

# INDIGENOUS CLIMATE CHANGE STUDIES: INDIGENIZING FUTURES, DECOLONIZING THE ANTHROPOCENE

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## Introduction

Indigenous and allied scholars, knowledge keepers, scientists, learners, change-makers, and leaders are creating a field to support Indigenous peoples' capacities to address anthropogenic (human-caused) climate change. Provisionally, I call it *Indigenous climate change studies* (Indigenous studies, for short, in this essay). The studies involve many types of work, including Indigenous climate resiliency plans, such as the Salish-Kootenai Tribe's *Climate Change Strategic Plan* that includes sections on "Culture" and "Tribal Elder Observations," policy documents, such as the Inuit Petition expressing "the right to be cold," conferences, such as "Climate Changed: Reflections on Our Past, Present and Future Situation," organized by the *Indigenous Peoples Climate Change Working Group*, and numerous declarations and academic papers, from the Mandaluyong Declaration of the Global Conference on Indigenous Women, Climate Change and REDD+ to a special issue of the scientific journal *Climatic Change* devoted to Indigenous peoples in the U.S. context.<sup>1</sup>

Indigenous studies often reflect the memories and knowledges that arise from Indigenous peoples' living heritages as societies with stories, lessons, and long histories of having to be well-organized to adapt to seasonal and inter-annual environmental changes. At the same time, our societies have been heavily disrupted by colonialism, capitalism, and industrialization. Regarding Indigenous peoples in the Arctic, Callison writes that climate change is "Understood as an emergent form of life ... climate change presents the need for excavation and reassessment of what a recognition of climate change portends for those who have endured a century of immense cultural, political and environmental changes."<sup>2</sup> Indigenous studies, then, arise from memories, knowledges, histories, and experiences of oppression that differ from many of the nonindigenous scientists, environmentalists, and politicians who are prominent in the framing of the issue of climate change today.

As a Potawatomi scholar-activist working on issues Indigenous people face with the U.S. settler state, I perceive *at least* three key themes reflected across the field that suggest distinct approaches to inquiries into climate change:

1. Anthropogenic (human-caused) climate change is an intensification of environmental change imposed on Indigenous peoples by colonialism.

2. Renewing Indigenous knowledges, such as traditional ecological knowledge, can bring together Indigenous communities to strengthen *their own* self-determined planning for climate change.
3. Indigenous peoples often imagine climate change futures from their perspectives (a) as societies with deep collective histories of having to be well-organized to adapt environmental change *and* (b) as societies who must reckon with the disruptions of historic and ongoing practices of colonialism, capitalism, and industrialization.

In engaging these themes, I will claim, at the end, that Indigenous studies offer critical, decolonizing approaches to how to address climate change. The approaches arise from how our ways of imagining the future guide our present actions.

### **Back to the Future: Climate Change as Intensified Colonialism**

Colonialism refers to a form of domination in which at least one society seeks to exploit some set of benefits believed to be found in the territory of one or more other societies, from farm land to precious minerals to labor. Exploitation can occur through military invasion, slavery, and settlement. Colonialism often paved the way for the expansion of capitalism, or an economic ideology based on wage-labor that prioritizes growth in monetary profits for the owners of assets as the underlying focus, incentive, and purpose of major human social endeavors.

Together, colonialism and capitalism then laid key parts of the groundwork for industrialization and militarization—or carbon-intensive economics—which produce the drivers of anthropogenic climate change, from massive deforestation for commodity agriculture to petrochemical technologies that burn fossil fuels for energy. The colonial invasion that began centuries ago caused anthropogenic environmental changes that rapidly disrupted many Indigenous peoples, including deforestation, pollution, modification of hydrological cycles, and the amplification of soil-use and terraforming for particular types of farming, grazing, transportation, and residential, commercial and government infrastructure.

Colonially-induced environmental changes altered the ecological conditions that supported Indigenous peoples' cultures, health, economies, and political self-determination. While Indigenous peoples, as any society, have long histories of adapting to change, colonialism caused changes at such a rapid pace that many Indigenous peoples became vulnerable to harms, from health problems related to new diets to erosion of their cultures to the destruction of Indigenous diplomacy, to which they were not as susceptible prior to colonization. Indigenous peoples often understand their vulnerability to climate change as an intensification of colonially-induced environmental changes.

Scientific syntheses, including the U.S. National Climate Assessment and Intergovernmental Panel on Climate Change Fifth Assessment reports, provide evidence that anthropogenic climate change affects Indigenous peoples earlier and more severely than other populations. Indigenous peoples, for example, are already among the first "climate refugees" in regions such as the Arctic or Pacific where sea-level rise is occurring.<sup>3</sup> Climate change affects the

integrity of Indigenous cultures and economies as the habitats change for species such as salmon that are important to Indigenous cultures, health, and economies.<sup>4</sup>

Shifting habitats and climate-induced displacement have implications for Indigenous self-determination. They can offset agreements with nations over designated harvesting areas, such as treaties, that are difficult to renegotiate with more powerful nation-state parties who are heavily influenced by corporations and constituencies of citizens who are largely ignorant about Indigenous peoples. Or they can throw Indigenous peoples into bureaucratic processes of emergency management in which Indigenous peoples' voices are silenced by states, corporations, and local governments.<sup>5</sup>

Indigenous scholars discuss climate vulnerability as an intensification or intensified episode of colonialism. Wildcat claims that Indigenous climate relocation today is part of three removals occurring as part of U.S. colonial, capitalist, and industrial expansion. The first two removals were "geographic" (displacement, e.g. Trail of Tears and the forced occupation of reservations), and "social" and "psycho-cultural" (such as through removal of children to boarding schools). Now,

As ice sheets and glaciers melt permafrost thaws, and seacoasts and riverbanks erode in the near and circumpolar arctic, peoples indigenous to these places will be forced to move, not as a result of something their Native lifeways produced, but because the most technologically advanced societies on the planet have built their modern lifestyles on a carbon energy foundation....<sup>6</sup>

For Wildcat, the *immediacy* of climate refugees is like the experience of *déjà vu* given that relocation and displacement are part of the history of colonially-induced environmental changes that harmed Indigenous peoples. Hence scholars such as Kimmerer can claim that, "Once again, we are in a situation of forced climate change adaptation."<sup>7</sup>

Colonially-driven environmental change destroyed ecosystems on which Indigenous peoples relied, boxed Indigenous peoples into small reservations that were fractions of their original territories, or simply displaced Indigenous peoples from their homelands to new ecosystems. Boarding schools forced Indigenous peoples to adopt English as their primary language, thereby erasing the knowledges encoded within their own languages about how to live in relation to certain ecological conditions; Indigenous students had to adopt heterosexual and patriarchal gender norms that demoralized and disenfranchised Indigenous girls, women and two-spirit persons. The U.S. forced Indigenous peoples to take on corporate government structures that incentivized Tribal government leaders to depend on and buy into extractive industries and other capitalist enterprises (today, gaming is one of them but so is the coal industry).

Through each of these practices of colonialism, Indigenous peoples witnessed the away-migration of their nonhuman relatives. Kimmerer writes that "Like the displaced farmers of Bangladesh fleeing rising sea levels, maples will become climate refugees. To survive they must migrate northward to find homes at the boreal fringe. Our energy policy is forcing them to leave. They will be exiled from their homelands for the price of cheap gas."<sup>8</sup> Mastak et al. see colonialism "as the literal planting and displanting of peoples, animals, and plants—as

inscribing a domination into blood and soil..."<sup>9</sup> Away-migration also occurs in a "psycho-cultural" sense, as Wildcat calls it, when people lose customs, protocols, skill-sets, and identities (e.g. animal clan identities in some Tribes) related to particular plants, animals, insects, and ecosystems.

Indigenous studies, then, seek to understand vulnerability to climate change as an intensification of colonialism. Chief, in work spanning several collaborations she is part of, analyzes the Pyramid Lake Paiute Tribe's (PLPT) vulnerability to climate stressors in relation to their identities as *Kuyuidokado/Kooyooee Tukadu*, or cui-ui (fish) eaters whose relationship to the fish has been eroded, on a cyclical, though intensified, basis, by the Derby Dam built some 100 years ago, high demand for water by settlers, and settler-caused environmental changes that exacerbate droughts.<sup>10</sup> So climate change is related to settlement *and* it is the actions of settlement that opened up PLPT territories for the development of cities such as Reno, Nevada.

Marino and Maldonado discuss how climate change is an intensification of colonialism which opened up territories for settlements and forced some Indigenous peoples to relocate. Marino, working with the *Kigiqitamiut* people in the Village of Shishmaref, Alaska, writes that "Previous flexibility to environmental shifts and unexpected hazards allowed the community to adapt to abrupt changes." Yet now a colonially-driven "relatively immobile infrastructure and development requires people to stay in place in order to carry out their daily lives."<sup>11</sup> Maldonado shows the vulnerability to sea level rise that is forcing the displacement of the Isle de Jean Charles Band of Biloxi-Chitimacha-Choctaw Indians arises from a number of colonial factors tied to energy and agriculture including dredging canals, cutting oil and gas pipelines, constructing dikes and levees, damming the Mississippi river, and large agricultural developments.<sup>12</sup>

The intensified *déjà vu* experience of climate change engages some of the most critical issues Indigenous peoples face today, gender being one of them. Climate change impacts affect Indigenous women more acutely, in many cases, while colonial policies for addressing climate change devalue the leadership of Indigenous women.<sup>13</sup> Moreover, Sweet claims that that "With warming temperatures and melting ice comes greater accessibility to the [Arctic] region, leading to more outside influences and more potential human security threats," including sex trafficking.<sup>14</sup> Oil production fields, such as the Bakken production field in North Dakota, form "man camps" for laborers that attract violent sex trafficking of Indigenous persons.<sup>15</sup> Of course, as a large literature in Indigenous gender studies shows, colonial domination and gender violence/oppression are of a piece.<sup>16</sup> Climate change, then, is both a gendered form of colonially imposed environmental change, and another intensified episode of colonialism that opens up Indigenous territories for capitalism and industrialization that occurs through gender violence.

In the studies just referenced, Indigenous persons and allies examine climate change less as a future trend, and more as the experience of going *back to the future*. For anthropogenic climate change is an intensified repetition of anthropogenic environmental change inflicted on Indigenous peoples via colonial practices that facilitated capitalist industrial expansion. The same colonial practices and policies that opened up Indigenous territories for deforestation

and extractive industries are the ones that make adaptation difficult for Indigenous peoples today.

Anthropogenic climate change makes Indigenous territories more accessible and Indigenous peoples more vulnerable to harm, just as did laws, policies, boarding schools, and the like in previous episodes of colonization. A rising number of scholars, such as Cameron, Stuhl, Haalbloom and Natcher, are adamant that the analysis of Indigenous climate vulnerability cannot occur in the absence of the history and present practices of colonialism and capitalism in Indigenous homelands.<sup>17</sup>

### **Renewing Relatives: Indigenous Knowledges and Climate Change**

Indigenous knowledges, in the simplest terms, refer to systems of monitoring, recording, communicating, and learning about the relationships among humans, nonhuman plants and animals, and ecosystems that are required for any society to survive and flourish in particular ecosystems which are subject to perturbations of various kinds. Indigenous knowledges range from how ecological information is encoded in words and grammars of Indigenous languages, to protocols of mentorship of elders and youth, to kin-based and spiritual relationships with plants and animals, to memories of environmental change used to draw lessons about how to adapt to similar changes in the future. Indigenous peoples see their knowledges as containing important insights about how to negotiate today's environmental issues; they often see the renewal of their knowledge systems as a significant strategy for achieving successful adaptation planning.

Sakakabira, in her work with Iñupiat communities in the arctic, discusses how people live according to relationships of moral reciprocity with whales, an animal they depend on economically, culturally, and for health. The connection is so intimate that Sakakabira calls it "cetaceousnes" (whale-consciousness).<sup>18</sup> While Iñupiat whale knowledge provides practical information on whale lifecycles that facilitate hunting and other practices that secure human benefits from whales, the knowledge also brings people together to respond to climate change. For example, climate change is experienced through changes in the availability of the whale tissue used for traditional drum membranes. Whereas historically drum ceremonies expressed the whales' invitations to bring people together, climate induced disruptions in whale cycles have been associated with a resurgence in drumming ceremonies in some communities. The ceremonies now express humans' invitation for whales to come back to reciprocal relations (with humans).<sup>19</sup>

Norgaard and Reed seek to renew Karuk knowledge, especially burning practices, as a basis for bringing the community members together to address climate change today—a goal they call "knowledge sovereignty." Reed views "climate change as a strategic opportunity not only for Tribes to retain cultural practices and return traditional management practices to the landscape, but for all land managers to remedy inappropriate ecological actions, and for enhanced and successful collaboration in the face of collective survival."<sup>20</sup> Through rekindling traditional burning connected to many human, plant, fish, and animal interactions, the Karuk climate change strategy renews Karuk knowledge to convene the community members themselves and improve the basis for collaborating with nonindigenous parties.

The St. Regis Mohawk Change Plan, spurred by the leadership of Arquette and Benedict, is organized entirely from the human relationships with plants, animals, spiritual beings, and ecosystems of their Thanksgiving Address and that are part of Mohawk knowledge of how to be good environmental stewards. The plan's sections are divided into "The People, Mother Earth, The Waters, The Fish, Small Plants and Grasses, The Berries, Three Sisters, Medicine Herbs, Animals, Trees, The Birds, The Four Winds, The Thunderers, Grandmother Moon, The Sun, the Stars, the Four Beings, the Creator".<sup>21</sup> Each section in the vulnerability analysis begins with a story and a description of the cultural and historical significance of the relationships, followed by comparisons between observed changes and scientific information about climate change. Solutions to climate adaptation in the report involve the continued renewal of the relationships, whether through education or stewardship practices, to mobilize community members to take action to address climate change.

In McNeeley's work with Koyukon people of Koyukuk-Middle Yukon region in the Arctic, one of the issues was that the state of Alaska, in order to cope with the consequences of climate change, was imposing hunting regulations on moose that would restrict Indigenous subsistence harvesting. The collaborators constructed, using Koyukon knowledge of their seasonal round, a seasonal wheel that shows *their* understanding of seasonality. The seasonal round original sketch was hand drawn by a Koyukon youth after a community focus group. Subsequently, different iterations were reviewed by elders and community members. The seasonal wheel, which illustrates numerous human relationships, terrestrial and aquatic plants and animals, and technologies, demonstrates that shifting the moose hunting season later so as to correspond with the Indigenous view of seasonality makes more sense than the date proposed by state and federal regulators.<sup>22</sup>

Renewing Indigenous knowledges can bring together Indigenous communities to strengthen their self-determined planning for climate change. In the cases just described renewing knowledges involved renewing relationships with humans and nonhumans and restoring reciprocity among the relatives (i.e. the parties to the relationships). I call this process *renewing relatives*, as it involves both restoring persisting relationships that are part of longstanding Indigenous heritages but also creating new relationships that support Indigenous peoples' mobilizing to address climate change. While Indigenous knowledges obviously have useful information about the nature of ecological changes, it is perhaps more interesting to explore how renewing Indigenous knowledges serves the motivation of people and communities to address climate change.

Of course, many Indigenous persons are understandably concerned that climate scientists will intentionally or naively clamor around Indigenous communities to exploit the information Indigenous knowledges might possess that could fill in gaps in climate science research. Williams and Hardison and Cochran have been a part of work designed to improve ethical policies and practices for bridging epistemic, power and privilege, cultural, and political differences that scientists often are not trained to understand. Yet as Hardison and Williams show, the more scientists understand the significance of the practice and renewal of Indigenous knowledges for Indigenous peoples' own purposes of preparing for climate change and

protecting their ways of life (sometimes called the governance value of Indigenous knowledges<sup>23</sup>), the more scientists will grasp richer senses of their responsibilities to work with Indigenous collaborators mutually instead of exploitatively.<sup>24</sup>

### **Indigenizing Futures**

The *First Alaskan's Institute*, an Indigenous organization, includes as one of its slogans, "progress for the *next* 10,000 years," referring to Indigenous Alaskans' own histories of living in that region for that long. Since Indigenous peoples in North America think at this scale, the time period of European, U.S., and Canadian colonialism, imperialism, and settlement appears very short and acutely disruptive. Indigenous conceptions of the future often present striking contrasts between deep Indigenous histories and the brief, but highly disruptive colonial, capitalist, and industrial periods. Moreover, many Indigenous histories are explicit about the fact that Indigenous peoples, as collective actors, have also influenced local and regional environments. Many peoples' calendars and seasonal rounds explicitly demonstrate how Indigenous peoples, through practices such as burning and fishing, managed and maintained certain ecosystems. These ecosystems also changed through human interventions such as regional trading.

A term like "anthropogenic" has very diverse meanings for Indigenous peoples, from gradual changes, such as the adoption of new "relatives" (e.g. adoption of the horse in North America) to the shaping of habitats for certain plants and animals, to disruptive settler colonialism, such as practiced by Europeans arriving in North America. "Anthropogenic climate change" or "the Anthropocene," then, are not precise enough terms for many Indigenous peoples, because they sound like all humans are implicated in and affected by colonialism, capitalism and industrialization in the same ways.<sup>25</sup>

Davis and Todd argue that the Anthropocene is rooted in colonization. For colonialism has always included terraforming that tears apart what they call, following Watts, the "flesh"<sup>26</sup> of human-nonhuman-ecological relationships. That colonizers today, from settlers to imperialists, are concerned about climate change, suggests that they are now being affected by the seismic waves of massive ecosystem transformation that began over 500 years ago.<sup>27</sup> Mitchell cautions against "marking European colonization as a driving force of the Anthropocene," because doing so may "naturalize" colonization. That is, the "risk of equating human forms of agency with 'natural forces' is that they come to be seen as inevitable, determinate and less contestable than 'political forces'." Mitchell points out that "the Anthropocene is not the product of 'humanity', but rather particular segments of it."<sup>28</sup>

As Indigenous peoples, we do not tell our futures beginning from the position of concern with the Anthropocene as a hitherto unanticipated vision of human intervention, which involves mass extinctions and the disappearance of certain ecosystems. For the colonial period already rendered comparable outcomes that cost Indigenous peoples their reciprocal relationships with thousands of plants, animals, and ecosystems—most of which are not coming back. As Gross claims, "Native Americans have seen the end of their respective worlds... Just as importantly, though, Indians survived the apocalypse. This raises the further question, then, of what happens to a society that has gone through an apocalyptic event?"<sup>29</sup>

Some answers to Gross' question lie in the work of Indigenous Climate Change Studies described already in this essay. Indigenous imaginations of our futures in relation to climate change—the stuff of didactic science fiction—begin already with our living today in post-apocalyptic situation. Had someone told our ancestors a story of what today's times are like for Indigenous peoples, our ancestors would surely have thought they were hearing dystopian tales. For Indigenous peoples live in worlds so changed by colonialism, capitalism, and industrialization that our collective self-determination and agency are compromised to a degree our ancestors would have been haunted by. Indigenizing our futures involves our reflecting on why our ancestors' would have thought today's times are dystopian.

In our case, reflecting on why our ancestors' would have perceived the present as dystopian provides guidance on how to live under post-apocalyptic conditions. The Menominee Nation's recent development of culturally, spiritually, and economically significant sustainable forest was actually their response to the colonially-induced destruction of their relationships with many species. The transition to forestry involved envisioning and performing certain relationships and responsibilities that would have mattered to their ancestors—just now in relation to forest biodiversity. The Menominee's relationships to the forest motivates their ongoing leadership in addressing climate change.<sup>30</sup> Indigenous climate justice activism is also about performing these ancestrally inspired visions,<sup>31</sup> including the recent insistence by some leaders of the Standing Rock Sioux Tribe that their resistance to the Dakota Access Pipeline is primarily about prayer, ceremony, honoring their ancestors, and renewing their reciprocal responsibilities with water.<sup>32</sup>

Indigenous climate change studies perform futurities that Indigenous persons can build on in generations to come. That is, our actions today are cyclical performances; they are guided by our reflection on our ancestors' perspectives *and* on our desire to be good ancestors ourselves to future generations. Wildcat calls this performance "indigenuity;" Kimmerer, "returning the gift" (if we think broadly, in a multigenerational sense, about what Kimmerer means, here).<sup>33</sup> So for Indigenous peoples, "the Anthropocene epoch," as a concept some people invoke often to envision the future, does not present us, at first glance, with the specter of unprecedented changes. Indigenous Climate Change Studies is a field that opens up our interpretations of our own histories and futurities, with the goal of supporting Indigenous capacities to address climate change and the continuance of flourishing future generations.

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## NOTES

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<sup>2</sup> Candis Callison, *How Climate Change Comes to Matter: The Communal Life of Facts* (Duke University Press, 2014), 42.

<sup>3</sup> Julie Koppel Maldonado et al., "The Impact of Climate Change on Tribal Communities in the Us: Displacement, Relocation, and Human Rights," *Climatic Change* 120, no. 3 (2013).

<sup>4</sup> K. Norton-Smith et al., "Climate Change and Indigenous Peoples: A Synthesis of Current Impacts and Experiences," in *General Technical Report* (Portland, OR, USA: U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 2016).

<sup>5</sup> Zoltan Grossman and Alan Parker, *Asserting Native Resilience: Pacific Rim Indigenous Nations Face the Climate Crisis* (Oregon State University Press, 2012); Randall S Abate and Elizabeth Ann Kronk, *Climate Change and Indigenous Peoples: The Search for Legal Remedies* (Northampton, MA, USA: Edward Elgar Publishing, 2013); Christine Shearer, *Kivalina: A Climate Change Story* (Haymarket Books, 2011).

<sup>6</sup> Daniel R. Wildcat, *Red Alert! Saving the Planet with Indigenous Knowledge* (Golden, CO, USA: Fulcrum, 2009), 4.

<sup>7</sup> Robin Kimmerer, "Climate Change and Indigenous Knowledge," presentation at the *Center for Aboriginal Initiatives* (University of Toronto, March 18, 2014).

<sup>8</sup> *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants* (Milkweed Editions, 2013), 173.

<sup>9</sup> Tomaz Mastnak, Julia Elyachar, and Tom Boellstorff, "Botanical Decolonization: Rethinking Native Plants," *Environment and Planning D: Society and Space* 32, no. 2 (2014): 367.

<sup>10</sup> Karletta Chief et al., "Indigenous Experiences in the Us with Climate Change and Environmental Stewardship in the Anthropocene," in *Forest Conservation and Management in the Anthropocene: Conference Proceedings*, ed. V. Alaric Sample and R. Patrick Bixler (Fort Collins, CO, USA: US Department of Agriculture, Forest Service. Rocky Mountain Research Station, 2014).

<sup>11</sup> Elizabeth Marino, "The Long History of Environmental Migration: Assessing Vulnerability Construction and Obstacles to Successful Relocation in Shishmaref, Alaska," *Global Environmental Change* 22 no. 2 (2012): 374.

<sup>12</sup> Maldonado et al. (2013).

<sup>13</sup> Kirsten Vinyeta, Kyle Powys Whyte, and Kathy Lynn, "Climate Change through an Intersectional Lens: Gendered Vulnerability and Resilience in Indigenous Communities in the United States," *Forest Service General Technical Report* PNW-GTR-923 (2015).

<sup>14</sup> Victoria Sweet, "Rising Waters, Rising Threats: The Human Trafficking of Indigenous Women in the Circumpolar Region of the United States and Canada," *The Yearbook of Polar Law Online* 6, no. 1 (2014).

<sup>15</sup> Sarah Deer, *The Beginning and End of Rape* (University of Minnesota Press, 2015).

<sup>16</sup> Goeman, Mishuana R, and Jennifer Nez Denetdale. "Native Feminisms: Legacies, Interventions, and Indigenous Sovereignities." *Wicazo Sa Review* 24, no. 2 (2009).

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<sup>19</sup> Chie Sakakibara, "'No Whale, No Music': Iñupiat Drumming and Global Warming," *Polar Record* 45, no. 04 (2009).

<sup>20</sup> Kari Norgaard, "Retaining Knowledge Sovereignty: Expanding the Application of Tribal Traditional Knowledge on Forest Lands in the Face of Climate Change," *Prepared for the Karuk Tribe Department of Natural Resources* [www.karuktribeclimatechangeprojects.files.wordpress.com](http://www.karuktribeclimatechangeprojects.files.wordpress.com) (2014).

<sup>21</sup> St. Regis Mohawk Environmental Division, *Climate Change Adaptation Plan for Akwesasne* (Akwesasne, St. Regis Mohawk Tribe 2013).

<sup>22</sup> Shannon M McNeeley and Martha D Shulski, "Anatomy of a Closing Window: Vulnerability to Changing Seasonality in Interior Alaska," *Global Environmental Change* 21, no. 2 (2011); Shannon M McNeeley, "Examining Barriers and Opportunities for Sustainable Adaptation to Climate Change in Interior Alaska," *Climatic Change* 111, no. 3-4 (2012).

<sup>23</sup> Climate and Traditional Knowledges Workgroup, "The Ethics of Traditional Knowledge Exchange in Climate Change Initiatives. Earthzine," *Earthzine* July 31 (2015).

<sup>24</sup> Terry Williams and Preston Hardison, "Culture, Law, Risk and Governance: Contexts of Traditional Knowledge in Climate Change Adaptation," *Climatic Change* 120, no. 3 (2013); Patricia Cochran, "The Melting Ice Cellar," *American Journal of Public Health* 92, no 9(2002).

<sup>25</sup> See also, Schulz, Karsten. "Decolonising the Anthropocene: The Mytho-Politics of Human Mastery." *Critical Epistemologies of Global Politics*, eds. Marc Woons and Sebastian Weier (Bristol: E-International Relations Publishing), 46–62.

<sup>26</sup> Vanessa Watts, "Indigenous Place-Thought and Agency Amongst Humans and Non-Humans (First Woman and Sky Woman Go on a European World Tour!)," *Decolonization: Indigeneity, Education & Society* 2, no. 1 (2013).

<sup>27</sup> Heather Davis and Zoe Todd, personal correspondence on unpublished manuscript project.

<sup>28</sup> Audra Mitchell, "Decolonising the Anthropocene " <https://worldlyir.wordpress.com/2015/03/17/decolonising-the-anthropocene/> (2015).

<sup>29</sup> Lawrence W Gross, *Anishinaabe Ways of Knowing and Being* (Routledge, 2016), 33.

<sup>30</sup> Kyle Whyte, Chris Caldwell, and Marie Schaefer. "Indigenous Insights about Sustainability: Are they only about what works for "all humanity"? Paper under review (2017). Draft available at <https://michiganstate.academia.edu/KyleWhyte>

<sup>31</sup> Janet Fiskio, "Dancing at the End of the World: The Poetics of the Body in Indigenous Protest," in *Ecocriticism and Indigenous Studies: Conversations from Earth to Cosmos*, ed. Salma Monani and Joni Adamson (Routledge, 2016).

<sup>32</sup> Jaskiran Dhillon and Nick Estes, "Standing Rock, #NoDAPL, and Mni Wiconi," Hot Spots, *Cultural Anthropology*, December 22, 2016.

<sup>33</sup> Wildcat 2009; Kimmerer 2013.