects of First Nations' water rights and irrigation issues. He describes the jurisdictional struggles between the provincial and

federal government in the 1800/1900s to exert power over water allocation for First Nations in BC. Federal authorities wanted to use irrigation agriculture as a means to “civilize” Indigenous peoples, and thus issued water licenses along with reserve lands. The provincial government, however, did not recognize the federal government’s jurisdiction in the realm of reserve water allocations. The consequence of this jurisdictional battle was that First Nations’ water rights were not properly recorded. Matsui focuses on the Kamloops and Neskonlith reserves to provide case study examples of the consequences of this fragmented system.

Matsui, K. (2009). *Native peoples and water rights: Irrigation, dams, and the law in Western Canada*. Montreal, QC: McGill-Queen's University Press.

This book examines the history of colonialism in the definition of water rights and allocation in British Columbia, focussing on the federal-provincial struggle for power over controlling First Nations’ water rights. Matsui draws on a water allocation case study in the BC dry belt (Secwepemc) as well as a hydroelectric dam case study (Stoney Nakota). The book also highlights historical and ongoing Indigenous resistance to colonial water appropriations.

Ministry of Environment. (1997). *First Nations water rights in British Columbia: A historical summary of the rights of the Lower Similkameen First Nation*. Victoria, BC: Water Management Branch.

The Ministry of Environment has published several of these historical water rights summaries for different First Nations across BC. These documents include listings, rankings, and descriptions of the water licenses that are attached to specific reserve lands.

Richard, G. (1999). *When the ditch runs dry: Okanagan natives, water rights, and the tragedy of no commons*. *B.C. Historical News*, 32(2), 10.

A short piece on the history of reserve water allocation and associated conflicts in the Okanagan. Richard highlights the struggle between the provincial and federal governments over defining reserve water rights. As he concludes, “In the span of over sixty years, BC and Okanagan Natives lost their inherent rights to water. They lost that right primarily because of a determined provincial government which established their water laws as a colony and then doggedly held on to them, not only to prevent federal influence into an important government jurisdiction but also to service non-native settlers at the expense of Natives and their reservation communities” (17).

Shurts, J. (2000). *Indian reserved water rights: The Winters doctrine in its social and legal context, 1880s-1930s* (Vol. 8.). Norman: University of Oklahoma Press.

This book provides an excellent historical case study of the 1908 *Winters* doctrine and how it shaped the course of reservation water rights in the USA. Shurts draws on a case study of water rights litigation on the Uintah Reservation in Utah to demonstrate how the Winters Doctrine was applied in its early years.

Union of British Columbia Indian Chiefs. (1991). *Indian water rights in British Columbia: A handbook*. Available from http://www.ubcic.bc.ca/files/PDF/ubcic_indianwaterrights_1991.pdf

This handbook provides legal and historical information on Aboriginal water rights in British Columbia, beginning pre-Confederation. It outlines the legal avenues through which First Nations can assert their Aboriginal and reserve rights to water.

Walkem, A. (2004). *Lifblood of the Land: Aboriginal Water Rights in British Columbia. Semiahmoo Reserve, Surrey BC: Environmental Aboriginal Guardians through Law and Education*.

This book is a key resource on First Nations' water rights and governance in British Columbia. Chapter 5 covers water allocation and licensing and associated issues for Aboriginal rights and water access in BC.

3. Co-governance & collaborative water governance

Bark, R., Garrick, D., Robinson, C., & Jackson, S. (2012). Adaptive basin governance and the prospects for meeting Indigenous water claims. *Environmental Science & Policy*, 19-20, 169-177.

This paper considers several collaborative water basin governance entities in Australia and the US, examining the extent to which these recognize Indigenous water claims. It takes two attributes of collaborative planning as proxies or indicators of whether or not Indigenous claims are represented: 1) legal entitlements to water and 2) deliberative and collaborative water planning processes. Overall, the authors find a range from “sustained versus ad hoc Indigenous participation in planning” (175), as well as a spectrum in the extent to which Indigenous legal entitlements to water are taken into account.

Barnhill, K. (2009). *Negotiating sacred space: Indigenous participation in local environmental governance* (Master’s thesis). State University of New York. Available from <http://search.proquest.com.ezproxy.library.ubc.ca/docview/757875849?pq-origsite=summon>

This thesis examines a case study of the Onondaga Nation’s involvement in a local watershed collaborative initiative. It uses the Haudenosaunee principle of the *Kaswentha*, based on the Two Row Wampum treaty of the 17th century, as an analytical framework to evaluate the watershed initiative for “two principles deemed necessary for meaningful indigenous participation”: maintenance of Onondaga sovereignty in the process, and respect for and inclusion of traditional values and knowledge. Barnhill concludes that overall the planning process did not include traditional knowledge or explicitly address Onondaga sovereignty.

Cronin, A. & Ostergren, D. (2007). Democracy, participation, and Native American tribes in collaborative watershed management. *Society & Natural Resources*, 20, 527–542.

This research is based on two case studies of tribal involvement in collaborative watershed management initiatives. The paper examines six factors that influence tribal participation in such collaborative water processes. These include tribal cultural connection to aquatic resources; political clout and legal standing of tribes; a need and desire to build trust and relationships; ‘recognition of the benefits of collaboration’; availability of resources to Tribes; and consistency and vision of Tribal leadership. The paper concludes with a series of recommendations for Tribes, local communities, and

stakeholders in order to increase tribal participation in collaborative watershed management.

Goetze, T. (2005). Empowered co-management: Towards power-sharing and Indigenous rights in Clayoquot Sound, BC. *Anthropologica*, 47(2), 247-265.

This article presents some Nuu-chah-nulth thoughts on a co-management initiative between the Nuu-chah-nulth and the province of BC. Goetze focusses on the conditions that must be met for co-management to be *empowered*. First and foremost is the question of power sharing in decision-making activities, which “effective co-management not only requires, but creates, when it is successful” (248). Goetze describes that the Clayoquot Sound initiative gives the Nuu-chah-nulth co-managers substantial authority to make and veto decisions about resource use. This article highlights that a major barrier to co-management is the existing “crisis of confidence” between First Nations and colonial governments. Goetze suggests that the Clayoquot agreement resulted in systemic changes in the relationship between Nuu-chah-nulth and the provincial government: away from provincial control to a cooperative partnership in resource management.

Feit, H. (2005). Recognizing co-management as co-governance: Visions and histories of conservation at James Bay. *Anthropologica*, 47(2), 267-288.

Through an examination of Cree hunting territories and current conservation practices in those areas, this paper proposes that co-management involves certain forms of recognition of Indigenous rights and of co-governance. Feit suggests that co-governance represents a challenge to the claims of exclusive sovereignty and legitimacy of nation states and, therefore, co-governance is acknowledged only ambiguously by the state. The article emphasizes the ways in which conservation practices often serve as means of extending state authority over lands and peoples, emphasizing formal, state-planned resource management at the expense of local conservation practices and institutions. Co-management is seen as a means of resistance and a viable way of contesting state and corporate control of resources.

Jackson, S., Tan, P., Mooney, C., Hoverman, S., & White, I. (2012). Principles and guidelines for good practice in Indigenous engagement in water planning. *Journal of Hydrology*, 474, 57-65.

This paper describes three Australian case studies (two in the Murray Darling Basin and one in the Tiwi Islands) in which efforts were made to address and incorporate Indigenous values into water planning. The paper describes the engagement strategies each of these three water planning processes employed to ‘elicit’ Indigenous

knowledge, assess Indigenous values, and incorporate the results into planning. The authors also suggest a set of general principles aimed to guide water planning and improve Indigenous access to water.

Kotaska, J. (2013). *Reconciliation 'at the end of the day': Decolonizing territorial governance in British Columbia after Delgamuukw* (Doctoral dissertation). University of British Columbia. Available from https://circle.ubc.ca/bitstream/handle/2429/45003/ubc_2013_fall_kotaska_janalyn.pdf?sequence=3

This dissertation includes a thorough discussion on co-governance in the BC context (section 3.4.2 and chapter 7) as well as on the requirements for decolonizing territorial governance. Kotaska defines co-governance as: “areas where Indigenous nations have title to the land and settler governments may or may not have title to the land, depending on the arrangement worked out between the nation and the settler governments. Regardless of the title arrangement, Indigenous and settler governments share jurisdiction over the land and resources” (117). Kotaska highlights that the degree to which co-governance agreements are decolonizing depends on the question of power sharing: whether Indigenous nations achieve the level of authority they desire and whether Indigenous worldviews and governance systems are privileged. This dissertation also makes the key point that co-governance is an umbrella term that is often conflated with many different decision-making arrangements.

Low, M., & Shaw, K. (2011). *First Nations rights and environmental governance: Lessons from the Great Bear Rainforest*. *BC Studies*, (172), 157-183.

This article explores the Great Bear Rainforest Agreements and the ways in which Aboriginal rights and interests were addressed in the negotiations. The article underscores that the Great Bear Rainforest agreements highlight the increasing strength of First Nations’ participation in resource management in the province. These were government-to-government negotiations in which the BC government and First Nations “were extraordinarily successful and reconciling what had otherwise seemed to be impossible tensions” (19). The authors identify other key outcomes from the negotiations, including the evolution of communication, relationship building, and innovative new institutions. Identified challenges include ongoing capacity challenges and conflict between individual nations involved in the agreements.

Memon, P., & Kirk, N. (2012). *Role of Indigenous Māori People in collaborative water governance in Aotearoa/New Zealand*. *Journal of Environmental Planning and Management*, 55(7), 941-959.

This research examines recent initiatives to enhance the role of Maori in water governance in New Zealand. The article highlights that the water governance landscape in New Zealand has changed significantly in the last 25 years with the neo-liberal agendas of recent governments. This has happened at the same time as the revival of Indigenous rights during the 1970s and growing political recognition of Aboriginal customary natural resource ownership and management rights. The paper argues that property rights, globalisation and the regulatory planning environment for management both enable and constrain Indigenous peoples' ability to govern natural resources.

Nadasdy, P. (2003a). *Hunters and bureaucrats: Power, knowledge, and aboriginal-state relations in the Southwest Yukon*. Vancouver: UBC Press.

This is a key resource which critiques land claims and co-management as viable means to restructure the relationship between Aboriginal peoples and colonial governments in Canada. This book challenges the widely held assumption that land claims and co-management will help reverse centuries of inequity, arguing that these processes perpetuate existing power imbalances. Nadasdy's principal critique is that in existing co-management and lands claims scenarios, Indigenous knowledge and governance systems are reduced into fragments that can be 'translated' into state resource management practices, and that Indigenous peoples have been forced to develop bureaucratic infrastructures for interacting with the state.

Nadasdy, P. (2003b). Reevaluating the co-management success story. *Arctic*, 56(4), 367-380.

This article focuses on the politics of knowledge translation in a key critique of co-management. Nadasdy argues that integration of "TEK" in cooperative management entails translating First Nation peoples' life experiences into forms compatible with state wildlife management. Thus, Indigenous knowledge is not treated as a complete knowledge system, but rather distilled from its context into disparate fragments that can easily be incorporated into dominant bureaucratic resource management structures. Nadasdy argues for a more critical and nuanced analysis of co-management, highlighting the need to focus on the political dimensions of knowledge-integration to build a better understanding and assessment of the "success" of co-management.

Natcher, D., Davis, S., & Hickey, C. (2005). Co-management: Managing relationships, not resources. *Human Organization*, 64(3), 240-250.

This paper explores whether cultural differences enhance or hinder the working-group effectiveness of resource co-management boards established under Canada's comprehensive land claims process. This is based on research with the Little Salmon

Carmacks First Nation in the Yukon. The article concludes that fundamental differences in knowledge and value systems and colonial histories limit the overall effectiveness of the co-management process, noting that cultural distance has proven to be a “formidable obstacle to reaching consensus on management issues” (245). The authors conclude that the ultimate success of co-management schemes will depend on members’ ability to *engage* rather than *subvert* differences in knowledge and cultural experiences.

Tipa, G., & Welch, R. (2006). Co-management of natural resources: Issues of definition from an Indigenous community perspective. *The Journal of Applied Behavioral Science*, 42(3), 373-391.

This is an excellent article which highlights the many different understandings and expectations associated with different forms of co-management. The authors describe three forms of co-management: cooperative management, collaboration in management, and management by community, which vary in the degree to which authority and decision-making power is accorded Indigenous partners. This article describes some of the challenges to equal Indigenous participation in collaborative watershed arrangements, including capacity imbalances between Indigenous and state governments. It points to the need to shift the discussion of capacity development to consider state government capacity requirements for improved collaboration with Indigenous peoples.

van Tol Smit, E., de Loë, R., & Plummer, R. (2014). How knowledge is used in collaborative environmental governance: Water classification in New Brunswick, Canada. *Journal of Environmental Planning and Management*, 1-22.

This paper examines the ways in which different forms of knowledge are being ‘used’ and incorporated in collaborative water arrangements in New Brunswick. The authors find that there has been no consideration of Indigenous knowledges in this collaborative management cases. They highlight the practical and epistemological difficulties of knowledge translation. The article finds that local and experiential forms of knowledge appeared to play a complementary but ultimately subordinate roles to expert technical and scientific knowledge in the collaborative water management schemes examined.

von der Porten, S., & de Loë, R. (2014). Water policy reform and Indigenous governance. *Water Policy*, 16(2), 222-243.

This article explores the extent to which water policy reform efforts recognize concepts of Indigenous governance and self-determination. The authors draw on a case study of the Water Act Modernization process in BC to demonstrate that problematic

assumptions exist regarding the role of First Nations: First Nations are treated as stakeholders rather than as self-determining nations. The article suggests that these assumptions have the potential to undermine the prospects for water policy reform.

von der Porten, S., & de Loë, R. (2013a). Collaborative approaches to governance for water and Indigenous peoples: A case study from British Columbia, Canada. *Geoforum*, 50, 149-160.

This paper explores the extent to which collaborative water governance practices reflect Indigenous concerns and perspectives, examining several cases in British Columbia. Overall, the paper concludes that in the cases examined, collaborative practices tended not to recognize or account for concepts related to Indigenous self-determination and nationhood in ways that were accepted by affected First Nations people.

von der Porten, S., & de Loë, R. (2013b). Water governance and Indigenous governance: Towards a synthesis. *Indigenous Policy Journal*, XXIII(5), 1-12.

This article argues that collaborative resource governance approaches do not adequately address concerns relating to Indigenous governance and concepts of self-determination. As the authors describe, “Indigenous peoples...are often portrayed as one of many stakeholders or actors who ought to be included in collaborative processes” (2). However, this is inconsistent with the legal fact that Indigenous peoples are not stakeholders but rather sovereign nations and the rightful decision-makers over their lands and resources. In BC, the majority of First Nations have not signed historical or modern treaties and assert that they have never ceded their land to the colonial government. The article argues within both provincial and regional-level collaborative water governance process, First Nations are predominantly portrayed and consulted in a stakeholder versus government-to-government capacity.

4. Water/watershed governance (focus on BC & Canada)

Brandes, O., & O'Riordan, J. (2014). *A Blueprint for watershed governance in British Columbia*. University of Victoria, B.C.: POLIS Project on Ecological Governance.

This report focuses on current water governance issues in British Columbia and offers suggestions for how the Province could transform its current water governance approaches to ensure a *more sustainable and resilient future*. The report sets out a strategic 10-year program and proposes nine winning conditions. Co-governance with First Nations is one of these nine winning conditions.

Cohen, A. (2012). *Rescaling environmental governance: Watersheds as boundary objects at the intersection of science, neoliberalism, and participation*. *Environment and Planning A*, 44(9), 2207-2224.

This paper discusses how the watershed concept is a boundary object: a common concept interpreted differently by different groups. Cohen suggests that the trend of the uptake of the watershed approach both reflects and is shaped by ideologies underpinned by three different epistemic communities: the scientific, neoliberal, and grassroots. Overall, this article points to the political nature of watershed boundary delineation.

Cohen, A., & Bakker, K. (2014). *The eco-scalar fix: Rescaling environmental governance and the politics of ecological boundaries in Alberta, Canada*. *Environment and Planning D Society & Space*, 32(1), 128-146.

This paper examines the rescaling of water governance to the watershed level as an inherently political process. The authors argue that although the 'eco-scalar fix' is usually framed as an apolitical governance change, it is often a deeply political move that reconfigures power structures and prioritizes some resource uses over others. The paper suggests that although watershed governance is often depicted as an environmental strategy it is often articulated with processes of uneven development. The research draws on a case study in Alberta to explore these arguments.

Cohen, A., & Davidson, S. (2011). The watershed approach: Challenges, antecedents, and the transition from technical tool to governance unit. *Water Alternatives*, 4(1), 1-14.

This paper provides a critical analysis of watersheds as governance units. The authors summarize challenges associated with the watershed approach, including boundary choice, accountability, public participation, and watersheds' asymmetries with 'problem-sheds' and 'policy-sheds'. The paper suggests that the concept of watersheds was initially developed as a technical tool but has been taken up as a policy framework, which has resulted in the conflation of governance tools, hydrologic boundaries, and Integrated Water Resources Management. The paper calls for an analysis of watersheds as separate from the governance tools with which they have been conflated.

Morris, T. & Brandes, O. (2013). *State of the water movement in British Columbia: A watershed scan and needs assessment of B.C. watershed-based groups.* Available from <http://poliswaterproject.org/publication/561>

This study involved interviews with 11 key 'water leaders' and an online survey sent to 230 NGO groups working on freshwater issues in BC. The objective was to better understand key needs in the current NGO freshwater community in BC. The report advocates for watershed-level governance in the province, "achieved through a combination of locally tailored watershed boards co-managed with First Nations and strong provincial oversight, support, and enforcement" (1). First Nations water rights were recognized as a key issue; a central recommendation is that there be *an emphasis on genuine and meaningful First Nations participation and their shared role in decision-making at all levels.*

Bakker, K., & Cook, C. (2011). Water governance in Canada: Innovation and fragmentation. *International Journal of Water Resources Development*, 27(2), 275-289.

This article provides a broad critique of water governance in Canada. It highlights fragmentation in governance as a key barrier to effective water management. The authors highlight that there is a lack of inter-governmental coordination, with overlap and ambiguity between the roles of federal and provincial governments. Further, fragmentation in water governance has contributed to inadequate monitoring and enforcement, which presents challenges for effectively and comprehensively assessing the state of water across Canada.

Brandes, O., & Curran, D. (2009). *Setting a new course in British Columbia water governance: Reform options and opportunities*. University of Victoria, B.C.: POLIS Project on Ecological Governance. Available from <http://www.poliswaterproject.org/publication/272>

This policy discussion paper compares three possible models for water governance reform in British Columbia. The first model is *Enhanced Provincial Management*. Under this scenario, decision-making and control are centralized with the provincial government, with adequate resourcing and strong watershed planning and legislation. The second proposed model is the *Watershed-Agency* approach, which represents a shift to watershed- or regional-scale decision-making, with strong provincial oversight and coordination and enforcement. The third governance option is the *Regional District* model, where there is more local decision-making but within the current existing institutional and legal frameworks in B.C. The first and third scenarios are seen as the strongest options, but the authors note that the most likely scenario would involve a hybrid of the three. Note: there are some great tables in this report that compare the different models in terms of who is making decisions and the strengths and weakness of each model.

Nowlan, L., & Bakker, K. (2007). *Delegating water governance: Issues and challenges in the BC Context*. Vancouver: BC Water Governance Project.

This report examines shared or delegated water governance in British Columbia. It looks at some of the key changes and trends over the past decade as well as some of the new approaches to water governance in BC. The report analyzes the advantages and disadvantages of delegated water governance as well as some of the current barriers to the successful implementation and practice of delegated governance. Some of the major barriers identified include a lack of coordination between different levels of government, a lack of strong provincial standards to protect drinking water quality, limited opportunities for public participation, and a lack of clarity about the relative authority, responsibility, and accountability of the groups involved in water governance.

Nowlan, L., & Bakker, K. (2010). *Practising shared water governance in Canada: A primer*. Vancouver, BC: Program on Water Governance.

This article is addressed particularly at water managers and policy-makers, providing an overview of the benefits and challenges of shared water governance (defined here as the involvement of non-state actors in decision making for water management). The authors identify five key characteristics of shared water governance: 1) delegation by the government to a council or committee 2) rescaling decision-making to the watershed level 3) greater participation by non-state actors 4) collaborative decision-making and 5) science-based decision making. The article suggests that shared water governance

would bring multiple perspectives into water management and would benefit from increased public participation. Funding is identified as a key challenge. Further, the authors suggest that shared governance is not appropriate in every situation, and it is critical to identify the contexts in which shared water governance would be best applied.

Cave, K., Plummer, R., & de Loe, R. Exploring water governance and management in Oneida Nation of the Thames (Ontario, Canada): An application of the institutional analysis and development Framework. *Indigenous Policy Journal*, 13.4(2013), 1-27.

Dealing specifically with the Oneida Nation of the Thames, this article examines water institutions and their influence on water governance in a First Nations context. The authors argue that institutional analysis is an appropriate means of identifying power differentials in water management and for gaining insight into the ways in which First Nations are being impacted by current water governance regimes. The article attempts to understand and explain various formal and informal institutions and their bearing on water management governance through the Institutional Analysis and Development (IAD) framework. Overall, the authors highlight the importance of informal institutions related to water in Oneida, preserved in oral tradition passed down through stories and ceremonies. Further, the study confirms that persistent jurisdictional fragmentation is a significant barrier to effective water management on First Nations' reserves, where there is a lack of clarity on roles and responsibilities and inadequate communication and transparency between actors.

5. Colonialism & Aboriginal rights and title to land and water

Bartlett, R. (1998). *Aboriginal water rights in Canada: A study of Aboriginal title to water and Indian water rights.* Calgary, AB: Canadian Institute of Resources Law.

This book is a helpful (now somewhat outdated) guide to the history and legal ins-and-outs of Aboriginal water rights in Canada. Bartlett considers how water rights were variously dealt with in treaties and federal and provincial government policy across Canada. The book describes the pathways through which an Aboriginal right and title to water may be claimed and/or disproven.

Blackburn, C. (2005). Searching for guarantees in the midst of uncertainty: Negotiating Aboriginal rights and title in British Columbia. *American Anthropologist*, 107(4), 586-596.

This article analyzes the concept of certainty relating to Aboriginal rights, treaties, and economic development in BC. In the context of treaty negotiations in British Columbia, certainty requires that *Aboriginal rights* be legally transformed into a set of *treaty rights*. This transformation moves these rights from a state of “uncertainty” to a state in which they are “certain.” Removing uncertainty is said to encourage investment in resource industries. Blackburn argues that treaty negotiations are a form of governmentality that helps regulate a population and produces effects of state sovereignty. This paper also argues that the focus on undefined Aboriginal rights as the source of economic uncertainty fails to acknowledge the lack of certainty inherent within capitalism.

Borrows, J. (1997). Living between water and rocks: First Nations, environmental planning and democracy. *The University of Toronto Law Journal*, 47(4), 417-468.

This article analyzes how North American democracies have fundamentally constrained Indigenous participation in environmental governance and decision-making. Borrows calls for a restructuring of federal legal institutions such that, “[First Nations] communities are placed at the centre of debates concerning their environments” (450). He argues that Indigenous communities have vital knowledge to bring to bear on environmental decision-making. Borrows argues that Indigenous peoples have been treated as *objects to be acted upon* rather than as *active agents able to participate on their own terms in the formulation of decisions*. This article highlights the importance and applicability of Indigenous environmental laws in environmental decision-making.

Borrows, J. (2000). Questioning Canada's title to land: The rule of law, Aboriginal peoples and colonialism. In *Speaking Truth to Power: A Treaty Forum* (pp. 35-73). British Columbia Treaty Commission.

This essay provides a critical discussion of Canada's assertion of exclusive sovereignty. Borrows highlights that from an Aboriginal legal perspective, Canada does not have underlying title or overarching sovereignty in traditional Aboriginal territories. Borrows examines how the rule of law as articulated by Canadian courts can be used to question Canada's claim to underlying title and sovereignty.

Culhane, D. (1997). *The pleasure of the Crown: Anthropology, law, and First Nations*. Burnaby, BC: Talonbooks.

This book is an in-depth analysis of the 130 year history of the Aboriginal title issue in BC. Focusing in particular on the Gitksan and Wet'suwet'en case, the book traces the Delgamuukw trial from its inception to the Supreme Court's landmark ruling in 1997. Culhane offers a comprehensive look at how B.C., Canada, and other colonial societies "reveal themselves" through Aboriginal title litigation. She questions the assumptions, beliefs, and values upon which the Crown asserts its claims to hold legitimate sovereignty and jurisdiction over lands and resources in BC.

Dalton, J. (2006). Aboriginal self-determination in Canada: Protections afforded by the judiciary and government. *Canadian Journal of Law and Society*, 21(1), 11-37.

This article reviews key Supreme Court of Canada cases to refute the claim that these cases led to increased recognition and protection of Aboriginal rights. Dalton argues that in reality, "the rights of Aboriginal peoples in Canada have not gained greater protection and they certainly have not expanded to encompass the right of self-determination" (37). Indeed, she argues, the Supreme Court rulings have in some cases had the opposite effect, *creating further impediments to the expansion of Aboriginal rights under section 35(1)*. Dalton highlights that the Supreme Court has yet to explicitly define how Aboriginal self-determination is embodied in S 35(1). This article demonstrates how the Supreme Court avoided directly addressing the issue of self-determination in *the Sparrow, van der Peet, Gladstone, Pamajewon, and Delgamuukw* court cases.

Harris, D. (2009). A court between: Aboriginal and treaty rights in the British Columbia Court of Appeal. *BC Studies*, 162, 137-164.

This article examines the legal history of Aboriginal and treaty rights, focusing primarily on BC. Through an examination of key court cases, it reviews the decisions of the

British Columbia Court of Appeal (BCCA) in regards to Aboriginal and treaty rights. Prior to the constitutional entrenchment of Aboriginal rights in 1982, the court primarily upheld the status quo; however, the article points to a key shift in the court's role after 1982, where the court became a prominent player in the articulation of Aboriginal rights and title. The article demonstrates that Aboriginal peoples have often turned to the courts to help structure the processes of litigation and negotiation of Aboriginal rights. The article shows the varied contributions of the BCCA and claims that it will continue to play a central role in the negotiation of Aboriginal rights and title.

Harris, C. (1997). *The resettlement of British Columbia: Essays on colonialism and geographical change*. Vancouver: University of British Columbia Press.

In this collection of nine essays, Harris discusses strategies of colonialism in BC during the first 150 years after the arrival of European settlers. Harris considers the displacement of Indigenous peoples and the mechanisms through which dispossession was accomplished, and explores the resulting effects on social lives and landscapes in BC.

Harris, C. (2001). *Making native space*. Vancouver: University of British Columbia Press.

A key reference on the history of reserves in British Columbia and impacts on Indigenous lives and livelihoods. The book examines Native land policy in British Columbia from the Douglas treaties in the early 1850s to the formal transfer of reserves to the Dominion in 1938, highlighting federal-provincial wrangling in the process. Throughout, Harris highlights Indigenous resistance to colonial policies of the territorial dispossession.

Harris, C. (2004). How did colonialism dispossess? Comments from an edge of empire. *Annals of the Association of American Geographers*, 94(1), 165-182.

In this paper, Harris considers how the workings of colonial powers can be revealed through an examination of colonialism's *basic geographical dispossessions of the colonized*. The paper focuses on the powers underlying the reserve system in BC, which confined First Nations onto tiny allotments of land and opened up the rest of the province for development. Harris examines the source of the colonizer's initial and ongoing ability to *dispossess*, as well as the legitimation and moral justifications used for dispossession. He highlights that "the management of dispossession rested with a set of disciplinary technologies of which maps, numbers, law, and the geography of resettlement itself were the most important" (165).

Harris, D. (2001). *Fish, law, and colonialism: The legal capture of salmon in British Columbia*. Toronto, ON: University of Toronto Press.

This book examines encounter and conflict between Native salmon fisheries and Canadian state fisheries from the late 1800s to the mid-1900s. Harris documents the ways in which Pacific salmon fisheries, which were owned and managed by Aboriginal peoples, were transformed by commercial and sport fisheries sanctioned by the Canadian government. Overall, this book documents how these conflicts were shaped by law and conflicting Aboriginal and colonial legal frameworks.

Kelm, M.-E. (1997). *Colonizing bodies: Aboriginal health and healing in British Columbia 1900-1950*. Vancouver: University of British Columbia Press.

This is an excellent book which examines the impacts of colonization and colonial government policy on Aboriginal health in BC during the 1900s. Kelm considers water and reserve policy in Chapters 2 & 3, noting that reserves often were given insufficient water allocations to support agriculture and domestic needs, and further, that drinking water provisioning on reserve is inadequate. This book highlights Indigenous resistance to colonial policies.

Laidlaw, D., & Passelac-Ross, M. (2010). Water rights and water stewardship: What about Aboriginal peoples? *Law Now*, 35(1): 1-12.

This article reviews Aboriginal rights and title to water. With respect to *Aboriginal title*, the authors highlight: "Insofar as water is considered to be an integral part of land, then Aboriginal title gives Aboriginal peoples the right to the lands submerged by water and entitles them to make use of the waters for a wide variety of purposes... Aboriginal title also imparts the right to make decisions with respect to water, and the right to apply Aboriginal law systems to water uses." The report states *Aboriginal rights* to water stem from the rights to uses of water associated with the customs, practices and traditions of a given Aboriginal community. With respect to legislation, the authors note that "there has been no competent legislation that expresses a "plain and clear intention" to eliminate Aboriginal rights to water." The report concludes that it is highly unlikely that Aboriginal and/or treaty rights to water were ever ceded or extinguished.

Morellato, M. (2008). *The Crown's Constitutional Duty to Consult and Accommodate Aboriginal and Treaty Rights*. West Vancouver, BC: National Centre for First Nations Governance.

This report provides an extremely thorough review of the court cases in Canada that have addressed Aboriginal title and rights. The first section of the report reviews fourteen key court cases which have set precedents for how Aboriginal rights and title

are defined and proven. Part two of the article discusses the lack of clarification on the right to self-governance in these cases, and suggests various ways in which the right to self-governance is implicit within the definitions of Aboriginal rights and title. Part three considers steps towards reconciliation, with much of the discussion focussed on the need for First Nations to be involved in land and resource decisions at the strategic level.

Nowlan, L. (2004). *Customary Water Laws & Practices in Canada*. Rome, Italy: Food and Agriculture Organization. Available from http://www.fao.org/fileadmin/templates/legal/docs/CaseStudy_Canada.pdf

This is a great overview of the legal complexities surrounding water and Aboriginal water rights in Canada. The paper discusses customary water laws and colonial government water policy in Canada. It describes the legal interface between customary water laws and statutory rights, discussing different sources of Aboriginal rights to water in Canada. In addition, Nowlan discusses mechanisms to resolve conflicts and disputes between customary and state law.

Passelac-Ross, M. & Buss, K. (2011). *Water stewardship in the Lower Athabasca River: Is the Alberta government paying attention to Aboriginal rights to water?* *Journal of Environmental Law and Practice*, 69-83.

This article looks at the ways in which Alberta addresses Indigenous concerns about water in relation to resource development processes. It deals primarily with the Lower Athabasca River region of Alberta, which is a major site of oil sands development. The article examines the ways in which resource development is impinging on traditional ways of living, particularly in the context of those practices dependent upon adequate flow of water in the Athabasca region. It finds that Alberta's water management system does not consider the impacts of development on Aboriginal title and rights and treaty rights. Overall, the article concludes that Alberta is largely failing to meet its constitutional obligations to Aboriginal peoples.

Passelac-Ross, M & Smith, C. (2010). *Defining Aboriginal rights to water in Alberta: Do they still 'exist'? How extensive are they?* *Canadian Institute of Resources Law*.

This article explores First Nations' water rights in Alberta and the uncertainty concerning the nature and extent of those rights both on and off-reserve. Examining the impacts of 19th century treaties and federal water legislation, the article finds that Aboriginal rights to water were not extinguished and are constitutionally protected. The article advocates for the acknowledgement and respect of Aboriginal water rights in Alberta, as well as the need for true and lasting partnerships with Aboriginal communities.

Phare, M.-A. (2009). *Denying the source: The crisis of First Nations water rights*. Surrey, BC: Rocky Mountain Books.

This short book is an excellent primer on the drivers of water issues on First Nations reserves, highlighting political and environmental justice dimensions. It also covers the legal landscape of Aboriginal rights and title to water. A strong focus is the exclusion of First Nations from decision-making around water management and governance. Phare calls for a new water ethic and respect for First Nations' water rights.

von der Porten, S. (2012). *Canadian Indigenous governance literature: A review*. *AlterNative: An International Journal of Indigenous Peoples*, 9(1), 1-14.

This paper reviews the literature that addresses the various ways in which Indigenous self-determination is being defined in the contemporary context. While there are several different definitions of self-determination, these definitions generally share the basic idea that *self-determination involves the right of "peoples" to freely pursue social, community and economic development*. von der Porten suggests that a useful approach to self-determination is to consider a spectrum of self-governance, from an independent Indigenous state to self-governance operating within the existing Canadian state. The article discusses various approaches to self-governance and the opportunities and limitations with each approach. This piece also reviews various ways forward for Indigenous governance: Indigenous - Indigenous alliances, addressing colonialism, and defending and asserting Indigenous nationhood.

Walkem, A. (2004). *Lifblood of the land: Aboriginal water rights in British Columbia*. Surrey BC: Environmental Aboriginal Guardians through Law and Education.

This book is a key resource on First Nations' water rights and governance in British Columbia. Chapters 3-5 provide a thorough analysis of the current jurisdictional framework for water in BC. Chapter 6 describes the routes through which Aboriginal rights and title to water can be established and claimed, despite the fact that there has never been a court case in Canada that explicitly proves/disproves an Aboriginal right to water. Chapter 7 describes Indian Act and Band Council reserve powers over water. Chapters 9-15 describe the competing uses for water in BC and implications for First Nations, including forestry, mining, hydro, fish farms, etc...

6. Drinking water access & issues

Aboriginal Affairs and Northern Development Canada (AANDC). (2013). *Water*. Available from <http://www.aadnc-aandc.gc.ca/eng/1100100034879/1100100034883>

AANDC's main portal for First Nations' reserve water information, including resources on capacity and training; roles and responsibilities; Bill S-8; infrastructure investments; and water and wastewater infrastructure reports. This site also links to AANDC drinking water progress reports and drinking water and wastewater assessment reports.

Assembly of First Nations (AFN). (2012). *Bill S-8: Safe Drinking Water for First Nations Act*. Submission to the Standing Senate Committee on Aboriginal Peoples. Available from http://www.afn.ca/uploads/files/water/senatestandingcommitteebill_s-8.pdf

In this submission the AFN outlines its rejection of Bill S-8. The overarching concern is that Bill S-8 does not respect First Nations' authority and jurisdiction over water resources. The AFN identifies two major issues with the legislation. The first is the non-abrogation clause which states that the Crown will respect Aboriginal and Treaty Rights as per section 35(1) of the Constitution, *except to the extent necessary to ensure the safety of drinking water on First Nations lands*. The second major concern is that Bill S-8 does not address resource requirements: the legislation will impose new costs and responsibilities on First Nations, but does not contain any commitment to transfer resources and build capacity to fulfill these new legislated duties.

Baird, J., & Plummer, R. (2013). *Exploring the governance landscape of Indigenous peoples and water in Canada - An introduction to the special issue*. *Indigenous Policy Journal*, XXIII(4), 1-6.

This brief article examines the governance dimensions of the drinking water crisis on First Nations reserves in Canada. The authors identify several key governance failures, including a lack of clear roles and responsibilities for reserve drinking water provision, as well as insufficient funding and capacity building. Overall, the article suggests that existing government efforts have failed to create widespread improvement in drinking water conditions on reserves. The article highlights that efforts to address water quality in Indigenous communities must include Indigenous knowledges and forms of governance.

Bernier, J., Maheux, A., Boissinot, M., Picard, F., Bissonnette, L., & Martin, D. et al (2009). Onsite microbiological quality monitoring of raw source water in Cree Community of Mistissini. *Water Quality Research Journal of Canada*, 44(4), 345-354.

This study assessed water quality in several drinking water sources used by residents of the Cree community of Mistissini, QC. The authors note that water is a key determinant of health, and that it is common for community members to drink raw untreated water. In the contemporary reality, however, there are risks associated with drinking untreated water. The researchers collected samples from 12 environmental sites from which raw water is commonly sourced, in addition to testing water quality in potable water containers in 24 households. Overall, samples collected from lakes had lower levels of bacteria than samples collected from rivers. The study established that Mistissini inhabitants use appropriate water collection and storage methods. Overall, however, the authors state that lake/river water should not be directly used for drinking, since there were frequent positive results for fecal contamination indicators.

Bharadwaj, Lalita and Maya Basdeo. (2013). Beyond physical: Social dimensions of the water crisis on Canada's First Nations and considerations for governance. *Indigenous Policy Journal*, 13(4), 1-14.

This article provides an overview of the social dimensions of the water crisis on reserves, situating the socio-cultural implications of current water issues within the larger framework of colonization. The authors suggest that as a result of historical and ongoing colonialism, First Nations bear the brunt of environmental degradation and face major barriers to adequate input and control over water policy and practices. Due to the emphasis placed on the physical dimensions of the water crisis, the extent of the social, cultural, and spiritual impacts on First Nations are often neglected. The authors call for a broader, more holistic approach which includes Indigenous knowledges and approaches to water governance. The article underscores the importance of issues of equity and social justice in water governance.

Bowden, M.A. (2011). *A brief analysis of Bill S-11: Safe Drinking Water for First Nations Act*. Available from http://www.cba.org/cba/cle/PDF/ENV11_Bowden_Paper.pdf

This is a helpful analysis of the background and content of Bill S-11, the precursor legislation to Bill S-8. Bowden provides a useful overview of the federal government's legal regime and attempts to resolve drinking water issues on reserves since 1995. Overall, this analysis takes a critical stance on Bill S-11 for such factors as its lack of

attention to capacity and resourcing and the erosion of First Nations' constitutionally-protected rights through a derogation clause.

Boyd, D. (2011). No taps, no toilets: First Nations and the constitutional right to water in Canada. *McGill Law Journal*, 57(1), 83-134.

This article examines the bases on which First Nations can claim an enforceable constitutional right to water. Boyd concludes that there are three legal pathways through which First Nations' right to water can be claimed. The first is the Right to Life, Liberty and Security of the Person under Section 7 of the *Canadian Charter of Rights and Freedoms*. The second legal pathway is the Right to Equality under section 15 of the *Charter*. Boyd states that it is clear that First Nations do not have a comparable level of drinking water protection compared to non-First Nations communities. The third line of protection lies in the Federal Government's duty to provide essential public services of reasonable quality to all Canadians under section 36 of the *Constitution Act, 1982*. Along these lines, Boyd interprets access to safe drinking water as an essential public service.

Canadian Environmental Law Association. (2012). *Briefing note to the standing committee on Aboriginal Peoples Re: Bill S-8 First Nations Safe Drinking Water Act*. Available from http://s.cela.ca/files/846CELA_BriefingNoteBills-8.pdf

A useful overview of Bill S-8 and its implications. This document outlines three key considerations deemed necessary to be incorporated into the legislation: 1) Protection of constitutionally-protected Aboriginal and treaty rights 2) Incorporation of a long-term vision for First Nations water resources management and 3) Respect for First Nations' governance structures. The final version of Bill S-8 notably did not account for these three considerations.

Centre for Aboriginal Health Research. (2011). *Crisis on tap: Seeking solutions for safe water for Indigenous peoples*. University of Victoria. Available from <http://www.uvic.ca/research/centres/cahr/knowledge/publications/waterbook.pdf>

This report contains a wealth of information on reserve drinking water issues, with a British Columbia focus. Part 1 of the report provides a brief overview of drinking water and related health issues facing Indigenous people in the provincial, national, and international contexts. Part two includes abstracts & short papers written by a variety of conference presenters at the *Consensus Conference on Small Water Systems Management for the Promotion of Indigenous Health*. Part 3 delves into a thematic analysis of the outcomes of the 2010 *Indigenous Water Ways* workshop series, which focused on the barriers to safe drinking water experienced by First Nations in B.C.

Some key concerns emerging from the workshop include concerns about land-use on water quality in BC, and the lack of financial resources for communities to adequately monitor and manage drinking water.

Davies, J.-M. & A. Mazumder (2003). Health and environmental policy Issues in Canada: The role of watershed management in sustaining clean drinking water quality at surface sources. *Journal of Environmental Management*, 68(3), 273-286.

This very broad article discusses the links between water quality and human health, with a focus on the importance of source water protection. Traditionally, drinking water risk management has been focused on treating water immediately prior to and during distribution; however, now there is a shift to source protection, as “cleaner source water requires less intense water treatment and has lower associated acute and chronic health risks” (274). The article provides an overview of common water-borne health risks and the ways in which source water protection can be effective in mitigating these risks. While the article does delve into some discussion of source water planning and BC water policy, this section was not as strong and is now ten years outdated

Dunn, G., Bakker, K., & Harris, L. (2014). Drinking water quality guidelines across Canadian provinces and territories: Jurisdictional variation in the context of decentralized water governance. *International Journal of Environmental Research and Public Health*, 11(5), 4634-4651.

This article presents a comprehensive review and analysis of the application of the Canadian Drinking Water Quality Guidelines across the 13 provinces and territories. The review identifies key differences in approaches to drinking water quality across Canada’s jurisdictions. The analysis explores three main questions: whether standards should be uniform or variable; whether compliance should be voluntary or legally binding, and whether regulation and oversight should be harmonized or delegated.

Edmond, J. (2011). First Nations water: Is regulation the answer? *Law Now*, 35(5), 60-65.

This article provides a brief overview of drinking water problems on reserves, highlighting jurisdictional fragmentation and the lack of drinking water standards as key drivers of the issues. Edmond reviews the Expert Panel on Safe Drinking Water’s 2006 report and its principal findings. The Expert Panel stressed that neither existing federal statutes nor provincial regimes provide an adequate base for achieving safe drinking water on reserves. The Panel outlined three possible regulatory regimes: uniform federal standards for drinking water reserves, adopting provincial regimes, or starting from a base of customary law. In addition, the Expert Panel highlighted the need for resources before regulation. This article outlines key critiques of Bill S-11, focussing the

lack of resources specified to implement the legislation and build community capacity to assume their new responsibilities under the Bill.

Edwards, J., Henderson S, Struck, S., & Kosatsky, T. (2012). Characteristics of small residential and commercial water systems that influence their likelihood of being on drinking water advisories in rural British Columbia, Canada: A cross-sectional study using administrative data. *Journal of Water and Health*, 10(4), 629.

This study examined variables associated with advisories in residential and commercial drinking water systems in British Columbia. The research started from the premise that although there is recognition that the *number* of advisories is a concern, there is limited information about the *driving factors* behind these advisories. Variables tested included water system size, administrative area, governance structure, water source, treatment level, and service type. The study found that that water system size was associated with the odds of being on an advisory for residential systems. As the size of the water system decreased the odds of being on an advisory increased. Further, for residential systems, governance structure was found to be significant determinant of drinking water advisories. The study found that cooperative government structures not run by a local government or utility were most likely to be on advisory. The study further found that the variables associated with advisory status for commercial systems different from residential systems, where the only variables which were found to be significant were water source, water treatment, number of connections and administrative area.

Eggerston, L. (2008). Investigative report: 1766 boil-water advisories now in place across Canada. *Canadian Medical Association Journal*, 178(10), 1261-1263.

This report investigates the 1760 boil water advisories in place in communities across Canada at the time of writing. Eggerston notes that while drinking water problems are particularly *acute* on reserves, these issues are also increasingly prevalent in small non-First Nations communities across the country. The report outlines the provincial breakdown of the boil water advisories; BC and Ontario had the most advisories in place. In BC, this is linked to the fact that there are many small drinking water systems in the province, which are susceptible to financing and capacity deficits. Interviews with the Council of Canadians and the Federation of the Canadian Municipalities highlight a call for a federal national water strategy and stricter legislation around drinking water treatment.

Finn, S. (2010). *The Multiple barrier approach to safe drinking water for First Nations communities: A case study* (Master's thesis). University of Waterloo. Available from

https://uwspace.uwaterloo.ca/bitstream/handle/10012/4957/Finn_Stuart.pdf?sequence=1

In this thesis, Finn worked with three Ontario First Nations communities to investigate the challenges and opportunities in the multiple barrier approach (MBA) to providing safe drinking water. Overall, Finn found that the MBA approach does not meet the unique needs of some First Nations communities. Key themes that emerged from this research include: the importance and need for participation, involvement and engagement of First Nations in decision and policy making; regulation and jurisdiction in water quality management; the incorporation of Indigenous traditional knowledge about water into water management; and commitment, qualifications and resources for water treatment programs.

First Nations Leadership Council (FNLC). (2011). *Open letter: First Nations leadership council concerns on Water Act Modernization*. Available from http://www.ubcic.bc.ca/print/News_Releases/UBCICNews03161101.htm

This letter outlines key concerns with the Water Act Modernization in British Columbia. A principal objection is that First Nations have not been adequately or meaningfully consulted on a nation to nation to basis about the new legislation. The letter outlines that First Nations have constitutionally protected Aboriginal title, rights, and treaty rights and object to provincial assertion of jurisdiction over water in the Water Sustainability Act. Third, the letter highlights that the Policy Proposal does not recognize First Nations' inherent self-determination over water resources. Overall this letter calls for respect of the "New Relationship" between B.C. and First Nations, where initiatives and standards are not unilaterally imposed but rather jointly developed and First Nation are engaged at the *strategic* level.

Graham, J., & Fortier, E. (2006, March). *Building governance capacity: the case of potable water in First Nations communities*. Paper presented at the Aboriginal Policy Research Conference of the Ontario Institute on Governance. Ottawa, ON.

This paper builds a three-level model of capacity (individuals, organizations, and systems) which is then applied to analyze the capacity deficits for First Nations' reserve drinking water governance. At the individual level, the authors note that many water operators on reserves are uncertified. At the organizational level, they describe that some water plants on reserves are not well maintained; water systems suffer from infrastructure deficits; and communities often lack the finances to address problems. Finally, with respect to system-wide capacity issues, the report highlights that there are unclear standards for water quality on reserves; inspections are insufficient; enforcement of standards is limited; and roles of the key players are poorly defined. Overall, Graham et al. suggest that the only effective way to meaningfully address First

Nations drinking water issues is at the system-level, with a focus on building a regulatory regime.

Health Canada. (2007). *Drinking water advisories in First Nations communities: A national overview, 1995-2007*. Available from http://www.hc-sc.gc.ca/fniah-spnia/alt_formats/pdf/pubs/promotion/envIRON/2009_water-qualit-eau-canada/2009_water-qualit-eau-canada-eng.pdf

This report provides a national overview of the duration, frequency and reasons for issuing Drinking Water Advisories in First Nations' communities between 1995-2007.

Health Canada. (2014). *First Nations and Inuit health: Drinking water and wastewater*. Available from <http://www.hc-sc.gc.ca/fniah-spnia/promotion/public-publique/water-eau-eng.php>

This website includes information on the number of boil water advisories in Canada (excluding BC, which is now on the First Nations Health Authority site, see annotation above) and Health Canada's various responsibilities and initiatives relating to reserve drinking water monitoring and water advisories.

Lebel, P. & Reed, M. (2010). *The capacity of Montreal Lake, Saskatchewan to provide safe drinking water: Applying a framework for analysis*. *Canadian Water Resources Journal*, 35(3), 317-337.

This article establishes an analytical framework to assess the capacity of a Saskatchewan First Nations community to provide safe drinking water. The authors identify five dimensions of capacity in their analytic framework: Human Resources, Financial, Institutional, Social/Political, and Technical. The study developed indicators for each capacity dimension, which were weighted equally. After applying the framework to a case study in Montreal Lake, the authors acknowledge that this framework is limited insofar as it is based exclusively on Western science and may represent a narrow consideration of the key elements of First Nations drinking water management.

Levangie, J. (2009). *A bottom up approach to evaluate risk assessment tools for drinking water safety In First Nations communities* (Master's thesis). University of Guelph. Available from <https://atrium.lib.uoguelph.ca/xmlui/bitstream/handle/10214/2043/jl-thesis-Oct1.pdf?sequence=1>

This research aimed to determine the appropriateness of current risk assessment tools and approaches for First Nations drinking water systems. It advocates for a bottom-up approach to risk assessment and management as well as the incorporation of traditional knowledge into all types of environmental decision-making processes. This research determined that current risk assessment tools do not adequately assess certain challenges facing small, remote, and First Nations communities and that the priorities of those who have made the risk assessment tools often conflict with those of community members.

Livingstone, K. *Water operator and community engagement to improve drinking water access in First Nations in British Columbia (Master's Thesis). University of British Columbia. Available from <http://circle.ubc.ca/handle/2429/52791>*

This thesis examines the role of water operators in the provision of safe drinking water on First Nations reserves in BC. The author notes the important role operators have both in the design and management of water treatment systems, and also as educators within their communities and a trusted source of information for community members about their water. This thesis highlights that key challenges for water operators relate to a lack of support from community leadership and inadequate funding. This work concludes that operators need to have an increased role in budgeting and decision-making to develop appropriate water treatment solutions within their communities.

MacIntosh, C. (2008). *Testing the waters: Jurisdictional and policy aspects of the continuing failure to remedy drinking water quality on First Nations reserves. Ottawa Law Review, 39, 63-97.*

This is a key article on the legal & policy drivers of the disparity in access to safe drinking water between First Nations and non-reserve communities in Canada. MacIntosh's ultimate conclusion is that in failing to legislate drinking water standards on reserves, the Federal government has "allowed all potentially responsible parties to avoid direct liability and so an enforceable obligation to act" (50). The discussion outlines many of the main weaknesses in the current governance framework – jurisdictional fragmentation, a lack of First Nations involvement in source water planning, inadequate funding, etc. A central critique of this article is on devolution without a corresponding transfer in capacity and resources.

MacIntosh, C. (2009). Public health protection and drinking water quality on First Nation reserves: Considering the new federal regulatory proposal. *Health Law Review*, 18(1), 5-11.

This article briefly covers the drivers of the current state of water safety on reserves, and then moves to discuss the strengths and gaps in the proposed federal regulatory framework for drinking water on reserves. The article critiques the regulatory route being adopted by the federal government, which incorporates provincial legislation. MacIntosh acknowledges that, "Regulated standards will undoubtedly bring about some improvements to public health" (6). However, she identifies two major gaps that weaken the Federal regulatory approach. First, it does not adequately address the public health risks that arise from the lack of piped-in running water in homes, which is critical to reduce the transmission of waterborne disease. Secondly, the plan does not address source water protection, a key component of a multi-barrier approach to drinking water protection.

Martin, D., Belanger, D., Gosselin, P., Brazeau, J., Furgal, C., & Dery, S. (2007). Drinking water and potential threats to human health in Nunavik: Adaptation strategies under climate change conditions. *Arctic* 60(2), 195-202.

This article looks at the state of water in Nunavik, examining the consequences of climate change on the environment of northern communities, paying particular attention to the impact of climate warming on the incidence of gastroenteric diseases. The study looks at four Nunavik communities to evaluate water drinking habits that may place Nunavik residents at increased risk of gastroenteric diseases. It looks at developing or improving climate change adaptation strategies by establishing appropriate environmental monitoring systems, improving wastewater disposal, and raising public awareness as well as involving health professionals in various drinking water awareness campaigns.

Mascarenhas, M. (2007). Where the waters divide: First Nations, tainted water and environmental justice in Canada. *Local Environment*, 12(6), 565-577.

This article discusses drinking water issues on reserves from an environmental justice perspective. Mascarenhas draws on a case study in several First Nations communities in southwestern Ontario to highlight the ways in which neoliberal reform has a) rendered the recognition of environmental injustices more difficult for First Nations and b) reduced legitimate Indigenous opportunities to participate in environmental governance.

McCullough, J., Farahbakhsh, K. (2012). Square peg, round hole: First Nations drinking water infrastructure and federal policies, programs, and processes. *The International Indigenous Policy Journal*, 3(1), 1-27.

This article contains a wealth of information on reserve drinking water policy and governance. The first section of the article provides a thorough analysis of the shortcomings in federal programs, policies, and processes (PPPs) for reserve drinking water governance. The second section of the article is based on a case study with 16 First Nations water practitioners in Ontario. It discusses the shortcomings of status-quo governing PPP principles and format. Overall they find that practitioners characterized the PPP format as 'one-size-fits-all' and emphasized the need for the execution format to appreciate and accommodate the diversity among First Nations.

Metcalfe, C., Murray, C., Collins, L. & Furgal, C. (2011). Water quality and human health in indigenous communities in Canada. *Global Bioethics*, 24(1-4), 91-94.

This article explores the health implications of contaminated drinking water on First Nations' reserves. The authors note that overall there is a lack of information and data on the prevalence of illnesses in Indigenous communities related to contaminated drinking water. Overall, the authors underscore that the number of boil water advisories alone does not indicate the prevalence of waterborne disease in communities.

Murdocca, C. (2010). "There's something in that water": Race, nationalism, and legal violence. *Law and Social Inquiry* 35(2), 369-402.

This article explores the 2005 Kashechewan water crisis and identifies the ways in which narratives about the water crisis were inherently narratives of colonial racial and structural violence. A powerful piece of the discussion delves into how cultural difference is framed as cultural deficiency: Murdocca argues that the official report on the incident was grounded in a narrative of social decay, "*a narrative about the pervasive inability of Aboriginal peoples to regulate themselves and cope with the pillars of liberal life*" (385). Conversely, the government was applauded for its humanitarian response to help the Kashechewan community out of the crisis. The final section of the article discusses the methodological use of the case study to demonstrate the manifestation of structural violence, where the challenge is to think beyond the individual case to understand the deeper historical and political-economic context.

Office of the Auditor General (OAG). (2005). *Drinking water in First Nations Communities. Report of the Commissioner of the Environment and Sustainable Development. Office of the Auditor General of Canada.*

This report presents the results of Office of the Auditor General's 2005 audit of drinking water systems in First Nations communities. The report relates three main findings. First, the OAG found that First Nations communities do not have a comparable level of access to safe drinking water to non-reserve communities. This is mainly attributed to the regulatory gap for drinking water on reserves. Second, the audit found that although millions of dollars have been put towards improving First Nations' water systems, serious deficiencies persist in many systems. Thirdly, the report notes that the technical support available to First Nations to provide safe drinking water is fragmented and limited. This report provides useful overview of the range of issues with the drinking water governance framework for First Nations, although it was produced almost 10 years ago so is somewhat out of date.

Patrick, R. (2011). *Uneven access to safe drinking water for First Nations in Canada: Connecting health and place through source water protection. Health & Place, 17, 386-389.*

This article looks at the state of drinking water for First Nations in Canada through an examination of health and place. It looks at health disparities and inequities in relation to the history of oppression and colonization in Canada and connects the water crisis in First Nations to past and ongoing dispossession. The article emphasizes a need for greater attention to source water protection, providing an overview of the benefits as well as some of the challenges for implementing a source water protection plan for First Nations communities. The article sees source water protection as providing opportunities not only for enhanced water quality but also for increased community-engagement, intergenerational interaction and knowledge transfer, and the reconnection of health and place for First Nations.

Phare, M.-A. (2011). *Restoring the lifeblood: Water, First Nations and opportunities for change. Toronto, ON: Walter and Duncan Gordon Foundation.*

This article outlines some of the main barriers and opportunities for First Nations in water management. Phare highlights that First Nations are under "jurisdictional domination": their ability to address key water challenges and raise funds is constrained by a restrictive legal regime. Section 2 of the report outlines some of the key challenges/issues for water use in Canada nationally. Section 3 provides a broad overview of water challenges facing First Nations. These include issues of water rights and ownership, a disregard for First Nations needs/rights in provincial water allocation processes; the exclusion of First Nations from decision-making processes about off-reserve water decisions; the lack of

lack of intergovernmental cooperation across First Nations reserve borders; competing claims to water by multiple First Nations; and human resources, financial, and information capacity deficits. Section 5 of the report outlines several opportunities for program and project development that could improve drinking water on reserves.

Plummer, R., de Grosbois, D., Armitage, D., & de Loe, R. (2013). An integrative assessment of water vulnerability in First Nation communities in Southern Ontario, Canada. *Global Environmental Change*, 23(4), 749-763.

This paper documents a collaborative research project in which researchers worked with 3 Ontario First Nations communities to develop an integrative framework and instrument to assess water vulnerability. Much of this paper is focused on the extensive research process and methodology undertaken. First, a comprehensive literature review on water vulnerability assessment tools was undertaken. Second, community representatives were involved in conceptualizing water vulnerability through concept maps/personal pictures. Third, a conceptual, place-based framing of water vulnerability was constructed combining the data from the previous two steps. Next, 107 indicators were established based on literature and input from community participants. The researchers used questionnaires, interviews, and secondary data to collect data for all indicators. The end result was a water vulnerability score for each community.

Rae, J. (2009). Program delivery devolution: A stepping stone or quagmire for First Nations? *Indigenous Law Journal*, 7(2), 1-40.

This thorough article provides a critical analysis of the devolution of administration of public services for First Nations to the band level, a trend which began in the 1970s and continues today. Rae's fundamental question is whether 'self-administration' is a transitional tool for First Nations in the move towards a better future and genuine self-government, or whether it rather hinders First Nations in their goals to self-govern. After weighing the ways in which devolution might be a stepping-stone versus a hindrance, Rae ultimately concludes that, "if devolution once held any promise of benefit, that promise is quickly being lost" (25). The federal government is not providing adequate funding to allow First Nations to meet the growing costs of self-administration or provide effective and culturally relevant programming.

Rizvi, Z., Adamowski, J., & Patrick, R. (2013). First Nation capacity in Quebec to practise integrated water resources management. *International Journal of Water* 7(3), 161-190.

This study developed and applied an analytical framework to assess the overall capacity of two First Nations communities in Québec to practise IWRM. Dimensions of

capacity included in this study were actor network, information management, human resources, technical, financial and institutional capacity. This study recommends that future Québec IWRM initiatives with First Nations collaboration be directed towards strengthening actor network capacities and understanding the complexity of First Nations' perspectives.

Simeone, T. & Troniak, T. (2012). Legislative Summary: Bill S-8: The Safe Drinking Water for First Nations Act. Publication No. 41-1-S8-E. Library of Parliament.

An overview of the objectives and content of Bill S-8, the Safe Drinking Water for First Nations Act.

Smith, D., Guest, R., Svrcek, C., & Farahbakhsh, K. (2006). Public health evaluation of drinking water systems for First Nations reserves in Alberta, Canada. *Journal of Environmental Engineering and Science*, 5(1), S1-S17.

This study evaluated fifty-six drinking water systems in First Nations communities in Alberta for their ability to protect public health. Eight categories were developed for the risk evaluation methodology: source water, treatment process, microorganism reduction, reservoir and distribution, finished water quality, operation/maintenance and training, monitoring and reporting, and non-treatment infrastructure. Each of these was assigned a weighted factor based on their relative importance to public health protection, and a categorical ranking system was developed to assess *overall* drinking water system risk. Overall, of the 56 facilities, 50% received a high overall risk ranking. The authors highlight that to effectively address drinking water concerns, there is a need to address, the unique culture, political, social and economic environment in First Nations reserves.”

Swain, H., Louttit, S., & Hrudehy, S. (2006). *Report of the expert panel on safe drinking water*. Ottawa, ON: Indian Affairs and Northern Development.

This report was published by a panel assembled in 2006 as part of the *Protocol for Safe Drinking Water in First Nations Communities*. It summarizes the results of a series of public hearings the Panel held across Canada. The Panel highlights the importance of a source-to-tap approach to drinking water protection. The second half of the report broadly outlines the complexities and challenges for reserve drinking water governance: there is overlap and confusion in roles and responsibilities and inadequate funding. A key message is that devolution demands resources and that a precondition to regulation is closing the resource gap. The Panel outlines the necessary features of any regulatory regime for First Nations and lays out 3 possible regulatory frameworks for drinking water on reserves: creating new federal legislation, reference to existing provincial statutes, or founding the framework upon the customary law of First Nations.

Trent University Institute for Watershed Science. *Final report: Protecting drinking water in Indigenous communities in Canada's North*. RBC Blue Water Project #50. Available from <http://www.trentu.ca/iws/documents/FinalPublicReport.pdf>

This report summarizes a 5 year research and training program aimed at protecting sources of drinking water in Indigenous communities in Canada's north. This project involved development of a research and training network, with a principal focus on capacity building, including curriculum development for community colleges, community-based training, and training of water professionals.

Union of British Columbia Indian Chiefs. (2011). *UBCIC Submission to Senate Standing Committee on Aboriginal Peoples: Bill S-11*. Available from http://www.ubcic.bc.ca/files/PDF/UBCICSubmissiontoSenate_S11_020911.pdf

This submission documents the UBCIC's principal concerns with Bill S-11, Bill S-8's precursor legislation. A key issue identified is the transfer of liability for safe drinking water to First Nations communities without adequate resources or infrastructure and without attention to underlying causes of the problem, including land degradation. As noted in the executive summary: "The lack of safe drinking water to First Nation communities is not caused by a lack of regulations. The lack of safe drinking water is caused by a lack of infrastructure, financial resources and technical expertise to ensure the safety of the water supply, and by resource and land development outside of reserve lands (such as industrial logging and mining in watersheds without regard to the ability of those watersheds to maintain a safe water supply) authorized without regard to the impact on the drinking water supply to First Nation communities" (2). The UBCIC further identifies that Bill S-11 does not respect constitutionally protected Aboriginal rights.

Walters, D., Spence, N., Kuikman, K., & Singh, B. (2012). *Multi-barrier protection of drinking water systems in Ontario: A comparison of First Nation and non-First Nation communities*. *International Indigenous Policy Journal*, 3(3), 1-23.

This article compares the risk evaluation rankings of First Nations and non-First Nations drinking water systems in Ontario. These risk rankings are taken as a proxy for the ability of First Nations to implement multi-barrier protection of their drinking water systems. The authors highlight a growing focus on the multi-barrier approach to safe drinking water. Responsibility for multi-barrier protection of drinking water for First Nations is shared between the *federal* government and First Nations, while multi-barrier protection of drinking water for non-First Nations is shared between *provincial* governments and non-First Nations communities. This jurisdictional split creates a great deal of complexity in establishing multi-barrier plans. The second section of the article measures the overall health risk of First Nations and non-First Nations drinking water systems, based on five categories: water source, design, operation, reporting, and

operators. For each of these categories, they found that First Nations communities were at greater risk than non-First Nations.

Watt, D. (2008). Water, water everywhere: Not any drop to drink. *Law Now* 33(1), 1-5.

This article provides a brief overview of the deficiencies in the existing Federal approach to drinking water on reserves, and outlines possible regulatory regimes. Much of the article is based on summarizing the 2006 Report of the Expert Panel (see week 1 annotations). Watt outlines 3 main shortcomings in the current water governance framework: a lack of effective standards and regulatory abandonment, jurisdictional fragmentation, and insufficient funding. He describes the three regulatory regime options proposed by the Expert Panel: 1) regulation grounded in First Nations asserted customary law 2) regulation based on existing federal or provincial laws, or 3) new federal legislation. While the Expert Panel recommended that this federal legislation create new federal water quality requirements, the government instead decided to reference provincial water-quality requirements. This is deemed to be a less effective option as provincial standards do not include “all the elements of good practice” and they are not consistent across the country.

White, J. P., Murphy, L., & Spence, N. (2012). Water and Indigenous peoples: Canada’s paradox. *The International Indigenous Policy Journal*, 3(3), 1-27.

This article considers why widespread drinking water problems persist on reserves despite extensive government action on the issue. The overarching response is that drinking water is not a quick-fix issue that can be solved merely through regulation and funding. Rather, “The legacy of colonial relations, attempted forced assimilation, and ongoing paternalistic relations, codified through the Indian Act, have created a situation where simple investments in water infrastructure and/or better regulations will not solve the problem” (19). White et al. propose that to achieve safe drinking water, First Nations must be supported to work towards adaptive sustainability, where human, social, and physical capital interact to influence community capacity development, which in turn leads to adaptive sustainability. The authors suggest that regulation alone will not achieve adaptive sustainability; key issues to address first are capacity development and funding.

7. Research ethics (Selected sources & overview)

Baskin, C. Storytelling circles: Reflections of Aboriginal protocols in research. *Canadian Social Work Review* 22.2(2005): 171-187.

This article focuses the storytelling circle as an Aboriginal research methodology. With an emphasis on direct and extensive involvement of the community, storytelling circles create reciprocal relationships between the researcher and the participants, and break down the “expert” paradigm. Baskin identifies self-determination and decolonization as being at the heart of Aboriginal research methodologies. She emphasizes the importance developing mutually beneficial and reciprocal relationships with those involved in the research. Baskin places an ethical responsibility on the researcher to maintain relationships with those involved in the projects as well as to ensure the research creates positive outcomes for the community.

Castellano, M. (2004). Ethics of Aboriginal research. *Journal of Aboriginal Health*, 1(1), 98-115.

This article reviews how the norms of Western research are problematic in Aboriginal communities, and proposes a set of eight principles to guide the development of ethical codes for research with Aboriginal communities. Castellano describes that First Nations communities have been *researched to death*; research conducted by outsiders has been extractive, paternalistic, and often produced harmful outcomes to communities. The article describes how ethics are framed in Aboriginal cultures, and the ways in which these are in tension with the Western research paradigm. For instance, the notion that the investigator must be separate from informants to maintain objectivity “violates Aboriginal ethics of reciprocal relationships and collective validation” (105).

Cochran, P., Marshall, A., Garcia-Downing, C., Kendall, E., Cook, D., & McCubbin, L. et al. (2008). Indigenous ways of knowing: Implications for participatory research and community. *American Journal of Public Health* 98(1): 22-27.

With a focus on health research, this article examines the detrimental history of research with Indigenous peoples and considers participatory research models as ways of restoring trust, respecting Indigenous knowledge and practices, and resolving conflict. One of the major challenges identified throughout the article is that of intellectual and cultural property rights and the need to consider ways of distributing the results and benefits of the research in ways that protect Indigenous knowledge. The article provides examples of various groups and institutes that are attempting to address these issues and outlines areas in need of further consideration, including the potential need for academic researchers to give up the role of principal investigator and the need for

additional funding for community capacity-building to be built into the research design and process.

Evans, M., Hole, R., & Bert, L. (2009). Common insights, differing methodologies: Toward a fusion of Indigenous methodologies, participatory action research, and White studies in an urban Aboriginal research agenda. *Qualitative Inquiry*, 15(5), 893-910.

This article discusses three broad research approaches and the potential for their fusion: indigenous methodologies (IM), participatory action research (PAR), and White studies (WS). The authors highlight a fundamental tension with PAR: “how do researchers engaged in PAR with Aboriginal people, in a society imbued with, and often structured by racism, not reproduce racialized identities and colonial representations of the *other*? In fact, how might the constructs inherent in PAR, such as *the oppressed*, *the people*, and *the researcher* secure racial othering?” (900). Evans et al. propose that an effective response to this issue is to integrate the three methodologies described above: i.e. adopting IM and PAR approaches, “but refocusing the object of inquiry directly and specifically on the [White] institutions and structures that Indigenous peoples face” (894). This refocusing locates the source of problems within white institutions/structures rather than within Indigenous communities.

First Nations Environmental Health and Environmental Innovation Network. (2015) *Research tools*. Available from <http://www.fnehin.ca/research-tools/research-guidelines>.

This is an excellent resource with examples of several research protocols developed by First Nations and community-university partnerships with guidelines for conducting respectful research.

Leeuw, S., Cameron, E. & Greenwood, M. L. (2012). Participatory and community-based research, indigenous geographies, and the spaces of friendship: A critical engagement. *The Canadian Geographer / Le Géographe Canadien*, 56(2), 180-194.

This article articulates four principal concerns with participatory and community-based research methods: “a) dissent may be stifled by non-Indigenous researchers’ investments in being “good”; b) claims to overcome difference and distance may actually retrench colonial research relations; c) the framing of particular methods as “best practices” risks closing down necessary and ongoing critique; and d) institutional pressures work against the development and maintenance of meaningful, accountable, and non-extractive relations with Indigenous communities.” (180). The authors reflect on their longstanding

friendship and consider how such friendships may provide a productive space through which research methods can be challenged and decolonized.

Menzies, C & Butler, C. (2011). Collaborative service learning and anthropology with the Gitxaala Nation. *Collaborative Anthropologies*, 4, 169-242.

This article documents a Gitxaala-UBC collaborative program in service learning student research, outlining the program's history and context. The article is useful in its exploration of critical research issues and the potential challenges present in research with Indigenous communities. The article stresses the importance of fostering critical awareness on behalf of the researcher concerning their social location and their obligation to give up their position of power and privilege when conducting research. The article also includes several student reflections and testimonials documenting their experiences with the program.

Nilson, S. Bharadwaj, L, Knockwood, D. & Hill, V. (2008). Science in a circle: Forming 'community links' to conduct health research in partnership with communities. *Pimatisiwin: A Journal of Aboriginal and Indigenous Community Health* 6(1), 123-135.

This article documents the "Science in a Circle" research model, which is based on the values of mutual respect, caring, honesty, and communication. This model aims to establish partnerships between university scientists and First Nations community members in order to better incorporate and respect cultural knowledge in the planning and methodology of research, looking to elders as key partners. The article outlines the entire process of research conducted using the Science in a Circle model and emphasizes ethics of shared knowledge and the building of community capacity and participation in research and policy development.

Schnarch, B. (2004). Ownership, control, access, and possession (OCAP) or Self-determination applied to research: A Critical analysis of contemporary First Nations. *Journal of Aboriginal Health*, 1(1), 80-98.

This article outlines the principles of OCAP (Ownership, Control, Access, and Possession) in research with First Nations. As Schnarch describes, "Ownership, control, access, and possession, is self-determination applied to research. It is a political response to tenacious colonial approaches to research and information management" (4). Schnarch outlines a long list of issues with the Western research process, where external researchers come into First Nations communities with pre-defined research projects which often do not serve community interests. Further, he highlights that capacity development and OCAP are interwoven, with an emphasis on building capacity

at the individual, organization, and community levels. Further, he points the importance of a First Nations review process to ensure that research is relevant and appropriately interpreted.

Smith, L. (2012). *Decolonizing methodologies: Research and Indigenous peoples*. New York: Zed Books.

A key reference on the extractive histories of Western research in Indigenous communities which explores intersections of imperialism and research.

Walters, K, Stately, A., Evans-Campbell, T., Simoni, J., Duran, B., & Schultz, K. et al. (2009). Indigenist research efforts in Native American communities. In A. Stiffman (Ed.), *The field research survival guide* (pp.146-173). New York: Oxford University Press.

This article addresses some of the challenges and opportunities in building community-based research partnerships with indigenous communities. First, Walters et al. outline the relationship between colonial projects and drive-by extractive research *on* Indigenous people, noting that, “Part of the colonization process is to render invisible the successes of indigenous science and knowledge while simultaneously infusing public discourse with images of Indians as intellectually inferior” (148). Next, the article outlines the principles of Community-Based Participatory Research and proposes the following eight Indigenist Research Principles: Reflection, Respect, Relevance, Resilience, Reciprocity, Responsibility, Retraditionalization, and Revolution.

Wilson, S. (2008). *Research is ceremony: Indigenous research methods*. Black Point, NS: Fernwood Publishing.

This book describes elements of an Indigenous research paradigm shared by Indigenous scholars in Canada and Australia, and explores how these can be put into practice. Wilson focuses on *relationships* as the heart of research. As he describes in the book summary: “Relationships don’t just shape Indigenous reality, they are our reality. Indigenous researchers develop relationships with ideas in order to achieve enlightenment in the ceremony that is Indigenous research. Indigenous research is the ceremony of maintaining accountability to these relationships.”

8. Additional resources

Centre for Aboriginal Health Research. (2011). *Annotated bibliography: Water and Aboriginal peoples' health*. Available from <http://www.uvic.ca/research/centres/cahr/knowledge/publications/annotated-biblio.pdf>

An annotated bibliography with a focus on Indigenous health and water.

Centre for Aboriginal Health Research. (2011). *Crisis on tap: First Nations water for life*. Video documentary. Available from <http://www.uvic.ca/research/centres/cahr/knowledge/media/index.php>

A 30 minute video which considers the complexity of reserve drinking water challenges.

Centre for Indigenous Environmental Resources. (2011). *First Nations integrated watershed planning booklets*. Available from <http://www.yourcier.org/first-nations-integrated-watershed-planning-guidebooks-2011.html>

A series of booklets designed to support First Nations' watershed planning processes. The first booklet ("Getting Started") is available for free download and includes a helpful glossary of water-related terms presented in accessible language.

Davis, W. & R. Clow. (2009). *American Indian sovereignty and law: An annotated bibliography*. Plymouth: Scarecrow Press.

An extensive annotated bibliography on a wide range of topics pertaining to American Indian sovereignty and law. Chapter 41 of this book covers Water Law.

Fraser Basin Council. (2014). *Who does what in water?* Available from http://www.rethinkingwater.ca/who_does_what.html

A useful resource outlining the respective roles and responsibilities of federal, provincial, local, and First Nations governments and other organizations in water governance in British Columbia.

First Nations Studies Program, UBC. (2015). *Indigenous foundations*. Available from www.indigenousfoundations.arts.ubc.ca.

This is a great backgrounder site with a wealth of information on key topics relating to the histories, politics, and cultures of Indigenous peoples of Canada.