



Indigenous Environmental Justice Annotated Bibliography

**A working document presented by the
Indigenous Environmental Justice Project**

**Edited by Jesse Abell, Steve Whitaker, Dale Hamilton, &
Deborah McGregor**

Contributions by Jesse Abell, Jayce Chiblow, William Dandie,
Emilia Khalil, Ethan Persaud-Quiroz, Abdeali Hatim Saherwala,
Kim Tran, Jayce Chiblow, Dale Hamilton

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Introduction

In Canada, environmental (in)justice is a constant undercurrent for arguably most (if not all) environmental challenges that Indigenous peoples face. The field of environmental justice studies, therefore, forms a critical theoretical and applied framework for addressing key environmental issues of concern to Indigenous peoples in this country. To date, however, Canadian research focused on Indigenous environmental justice (IEJ) has not yet occurred in a substantive way.

If environmental justice studies are to benefit Indigenous communities, they must include knowledge, principles and values already held and practiced by Indigenous peoples. **The Indigenous Environmental Justice Project**, a 5-year SSHRC-funded initiative based out of York University, led by Professor Deborah McGregor is working to fill this gap. Our research aims to develop a distinctive EJ framework that is informed by Indigenous knowledge systems, laws, concepts of justice and the lived experiences of Indigenous peoples.

Our hope is that the IEJ Project will act as a significant information hub for community members, students, faculty, scholars, activists and others in their search for both theoretical and practical knowledge on achieving environmental justice. In addition to contributing to the further development of the IEJ field, we will:

- Provide resources to educators interested in teaching their students about the struggles of Indigenous peoples and their efforts to seek environmental justice,
- Create opportunities for increased and inclusive dialogue on how to advance environmental justice, and
- Build knowledge, capacity, and awareness among non-Indigenous actors to better work with Indigenous peoples in their quest for environmental justice.

This annotated IEJ bibliography, which builds on the one prepared in 2018, is intended to serve as a key element among said resources. While not an exhaustive compilation, it should provide a helpful starting point for research as it summarizes leading literature on critical topic areas relating to IEJ, including recently published book chapters, articles, and reports. With a primary geographic focus on Canada, this bibliography also includes literature from US, Australian, and New Zealand contexts. We have provided a summary of each source. The sources are listed alphabetically by author last name.

For additional resources related to the IEJ project and other IEJ-related information, please visit the IEJ website at <http://iejproject.info.yorku.ca>.

Bibliographic Entries

Alphabetical by author last name

A

Albert, S., Bronen, R., Tooler, N., Leon, J., Yee, D., Ash, J., Boseto, D., & Grinham, A. (2018). Heading for the hills: climate-driven community relocations in the Solomon Islands and Alaska provide insight for a 1.5°C future. *Regional Environmental Change*, 18(8), 2261-2272. <https://doi.org/10.1007/s10113-017-1256-8>

Themes: Climate change, relocation, Indigenous cultural practices, adaptive capacity

This article analyzes four communities that have moved inland as a response to rising sea levels and erosion of coastal areas. Three of the communities are in the Solomon Islands, and the fourth is in Alaska, United States. The four case studies provide perspectives from developing countries (the Solomon Islands), and a developed country (United States), and the similarities and differences between them. Both the Solomon Islands and the United States failed to provide sufficient government supports to the communities, due to lack of a framework for relocation, insufficient financial support, intricate planning, and limitations of land tenure. However, the Indigenous communities in the Solomon Islands have been rapidly adapting to their relocations as necessary. One of the key factors that has helped the communities' relocations is their traditional cultural practices, which increased their adaptive capacity. The authors argue that governments need to develop a relocation governance framework that incorporates communities' traditional practices, recognizes their autonomy, and ensures the protection of their human rights. The four case studies provide examples for other coastal communities and governments who may face relocation inland.

Arsenault, R., Bourassa, C., Diver, S., McGregor, D., & Witham, A. (2019). Including Indigenous Knowledge Systems in Environmental Assessments: Restructuring the Process. Governance. *Global Environmental Politics*, 19(3), 120-132. http://dx.doi.org/10.1162/glep_a_00519

Themes: Environmental Assessments, resource development, Indigenous knowledge, Indigenous participation, First Nations territory

The authors recognize that Indigenous communities disproportionately bear the harmful impacts of industrial development. Thus, it is critical that Indigenous knowledges are meaningfully included in industrial project development, in order to more accurately reflect and mitigate the risks that these projects pose to Indigenous communities. Environmental assessments (EAs) are mandated in Canada, and evaluate the environmental impacts of proposed development projects with the aim of mitigating harmful effects of projects. However, while EAs sometimes result in changes to project design, they rarely lead to the cancellation of a project. The authors argue that Indigenous participation must be institutionalized in EAs in order to more effectively mitigate the

harmful effects of projects on Indigenous communities. The article discusses historical barriers to Indigenous involvement in EAs, proposes ways in which EAs can meaningfully engage with Indigenous peoples, and makes five specific recommendations for improving EAs on First Nations' territory.

B

Bagelman, C. (2018). Unsettling Food Security: The Role of Young People in Indigenous Food System Revitalisation. *Children & Society*, 32(3), 219–32. <https://doi.org/10.1111/chso.12268>

Themes: Indigenous food systems, Indigenous food security, food system revitalization, place-based learning, experiential education, settler-colonialism, decolonization

Caroline Bagelman critiques the Canadian Community Healthy Survey (CCHS), which is the primary metric for assessing food security in Canada. Bagelman asserts that the CCHS's method of collecting data on food security in Canada is underpinned by settler-colonial understandings of food security, which ignore the causes and experience of Indigenous food insecurity. The CCHS does not survey Indigenous individuals living on reservations, nor Indigenous people who are experiencing homelessness. As a result, the CCHS excludes approximately half of Canada's Indigenous population, and those who experience the greatest amount of poverty and food insecurity. Further, the CCHS focuses on households' financial barriers in accessing nutritional food regularly, without considering Indigenous perspectives on food security, health, and well-being. Bagelman asserts that the CCHS reinforces the rupture between Indigenous food security and Indigenous food systems first created by colonial policies like residential schools. Bagelman examines two projects established by Indigenous communities, which aimed to promote their food systems for food security by educating children about traditional food practices and knowledge on the land. Bagelman contends that Canada must understand what food security means for Indigenous communities in order to effectively address food insecurity experienced by those communities, and proposes projects that engage Indigenous children in dialogue about food as one means of raising awareness about Indigenous food security.

Ban, N., Wilson, E., & Neasloss, D. (2019). Strong historical and ongoing Indigenous marine governance in the northeast Pacific Ocean: a case study of the Kitasoo/Xai'xais First Nation. *Ecology and Society*, 24(4). <https://doi.org/10.5751/ES-11091-240410>

Themes: Resource management, marine governance, Kitasoo/Xai'ais, First Nations, environmental management, Indigenous governance, Indigenous law

The authors use interviews, archival information, and traditional stories to synthesize Kitasoo/Xai'xais First Nation of the Pacific Northeast's marine governance practices and institutions. Sustainable resource use, and intergenerational and interspecies equity, are the

underlying principles of the First Nation's marine governance. These principles are enforced by Hereditary Chiefs, high-ranking women, and Elders, through traditional ceremony, law, and marriage. Additionally, these decision-makers exercise their authority through stewardship authorities and boards. Drawing on the example of marine resource harvesting protocols, the authors assert that Kitasoo/Xai'xais marine governance requires people to respect the territory, ask for permission, and abide by traditional principles, or risk loss of access. The authors highlight the resilience of Kitasoo/Xai'xais marine governance and sustainable resource use in the face of colonial assimilation.

Barnhill-Dilling, S. K., Rivers, L., & Delborne, J. A. (2020). Rooted in Recognition: Indigenous Environmental Justice and the Genetically Engineered American Chestnut Tree. *Society & Natural Resources*, 33(1), 83–100. <https://doi.org/10.1080/08941920.2019.1685145>

Themes: Indigenous worldviews; Haudenosaunee; Traditional Ecological Knowledge; genetic engineering; Indigenous Environmental Justice; Free, Prior, and Informed Consent

In response to proposals to introduce genetically engineered American chestnut (GEAC) trees near Haudenosaunee communities in New York, the authors advocate for a decision-making process that recognizes Haudenosaunee sovereignty and worldviews. Existing scientific proposals have been produced within a settler worldview and neglect the GEAC's potential to fundamentally reshape the environment of Haudenosaunee territories. The decision-making framework must recognize Haudenosaunee governance institutions, treaties, and historic mistrust of consultation. Additionally, the framework must appreciate the potential conflict between genetic engineering and Haudenosaunee worldviews, including Haudenosaunee Traditional Ecological Knowledge (TEK). The authors conclude by asserting that the implementation of Free, Prior, and Informed Consent, and the use of TEK as a collaborative tool, are important next steps to achieving an environmentally just decision-making framework.

Batal, M., Johnson-Down, L., Moubarac, J.-C., Ing, A., Fediuk, K., Sadik, T., Tikhonov, C., Chan, L., & Willows, N. (2018). Quantifying associations of the dietary share of ultra-processed foods with overall diet quality in First Nations peoples in the Canadian provinces of British Columbia, Alberta, Manitoba and Ontario. *Public Health Nutrition*, 21(1), 103–13. <https://doi.org/10.1017/S1368980017001677>

Themes: First Nations health, food security, diet, food systems

The authors conducted a study aimed at quantifying the share of ultra-processed foods (“UPF”) within First Nations diets and how it affects overall diet quality (e.g., vitamin, protein, and sugar intake). The article indicates that UPF is highly prevalent in First Nations diets and that higher UPF levels lead to a decrease in fibre, protein, potassium, iron, and vitamin A. The article posits that individuals who partake in traditional First Nations food (e.g., wild plants and game animals) experience an improvement in diet quality and health. The authors discuss the numerous barriers

(e.g., cost) First Nations groups face when it comes to obtaining healthier food options, and the prevalence of obesity and obesity-related diseases within the First Nations population.

Biggs, S., Lake, O. O., & Goldtooth, T. B. K., (Ed.). (2017). *Rights of Nature & Mother Earth: Rights-Based Law for Systematic Change. Indigenous Environmental Network.*

Available at: <https://www.ienearth.org/rights-based-law-for-systematic-change/>

Themes: Natural Law, rights-based law, rights of nature, climate capitalism

This report proposes a radical shift from our current frameworks of human law and human rights—which define nature as property to be owned, commodified, and destroyed—towards a framework that recognizes natural law and the rights of ecosystems. This report features eight articles with global examples that illustrate the emergence and establishment of natural law, and the responsibilities humans have to the environment around the world.

Borrows, J. (2008). *Living Law on a Living Earth: Aboriginal Religion, Law, and the Constitution.* In R.J. Moon (Ed.), *Law and Religious Pluralism in Canada* (pp. 161–191). UBC Press.

Themes: Justice, Indigenous legal systems, Anishinaabe law, environmental protection, religious freedom, common law

In this chapter, John Borrows compares the Canadian legal system with Anishinaabek legal systems. Borrows provides an overview of Anishinaabek religious beliefs, including sacred stories of creation. He explains that central to Anishinaabek belief systems is a conception of the Earth as a living being. He also relates the significance of sacred pipe ceremonies and offering tobacco to the Creator as ways to ask for the gifts of the Earth upon which humans, plants and animals all depend. Borrows discusses the limitations of the Canadian legal system in understanding and accommodating Indigenous legal frameworks and religious practices. Because of the many challenges faced by Indigenous peoples in Canadian courts, Borrows argues that the Anishinaabek law should be recognized as valid by Canadian courts as it has the ability to protect Indigenous rights and religious practices.

Bradford, L. E. A., Bharadwaj, L. A., Okpalauwaekwe, U., & Waldner, C. L. (2016). *Drinking water quality in Indigenous communities in Canada and health outcomes: A scoping review. International Journal of Circumpolar Health, 75(1), 1–16.*
<https://doi.org/10.3402/ijch.v75.32336>

Themes: Clean drinking water, Indigenous water security

This article is the culmination of a review of literature related to lack of access to safe drinking water in Indigenous communities in Canada. The authors note that Indigenous communities are experiencing serious health concerns resulting from poor quality drinking water. Indigenous worldviews consider water to be “a gift from the Creator...that must be respected and kept clean” (2). The authors found the existing literature often focuses only on negative health outcomes, rather than offering possible solutions. The authors identify a number of challenges for Indigenous communities in securing safe drinking water, including the remoteness of some reserves, difficulty acquiring certified water plant operators, differences in cultural beliefs, and bureaucratic barriers. Referring to the findings of the TRC, the authors call for new approaches and better engagement with communities to combat the issue of clean drinking water accessibility. They recommend conducting large cross-sectional and longitudinal studies analyzing Indigenous health outcomes with respect to drinking water, developing a database collating this information, and creating a coordinated network of researchers, communities, and government agencies. They propose increased research funding and interdisciplinary work on the subject, and the creation of “funding opportunities to develop capacity within Indigenous communities to monitor and report drinking water safety and outcomes” (14).

Burkett, M. (2013). Indigenous environmental knowledge and climate change adaptation. In R. S. Abate & E. A. Kronk (Eds.), *Climate Change and Indigenous Peoples: The Search for Legal Remedies*. Edward Elgar Publishing Ltd.

Themes: Indigenous traditional knowledge, climate change, climate justice, environmental justice, climate adaptation

This chapter discusses climate change in relation to traditional knowledge, climate justice, and capacity for adaptation. Through the lens of traditional knowledge, the author examines Indigenous community adaptation as a place-based response to climate change aimed at mitigating its impacts. This chapter is from a book that explores the relationship between Indigenous peoples and climate change and argues that legal solutions to climate change must be taken seriously by all levels of government. This specific chapter discusses challenges and solutions related to climate change, including attempts to harmonize Indigenous environmental knowledge and western knowledge as a means to more effectively mitigate and adapt to climate change impacts. The author posits that the harmonization of these two knowledge streams will allow everyone to benefit by combining traditional knowledge derived from local communities with western knowledge, which is generally wider in scope.

C

Chiblow, S. (2019). Anishinabek Women’s Nibi Giikendaaswin (Water Knowledge). *Water*, 11(2), 1–14. <https://doi.org/10.3390/w11020209>

Themes: Indigenous Environmental Justice, water justice, water governance, traditional ecological knowledge, Indigenous women, water

Ogamauh annag qwe, or Susan Chiblow, is an Anishinaabek scholar from Garden River First Nation in Ontario. This paper focuses on Indigenous women's water knowledge and its implications for water governance. Chiblow describes Anishinaabek giikendaaswin, or traditional ecological knowledge (TEK), as being about reciprocal relationships and responsibilities. When considering water governance, she suggests that rather than the water itself, it is human behaviour toward water that must be governed, which is in contrast to federal and provincial government discourse that views water simply as a resource. Chiblow argues for "responsibility-based governance" (2) based on Anishinaabek giikendaaswin, and suggests that lessons from Indigenous women's special connections to water can offer healthier ways to relate to water. Chiblow concludes that if governments were to actively involve Indigenous women in decision-making regarding their territories, these women would be able to offer valuable insights into sustainable water governance.

Clark, B. (2002). The Indigenous Environmental Movement in the United States: Transcending Borders in Struggles Against Mining, Manufacturing, and the Capitalist State. *Organization & Environment*, 15(4), 410–442. <https://doi.org/10.1177/1086026602238170>

Themes: Environmentalism, Indigenous peoples, resource extraction

Brett Clark explores how the mainstream environmental justice movement of the 1980s and 1990s in the United States came to be dominated by Indigenous peoples. Clark describes the struggle against resource extraction in Indigenous communities across the United States, and how some Indigenous communities are indirectly or directly allowing resource extraction in their territories in order to generate revenue in the face of serious financial struggles. Clark notes that the American environmental justice movement is important because its strategies have been adopted by countries around the world.

Corntassel, J. (2012) Re-envisioning resurgence: Indigenous pathways to decolonization and sustainable self-determination. *Decolonization: Indigeneity, Education & Society*, 1(1).

Available at: <https://jps.library.utoronto.ca/index.php/des/article/view/18627>

Themes: Indigenous people, decolonization, resurgence, renewal, responsibility

Jeff Corntassel analyzes various Indigenous techniques of decolonization and resurgence and notes the financial, political and ecological challenges that Indigenous people face in accomplishing decolonization and resurgence. Corntassel asserts that being Indigenous today involves a struggle of resurgence to "regenerate one's relational, place-based existence" (88) by challenging the colonial project. Colonialism disconnects Indigenous peoples from their lands, cultures, and

communities, resulting in social dislocation and family break-down, and the undermining of Indigenous peoples' relations of respect and responsibility with more-than-human relatives. Corntassel discusses a "peoplehood model" (89) which recognizes the interconnected nature of language, homeland, ceremonial cycles, and sacred living histories, for Indigenous peoples. A disruption to any one of these elements threatens all aspects of Indigenous people's lives. However, Indigenous peoples' daily acts of renewal and remembrance, such as speaking their traditional language, form the foundations of resurgence and decolonization. Corntassel discusses Alfred Taiaiake's five objectives of Indigenous regeneration, and Leanne Simpson's four-part strategy to overcome the politics of distraction, as important acts of decolonization and resurgence.

Corntassel, J. (2008). Toward Sustainable Self-Determination: Rethinking the Contemporary Indigenous-Rights Discourse. *Alternatives: Global, Local, Political*, 33(1) 105–132. <https://doi.org/10.1177/030437540803300106>

Themes: Sustainable self-determination, Indigenous rights, responsibilities, livelihoods

Jeff Corntassel explores the limits of existing rights-based discourse on Indigenous self-determination, which focuses on gaining political and legal recognition of Indigenous authority, without considering interrelated issues concerning the environment, cultural practices, and community health and well-being. Corntassel asserts that the existing rights-based discourse undermines Indigenous futures in four ways. First, while this framing may provide a limited political or legal basis for Indigenous autonomy within the existing state, it does not address the interrelated questions of Indigenous peoples' connections to their territories and resources. Second, this discourse has resulted in some states denying the existence of Indigenous peoples within their borders, or referring to them as minorities. Third, the discourse focuses on political and legal rights while overlooking Indigenous peoples' reciprocal responsibilities and relationships with other humans and more-than-humans, which are critical for the future health of Indigenous communities. Fourth, this discourse has established ad hoc restrictions for Indigenous peoples that limit the utility of decolonization frameworks. Corntassel proposes "sustainable self-determination" (109) as an alternate model, contending that Indigenous self-determination must involve Indigenous peoples' self-determination over their relationships to the natural world in order to be sustainable and meaningful in practice. Corntassel does not propose abandoning the existing rights-based discourse, but instead proposes refocusing on Indigenous self-determination on community regeneration and decolonization, and privileging community-based initiatives over state projects for self-determination.

Curran, D., Kung, E., Slett, G. M. (2020). Ġvilás and Snəwayəl: Indigenous Laws, Economies, and Relationships with Place Speaking to State Extractions. *South Atlantic Quarterly*, 119(2), 215–241. <https://doi.org/10.1215/00382876-8177735>

Themes: Resource extraction, Indigenous legal processes, Aboriginal title, Aboriginal rights, Indigenous territory, Heiltsuk Nation; Tseil-Waututh Nation

The authors contend that a fundamental tension exists between Indigenous economies grounded in reciprocal relationships with the land and water, and the Canadian state's economies based on resource extraction. The state supports extractive projects that seriously harm Indigenous territories, failing to recognize Indigenous title to, rights to, and obligations toward, those territories. Increasingly, Indigenous communities are enacting their own legal processes in response to extractive projects, challenging state economies and restructuring regulatory processes. The authors discuss the state's limited acknowledgement of Indigenous rights and the duty to consult, the state's failure to recognize Indigenous communities' reciprocal relationships with their land, and problems with the state-defined consultation regime. The authors then examine the responses of two First Nations in British Columbia (the Heiltsuk Nation and the Tsleil-Waututh Nation) to resource extraction projects.

D

Daigle, M. (2019). Tracing the terrain of Indigenous food sovereignties. *The Journal of Peasant Studies*, 46(2), 297–315. <https://doi.org/10.1080/03066150.2017.1324423>

Themes: Indigenous food sovereignty, Indigenous self-determination, decolonization, colonial capitalism, Anishinaabe Nation, Indigenous resurgence

Michelle Daigle is a Mushkegowuk scholar who has kinship relations within Treaty 3, which include Anishinaabe people. Daigle discusses the work of Anishinaabe people in and beyond Treaty 3 territory in Ontario, Canada, to achieve food sovereignty. Daigle notes that Indigenous food sovereignty can be understood as a form of resistance to colonial capitalism, and a resurgence of Indigenous forms of authority and autonomy. Daigle conducted interviews with 30 members of the Anishinaabe Nation who are Knowledge Holders, and political or legal authorities of the Nation, responsible for food practices. Daigle explores how Anishinaabe people employ Anishinaabe laws, including the law of *mino bimaadiziwin* (living a good life), to renew food harvesting grounds, waters, and foodways through daily acts of resurgence. Examples of daily acts of resistance and resurgence include: resisting geopolitical borders, reinforcing women's roles in leading and teaching, and rekindling relationships with non-human kin (e.g., the earth, ecosystems, and animals).

Daigle, M. (2018). Resurging through Kishiichiwan: The spatial politics of Indigenous water relations. *Decolonization: Indigeneity, Education & Society*, 7(1), 158–172.

Available at: <https://jps.library.utoronto.ca/index.php/des/article/view/30408>

Themes: Indigenous water governance, resurgence, mining, water, ring of fire, resource extraction, Treaty 9

Michelle Daigle, a Mushkegowuk scholar, analyzes the ways in which settlers dispossessed Mushkegowuk people of water through mining developments (e.g., the Ring of Fire and Arc of Fire) legitimized through the James Bay Agreement (Treaty 9). Treaty 9 undermined Muskegowuk political, legal, and economic structures, and the community's ability to protect its territory, opening up the region for resource extraction. Mining companies use colonial narratives about the uninhabited north, and the deficits of Indigenous communities, to justify their mining projects as solutions to Indigenous poverty in the area. However, Daigle asserts that these mining developments do not lead to meaningful local employment, while nonetheless causing serious harm to local ecosystems and communities. Daigle discusses how Indigenous political geographies are lived and mobilized by Indigenous peoples' connection to water relations, and how Muskegowuk people resist the dispossession caused by Treaty 9 and mining developments by reconnecting with the waterways in their territory.

Darrah-Okike, J. (2019). "The decision you make today will affect many generations to come": Environmental assessment law and Indigenous resistance to urbanization. *Environment and Planning E: Nature and Space*, 2(4), 807–830. <https://doi.org/10.1177/2514848619861043>

Themes: Environmental assessment, Indigenous politics, urbanization, colonialism, resistance

Sociologist Darrah-Okike examines the Native Hawaiian Moloka'i community's engagement with an environmental assessment (EA) process relating to resource development on the sacred La'au Point. She argues that Moloka'i community members employed settler property law and environmental law, while simultaneously affirming their cultural conceptions of the land, to protect La'au. In public consultations and other EA processes, community members addressed legal criteria and applied legal terminology, advanced both moral claims and legal appeals, affirmed their ancestral connections to lands, and extended culturally-grounded moral relationships of responsibility to decision-makers. Darrah-Okike characterizes community members' strategies during the EA process as nuanced expressions of Indigenous agency that transcend and challenge the structures and authority of the settler state.

Da Silva, J. (2010). *Grassy Narrows: advocate for Mother Earth and its inhabitants*. In L. Davis (Ed.), *Alliances: Re/Envisioning Indigenous-non-Indigenous Relationships* (pp. 69–76). University of Toronto Press.

Themes: Environmental contamination, decolonization, resistance, resource extraction, forestry, Grassy Narrows

Da Silva discusses her experiences with mercury contamination in her home community of Grassy Narrows in northwestern Ontario. Da Silva contrasts the poverty experienced by Indigenous people in Grassy Narrows with the richness of resources that exist in the territory. Da Silva discusses the challenges of continuing to practice Anishinaabe fishing and hunting traditions, while

experiencing pressure to assimilate and adopt new lifestyles, using the example of her brother's need to pay for a truck and gas to drive out into the forest to hunt. Da Silva asserts that despite the challenges, Indigenous people in Grassy Narrows are still eating traditional foods from the forest, which sustains their culture. Da Silva identifies deforestation as a key factor in disrupting the ability of the Land of the Thousand Lakes ecosystem to filter poisonous contaminants emitted by local pulp and paper mills. Highly mechanized clear-cutting forestry practices have devastated biodiversity in the area, which results in the loss of Indigenous foods and medicines that are replaced by industrial mono-cropped timber plantations. Da Silva concludes by emphasizing the important role of partnered "allyships" in the struggle to save our common Earth.

Davis, H., & Todd, Z. (2017). On the Importance of a Date, or Decolonizing the Anthropocene. *ACME: An International Journal for Critical Geographies*, 16(4), 761–780.

Available at: <https://acme-journal.org/index.php/acme/article/view/1539>

Themes: Anthropocene, decolonization, Indigenous philosophy, colonialism

Heather Davis and Zoe Todd contend that Indigenous knowledge must be incorporated into conversations and research about the Anthropocene. Davis and Todd suggest that one way to do so is to change the start date of the Anthropocene to 1610, the date of the beginning of colonization in what are now North and South America. This suggestion is underpinned by the work of Indigenous scholars, who assert that the Anthropocene is not a new epoch, but rather a continuation of colonial dispossession and genocide, combined with a radical alteration in the environment, that has been ongoing for the past five centuries. Davis and Todd also note that the mainstream concept of the Anthropocene ignores the connections between peoples' minds, bodies, and the land. By dating the beginning of the Anthropocene as the beginning of colonization, the authors highlight the connections between the two processes, and open up possibilities for decolonization.

Dhillon, J. (2018). Introduction: Indigenous Resurgence, Decolonization, and Movements for Environmental Justice. *Environment and Society*, 9(1), 1–5.
<https://doi.org/10.3167/ares.2018.090101>

Themes: Climate change, environmental justice, Indigenous knowledge, resistance, social movements

In introducing a volume of *Environment and Society* on Indigenous Environmental Justice, anti-colonial scholar Jaskiran Dhillon explains how the articles in the volume challenge settler ideologies underpinning the mainstream environmental justice movement. The authors in the volume interrupt the dominant trends in environmental justice by framing climate change through an anticolonial lens. They also demonstrate the mainstream movement's preoccupation with state sovereignty, describe how Indigenous worldviews on climate protection challenge the narrative of settler domination, and evoke questions of politicized allyship.

E

Eichler, L., Baumeister, D. (2018). Hunting for Justice: An Indigenous Critique of the North American Model of Wildlife Conservation. *Environment and Society: Advances in Research*, 9(1), 75–90. <https://doi.org/10.3167/ares.2018.090106>

Themes: Indigenous Environmental Justice, Wildlife Conservation

The authors discuss the North American Model (NAM) of wildlife conservation. The authors posit that using regulated hunting as a tool for preserving and managing the population of wild animals perpetuates settler colonialism. The authors argue that hunting regulation contributes to the destruction of Indigenous identity by interrupting Indigenous “lifeways” (75). The authors further expand on how the NAM model works to neglect Indigenous history, as well as the needs and interests of Indigenous peoples. They also suggest that Indigenous people should be consulted and able to participate meaningfully in the development of legislation and policies related to wildlife conservation, in order to achieve environmental justice in this context.

F

Forbes, R. (2008). Creating Legal Space for Animal-Indigenous Relationships. *Undercurrents: Journal of Critical Environmental Studies*, 17, 27–33.

Themes: Animal justice, animal rights, Indigenous legal systems, common law, legal rights

Rachel Forbes discusses the merits and challenges of extending legal rights to animals under Canadian law. Forbes asserts that the Canadian legal system is not currently capable of integrating Indigenous legal systems into its framework. For example, in Anishinabek law, animals engage in law-making, which is incompatible with Eurocentric conceptions of animals as property underpinning the common law. Forbes discusses the importance and challenges of incorporating Indigenous legal systems into Canadian law, in order to ensure and protect the well-being and rights of both animals and humans.

Fuentes, L., Asselin, H., Bélisle, A. C., & Labra, O. (2020). Impacts of Environmental Changes on Well-Being in Indigenous Communities in Eastern Canada. *International Journal of Environmental Research and Public Health*, 17(2). <https://doi.org/10.3390/ijerph17020637>

Themes: Indigenous well-being, environmental change, boreal forest, resilience, Indigenous communities

This study examines how environmental changes affect Indigenous well-being in the boreal forest of eastern Canada. The researchers used a questionnaire to study the environmental distress of 241

members of four Indigenous communities in the region. The researchers found that Indigenous peoples in these communities experienced environmental distress and reduced well-being due to factors such as environmental change, altered lifestyles, lessened access to services, and obstructed transmission of traditional knowledge. The study's results demonstrated that environmental distress increases as environmental change increases, and that older individuals feel greater levels of environmental change than younger people, which may be due to the greater amount of time that they have spent on the land relative to younger individuals. Participants with a higher quality of life reported feeling fewer impacts of environmental change. On the other hand, more resilient participants felt greater impacts, which was counter to the authors' expectations. The authors hypothesize that this latter finding is due to the fact that less resilient people stopped spending time on the land once environmental change became more acute, so only more resilient people felt the impacts of serious environmental change. This study offers a localized perspective on the features of Indigenous well-being as it relates to environmental change.

G

Galway, L. P. (2016). Boiling Over: A Descriptive Analysis of Drinking Water Advisories in First Nations Communities in Ontario, Canada. *International Journal of Environmental Research and Public Health*, 13(5). <https://doi.org/10.3390/ijerph13050505>

Themes: Environmental justice, water advisories, water justice, safe drinking water, Indigenous communities

This paper examines trends in 402 drinking water advisories in First Nations communities in Ontario, Canada, from 2004 to 2013. On average, advisories lasted for 294 days and were more prevalent during the warmer months. These findings emphasize the prevalence of water injustice in First Nations communities, and indicate that the federal government must ensure these communities have access to safe and reliable drinking water, which is a basic human right.

George, C. T. (2019). Decolonize, then Indigenize: Critical insights on decolonizing education and Indigenous resurgence in Canada. *Antistasis*, 9(1), 73–95.

Themes: Indigenous education, settler colonialism, Indian Act, decolonization research, Indigenous methodology

Mi'Kmaq scholar Christopher George argues that decolonizing the Canadian academy requires detaching from colonial attitudes, behaviours, and policies, and revitalizing Indigenous earth-based methods and identities. Indigenous education in Canada is underpinned by colonial policies, particularly the Indian Act, that reinscribe cognitive imperialism and assimilation in subtle ways. George offers several solutions to moving beyond paternalistic approaches to Indigenous education. He advocates for prioritizing traditional teachings, such as the longhouse system in Wabanaki societies, that regenerate Indigenous knowledge in locally-controlled ways.

Additionally, he supports Indigenous oversight of research that involves Indigenous communities. George proposes a guide for Indigenous education, including education related to environmental knowledge, that adopts local, action-based, critical, and postcolonial research methodologies, and works toward reconciliation.

Georgeson, R., & Hallenbeck, J. (2018). We Have Stories: Five generations of Indigenous women in water. *Decolonization: Indigeneity, Education & Society*, 7(1), 19–38.

Available at: <https://jps.library.utoronto.ca/index.php/des/issue/view/2004>

Themes: colonialism, Indigenous women, Indigenous knowledge, fish, water

Rosemary Georgeson is a Sahtu Dene and Coast Salish outreach arts coordinator, and Jessica Hallenbeck is a white settler PhD candidate in geography. The authors discuss what they know about Rosemary's great-great-grandmother and great-grandmother, and her family's changing relationships with water and fish on their traditional territory. The authors highlight how settler colonial policies operated to control access to water and fish, and how Rosemary's family maintained connections to water and fish in the face of colonial dispossession. The authors re-center Indigenous women in the effort to understand their strategic resistance to colonialism and connections to water, fish and family.

Godden, L., & Tehan, M. (2016). REDD+: Climate justice and Indigenous and local community right in an era of climate disruption. *Journal of Energy & Natural Resources Law*, 34(1), 95-108. <https://doi.org/10.1080/02646811.2016.1121620>

Themes: Greenhouse gas emissions, human rights, forest degradation, emissions, Indigenous peoples

Lee Godden and Maureen Tehan provide a brief contextual background on the REDD+ program, designed to reduce the greenhouse gas emissions. They also analyze the report by the International Bar Association's Climate Change Justice and Human Rights Task Force, and discuss how adopting an effective human rights framework has challenges and can even produce further inequities. For example, the program's goal to limit forest degradation may reduce emissions but will negatively impact Indigenous peoples and local forest-driven communities. The authors ultimately argue that despite REDD+ adopting a human rights framework with an emphasis on participatory rights, the program may unintentionally continue to reinforce inequalities for some Indigenous and local communities.

Granderson, A. A. (2017). The Role of Traditional Knowledge in Building Adaptive Capacity for Climate Change: Perspectives from Vanuatu. *Weather, Climate & Society*, 9(3) 545–561. <https://doi.org/10.1175/WCAS-D-16-0094.1>

Themes: Traditional Ecological Knowledge, sustainability, climate change, Indigenous peoples, knowledge, Pacific Islands

Ainka Granderson examines Indigenous traditional knowledge in relation to climate change on Tongoa Island, in the Republic of Vanuatu, a South Pacific island country already feeling significant impacts from climate change. Granderson details Indigenous traditional knowledge relating to observations of weather and climate, resource management, social networks, and local leadership. Tongoa Island villagers' perspectives on traditional knowledge reveal both the limitations and potentials of this knowledge in building adaptive capacity for climate change. Granderson also explores the ways in which traditional knowledge retention has been undermined by larger economic, political, and sociocultural changes, including the move toward a cash economy, the privileging of Western values, and rural-urban migration. Granderson asserts that Indigenous communities in the Pacific Islands must document and share traditional knowledge between generations, and experiment with applying traditional knowledge to new climatic changes, in order to maximize the potential of their traditional knowledge to build adaptive capacity for climate change.

Greaves, W. (2018). Damaging Environments: Land, Settler Colonialism, and Security for Indigenous Peoples. *Environment and Society: Advances in Research*, 9, 107–24. <https://doi.org/10.3167/ares.2018.090108>

Themes: Indigenous Environmental Justice, settler colonialism, securitization, Indigenous security claims

Wilfrid Greaves discusses why settler governments often fail to accept Indigenous peoples' security claims, or incorporate them into security policies. Greaves applies concepts of securitization and ontological security to explain how Indigenous peoples are unable to translate their security needs to the state in a way the state understands. Greaves asserts that the state and dominant society are unwilling to recognize and respond to members of nondominant groups' security claims when the source of their insecurity is the state and dominant society. As a result, Indigeneity inhibits Indigenous peoples from successfully securitizing because, by identifying the state and dominant society as the source of their insecurity, Indigenous peoples' claims about security challenge the security of the settler state and society. Given the differences between Indigenous and settler claims to land authority, and Indigenous peoples' reciprocal relationship to land, the extent to which Indigeneity inhibits Indigenous securitization is particularly relevant when it comes to security claims related to environmental degradation.

Grey, S., and Patel, R. (2015). Food sovereignty as decolonization: some contributions from Indigenous movements to food system and development politics. *Agriculture and Human Values*, 32(3), 431–44. <https://doi.org/10.1007/s10460-014-9548-9>

Themes: Food sovereignty, Indigenous self-determination, decolonization, food politics, food systems, development

Sam Grey and Raj Patel contend that Indigenous food sovereignty is about much more than agricultural practice. Grey and Patel contend that to achieve food sovereignty for Indigenous peoples, the concept of food sovereignty has to encompass more than the usual bundle of rights related to production and consumption. The resurgence of Indigenous food systems and traditional foods is tied up in broader Indigenous cultural, social, and political resurgence. Thus, Grey and Patel conceptualize Indigenous food sovereignty as a form of decolonization, the continuation of anti-colonial movements in a postcolonial context. Grey and Patel note that this conceptualization highlights issues around gender politics in Indigenous movements, and raises questions about solidarity in the food sovereignty movement between settlers and Indigenous peoples. This conceptualization also highlights how the settler colonial project works in tandem with neoliberal development. Ultimately, the authors assert that food sovereignty as decolonization should be understood as a radical, daily process of resistance and resurgence, rather than an end goal.

Gullason, K. (2018). The Water Sustainability Act, Groundwater Regulation and Indigenous Rights to Water: Missed Opportunities and Future Challenges. *Appeal: Review of Current Law and Law Reform*, 23, 29–40.

Available at: <https://journals.uvic.ca/index.php/appeal/article/view/18107>

Themes: Groundwater, water sustainability, Indigenous water rights, Indigenous sovereignty

The author discusses the 2016 BC Water Sustainability Act (WSA), which introduced licensing requirements for previously unregulated groundwater in the province, and how the WSA's groundwater regulations impact Indigenous water rights. The author argues that the main issue with the WSA is that it upholds the historical principle of “prior allocation” (30) privileging colonial assertions of ownership over water, and neglects to acknowledge Indigenous water rights. The author notes that Europeans justified their sovereignty claims in Canada on the basis of the doctrine of discovery. However, the doctrine of discovery is predicated on the notion of *terra nullius*, or uninhabited land, which is clearly historically inaccurate, as Indigenous inhabitants long predated Europeans. The author describes how Indigenous sovereignty over lands and waters continues to be usurped in Canadian law, despite the Canadian legal system’s limited recognition of Aboriginal rights and title in treaties, in the Constitution Act, 1982, and in case law. The author concludes that in cases where water rights were not negotiated in treaties, governmental allocation of groundwater licenses, such as in the WSA, is an act of colonialism.

Gupta, J., Hildering, A., & Misiedjan, D. (2014). Indigenous people’s right to water under international law: a legal pluralism perspective. *Current Opinion in Environmental Sustainability*, 11, 26–33. <https://doi.org/10.1016/j.cosust.2014.09.015>

Themes: International right to water, legal pluralism, Indigenous right to water, sustainable resource management

This article argues that nation states' selective "shopping" (29) of international rules regarding the right to water creates inconsistencies in laws related to Indigenous water rights world-wide. These inconsistencies marginalize communities and limit their ability to sustainably utilize their resources. The authors identify six tensions in nation states' selective adoption of international rules on water rights. Inconsistencies within international law include the content of water rights, the degree to which rights exist, and conditions under which rights may be breached. The authors identify four methods for resolving these inconsistencies. First, the implementation of a system to report and monitor rule implementation; second, a serious emphasis on free, prior, and informed consent in participatory processes; third, coherence in United Nations agencies' approaches to the rights of Indigenous peoples; and fourth, a guarantee of the right to water and the right of communities to demarcate their territory. The authors demonstrate how legal reforms at the international level can meaningfully impact water rights of Indigenous communities globally.

H

Hania, P. (2019). Revitalizing Indigenous Women's Water Governance Roles in Impact and Benefit Agreement Processes Through Indigenous Legal Orders and Water Stories. *Les Cahiers de Droit* 60(2), 519–556. <https://doi.org/10.7202/1060985ar>

Themes: Indigenous water governance, impact benefit agreements, mining, resource extraction, gender, Indigenous women, water systems

Patricia Hania responds to recent scholarship by Sari Graben, Angela Cameron and Sarah Morales, who contended that the law-making process for impact benefit agreements (IBAs) in the mining industry is gendered, and that the process must involve Indigenous women as key participants. Hania builds on Graben, Cameron and Morales' work to propose that the IBA law-making process not only involve Indigenous women as participants, but also engage with Indigenous women's worldview and traditional governance responsibilities from start to finish. Mining is an extractive activity that has serious impacts on water systems. Indigenous women are traditionally understood to be the holders of communities' water knowledge, and to have responsibilities to protect water. Hania asserts that including Indigenous women's participation in the IBA process is meaningless without acknowledging their traditional governance responsibilities to speak for water. Hania explores Indigenous women's water governance through published Indigenous stories and direct personal stories, recognizing that Indigenous stories are a source of law.

Hanrahan, M. (2017). Water (in)security in Canada: national identity and the exclusion of Indigenous peoples. *British Journal of Canadian Studies*, 30(1), 69–89. <https://doi.org/10.3828/bjcs.2017.4>

Themes: Water Security, Indigenous health, drinking water, wastewater treatment

Maura Hanrahan examines the disparity in access to adequate, safe drinking water and wastewater treatment systems between Indigenous and non-Indigenous communities in Canada. Hanrahan asserts that this disparity is underpinned by Canadian neoliberal politics, as colonial systems of oppression that marginalize Indigenous communities are essential to maintaining the Canadian identity. Hanrahan uses case studies from two Inuit communities (Rigolet and Black-Tickle Domino in Labrador) and three First Nations communities (Dokis, Kashechewan and Bkejwanong (Walpole Island) in Ontario) to discuss Indigenous water insecurity. Each of these case studies reveals unique challenges for developing adequate water provision and treatment systems, and achieving water justice. Hanrahan notes that one factor common to all of these case studies is that environmental inequalities in Indigenous communities are caused by colonialism. Hanrahan argues that resisting neoliberalism, and restructuring the Canadian identity to include greater recognition of Indigenous peoples' rights are necessary in order to move towards achieving water justice for Indigenous peoples in Canada.

Hatala, A. R., Njeze, C., Morton, D., Pearl, T., & Bird-Naytowhow, K. (2020). Land and nature as sources of health and resilience among Indigenous youth in an urban Canadian context: a photovoice exploration. *BMC Public Health*, 20, 1–14. <https://doi.org/10.1186/s12889-020-08647-z>

Themes: Indigenous health, resilience, well-being, meaning-making, Indigenous youth, urban environments, natural environments

The authors conducted interviews with Indigenous youth in Saskatoon to explore their “meaning-making” (3) processes, and engagements with land and nature in an urban environment. The authors used a “photovoice” (3) approach, in which they discussed with youth the photos the youth had taken of the city. The authors identified that connection to nature was a central theme in the youth’s photos. Many of the youth conceive of nature as a calming place to destress that teaches them lessons of resilience and provides them with a sense of hope. Overall, the youth noted that nature is highly personal and provides mental and emotional health benefits. Through this study, the authors aimed to add to research on Indigenous youth health in an urban context, and highlight the need for safe natural environments to support Indigenous well-being in cities.

Hayman, E., James, C., & Wedge, M. (2018). Future rivers of the Anthropocene or whose Anthropocene is it? Decolonising the Anthropocene! *Decolonization: Indigeneity, Education & Society*, 7(1), 76–92.

Available at: <https://jps.library.utoronto.ca/index.php/des/article/view/30396>

Themes: Decolonization, Anthropocene, climate change, glaciers, Tagish First Nation

The authors, all members of the Tagish First Nation, examine glaciers in the current Anthropocene era in the context of Tlingit and Tagish First Nation ontologies and epistemologies. The authors consider how the Tlingit and Tagish conception that they are “part of the land, part of the water” (76) is a powerful lens through which to view current climate change realities, including melting glaciers. More specifically, the authors consider how the work of place-naming and counter-mapping is a decolonizing practice in the Anthropocene, and that Tlingit and Tagish glacial narratives, which involve slow activism and narrative ecologies, have the potential to disrupt mainstream Eurocentric understandings of the Anthropocene. Ultimately, the authors recognize that melting glaciers are our future rivers, and it is essential to look to narratives that have interacted with and understood glaciers historically to ensure the survival of complex processes on Earth.

Hicks, K., & Fabricant, N. (2016). The Bolivian climate justice movement: Mobilizing Indigeneity in climate change negotiations. *Latin American Perspectives*, 43(4), 87-104. <https://doi.org/10.1177/0094582X16630308>

Themes: Environmental movements, climate change, climate justice, conservation, Indigenous worldviews, environmentalism

This study draws on ethnographic fieldwork in 2010 in Bolivia, exploring social and environmental movements in the country, particularly the Bolivian Platform against Climate Change. The Platform is a coalition of social movement organizations and civil society that works to address global warming, and to spread awareness about global warming internationally. Since the 1980s, the Platform has fought for conservation and climate justice within the framework of Indigenous philosophy and worldviews. In tracing the Platform’s roots, the authors reveal the complicated relationship between the state and non-state bodies, which is mostly cooperative despite the failure of multilateral climate change negotiations, such as the Kyoto Protocol. Despite some tensions between state and non-state actors, the Platform’s activist and environmentalist model, that centres on Indigenous philosophy and worldviews, proves to be a strong, alternative model for other grassroots movements fighting for environmental justice.

Hinzo, A. M. (2018). “We’re not going to sit idly by:” 45 Years of Asserting Native Sovereignty Along the Missouri River in Nebraska. *Decolonization: Indigeneity, Education & Society*, 7(1), 199–214.

Available at: <https://jps.library.utoronto.ca/index.php/des/article/view/30414>

Themes: Sovereignty, treaty rights, water rights, Indigenous activism, Indigenous epistemology, Missouri River

Angel M. Hinzo is a Ho-Chunk scholar, a citizen of the Winnebago Tribe of Nebraska. She discusses how Indigenous communities have protected their land rights and asserted sovereignty

along the Missouri River in the face of settler efforts to claim treaty land for development. Hinzo highlights the spiritual importance of the Missouri River for the Ho-Chunk people who have sacred connections to the waterway. Hinzo discusses the movement against the Dakota Access Pipeline at Standing Rock and other legal battles as instances in which Indigenous groups have asserted their cultural and political sovereignty to protect the land, water, and lives of humans and more-than-humans along the Missouri River.

Hoover, E. (2019). “Fires were lit inside them:” The Pyropolitics of Water Protector Camps at Standing Rock. *Review of International American Studies*, 12(1), 13–43. <https://doi.org/10.31261/rias.7391>

Themes: Pyropolitics, Dakota Access Pipeline protests, water protector camps, fire, social movements, Standing Rock, Indigenous rights

Elizabeth Hoover draws from ethnographic research in an attempt to build an understanding of the pyropolitics of the Indigenous-led, anti-pipeline movement at Standing Rock. Hoover details how fires were used and understood in multiple ways to support the movement against the Dakota Access Pipeline (DAPL), to ensure physical survival at the built camps, and to make certain there was a social order throughout the protest. Hoover explains that fires and social movements are intertwined, and that an understanding of the role and possibility of fires is essential to develop a deeper knowledge of the Standing Rock and #NODAPL protests. Hoover discusses the history of the Standing Rock Sioux and their role in the protest against the building of the pipeline. Hoover discusses the importance of different types of fires, including the central ceremonial fire, individual camp sacred fires, social fires, home fires, cooking fires, and front line fires, and situates these fires within the context of pyropolitics.

Hoover, E. (2017). *The River Is in Us: Fighting Toxics in a Mohawk Community*. University of Minnesota Press.

Themes: Environmental justice, political ecology, Mohawk, environmental health, health studies, pollution, contamination

Elizabeth Hoover's book offers a candid look into the community of Akwesasne, a Mohawk community in upstate New York. The community was part of the first large-scale community-based Participatory Research project that exposed the environmental injustices the community was experiencing, including environmental contamination leading to increased miscarriages, birth defects and cancer. Hoover examines how partnerships have formed between the community and scientists, resulting in grassroots programs that increase resistance to contamination and promote reclamation of health, identity and culture. The community's efforts are documented through interviews, archival materials, newspaper reports, and notes from meetings with community members. Hoover details changes to the Akwesasne community (such as increasing diagnoses of diabetes) and emphasizes the importance of the community's efforts to preserve their culture and health.

Hoover, C., Parker, C., Hornby, C., Ostertag, S., Hansen-Craik, K., Pearce, T. & Loseto, L. (2017). Cultural Relevance in Arctic Food Security Initiatives. In J. Duncan & M. Bailey (Eds.), *Sustainable Food Futures: Multidisciplinary Solutions* (pp. 17–33). Taylor & Francis Group.

Themes: Traditional ecological knowledge, agriculture, pastoralism, Arctic, food security, cultural relevance, community development

The authors discuss initiatives currently being taken to address Arctic food security. They divide food security into three components—food access, food availability, and food quality. More culturally relevant, bottom-up approaches to food security are compared to less effective, less culturally relevant, top-down approaches. The efficacy of one top-down approach is critiqued in particular: the Nutrition North Canada program, which is Canada's most heavily subsidized Arctic food security program. The authors discuss strategies for making hunter support programs more accessible and the cultural context that makes collective community freezers a more effective summer storage system than individual family freezers. They reference the successful implementation of reindeer herding in the Inuvialuit Settlement Region as an indicator that adapting agricultural techniques from other cultures could be a viable method for creating supplementary local food production. Community greenhouses have been able to produce some fruits and vegetables locally, although incorporating foods that are not traditionally a part of Inuit diets requires additional education. The authors identify supporting land-based education programs, including the use of online platforms for the transfer of hunting, fishing and trapping knowledge, both within and across communities, as essential to the success of Arctic food security initiatives.

J

Jodoin, S., Snow, S., & Corobow, A. (2020). Realizing the Right to Be Cold? Framing Processes and Outcomes Associated with the Inuit Petition on Human Rights and Global Warming. *Law & Society Review*, 54(1), 168–200. <https://doi.org.ezproxy.library.vorku.ca/10.1111/lasr.12458>

Themes: Indigenous justice, Inuit communities, human rights, climate change, Indigenous rights, environmental rights, public interest litigation

This study analyzes the processes and outcomes associated with a petition submitted by Inuit communities to the Inter-American Commission of Human Rights in 2005 asserting the infringement of their rights by climate change. Drawing on interviews with members of two Inuit communities, the authors conclude that the petition represented a “climate rights” (171) framework that utilized human rights principles to understand climate change. The authors find that this framing of climate change resonated with actors and activists in civil society. The petition contributed to a transnational effort to link the fields of human rights and climate change. However, the climate rights framework exerted minimal influence on policymakers’ economic-based

understanding of climate change. Additionally, core elements of the framework were not influential within many Inuit communities, as they were incongruent with certain social and cultural norms. This study highlights the ethical responsibilities and expectations that legal initiatives must address when framing issues of environmental justice in Indigenous communities.

L

LaDuke, W. (2017). In the Time of the Sacred Places. In J. Hart (Ed.), *The Wiley Blackwell Companion to Religion and Ecology* (pp. 71–84). Wiley Blackwell.

Themes: Ecology, mining, Indigenous sacred sites, land claims, Indigenous ceremony

Winona LaDuke describes differences between Indigenous and settler worldviews, particularly the lack of understanding from the mining industry and government regulators of the importance of Indigenous sacred sites to Indigenous peoples' relationships with their land. LaDuke examines the complexities and frustrations of land claim cases that result from treaty misinterpretations, and which lead to dispossession of Indigenous peoples. She emphasizes the importance of ceremony and spiritual practice in the process of reclaiming and protecting sacred sites on colonized lands.

LaDuke, W. (1994). Traditional Ecological Knowledge and Environmental Futures. *Colorado Journal of International Environmental Law and Policy*, 5(1), 127–148.

Themes: Traditional ecological knowledge, environmental justice, Indigenous societies, cyclical thinking, reciprocal relationships

Winona LaDuke discusses how traditional ecological knowledge is a foundation upon which Indigenous societies are developed and maintained. LaDuke explains that “Minobimaatisiwin,” or living a “good life” (128) is a central principle of Anishinabeg and Cree society that structures how Anishinabeg and Cree people understand the world and how to live as a society within natural law. This principle is underpinned by two ideas: cyclical thinking, which recognizes that the world moves in cycles, continually engaged in birth and rebirth; and reciprocal relationships and responsibilities to all humans and more-than-humans. LaDuke asserts that Minobimaatisiwin involves an intimate, balanced relationship between humans and their ecosystems, which enables environmental sustainability. Colonization and the marginalization of Indigenous peoples has resulted in the underdevelopment of their legal and economic systems, and their dependency on the colonial economy, and enabled the exploitation of Indigenous lands and environmental degradation. LaDuke asserts that the mainstream environmental movement has a history of ignoring Indigenous traditional ecological knowledge and engaging in environmental racism. She provides examples of Indigenous communities applying their traditional knowledge in creative ways to community development projects, and asserts that the environmental movement must engage with Indigenous knowledge, experience, world views and the process of decolonization.

LaDuke, W., & Cowen, D. (2020). Beyond Wiindigo Infrastructure. *South Atlantic Quarterly*, 119(2), 243–68. <https://doi.org/10.1215/00382876-8177747>

Themes: Climate crisis, resource extraction, colonialism, Wiindigo, Indigenous infrastructure, essential infrastructure, pipelines

The authors use the lens of the Anishinaabe story of the Wiindigo to understand the current climate crisis and see a way forward from it. The authors assert that the crisis is grounded in the “Wiindigo economy” (244), an economic system premised on state accumulation and dispossession of Indigenous land, that “destroys the source of its wealth, Mother Earth” (253). “Wiindigo infrastructure” (244) can be understood as the material systems that facilitate this economic system, such as oil and gas pipelines. The authors contend that the state deems such infrastructure as critical, while Indigenous communities’ infrastructure (such as berry patches and bodies of water) are seen as exploitable. In order to effectively survive the climate crisis, the authors assert that we must collectively privilege life-giving infrastructure that sustains the body, the spirit, and the law, over life-draining, invasive infrastructure. The authors assert that the Wiindigo can be understood as the experience of colonialism, and use stories about the Wiindigo, and stories of resistance to the Wiindigo, to “reimagine the critical infrastructures of everyday life on Turtle island” (245).

Lemke, S., & Delormier, T. (2018). Indigenous Peoples’ food systems, nutrition, and gender: Conceptual and methodological considerations. *Maternal & Child Nutrition*, 13(S3), 1–12. <https://doi.org/10.1111/mcn.12499>

Themes: Indigenous food systems, gender, Indigenous women, self-determination, food sovereignty

This article outlines how Indigenous women's health is disproportionately affected by the loss of traditional land, resources, and lifestyles. This occurs through impacts on Indigenous food systems, and produces larger issues of identity loss, loss of livelihoods, the undermining of self-determination, and decreases in overall wellbeing. The authors contend that it is imperative to understand gender relations within Indigenous communities as they relate to Indigenous peoples' food systems before bridging the gaps between Indigenous and Western research approaches and epistemologies to address issues of food systems and food sovereignty within Indigenous communities.

Lepofsky, D., & Lertzman, K. (2018/2019). Through the Lens of the Land: Reflections from Archaeology, Ethnoecology, and Environmental Science on Collaborations with First Nations, 1970s to the Present. *BC Studies*, 200, 141–305.

Themes: Indigenous communities, community relations, British Columbia, collaborative research, environmental science, ecology, archeology

Dana Lepofsky and Ken Lertzman, an archeologist and an ecologist with decades of experience working with First Nations in British Columbia, examine the evolution of university scholars' relationships with Indigenous communities. The authors conclude that the evolution of collaborations among archeologists, ecologists and First Nations since the 1970s has been marked by increasing First Nations control over the research that is relevant to them. Additionally, non-Indigenous researchers have learned how to be more ethical, inclusive, and innovative. However, despite the progressive move towards greater collaboration between university scholars and First Nations, the authors note that the uneven distribution of resources between First Nations communities and university academics continues to be detrimental to relations between them. The authors recommend that researchers stay mindful of communities' history, identity, and connection to place; understand the utility of traditional knowledge; use respectful language; and practice patience, graciousness, and flexibility in their work.

Levkoe, C., Ray, L., & McLaughlin, J. (2019). The Indigenous Food Circle: Reconciliation and Resurgence through Food in Northwestern Ontario. *Journal of Agriculture, Food Systems, and Community Development*, 9(B), 1–14. <https://doi.org/10.5304/jafscd.2019.09B.008>

Themes: Food policy, food security, food sovereignty, Indigenous peoples, Indigenous Food Circle, self-determination, decolonization, Thunder Bay

Drawing on literature on Indigenous food sovereignty and decolonization, the paper recounts the establishment of the Indigenous Food Circle by the Thunder Bay and Area Food Strategy (the Circle). The Circle was mandated to coordinate food-related initiatives for Indigenous communities with the aim of reducing food insecurity, increasing self-determination, and establishing meaningful relationships with the settler population. Despite initial successes, the authors identify issues with the Circle related to settler discomfort, insufficient resources, and prioritization. Drawing on the literature, they argue that the Circle must continue to emphasize land connection and create space for Indigenous Peoples to enact their own knowledge systems. To achieve these aims, the project should improve policies and programs that embody the principles of Indigenous food sovereignty.

Lowan-Trudeau, G. (2019). Gatekeeper or gardener? Exploring positioning, paradigms, and metaphors in Indigenous environmental education research. *The Journal of Environmental Education*, 50(4-6), 348–357. <https://doi.org/10.1080/00958964.2019.1687413>

Themes: Education, environmental, Indigenous environmental education, Indigenous scholars

Métis Scholar Gregory Lowan-Trudeau explores his role as an Indigenous scholar and “gatekeeper” (348) for research paradigms related to Indigenous environmental education. Reviewing the paradigms and metaphors in the literature regarding Indigenous scholars’ position in the Western academy, Lowan-Trudeau concludes that Indigenous academics must take these paradigms collectively, as guides in their scholarship. This practice ensures that the researcher is intentional in their interactions. Additionally, Lowan-Trudeau adopts Kimmerer’s conception of scholars as “gardeners” (352) rather than gatekeepers, who invite and facilitate others’ participation in learning. Lowan-Trudeau discusses unanswered questions in the field of Indigenous environmental education and research, such as the accommodation of diverse Indigenous views, the role of Indigenous languages, and potential of accepting forms of Western methodology.

Lowan-Trudeau, G. (2018). From reticence to resistance: Understanding educators’ engagement with Indigenous environmental issues in Canada. *Environmental Education Research*, 25(1), 1–13. <https://doi.org/10.1080/13504622.2017.1422114>

Themes: Education, Indigenous environmental issues, environmentalism, educators

Gregory Lowan-Trudeau conducted a study informed by decolonization and Eisner’s concept of the three curricula (the explicit, the implicit, and the null), to examine the challenges educators face, and successful strategies they have employed, to introduce Indigenous environmental issues into both formal and informal learning settings. Lowan-Trudeau notes the need to disrupt colonial institutions and ideologies presently governing learning in Canada in order to facilitate the exploration of Indigenous environmental issues in the classroom. Lowan-Trudeau discusses the concept of “repressive tolerance” (70), in which groups in power allow a small amount of public activism to give the illusion that the society is democratic. Lowan-Trudeau uses this theory to demonstrate the extent to which educators face institutional barriers when introducing so-called controversial issues into the curriculum. Another challenge to introducing Indigenous environmental issues in the classroom is the limited amount of time and resources available to explore complex issues. Lowan-Trudeau discusses successful strategies, including using local case studies to discuss Indigenous environmental issues, and normalizing engaging with local Indigenous communities without romanticizing them. Lowan-Trudeau emphasizes the importance of meaningful engagement with Elders, using an experiential land-based learning approach, storytelling, and increased administrative activism. He concludes by noting the need for better, more accessible resources and curricular support in different regions.

Lowitt, K., Johnston-Weiser, D., Lauzon, R., & Hickey, G. M. (2018). On food security and access to fish in the Saugeen Ojibway Nation, Lake Huron, Canada. *Journal of Great Lakes Research*, 44(1), 174–83. <https://doi.org/10.1016/j.jglr.2017.10.009>

Themes: Indigenous fisheries, fishing rights, food security, Indigenous peoples, food sovereignty

This paper explores the complex relationships between the Saugeen Ojibway Nation (SON), local fisheries, and food security. The authors explore the interrelated structural, legal, and social mechanisms that impact the ability of SON members to access culturally appropriate and nutritious food, and develop sustainable livelihoods from fisheries within their traditional territories. Food security is broken down into four dimensions: accessibility, availability, utilization, and stability. This is followed by a detailed description of the significance of fishing and fisheries to SON people. Drawing on qualitative results from key-informant interviews and focus groups, this study identifies key access mechanisms influencing household fish consumption and fishing activity over time. This article also provides an account of the obstacles Indigenous communities face relating to knowledge transfer and cultural identity, as well as the need for community-led economic and cultural development strategies.

Lynn, K., Daigle, J., Hoffman, J., Lake, F., Michelle, N., Ranco, D., Viles, C., Voggesser, G., & Williams, P. (2013). The Impacts of Climate Change on Tribal Traditional Foods. *Climatic Change*, 120(3), 545–556. <https://doi.org/10.1007/s10584-013-0736-1>

Themes: Climate justice, traditional foods, food sovereignty, food justice, climate change

This paper discusses the impacts of climate change on traditional foods, exploring how Indigenous communities are affected on multiple levels—political, social, cultural, and economic. The authors examine the importance of food to Indigenous cultures and assert that climatic changes directly impact Indigenous peoples’ way of life by affecting their ability to maintain positive reciprocal relationships with Mother Earth. Although the authors identify numerous negative impacts of climate change on Indigenous communities, they recognize that, as sovereign nations, Indigenous communities have the ability to develop and implement climate change adaptation strategies. These strategies can impact non-Indigenous government policies, regional strategies, resource regulations and conservation efforts. The authors’ discussion of Indigenous-led strategies is situated in the context of Indigenous environmental justice discourse, which highlights the importance of including Indigenous worldviews and methodologies in all environmental decision-making processes.

M

Mantyka-Pringle, C.S., Westman, C.N., Kythreotis, A.P., & Schindler, D.W. (2015). Honouring Indigenous treaty rights for climate justice. *Nature Climate Change*, 5(9), 798–801. <https://doi.org/10.1038/nclimate2714>

Themes: Oil sands, treaty rights, climate governance, Indigenous communities, resource extraction, fossil fuels

The authors discuss the impacts of extractive resource development on Indigenous communities, and how extractive projects breach treaty agreements by threatening the viability of Indigenous subsistence livelihoods. Despite Crown obligations to consult Indigenous communities regarding resource extraction and development on their territory, Indigenous communities lack decision-making power with regard to these projects. As the profitability of the fossil-fuel industry declines, and Canada considers its position as one of the wealthiest nations in the world, the authors assert that Indigenous rights must be privileged in the redevelopment of the Canadian energy industry. The authors assert that monitoring the social and environmental impacts of new resource extraction projects, and requiring Indigenous consent for new projects, are both essential to creating sustainability in the energy industry. The authors propose decentralization as a strategy to create greater economic justice in the development of new projects. Decentralization would involve establishing energy processing jobs in Indigenous communities rather than focusing on large, centralized extraction projects, as has been the case in the Alberta Oil Sands.

McGregor, D. (2018). Indigenous Environmental Justice, Knowledge and Law. *Kalfou*, 5(2), 279–296. <https://doi.org/10.15367/kf.v5i2.213>

Themes: Environmental justice, Indigenous Environmental Justice, Indigenous traditional knowledge, environmental impacts, Indigenous legal orders

Anishinaabe scholar Deborah McGregor proposes a distinct conception of Indigenous environmental justice (IEJ) that is grounded in Indigenous legal orders, knowledge, and understandings of justice. McGregor asserts that conceptions of environmental justice have been in existence on Turtle Island for thousands of years and far predate European arrival. From an Indigenous perspective, environmental injustice is part of an ongoing colonial project. Colonial dispossession and transformation of Indigenous land has been ongoing for the past five hundred years. Laws and policies at the provincial, federal and international levels are failing to protect against further environmental degradation. Thus, McGregor proposes IEJ as a distinct conception and process, with the aim of achieving real justice for Indigenous communities and expanding the conception of environmental justice toward more-than-human relations. McGregor emphasizes that IEJ requires not just indigenizing existing environmental justice systems, but developing a distinct EJ system informed by an Indigenous worldview that recognizes the diversity of Indigenous nations and experiences.

McGregor, D. (2018). Mino-Mnaamodzawin: Achieving Indigenous Environmental Justice in Canada. *Environment and Society: Advances in Research*, 9, 7–24. <https://doi.org/10.3167/ares.2018.090102>

Themes: Indigenous Environmental Justice, environmental justice, Indigenous knowledge systems, Indigenous legal systems

Dr. Deborah McGregor is an Anishinaabe scholar and professor at Osgoode Hall Law School and York University. McGregor discusses the concept of Indigenous Environmental Justice and the need to develop distinct frameworks for environmental justice that are based in Indigenous ontologies and epistemologies. McGregor explains that Indigenous knowledge systems provide instructions, laws, protocols, and ethics about human interactions with all relations, including animals, water, plants, and wind. She explains how clan names were taken from the animals who were the first give up their lives for the Anishinaabek and are considered relatives and teachers. McGregor notes that justice and reconciliation from an Indigenous perspective involves considering the wellbeing of all relations, human and other-than-human. She analyzes racism and discrimination in Canadian policy in relation to the inability of this system to achieve justice through traditional forms of punishment. McGregor also discusses the limitations of international organizations and their decrees, such as the United Nations Declaration on the Rights of Indigenous Peoples, noting that these declarations omit explicit concern for the well-being of other-than-human entities. McGregor notes that Indigenous concepts of justice encompass respect for the spirit in all the relatives of creation, including ancestors and future generations. McGregor concludes that conventional justice frameworks are flawed in that they “continue to characterize other beings as resources, commodities, and private property” (18).

McGregor, D. (2018). Reconciliation and environmental justice. *Journal of Global Ethics*, 14(2), 222–31. <https://doi.org/10.1080/17449626.2018.1507005>

Themes: Reconciliation, Indigenous laws, environmental justice, Indigenous environmental justice, sustainability

Dr. Deborah McGregor is an Anishinaabe scholar and professor at the Osgoode Hall Law School of York University. McGregor discusses what reconciliation could look like in Canada, and how Indigenous conceptions of reconciliation should inform reconciliation processes. McGregor asserts that conceptions of reconciliation must take into account environmental justice, which involves the healing of relationships between humans, both Indigenous and non-Indigenous, and the land. McGregor proposes a balanced relationship between humans and the land that applies the Anishinaabe concept of Mino-bimaatisiwin (the “good life” or “living well” (225)) as a framework for ensuring meaningful movement toward a sustainable, just society.

McGregor, D., Whitaker, S., & Sritharan, M. (2020). Indigenous environmental justice and sustainability. *Current Opinion in Environmental Sustainability*, 43, 35–40. <https://doi.org/10.1016/j.cosust.2020.01.007>

Themes: Indigenous environmental justice, Indigenous peoples, decolonization, traditional knowledge, Indigenous legal orders, epistemology, ontology, colonial nation state, climate change, ecological crisis

The authors argue that a distinct conception of Indigenous environmental justice (IEJ), grounded in Indigenous philosophies, ontologies, and epistemologies, is necessary to address the global climate crisis and injustices experienced by Indigenous communities. They contend that climate change, and settler states' responses to it, are underpinned by colonialism and work to undermine Indigenous resilience. Therefore, decolonizing frameworks of environmental justice based on Indigenous conceptions of justice are required for substantial progress against climate change. Indigenous conceptions of the environment are based on an understanding that humans have responsibilities to the rest of the natural world. Indigenous knowledge and legal systems, which are premised on this perspective of reciprocal relationships, are integral to supporting the well-being, resilience, and sustainability of communities and the environment. An Indigenous environmental justice approach to the ecological crisis challenges the legitimacy of global and state solutions to climate change, and provides a clear path to just environmental sustainability.

McLean, J. (2007). Water injustices and potential remedies in Indigenous rural contexts: A water justice analysis. *Environmentalist*, 27(1), 25–38. <https://doi.org/10.1007/s10669-007-9012-0>

Themes: Indigenous justice, Indigenous rights, water justice, water cultures, cultural flows

Jess McLean analyzes water justice through a lens that acknowledges differences in how water is viewed and understood between cultures. McLean examines the debate over public or private sector provision of water sanitation and purification. The author also notes that issues relating to water justice are highly varied, and analyses of water justice must be conducted in a location-specific manner to avoid the discursive debates that can arise from generalizations. McLean focuses on inadequate drinking water provision and water sanitation systems in Indigenous communities in remote parts of Australia. Achieving water justice in this context requires acknowledging that many communities have been dispossessed of their traditional land and water resources by ongoing colonialism.

Middleton-Manning, B. R., Gali, M. S., & Houck, D. (2018). Holding the Headwaters: Northern California Indian Resistance to State and Corporate Water Development. *Decolonization: Indigeneity, Education & Society*, 7(1), 173–98.

Available at: <https://ips.library.utoronto.ca/index.php/des/article/view/30411>

Themes: Water sovereignty, land repatriation, Indigenous sovereignty, decolonization

The authors consider Indigenous resistance to California’s two major water projects (the state Water Project and the federal Central Valley Project). Legal and political actions by three headwaters nations (Pit River, Winnemem Wintu, and Mountain Maidu) have been successful in asserting land and water rights in the region, and provide lessons for large-scale reform of water and land stewardship. The authors conduct brief case studies of these three nations’ resistance work to examine both the challenges and the effective deployment of legal and political strategies to combat large state water management programs and repatriate land and water to communities.

Mitchell, F. M. (2019). Water (in)security and American Indian health: social and environmental justice implications for policy, practice, and research. *Public Health*, 176, 98–105. <https://doi.org/10.1016/j.puhe.2018.10.010>

Themes: Indigenous health, Indigenous well-being, water security, treaty rights, Indigenous Environmental Justice

The author examines cases of water insecurity in American Indigenous communities and highlights the environmental justice implications of water insecurity for practice, policy, and research with Indigenous communities. It is recognized that many of the health disparities that Indigenous communities experience are exacerbated by lack of adequate, safe water resources. However, the author notes that having access to safe, sustainable water sources alone will not necessarily result in significant health improvements in Indigenous communities. Resolving health inequalities requires recognizing Indigenous treaty and subsistence rights, developing a multi-faceted and culturally responsive approach to these rights, and conducting research to account for Indigenous cultural connections to water. Scholars and practitioners must diversify and enhance the mainstream discourse on water, and contribute to improved policy, practice, and research that addresses issues of water insecurity and promotes Indigenous health and well-being.

Morales, S. (2016). Stl’ Nup: Legal Landscapes of the Hul’Qumi’num Mustimuhw. *Windsor Yearbook of Access to Justice*, 33(1), 103–124.

Themes: Indigenous law, Indigenous land, connection to place

Sarah Morales, a Hul’qumi’num Mustimuhw scholar, discusses the connection between land and law for her people. She discusses how Hul’qumi’num land and water are transformed into legal

landscapes when conceptualized in the context of place, time, and experience. She then examines specific legal landscapes within Hul'qumi'num territory and considers how laws and regulations exist within, and grow out of, these landscapes. Morales discusses how these places shape the Hul'qumi'num legal tradition and teach Hul'qumi'num people about their reciprocal responsibilities to places and beings in those places.

Muller, S., Hemming, S., & Rigney, D. (2019). Indigenous sovereignties: relational ontologies and environmental management. *Geographical Research*, 57(4), 399–410. <https://doi.org/10.1111/1745-5871.12362>

Themes: Indigenous peoples, Indigenous nation-building, Indigenous governance, environmentalism, relational ontologies

The authors contend that environmental management must recognize Indigenous sovereignty in order to ensure equitable Indigenous engagement and develop innovative solutions to ecological challenges. The authors argue that Western environmental management is a tool of colonialism that privileges settler worldviews, including the separation of self from place. Indigenous worldviews, which are based on relational and ethical connections between humans and the environment, challenge the underlying power structures of Western environmental management. The authors argue that Indigenous sovereignty, which upholds these ethical relations to land, must be recognized in order to ensure equitable and innovative structures for environment management. The authors use three case studies of settler-nations in the Pacific Rim to illustrate how Indigenous agency can decolonize and transform environmental management.

N

Nakashima, D., McLean, K. G., Thulstrup, H., Ramos-Castillo, A., & Rubis, J. (2012). *Weathering Uncertainty: Traditional Knowledge for Climate Change Assessment and Adaptation*. UNESCO and United Nations University Traditional Knowledge Initiative.

Available at: <https://unesdoc.unesco.org/ark:/48223/pf0000216613>

Themes: Traditional ecological knowledge, climate change, climate justice, Indigenous knowledge, adaptation

This 120-page volume was co-published by UNESCO and the UN, and studies Indigenous traditional ecological knowledge (TEK) as it relates to climate change, including observations, impacts, and opportunities for adaptation. The report acknowledges that many Indigenous communities are particularly vulnerable to the impacts of climate change because of the regions they live in, their dependence on the environment, and their exclusion from decision-making about climate change. That said, the report recognizes that Indigenous communities are resilient, and have developed extensive, sophisticated knowledge and practices about their environment,

including strategies for adapting to and mitigating the impacts of climate change. The report provides an overview of published scientific literature about TEK related to climate change. The report contends that this knowledge should be used as a foundation for state decision-making in response to climate change.

Neufeld, H.T., & Richmond, C. A. M. (2017). Impacts of Place and Social Spaces on Traditional Food Systems in Southwestern Ontario. *International Journal of Indigenous Health*, 12(1), 93–115. <https://doi.org/10.18357/ijih112201716903>

Themes: Indigenous traditional ecological knowledge, traditional food systems, food sovereignty, environmental health, Southwestern Ontario, diet

The authors explore the interdependent relationship between Indigenous peoples and their local ecosystems. The authors describe a study they conducted to examine Indigenous mothers' knowledge about access, availability, and practices concerning traditional foods in London, Ontario, and nearby reserves. The authors conducted interviews with 25 women and found that, in this small sample at least, mothers living on a reserve relied more consistently on traditional foods, and had greater knowledge of traditional foods, than urban mothers, who faced greater economic, knowledge, and transportation-related barriers. The results of the study suggest that there are geographic challenges for Indigenous engagement in Traditional Food Systems (TFS). This is significant because the TFS helps reinforce dietary and biocultural diversity, which in turn helps improve health and build resilience for Indigenous peoples.

Noll, S., & Murdock, E. G. (2020). Whose Justice is it Anyway? Mitigating the Tensions Between Food Security and Food Sovereignty. *Journal of Agricultural and Environmental Ethics*, 33(1), 1–14. <https://doi.org/10.1007/s10806-019-09809-9>

Themes: Food security, food sovereignty, environmental philosophy, Indigenous peoples, environmental justice

The authors critically analyze the presupposed tension within the environmental justice literature between food security and food sovereignty. The fundamental difference between the two concepts lies in their differing notions of justice. Food security programs, which are premised on access to material goods, are based on a distributive model of justice. Food sovereignty, defined as the right of people to determine their own agricultural policy and production, is a more holistic justice paradigm. Despite the literature's assumption that the concepts are in conflict, the authors conclude that food security and access to material goods is an integral aspect of food sovereignty. Although a necessary requirement to achieving food sovereignty, food security alone is insufficient as a solution. This study aids in framing debates on food security and sovereignty within Indigenous environmental justice scholarship. Additionally, the authors note the importance of Indigenous relational models of justice to the food sovereignty paradigm.

Norgaard, K. M., & Reed, R. (2017). Emotional impacts of environmental decline: What can Native cosmologies teach sociology about emotions and environmental justice? *Theory and Society*, 46(6), 463–495. <https://doi.org/10.1007/s11186-017-9302-6>

Themes: Colonialism, Indigenous peoples, environmental justice, social inequality, natural environment

Kari Marie Norgaard and Ron Reed conducted interviews with members of the Karuk Tribe in California regarding their territory's polluted Klamath River. Norgaard and Reed conclude that emotions associated with environmental change serve a signal function for communities, inscribing structures of colonial power. Norgaard and Reed find that the river evokes direct emotions in Tribe members, such as joy in fishing, as well as indirect emotions related to the river's pollution. Norgaard and Reed argue that Karuk peoples' emotions of grief, anger, shame, and powerlessness represent their recognition of environmental decline as a threat to their identity, a disruption to social interaction, and an outcome of colonialism. They contend that although the natural environment is a site of racial (re)inscription, is it also a motivator for social action and emotions connected to environmental justice. The authors note the emotional cost of environmental degradation on Indigenous peoples' identities, social structures, and sense of location in colonial hierarchies.

Norman, E. S. (2017). Standing Up for Inherent Rights: The Role of Indigenous-Led Activism in Protecting Sacred Waters and Ways of Life. *Society & Natural Resources*, 30(4), 537–553. <http://dx.doi.org/10.1080/08941920.2016.1274459>

Themes: Indigenous activism, climate justice, fishing rights, Indigenous peoples, treaty rights, water governance

Using three ethnographies from Canada and the United States, Norman explores the role of Indigenous activism at three scales—personal, tribal, and collective—and how Indigenous peoples have intervened to uphold treaty rights and to protect Indigenous ontologies. These three scales provide proof that Indigenous peoples are taking leading roles in social and environmental justice movements, especially with climate justice, fishing rights, and water governance. Norman describes everyday Indigenous acts of survival (e.g., fishing) as a form of resistance, activism and heroism in the face of structural injustice. Additionally, he highlights the importance of incorporating “Indigenous Ways of Knowing” (541) into research practice in an effort to identify unseen problems and alternative solutions. Norman discusses the fishing practices of Coast Salish communities and the ShellNo protests against Arctic drilling as case studies to further our understanding of how Indigenous peoples continuously intervene in key moments to uphold treaty rights and protect Indigenous ways of life.

Norton-Smith, K., Lynn, K., Chief, K., & Cozzetto, K. (2016). *Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences*. United States Department of Agriculture.

Available at: https://www.fs.fed.us/pnw/pubs/pnw_gtr944.pdf

Themes: Climate change, climate change adaptivity, Indigenous knowledge

The authors examine the impacts of climate change on Indigenous communities in the United States, including their strategies for responding to those impacts. Many Indigenous communities are particularly vulnerable to climate change due to the effects of colonialism. Colonialism both created the economic conditions that promote climate change and the social conditions that limit Indigenous resilience to it. As a result, many communities' traditional adaptive methods to environmental changes, such as mobility across territories, are no longer possible. However, Indigenous communities remain resilient in many ways, and are actively adapting to and mitigating the effects of climate change on their territories. The authors consider three Indigenous-centred frameworks for studying how climate change impacts Indigenous peoples in the United States: Indigenous sovereignty and self-determination, traditional knowledge, and community health. The authors then detail current climate impacts on Indigenous communities and the strategies they are employing to adapt to and mitigate its impacts.

O

O'Donnell, E. L., & Talbot-Jones, J. (2018). *Creating legal rights for rivers: lessons from Australia, New Zealand, and India*. *Ecology and Society*, 23(1). <https://doi.org/10.5751/ES-09854-230107>

Themes: Legal rights for nature, environmental law, Indigenous worldviews

This article explores and analyzes how law has been employed to grant rights to rivers. Using case studies in Australia, New Zealand, and India, the authors investigate how communities have applied law to the environment in their own social-political context. The authors argue that granting rights to nature is an important concept that personifies nonhuman entities and is centred and motivated by Indigenous worldviews. The authors reach three conclusions: First, achieving legal rights for nature is possible, and can be done within a range of institutional settings to help resolve economic, cultural, and environmental problems. Second, legal rights for nature can be enshrined in both judicial and legislative contexts. Third, granting rights to nature is an important development in environmental law, but must be fully enforced in order to be effective.

P

Pearl, M. A. (2018). Human Rights, Indigenous Peoples, and the Global Climate Crisis. *Wake Forest Law Review*, 53(4), 713–738.

Themes: Climate change, human rights law, hydrocarbon extraction, Indigenous environmental justice, Indigenous worldviews

M. Alexander Pearl examines why climate change is particularly devastating to Indigenous peoples, noting that even though they have not contributed substantially to climate change, they bear a disproportionate share of its impacts, and have less political power to combat it. Pearl uses the “tragedy of the commons” framework (721) to explain the causes of climate change and notes how principles derived from western property law—e.g., using one’s resources to the exclusion of others—are contrary to Indigenous worldviews. Pearl posits that the “Earth is an inherent common *unsusceptible* to privatization” (721) and that many Indigenous peoples do not subscribe to the Western view of land as property. As a result, environmental degradation may have a far greater spiritual cost to Indigenous communities. Pearl further describes climate change as a form of slow violence, unlike other extinction-level catastrophes that may bring about quicker political mobilization. Indigenous peoples are at the epicentre of climate change—particularly with respect to resource extraction and sacred site disruption on Indigenous land, such as in the cases of Standing Rock and the Trans Mountain Pipeline protests. Pearl also explores the intersection of Indigenous rights and human rights in the context of climate change, calling for the development of an “overarching framework that incorporates...[I]ndigenous rights into international human rights law” (731). In the interim, Pearl points to litigation as an important battleground for Indigenous environmental justice, as it imposes steeper costs on the carbon industry.

Perkins, P. E. (2019). Climate justice, commons, and degrowth. *Ecological Economics*, 160, 183-190. <https://doi.org/10.1016/j.ecolecon.2019.02.005>

Themes: Climate change, climate justice, ecofeminism, Indigenous scholarship

Patricia E. Perkins analyzes three concepts to address climate change using an ecofeminist lens and center Indigenous scholarship and leadership: climate justice, commons, and degrowth. Women have historically played, and continue to play, a significant role in the climate justice movement, and their unpaid work in this activism has mostly gone unacknowledged. Essentially, Perkins asserts that ecofeminists support the commons, which are shared resources such as oceans and the Earth’s atmosphere. Simultaneously, degrowth movements highlight the problems of overconsumption and the hyper-growth of resources for financial gain. When studied together, both ecofeminist and Indigenous scholarship revive participatory democracy and prevent the commodification of the commons. Ultimately, Perkins proposes two ideas: (1) that climate justice, the de-commodification of the commons, and decolonization are pre-conditions to achieve participatory and responsible governance; and (2) that Indigenous worldviews allow for these concepts to manifest in a concrete way contingent on the dismantling of colonialism.

Perkins, P. E. (2017). Canadian Indigenous Female Leadership and Political Agency on Climate Change. In M. G. Cohen (Ed.), *Climate Change and Gender in Rich Countries: Work, Public Policy and Action* (pp. 282–296). Routledge.

Themes: Climate justice, Indigenous women, climate change, climate action, gender, reconciliation

Patricia E. Perkins discusses the emergence of the Idle No More movement as a response to the lack of meaningful action by the Canadian government regarding the current climate crisis. Perkins provides accounts of Indigenous women who are engaging in unique actions and developing initiatives to lead the resistance against environmental destruction in Canada. Perkins asserts that Indigenous women are leaders in the climate justice movement and should be understood as distinct from Western feminist environmentalists. That said, Perkins notes that all women experience different impacts of climate change, and different adaptation responsibilities, than men due to their gendered societal positions, which at the same time limits their political influence. Perkins references a recent Canadian poll that indicates that men and women have different attitudes toward climate action. Perkins asserts that an increase in Indigenous voter turnout, particularly among, and led by, Indigenous women, was a factor in the election of Trudeau's Liberal Party. That said, while the Liberal government has developed a more constructive discourse between the Crown and Indigenous peoples, the government still has a lot to do when it comes to action around climate change and reconciliation.

Popp, J. N., Priadka, P., & Kozmik, C. (2019). The rise of moose co-management and integration of Indigenous knowledge. *Human Dimensions of Wildlife*, 24(2), 159–167. <https://doi.org/10.1080/10871209.2019.1545953>

Themes: Indigenous peoples, wildlife management, moose conservation, hunting rights, Indigenous Knowledge

Using examples of emerging and successful moose co-management and Indigenous Knowledge (“IK”) initiatives across Canada, the authors demonstrate the benefits of a holistic approach to conservation and wildlife management planning. Co-management between Indigenous and non-Indigenous governments, as well as the broad integration of wildlife management that derives from IK, is important for ensuring sustainability of moose hunting. The authors recognize that Indigenous worldviews reflect a deep understanding of land relationships, and posit that IK plays a vital role in developing environmental solutions. Each case presented in this article helps to reduce the knowledge gap between our scientific understanding of conservation initiatives and holistic IK approaches.

R

Reo, N.J. (2019). Inawendiwin and Relational Accountability in Anishnaabeg Studies: The Crux of the Biscuit. *Journal of Ethnobiology*, 39(1), 65-75. <https://doi.org/10.2993/0278-0771-39.1.65>

Themes: Research ethics, ethnobiology, community research, relational accountability, Anishinaabe inawendiwin

Anishinaabe scholar Nicholas J. Reo emphasizes the importance of relational accountability to research in Indigenous contexts. Reo contends that the teaching of Anishinaabe inawendiwin can be utilized by researchers to ensure respect and relational accountability in their work. Anishinaabe inawendiwin is way to relate to one another and honour the interconnectedness of all our relations. Utilizing the teaching as a research guide, Reo states that researchers must be accountable to an entire community, utilize community representatives to help ensure this accountability, recognize more-than-human persons as teachers and research collaborators, and open space for youth participation. Researchers must be careful to maintain relational accountability with the communities they research in order to ensure ethical outcomes.

Reo, N.J., & Ogden, L.A. (2018). Anishnaabe Aki: An Indigenous perspective on the global threat of invasive species. *Sustainability Science*, 13(5), 1443–1452. <https://doi.org/10.1007/s11625-018-0571-4>

Themes: Traditional Ecological Knowledge, invasive species, sustainability, Indigenous knowledge

Based on their ethnographic research with Anishnaabe communities, the authors discuss how Indigenous understandings of invasive species interact with colonialism. First, plants are regarded as people which assemble and migrate into nations, and no plants are deemed invasive or alien species. Second, new species in an area serve a purpose and this purpose can be discovered with the help of animal teachers. Thus, although invasive species are often the result of colonialism, Anishnaabe ways of thinking provide alternative understandings of invasive species in scientific discourse.

Reo, N. J., & Parker, A. K. (2013). Re-thinking colonialism to prepare for the impacts of rapid environmental change. *Climatic Change*, 120(3), 671–82. <https://doi.org/10.1007/s10584-013-0783-7>

Themes: Climate change, colonialism, Indigenous knowledge, historical research, ecological research

The authors propose melding historical and ecological research to develop strategies to mitigate and adapt to environmental change. They provide an example of this type of research by examining the ways in which early European colonization in what is now New England caused rapid, massive societal and environmental transformation. European colonists' violent dispossession of Indigenous peoples, and colonists' introduction of new diseases, crops, agricultural methods and pests, created reinforcing feedback loops that amplified the transformation of human and natural systems in the region. The authors propose that examining Indigenous communities' historical responses to these rapid transformations could generate insights into strategies to mitigate and adapt to contemporary changes.

Reo, N. J., & Whyte, K. P. (2012). Hunting and Morality as Elements of Traditional Ecological Knowledge. *Human Ecology*, 40, 15–27. <https://doi.org/10.1007/s10745-011-9448-1>

Themes: Traditional Ecological Knowledge, conservation, hunting rights, Indigenous environmental values

This article focuses on Traditional Ecological Knowledge (TEK) and its connection to community hunting practices, environmental values, and other ethical dimensions. TEK is a system of practice, a knowledge system, and a belief system that accumulates and changes over time within a community. Based on semi-structured interviews from the Lac du Flambeau (LDF) Indian Reservation in North Central Wisconsin, United States, the authors discuss the continuity of traditional hunting values and TEK within the LDF community.

Reo, N. J., Whyte, K. P., McGregor, D., Smith, M. A., & Jenkins, J. F. (2017) Factors that support Indigenous involvement in multi-actor environmental stewardship. *AlterNative: An International Journal of Indigenous Peoples*, 13(2) 58–68. <https://doi.org/10.1177/1177180117701028>

Themes: Indigenous Environmental Justice, traditional knowledge, Indigenous knowledge, Great Lakes, multi-actor projects, environmental protection, environmental stewardship

The authors discuss the challenges and potential of regional, multi-actor projects to achieve environmental protection and stewardship. While these projects are beneficial in that they incorporate many different knowledge systems, types of expertise, and perspectives, the authors note that participants may have difficulty reaching agreements, especially when both Indigenous and non-Indigenous participants are involved. The authors studied 39 regional, multi-actor partnerships involving Indigenous nations from the Great Lakes region to identify factors that led to successful collaboration and continued Indigenous engagement. Six factors are identified as influential in enabling Indigenous partners to stay involved in projects: respect for Indigenous knowledge systems and practices; Indigenous control of knowledge mobilization; intergenerational relationships and involvement; respect for Indigenous self-determination;

continuous cross-cultural education between partners; and early Indigenous involvement. The authors conclude that successful projects respect Indigenous political and governmental authority, recognize Indigenous cultural uniqueness, and incorporate Indigenous cultural norms and procedures.

Reo, N. J., Whyte, K. P., Ranco, D., Brandt, J., Blackmer, E., & Elliott, B. (2017). Invasive Species, Indigenous Stewards, and Vulnerability Discourse. *American Indian Quarterly*. 41(3), 201–223.

Themes: Climate change, invasive species, indigenous knowledge, traditional ecological knowledge, Anthropocene

The authors researched Indigenous communities' strategies for responding to invasive species in order to highlight Indigenous agency in dealing with this complex problem. Despite Indigenous communities' long histories of responding to rapid environmental change, and their diverse strategies for adapting to and mitigating the effects of invasive species, Indigenous peoples are rarely mentioned in literature about human engagement with invasive species, except as vulnerable groups. The authors conducted an online survey with staff from Indigenous nations across Canada and the United States about their strategies for dealing with invasive species. They highlight how Indigenous knowledge and values inform Indigenous communities' environmental governance in response to invasive species, including setting goals, designing planning tools, and adapting to and mitigating impacts.

Roosvall, A., & Tegelberg, M. (2018). *Media and Transnational Climate Justice; Indigenous Activism and Climate Politics*. Peter Lang Publishing Inc.

Themes: Media activism, climate justice, Indigenous peoples, globalization, climate crisis

This book examines the intersection of globalization, activism, the climate crisis and the media. Ann Roosvall & Matthew Tegelberg focus on the need for transnational approaches to climate justice to appropriately represent the positions of Indigenous activists who often do not have full representation in international settings such as the United Nations. The authors discuss the role of the media in creating transnational solidarity, and addressing injustices faced by Indigenous peoples that are often ignored in broader global discussions about climate change. The authors also make the case that including Indigenous peoples in discussions about the climate crisis result in greater attention being paid to the urgency of the climate crisis.

Rudolph, K. R., & McLachlan, S. M. (2013). Seeking Indigenous food sovereignty: Origins of and responses to the food crisis in northern Manitoba, Canada, *Local Environment*, 18(9), 1079–1098. <http://dx.doi.org/10.1080/13549839.2012.754741>

Themes: Food sovereignty, food crisis, food access, food systems, Indigenous peoples, traditional Indigenous foods, northern Canada

The authors explore the colonial roots of the current food crisis plaguing Indigenous communities in northern Canada, with a focus on the Grand Rapids and Misipawistik Cree Nation (MCN) in northern Manitoba. The authors recognize that the food crisis was caused by the introduction of processed foods into communities and a decrease in community consumption of healthy, traditional foods as a result of environmental changes, colonial policies, and cultural change. Structural barriers to food independence include the lack of access for Indigenous farmers to operating loans or subsidy programmes, both of which are more readily available to non-Indigenous farmers. The authors distinguish food sovereignty from food security on the basis that food sovereignty acknowledges “that food is more than a commodity” (1080) and privileges policy around food access, ensures food providers have good livelihoods, focuses on giving control over food systems to local food providers (rather than large companies and consumers), and ensures that food systems mimic natural systems. Conversely, food security is narrowly concerned with increasing the supply of food. The authors propose potential solutions to the current food crisis in the north, including a revival of “country foods traditions” (1092), enhancing community and individual gardens, enhancing agriculture, and importing better food. The authors concede that none of these solutions is perfect and emphasize the importance of taking a politicized approach towards achieving food sovereignty, acknowledging the way that power has shaped who can access healthy food, and what constitutes “a desirable food system” (1085). The authors further emphasize the importance of education about diet and nutrition that infuses cultural elements of Indigenous worldviews.

Rühs, N., & Jones, A. (2016). The Implementation of Earth Jurisprudence through Substantive Constitutional Rights of Nature. *Sustainability*, 8(2), 174. <https://doi.org/10.3390/su8020174>

Themes: Climate change, environmental protection, constitutional law, rights of nature

The author argues for enshrining rights of nature in countries’ constitutions as a means of ensuring environmental protection and combatting the effects of the climate crisis. The author examines the case study of Ecuador, which codified rights of nature in its constitution in 2008, and the successes and failures of the Ecuadorian model. The author asserts that inconsistencies and competing rights in the constitution, judicial corruption and lack of judicial understanding of rights of nature, and the power of the extractive economy in Ecuador continue to prevent successful implementation of the rights of nature framework. Thus, the Ecuadorian model provides an example of the benefits and challenges involved with enshrining environmental rights in a country’s constitution.

S

Schuster, R., Germain, R. R., Bennett, J. R., Reo, N. J., & Arcese, P. (2019). Vertebrate biodiversity on Indigenous-managed lands in Australia, Brazil, and Canada equals that in protected areas. *Environmental Science & Policy*, 101, 1–6. <https://doi.org/10.1016/j.envsci.2019.07.002>

Themes: Conservation, land-management, Indigenous peoples, extinction, global biodiversity

Based on their finding that Indigenous-managed lands host similar levels of vertebrate diversity as found on state-protected lands, the authors recommend that governments collaborate with Indigenous communities to enhance national conservation efforts. The authors compare species richness on Indigenous-managed lands with those in Protected Areas (PAs) in Australia, Brazil, and Canada. They find that Indigenous lands have slightly higher vertebrate species richness than PAs in all three countries. Drawing on these results, the authors conclude that state collaboration with Indigenous nations to enhance land management represents a viable route to achieving global biodiversity targets.

Scott, D. N. (2020). Extracting Contracting: The Struggle for Control of Indigenous Lands. *South Atlantic Quarterly*, 119(2), 269–99. <https://doi.org/10.1215/00382876-8177759>

Themes: Impact benefit agreements, resource extraction, duty to consult, Indigenous territory

Scott considers the growth of “consent by contract” (269) over the past twenty years. Increasing numbers of Indigenous communities are signing private benefit agreements with resource extraction companies to govern resource extraction on their territory. Scott notes that scholars tend to view benefit agreements as a model of risk management for companies and communities, in which both parties seek to protect their own interests in the context of the inadequate public law framework. Thus, these contracts are usually understood as “filling the gaps” (271) of the inadequate regulatory processes and constitutional caselaw. However, Scott argues that the process of consent by contract enables the state to make Indigenous territories accessible to private industry for extractive purposes. By providing some risk mitigation and control to the parties, the agreement regime removes pressure on the state to resolve failures in regulatory processes and constitutional jurisprudence. Thus, Scott contends that the public law system relies on agreements to govern extractive relationships in order to insulate the state from pressure to reform.

Sinclair, R. (2018). Righting Names: The Importance of Native American Philosophies of Naming for Environmental Justice. *Environment and Society: Advances in Research*, 9, 91–106. <https://doi.org/10.3167/ares.2018.090107>

Themes: Environmental justice, Indigenous philosophy, Indigenous naming

Rebekah Sinclair explores how Indigenous naming connects ethical responsibility, Indigenous ontological theory, and epistemic virtue into a complete philosophy. Sinclair focuses on American Indian philosophies and struggles for environmental justice. With the help of American Indian authors, Sinclair discusses Indigenous naming principles, such as naming in order to gather knowledge of certain relations or associations. Sinclair contends that decolonizing Indigenous naming practices and deferring to Indigenous names is critical to improve our ability to understand environmental and ecological ties and work toward environmental justice.

Sniderman, A. S., & Shedletzky, A. (2014). Aboriginal Peoples and Legal Challenges to Canadian Climate Change Policy, *Western Journal of Legal Studies*, 4(2), 1–16.

Themes: Charter challenges, constitutional rights, Northern Canada, Inuit, Indigenous rights, Indigenous law, oil sands

The authors explore two constitutional litigation strategies for challenging Canadian climate change policy, both involving the rights of Indigenous peoples in Canada. The first strategy involves employing section 7 of the *Canadian Charter of Rights and Freedoms*, which protects the security of a person. The authors contend that section 7 is applicable to the fight against climate change because climate change's detrimental effects will undermine Indigenous peoples' security. The second litigation strategy involves section 35 of the *Canadian Constitution Act, 1982*, which recognizes and affirms the existing rights and title of Indigenous peoples, who are the most vulnerable to climate change. The authors contend that courts are more likely to recognize that climate change is a threat to the constitutional rights of Indigenous peoples than of the public more broadly. It is suggested that these litigation strategies could result in the implementation of requirements on governments to fight and mitigate climate change more intensively.

Snyder, E. (2019). Challenges in Gendering Indigenous Legal Education: Insights from Professors Teaching about Indigenous Laws. *Canadian Journal of Law and Society*, 34(1), 33–54. <https://doi.org/10.1017/cls.2019.6>

Themes: Indigenous law, law and gender, Indigenous feminisms, legal education

Drawing on interviews with professors who teach Indigenous law at Canadian law schools, Emily Snyder examines the challenges in gendering Indigenous legal education. Snyder concludes that educators' general dissatisfaction with the quality of gendered Indigenous legal education is caused by gendered power dynamics and broader structural barriers. Snyder identifies five themes from the interviews she conducted: First, instructors' discomfort in teaching about gender; second, lack of educational resources; third, negative student reactions; fourth, discrimination in the forms of ageism, racism, and sexism; and fifth, institutional constraints such as the dearth of tenure positions for Indigenous faculty. To better gender Indigenous legal education, Snyder argues that there must be enhanced institutional support and change, more intersectional resources, better methods to eliminate discrimination, and more discussion about gender and Indigenous law.

Snyder's research is valuable for post-secondary institutions educating students about Indigenous law and Indigenous environmental justice.

Spiegel, S. J., Thomas, S., O'Neill, K., Brondgeest, C., Thomas, J., Beltran, J., Hunt, T., & Yassi, A. (2020). Visual Storytelling, Intergenerational Environmental Justice and Indigenous Sovereignty: Exploring Images and Stories amid a Contested Oil Pipeline Project. *International Journal of Environmental Research and Public Health*, 17(7), 1–20. <https://doi.org/10.3390/ijerph17072362>

Themes: Photovoice, Trans Mountain Pipeline, Tsleil-Waututh Nation, Indigenous knowledge & storytelling, environmental degradation, climate change, Indigenous sovereignty, intergenerational lens

To counter media campaigns in support of the Trans Mountain pipeline, the authors explore images and stories shared by members of the Tsleil-Waututh Nation related to the environment, health, and well-being of the Nation. Adapting a “photovoice” (2) approach, the authors held several meetings with the Nation's youth and elders in which they shared memories and photographs relevant to the pipeline and these topics. Themes that emerged from this visual storytelling included concerns about the health of the Nation, food and political sovereignty, connection to water, the concept of well-being, and visions of the future. Photovoice is a novel research methodology that provides an intergenerational lens onto environmental justice, using visual storytelling to challenge hegemonic narratives and invite diverse discussions.

T

Tobias, J. K., & Richmond, C. (2016). Gimiigwemin: Putting Knowledge Translation into Practice With Anishinaabe Communities. *International Journal of Indigenous Health*, 11 (1), 228–243. <https://doi.org/10.18357/ijih111201616019>

Themes: Knowledge translation, environmental repossession, community-based research, talking circles

The authors conducted research in collaboration with Elders from two Anishinaabe communities on the north shore of Lake Superior (Biigtigong Nishnaabeg and Batchewana First Nation of Ojibways) to explore strategies for environmental repossession in the communities. Environmental repossession refers to Indigenous communities' social, cultural, and political methods for building resilience and reclaiming traditional lands and ways of life. Elders identified four main strategies for environmental repossession in their communities: re-establishing youth-Elder relationships; increasing the amount of time community members spend on the land; improving community members' physical health; and fostering community members' pride. The authors also highlight how important it is for researchers to respect Elders' knowledge and knowledge-sharing practices and adopt culturally appropriate research methods.

Todd, Z. (2018). Refracting the State Through Human-Fish Relations. *Decolonization: Indigeneity, Education & Society*, 7(1), 59–79.

Available at: <https://jps.library.utoronto.ca/index.php/des/article/view/30393>

Themes: Human-fish relations, water, Indigenous resistance

Zoe Todd is a Metis scholar from amiskwaciwaskahikan (Edmonton, Alberta), and she explores relations between humans and fish both in her city and in Paulattuq, Northwest Territories. Noting that settler colonial imageries of the prairies rarely acknowledge the presence or importance of fish in the landscape, Todd recognizes that fish “exist and operate in pluralities” (61)—as food, subjects of scientific research, sites of memory, and more-than-human citizens. Todd suggests that “human-fish relations are a ‘micro-site’ of engagement” (61), as fish have not only witnessed colonial processes and intrusions, but have themselves been actively involved in simultaneously sustaining and resisting colonial projects. Todd applies the metaphors of refraction and dispersion — drawn from the ways in which human and fish perceptions of each other are refracted and dispersed by water — to Indigenous resistance of colonialism. She suggests that Indigenous people use Indigenous legal orders, and reciprocal relations with more-than-humans including fish, to refract and disperse settler colonial laws.

Todd, Z. (2017). Fish, Kin and Hope: Tending to Water Violations in amiskwaciwâskahikan and Treaty Six Territory. *Afterall: A Journal of Art, Context and Inquiry*, 43(1): 102-107. <https://doi.org/10.1086/692559>

Themes: Fish, water, oil, oil spills, relationality, Alberta

Zoe Todd is a Metis scholar born along the North Saskatchewan River in Edmonton. She discusses her deep connections to water ways, and her responsibilities toward fish, water, and other more-than-human beings as political agents. Todd interrogates her relationships and responsibilities to seemingly inert and polluting materials like oil and gas, in the context of the devastating Husky Energy oil spill into the North Saskatchewan River in 2016. Todd reminds the reader that oil originated as fossilized carbon beings deep in the earth, and that these fossilized beings can be understood “as agential more-than-human beings in their own right” (106). Thus, Todd conceptualizes these beings, and the oil that is processed from them, as kin, rather than as pollutants. Oil is not inherently violent or dangerous. Rather, corporate bodies are responsible for weaponizing oil and causing the pollution and devastation of the Husky Energy oil spill. Todd argues that we must “shift the logics of the petro-economy” (107) and tend to our responsibilities toward more-than-humans, including to oil, if we are to maintain human existence on this land.

Todd, Z. (2016). From Classroom to River's Edge: Tending to Reciprocal Duties Beyond the Academy. *Aboriginal Policy Studies*, 6(1) 90–7. <https://doi.org/10.5663/aps.v6i1.27448>

Themes: Indigenous relationships to water, urban waterways, colonial history in Canada, reciprocal relationships, more-than-humans

Zoe Todd is a Metis scholar who discusses teaching an anthropology course at Carleton University in Ottawa where she encouraged her students to ground the theoretical material of the course in the physical realities of the territory they inhabit. She asked students to spend a week identifying the rivers and creeks around them and considering their relationship with other humans and more-than-humans around these waterways. Todd discusses how rivers have enabled colonial dispossession of Indigenous land and water, but have also enabled Indigenous resistance. Similarly, fish at once fueled colonial enterprises while also acting as a “micro-site” (91) for the application of Indigenous legal orders. Todd teaches her students about colonial histories in Canadian cities by focusing on waterways, fish, and reciprocal relationships between humans and more-than-humans.

Trainor, S. F., Chapin, F. S., Huntington, H. P., Natcher, D. C. & Kofinas, G. (2007). Arctic Climate Impacts: Environmental Injustice in Canada and the United States. *Local Environment*, 12(6), 627–643. <https://doi.org/10.1080/13549830701657414>

Themes: Arctic climate change, environmental injustice, resource extraction, resource development, Indigenous traditions, climate justice

This article discusses the impacts of climate change on Indigenous peoples in Arctic and subarctic regions of the United States and Canada. The authors suggest that despite Indigenous peoples' inherent cultural resilience, colonization has caused a lack of community capacity and political influence that severely limits Indigenous peoples' ability to adapt to changing climate conditions in the north. The authors also note that resource extraction and modern infrastructure development cause an overall negative impact on Northern Indigenous communities as they continue to destabilize cultural traditions. Destabilization of the Arctic ecosystem caused by loss of ice is analyzed, illustrating how small temperature changes result in major disturbances in food systems. The authors provide a brief history of climate action and Indigenous rights and policy, noting differences between the United States and Canada, and concluding that the Canadian situation is generally more just. However, they question whether Canada's climate change action is merely a political tactic to advance international relations, and whether Canada's better record of action is in part due to the fact that a larger percentage of Canada's land and population is Arctic and Indigenous.

Twance, M. (2019). Learning from land and water: exploring mazinaabikiniganan as Indigenous epistemology. *Environmental Education Research*, 25(9), 1319–1333. <https://doi.org/10.1080/13504622.2019.1630802>

Themes: Indigenous knowledge, land education, place and culture, Indigenous pedagogy, decolonization

Anishinaabe scholar Melissa Twance explores how ancient Indigenous physical markings in Northern Ontario, named mazinaabikiniganan, and the knowledge they embody, can act as a form of Land education. Land education is an approach to learning that prioritizes Indigenous theorizing and sovereignty. In effect, it is a critique of settler colonialism. Using the Land education framework and an Indigenous story work methodology, Twance asked six Anishinaabe Elders for their perspectives on mazinaabikiniganan at Agawar Rock, Ontario. Twance identified three themes from these conversations: mazinaabikiniganan are situated in broader socio-political contexts, they are interpreted using Indigenous frames of reference, and they contain a wealth of knowledge and embody community history and connection to place. Drawing on these findings, Twance concludes that mazinaabikiniganan can be used as a form of Land education because understanding them privileges Indigenous philosophies and destabilizes settler notions of place.

W

Waller, D. M., & Reo, N. J. (2018). First Stewards: Ecological outcomes of forest and wildlife stewardship by Native peoples in Wisconsin, USA. *Ecology and Society*, 23(1). <https://doi.org/10.5751/ES-09865-230145>

Themes: Forests, Indigenous knowledge, biodiversity, sustainability

The authors examine the ecological outcomes of Indigenous and non-Indigenous land tenure in northern Wisconsin forestland and assert that Indigenous peoples' values and practices better promote biodiversity and sustainability. The authors compared the structure, composition, and diversity of forests in Ojibwe and Menominee tribal lands to that of forests in nearby nontribal forests governed by public and private managers. They found that Indigenous forest and wildlife management strategies privileged mature tree growth, allowed for deer hunting, and protected wolves. The Indigenous management strategies resulted in higher volumes of trees and mature trees, higher rates of tree regeneration, greater diversity of plants, and fewer invasive plant species than in nontribal forests. The authors contend that non-Indigenous private and public forest managers should learn from Indigenous approaches to forest management in order to increase the sustainability and biodiversity of nontribal forests.

Warner, E. A. K. (2016). Environmental Justice: A Necessary Lens to Effectively View Environmental Threats to Indigenous Survival. *Transnational Law & Contemporary Problems*, 26(2), 343–369.

Themes: Environmental justice, Indigenous environmental justice, international law

This article explores the unique legal elements of Indigenous environmental justice claims and examines why the legal claims of Indigenous communities necessarily differ from those of other groups seeking environmental justice. The author contends that people of colour are disproportionately burdened by the negative impacts of environmental degradation, despite having done little to cause the degradation. The author then describes four factors unique to Indigenous environmental justice claims. Firstly, in countries such as the United States and Canada, Indigenous peoples are entitled to a modicum of sovereignty as separate nations. Therefore, unlike other environmental justice groups drawing on existing law to justify their claims or lobbying for the creation of better laws, Indigenous environmental justice claims stem from Indigenous peoples' sovereign right to manage their lands and resources. Secondly, domestic governments in the United States and Canada owe a fiduciary responsibility to Indigenous communities, including a duty to consult and sustain resources. Thirdly, Indigenous environmental justice emphasizes spiritual and religious ties to the land, making any environmental injustice also a potential attack on Indigenous spirituality and religious rights. Finally, the author notes the increasing emphasis given to Indigenous rights in international law. The author concludes that courts' failure to take these four factors into account when adjudicating claims unduly restricts Indigenous peoples from accessing adequate substantive and/or procedural justice. The author then applies these principles to two case studies related to the Dakota Access Pipeline Project to demonstrate how an Indigenous environmental justice lens effectively captures the many dimensions of a single environmental injustice.

White, J.P., Murphy, L. & Spence, N. (2012). Water and Indigenous Peoples: Canada's Paradox. *International Indigenous Policy Journal*, 3(3), 1–25.

Themes: Community capacity, sustainable development, drinking water, wastewater treatment, Indigenous health

This article discusses the efforts of the Canadian government, in cooperation with Indigenous groups such as the Assembly of First Nations, to provide adequate access to drinking water and wastewater treatment facilities on First Nations reserves. The challenges and failures of these efforts are analyzed and compared to the situation in the United States. The colonization process in both countries involved establishing reserves on marginal land, which is a major contributing factor in the inefficacy of current efforts to address issues of water justice for First Nations. Residential schools, which removed Indigenous peoples from their communities and prevented them from being educated in their traditional water management systems, has resulted in Indigenous peoples being forced to rely on water systems dependent on water treatment plants created by a culture that is not their own. The authors note how oppressive colonial legacies reduced community capacity amongst First Nations, making it difficult for communities to

undertake the necessary economic development and training required to maintain the water management systems imposed by the government, further perpetuating cycles of community dependency on government. The authors contend that First Nations community capacity must be increased, and First Nations governance and self-sustainability must be promoted, in order to ensure that legislative and regulatory frameworks and government funding are successful in implementing effective water management systems on First Nations reserves.

Whyte, K. (2020). Too late for Indigenous climate justice: Ecological and relational tipping points. *Wiley Interdisciplinary Reviews: Climate Change*, 11(1), 1–7. <https://doi.org/10.1002/wcc.603>

Themes: Climate justice, decolonization, environmental justice, Indigenous peoples, traditional ecological knowledge

Whyte poses the question of whether it is too late to avoid climate change and its violent effects on Indigenous peoples. In the face of rapid ecological degradation, he notes how certain qualities necessary for cross-societal coordination, such as consent, trust, accountability, and reciprocity, are missing from Indigenous-settler relations. The ongoing processes of colonialism, capitalism, and industrialization have undermined trust-based relationships between societies. Additionally, forming these relationships takes time and is now potentially unachievable as the climate “tipping point” (2) looms closer. Whyte therefore concludes that responses to climate change must urgently address both ecological and relational crises.

Whyte, K. (2018). Critical Investigations of Resilience: A Brief Introduction to Indigenous Environmental Studies & Sciences. *Daedalus*, 147(2), 136–47.

Themes: Climate change, Indigenous knowledge, ecosystems, social resilience

Kyle Whyte is a Potawatomi scholar who discusses the emerging field of Indigenous Environmental Studies and Sciences (IESS). Whyte asserts that Indigenous communities have a long history of adapting to environmental change and are at the forefront of environmental protection. IESS investigates Indigenous communities’ social resilience to climatic change—that is, communities’ ability to learn from, and adapt to, ecosystem dynamics in order to protect humans and more-than-humans—through the lens of how they organize moral relationships of responsibility between humans and more-than-humans. Whyte discusses three examples of IESS research to highlight how IESS can generate insights to support Indigenous struggles for environmental justice and self-determination and contribute to the global climate justice movement.

Whyte, K. (2018). Indigenous science (fiction) for the Anthropocene: Ancestral dystopias and fantasies of climate change crises. *Environment and Planning E: Nature and Space*, 1 (1-2): 224–242. <https://doi.org/10.1177/2514848618777621>

Themes: Indigenous philosophy, climate change, climate justice, colonial capitalism, industrialism, allyship

In this article, Kyle Whyte compares Indigenous concepts of climate crisis with those of non-Indigenous allies. He notes that Indigenous peoples currently live in what their ancestors would have considered a dystopia, while many non-Indigenous allies live in a world that resembles the fantasies of their ancestors, and as a result conceptualize the climate crisis as impending rather than present. Whyte frames the climate crisis as a direct result of colonial capitalism and industrialism that has impacted Indigenous peoples since their contact with Europeans, but is only now beginning to impact the instigators of these destructive activities. Whyte explains the concept of “spiraling temporality” (228) that places the past, present and future in simultaneous existence, a central element of Indigenous ontology and epistemology. Whyte notes that spiralling time and the empowerment of non-human protagonists are elements of Indigenous science (fiction) that can provide guidance for surviving the present dystopia. He describes the nuanced and problematic “assumptions of innocence” by non-Indigenous allies that are enforced through the constructs of colonial, capitalist, industrial systems, and which can undermine effective allyship.

Whyte, K. (2018). On resilient parasitisms, or why I’m skeptical of Indigenous/settler reconciliation. *Journal of Global Ethics*, 14(2), 277–289. <https://doi.org/10.1080/17449626.2018.1516693>

Themes: Reconciliation, restorative justice, environmental justice, settler colonialism

Kyle Whyte contends that while settler nations pledge their support to pursuing reconciliation with Indigenous peoples, their actions are limited by an illusory moral ground that justifies the mistreatment of those same peoples. Whyte argues that the way settler colonialism frames Indigenous/settler relations is underpinned by a perception of Indigenous peoples as parasites or dependents clamoring for undue privileges. An example of this false narrative is state justification of the forced removal of Indigenous nations for the purpose of establishing nationally beneficial public lands. Whyte contends that Indigenous/settler reconciliation will not be viable until settler states question their moral understandings of relations with Indigenous peoples.

Whyte, K. (2018). Settler Colonialism, Ecology, and Environmental Injustice. *Environment and Society*, 9(1):125–144. <https://doi.org/10.3167/ares.2018.090109>

Themes: Anticolonialism, climate justice, decolonization, resilience, resurgence

When examined in an ecological context, Kyle Whyte contends that settler colonial domination undermines Indigenous collective continuance. Drawing on Anishinaabe intellectual traditions, Whyte defines collective continuance as a society’s capacity to self-determine how to adapt to change and avoid preventable harm. Settler colonial strategies of ecological domination—such as forced dislocation—have disenfranchised Indigenous peoples of their self-determined capacity to adapt to climate change. Whyte argues that the violence of this process is demonstrated in two types of environmental injustice: first, as vicious sedimentation, or the constant inscription of settler ecologies onto Indigenous ecologies that fortify settler ignorance of Indigenous peoples; second, as an insidious loop in which settler-induced climate change disproportionately affects Indigenous peoples and exposes communities to further colonial exploitation. Whyte concludes that both types of violence are patterns of environmental injustice characteristic of colonial domination.

Whyte, K. (2017). Indigenous Climate Change Studies: Indigenizing Futures, Decolonizing the Anthropocene. *English Language Notes*, 55(1–2), 153–162. <https://doi-org.ezproxy.library.vorku.ca/10.1215/00138282-55.1-2.153>

Themes: Climate change, colonialism, Indigenous knowledge, Anthropogenic climate change

Potawatomi scholar Kyle Whyte contends that Indigenous imaginings of the future offer a guide to addressing climate change. He identifies three themes in the Indigenous Studies literature that provide a decolonizing approach to climate change. First, Indigenous peoples understand their vulnerability to climate change as an intensification of colonially induced environmental change, such as forced displacement. Second, renewing Indigenous knowledge can bring communities together and strengthen their responses to climate change. Finally, Indigenous perspectives of “climate change futures” (154) emerge from their histories of reckoning with, and adapting to, colonial and capitalist change. This Indigenous imagining of the future involves reflecting on how ancestors would approach climate change. Whyte concludes that the utility of Indigenous environmental justice lies in the performance of these “ancestrally inspired visions” (160).

Whyte K. (2017). The Dakota Access Pipeline, Environmental Injustice, and U.S. Colonialism. *RED INK: An International Journal of Indigenous Literature, Arts, & Humanities*, 19(1), 154–169.

Available at: <https://ssrn.com/abstract=2925513>

Themes: Settler colonialism, DAPL, Standing Rock Sioux, environmental injustice

Kyle Whyte details the historical context of the Standing Rock Sioux resistance to the Dakota Access Pipeline (DAPL), and contends that DAPL is part of a larger history of settler colonial injustice that seeks to erase Indigenous peoples. Throughout the article, Whyte analogizes the construction of DAPL to the United States federal government's broken treaty promises in the 19th century. Settler colonial injustice should be understood as environmental injustice since colonialism intends to undermine the ecological conditions necessary for Indigenous self-determination. Whyte concludes that the #NoDAPL movement has the potential to motivate communities to address the various forms of environmental erasure that contribute to settler colonial injustice.

Whyte, K. (2017). *Way Beyond the Lifeboat: An Indigenous Peoples' Allegory of Climate Justice*. In D. Munshi, K.-K. Bhavnani, J. Foran, & P. Kurian (Eds.), *Climate Futures: Reimagining Global Climate Justice*. University of California Press.

Themes: Climate justice, environmental justice, resilience, sustainability, lifeboat ethics, Indigenous peoples

Kyle Whyte argues that decolonization and anti-colonialism cannot be disconnected from the Indigenous environmental justice movement. Whyte uses the analogy of vessels to illustrate the relationship between colonialism, capitalism, industrialization and climate injustice. He imagines a series of ships including canoes, aircraft carriers, and a hovercraft on a body of water that symbolizes the climate. The latter two vessels, representing nation-states and corporations, are disconnected from the water and cause turbulence. The carriers and hovercraft destroy the canoes, which represent Indigenous peoples and are seen as obstructing the colonial path. Occupants of the two larger types of vessels seek to solve issues of turbulence by creating even more turbulence. Whyte explains that his allegory is meant describe how colonialism, capitalism, and industrialization disrupt the climate, despite their stated intentions to preserve it. Whyte's analogy demonstrates that climate change solutions will continue to cause suffering for Indigenous peoples unless colonialism, industrialization, and capitalism are simultaneously addressed.

Whyte, K. (2016). Food Justice and Collective Food Relations. In A. Barnhill, M. Budolfson, & T. Doggett (Eds.), *Food, Ethics, and Society: An Introductory Text with Readings*. Oxford University Press.

Themes: Food justice, collective food relations, wild rice, industrial contamination, treaty responsibilities

Whyte provides an account of the necessary components for achieving justice in food systems, including: self-determination; safe working conditions; fair wages; and access to nutritious, healthy, culturally-appropriate food, regardless of social positioning. He discusses how food is sacred in the web of relationships that define many Indigenous cultures and communities, and defines collective food relations as the special relationships between food and collective self-determination. Whyte explains how seasonal actions to uphold responsibilities to traditional collective food relations are a way of responding to climate change and renewing relationships between the Anishinaabe and the land. Whyte discusses the importance of action regarding the issue of wild rice harvesting, intrinsic to the Anishinaabe way of life. Irresponsible land management by settlers is disrupting the wild rice habitat in ceded territories, in violation of treaty responsibilities.

Whyte, K. (2014). Indigenous Women, Climate Change Impacts, and Collective Action. *Hypatia: A Journal of Feminist Philosophy*, 29(3), 599–616. <https://doi-org.ezproxy.library.yorku.ca/10.1111/hypa.12089>

Themes: Indigenous women, political responsibility, climate change, collective continuance, systems of responsibilities, traditional knowledge, collective action

Kyle Whyte discusses the experiences of Indigenous women in relation to climate change and contends that Indigenous women are both distinctly vulnerable to environmental harm and facilitators of particular kinds of ecological adaptation. Whyte argues that political institutions must support Indigenous women in exercising their own forms of environmental collective action. Indigenous women's distinct responsibilities to the environment, coupled with systemic gender inequality, mean that they are disproportionately vulnerable to environmental change. However, Indigenous women's unique responsibilities also drive them to engage in collective action to protect systems integral to their communities. Whyte argues that political institutions should defer to Indigenous women's knowledge of, and motivations for, collective action to address climate change, and bolster the conditions necessary to support their collective action.

Whyte, K. (2013). Justice forward: Tribes, climate adaptation and responsibility. *Climatic Change*, 120(3), 517–530. <https://doi.org/10.1007/s10584-013-0743-2>

Themes: Climate change, climate justice, collective continuance, systems of responsibilities

To ensure Indigenous peoples are resilient and adaptive to climate change, Kyle Whyte proposes a forward-looking justice framework for the United States government when working with federally recognized tribes. Under the stress of climate change and political obstructions, the existing retrospective governmental framework is unable to ensure tribes' continued flourishing. Whyte's framework situates justice within systems of relational responsibilities that operate to support tribal communities' adaptation to ecological change. Whyte tasks institutions, leaders, scientists, and professionals engaging with tribal communities to act in a manner that protects and amends these systems to be able to address impacts of climate change. For example, when integrating tribal and non-tribal sciences, scientists must respect Indigenous traditional ecological knowledge that centers individuals' understanding of their responsibility and role in communities. To support Indigenous peoples' adaption to climate change, there must be a recognition of justice as being situated in systems of responsibilities.

Whyte, K. , Reo, N. J., McGregor, D., Smith, M. A., & Jenkins, J. (2017). Seven Indigenous Principles for Successful Cooperation in Great Lakes Conservation Initiatives. In E. Freedman, & M. Neuzil (Eds.), *Biodiversity, Conservation and Environmental Management in the Great Lakes Basin*. Routledge.

Themes: Environmental partnerships, ecological restoration, conservation, environmental protection, Indigenous knowledge, self-determination

The authors developed seven principles to guide environmental partnerships between Indigenous peoples and governmental, academic, and non-profit organizations in the Great Lakes region. The principles were informed by the experiences of Indigenous peoples who led or influenced partnerships focused on conservation, ecological restoration, and environmental protection. The principles are Indigenous self-determination, early involvement by Indigenous peoples, intergenerational involvement, continuous cross-cultural education, balance of power and decision-making, respect for Indigenous knowledges, and Indigenous control of knowledge mobilization. The authors proposed strategies for enacting each principle and emphasized that disrespecting these principles may result in serious harms. The point is stressed that partners must consider how to play a part in Indigenous communities' work on behalf of their territories, rather than only considering how Indigenous communities can support the work of non-Indigenous partners.

Whyte, K., Talley, J. L., & Gibson J. D. (2019). Indigenous mobility traditions, colonialism, and the anthropocene. *Mobilities*, 14(3), 319–335.
<https://doi.org/10.1080/17450101.2019.1611015>

Themes: Climate change, Anthropocene, traditional knowledge, Indigenous knowledge, climate injustice, Indigenous migration

The authors describe the Anthropocene as an epoch of unprecedented climatic change that requires brand new forms of social adaptation, including migration. They point out that many Indigenous groups have long histories of mobility and migration, as communities moved across landscapes to adapt to changing environmental situations. Many Indigenous intellectual traditions privilege mobility and fluidity as central to communities' resilience. As a result, a core tenet of settler colonialism was the containment of Indigenous mobility, and many Indigenous communities are now more vulnerable to climate change because of this. The authors assert that understanding Indigenous movement in the Anthropocene requires recognizing the effects of colonialism, rather than simply trying to grapple with so-called unprecedented changes.

Williams, L. (2018). Climate change, colonialism, and women's well-being in Canada: what is to be done? *Canadian Journal of Public Health*, 109(2), 268–271.
<https://doi.org/10.17269/s41997-018-0031-z>

Themes: Climate change, women's health, women's well-being, Indigenous women, health and gender inequality

To address the disproportionate impact of climate change on Indigenous women's well-being in Canada, Lewis Williams advocates for a radical intersectional approach to public health strategies. Williams explains how the patriarchal structure of the settler state and climate science exacerbates Indigenous women's existing vulnerability to climate change. To address the dearth of female perspectives in the mainstream climate change discourse, Williams argues for the inclusion of women, and Indigenous women in particular, in climate decision-making. Building on a 2018 report entitled *Women, Climate Change Impacts, and Action in Canada*, Williams recommends a sector-wide adoption of gender equity practices, expansion of gendered concepts of work, and inclusion of Indigenous women's worldviews grounded in the land and interspecies relationships. Williams both identifies the intersectional gap in the environmental justice discourse and proposes methods for including Indigenous women's perspectives on climate change.

Wilson, N. J. (2020). Querying Water Co-Governance: Yukon First Nations and Water Governance in the Context of Modern Land Claim Agreements. *Water Alternatives*, 13(1), 93–118.

Themes: Co-governance, environmental justice, Indigenous law, Indigenous water governance, modern land claims, Yukon First Nations

Nicole Wilson examines systems of water co-governance between First Nations and settler authorities in the Yukon. As a result of land claim and self-governance agreements, Yukon First Nations have experienced gains in water governance capacity. In applying a multidimensional justice framework, however, Wilson argues that the current water governance arrangements fall short of co-governance for three reasons. First, the systems fail to recognize First Nations' water rights, responsibilities, and authority. Second, multiple barriers, including settler resistance, obstruct the implementation of rights in agreements. Finally, existing arrangements marginalize Yukon First Nations' epistemologies, ontologies, and forms of governance. To achieve functional water co-governance, Wilson recommends acknowledging First Nations' jurisdiction, addressing barriers to rights implementation, and ultimately prioritizing Indigenous legal orders as a form of recognition and procedural justice.

Wilson, N. J. (2014). Indigenous water governance: Insights from the hydrosocial relations of the Koyukon Athabaskan Village of Ruby, Alaska. *Geoforum*, 57, 1–11. <http://dx.doi.org/10.1016/j.geoforum.2014.08.005>

Themes: Water governance, water values, Indigenous people, Indigenous governance

Nicole Wilson uses a case study of the Koyukon Athabaskan people to explore how analyzing hydrosocial relations enables a better understanding of Indigenous water governance. Wilson contends that studying peoples' sociocultural relations to water through literature, and recognizing Indigenous knowledge, values, and uses of water, reveals how multiple normative orders relating to water can exist in the same political space, where some communities' relationships with water are privileged over others'. Wilson discusses critical concepts to water governance, such as self-determination and sovereignty. Water governance literature stresses that Indigenous peoples have inherent water rights which cannot be conferred by colonial governments. Wilson's interviews and her traditional land-use mapping of the Yukon River Basin help illustrate concepts such as complex connectivity and context specificity. The Koyukon Athabaskan people have dynamic and adaptive relations with all aspects of their surrounding ecology, which creates connectivity between people, water, and land.

Wilson, N. J., Harris, L. M., Joseph-Rear, A., Beaumont, J., & Satterfield, T. (2019). Water is Medicine: Reimagining Water Security through Tr'ondëk Hwëch'in Relationships to Treated and Traditional Water Sources in Yukon, Canada. *Water*, 11(3). <https://doi.org/10.3390/w11030624>

Themes: Water security, traditional knowledge, ecological justice

The authors conducted community-based research, including interviews with Elders and other Tr'ondek Hwech'in community members, to explore the significance of traditional water sources to community members' physical, spiritual, and cultural wellbeing. They argue that Western

assessments of water security in Indigenous communities are fundamentally limited, because they are underpinned by a notion of water as a resource and apply a narrow conception of water health that focuses on the material dimensions of water. Water security assessments in Indigenous communities should respectfully incorporate “Indigenous water relations” (12), centering conceptions of water as a more-than-human relative, to which community members owe reciprocal responsibilities, and recognizing the spiritual and cultural importance of water sources. The authors propose applying “Two-Eyed Seeing” (13) to water security assessments, an approach which involves cooperation and integration between Indigenous knowledge (one eye) and Western knowledge (one eye), while privileging Indigenous peoples’ authority to determine their own health practices.

Zentner, E., Kecinski, M., Letourneau, A., & Davidson, D. (2019). Ignoring Indigenous peoples—climate change, oil development, and Indigenous rights clash in the Arctic National Wildlife Refuge. *Climatic Change*, 155(4), 533–544. <https://doi.org/10.1007/s10584-019-02489-4>

Themes: Climate change, Indigenous knowledge, traditional knowledge, Arctic sustainability

The authors consider the escalating impacts of climate change and resource extraction in the Arctic, where the impacts of climate change are particularly dire. The Arctic is warming at two times the world average rate, with major impacts to lands, ecosystems, and Indigenous communities. Climate-induced impacts on the land disrupt Indigenous communities’ ability to practice culturally significant activities and transfer knowledge of these activities intergenerationally. Such impacts are exacerbated by resource extraction in the region, particularly oil and gas development. The authors note that some climatic changes in the region are creating new possibilities for resource extraction. For example, the melting of ice cover and permafrost is opening up new territories for oil and gas exploration. Governments must engage with Indigenous knowledge when developing policies on climate change and resource development in the Arctic in order to protect Indigenous rights and create effective, sustainable plans for the region. As their case study of the Gwich’in in Alaska and Yukon illustrates, Indigenous communities are uniquely qualified, as sovereign nations and knowledge holders, to influence and enrich government policy and decision-making.

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Zurba, M., & Bullock, R. (2020). Bioenergy development and the implications for the social wellbeing of Indigenous peoples in Canada. *Ambio*, 49(1), 299–309. <https://doi.org/10.1007/s13280-019-01166-1>

Themes: Indigenous wellbeing, social wellbeing, bioenergy development, local governance, environmental assessment

The authors apply a social wellbeing framework to examine the perspectives of Indigenous business leaders on bioenergy development in their communities, and to better understand how wellbeing can be accommodated in environmental assessments. The social wellbeing framework accounts for relational aspects of wellbeing, such as how social interactions influence wellbeing, in addition to other subjective and material wellbeing indicators. Indigenous business leaders' responses to bioenergy development reflected varied perspectives of their own and their communities' conceptions of social wellbeing. The authors conclude that local Indigenous involvement in decision-making and business ownership can engrain community-specific values into bioenergy development and enhance links between human and environmental wellbeing. Bioenergy partners must attend to the relational wellbeing of Indigenous communities, something that is often neglected in environmental assessment processes.