HUMAN RIGHTS WATCH

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Map

Areas where Human Rights Watch conducted interviews. © 2020 John Emerson for Human Rights Watch

Summary

Joseph Koostachin, 58, remembers when he and his wife Helen, 56, went out on the land to hunt and berry pick with their young children. In the summer, the forests and meadows were lush and the water in the rivers plentiful. The winters were cold, with ice and snow cover allowing them to travel by dog sled from November through April. They would hunt caribou, a large type of deer, in the winter, while snow geese predictably arrived in April, and fish were bountiful in summer. The varied, seasonal harvest helped Joseph feed his family healthy food year-round.

The Koostachins live in Peawanuck, a remote community on Hudson Bay in the Canadian province of Ontario. Joseph and Helen's sons are now grown and have taken over the responsibility of securing food from the land for the family. Going out on the land means more than just finding food, however, it is also a reflection of their deep ties to the land of their ancestors and its importance to their cultural identity and traditions.

Yet as global temperatures have risen as a result of climate change, the Koostachins' way of life, and livelihood, have become increasingly difficult to maintain, and the realization of their rights to food, health, and culture are at risk. There are fewer caribou and geese migrating to the area. And it is harder—at times impossible—to hunt them because the ice and permafrost they must travel over is no longer stable throughout the winter, while the waters they traverse in summer are unpredictably low. As the climate continues to warm, these changes to their lands and environment will intensify, and their traditional sources of sustenance could entirely disappear.

Already, as a result of these changes, the Koostachins have not been able to harvest the food they need to ensure an adequate diet, and, like many northern and remote First Nations people in Canada, they lack a cost-effective, healthy alternative. If not enough food can be harvested from the land—through hunting, fishing, and gathering wild plants—their only option is to buy costly food imported from the [Canadian] "South." An average family of four in Peawanuck must spend around 30 percent more to purchase a standard selection of healthy food each month compared to a family in Toronto.

With their modest income, the Koostachins said they cannot afford to buy healthy food such as vegetables at the store. While there are government subsidies meant to make food shipped from the South more affordable, healthy imported food, particularly produce, remains inaccessible to many and is becoming more expensive as a result of climate impacts on transport costs.

Across Canada, Indigenous families are already much more likely to be "food insecure"—defined by the United Nations Food and Agriculture Organization (FAO) as not being able to access food to meet dietary needs and food preferences—largely as a result of historic marginalization and the impacts of colonialism. Some studies find nearly one in two households in First Nations are food insecure, compared with one out of nine white Canadian households. Food poverty now risks reaching increasingly dangerous levels as climate change impacts across the country intensify and accelerate, undermining First Nations' access to food and worsening health outcomes, especially for adults and children with chronic health conditions such as diabetes.

Climate change is significantly impacting First Nations—and their livelihoods—across Canada, and there is evidence that the worst is yet to come. Canada is warming by about twice the global average, and northern Canada is warming even faster. A 2019 government report, commissioned by the federal climate ministry, projects increasingly warmer temperatures, shorter snow and ice cover seasons, and thawing permafrost across the country. In fact, key sub-Arctic ecosystems that support many traditional sources of food are already at risk of reaching climate tipping points, past which they will not be able to recover from the consequences of rapid warming. This change, according to scientists, will contribute to carbon emissions. For example, climate change-induced permafrost thaw and increased forest fires are pushing historic carbon sinks like Canada's vast boreal forest to the brink, causing them to become net carbon contributors.

Indigenous peoples in Canada are among the lowest contributors to greenhouse emissions in the country, yet academic research shows they are among the most exposed to climate change impacts. As the climate warms, there are fewer animals migrating and traditional plants growing on First Nations' traditional territories. Unpredictable weather hampers the ability of hunters, who rely on traditional knowledge, to safely navigate potentially treacherous terrain to access hunting grounds. And as transport options like winter roads—constructed from snow and ice—become less reliable in warming winters,

communities increasingly rely on more expensive air transport to deliver food, driving up the cost of purchased foods.

The harmful impacts of warming that Indigenous populations in Canada are experiencing point to more devastating impacts in the future. Human Rights Watch research found that the Canadian government's failure to put in place adequate measures to support First Nations in adapting to current and anticipated impacts of climate change is leading to violations of their rights. And federal and provincial authorities are not doing enough to advance global efforts to curb climate change.

This report, the outcome of research Human Rights Watch conducted in Northern Ontario, Northwestern British Columbia, and Northern Yukon between June 2018 and December 2019, examines the impacts of the climate crisis on First Nations. Human Rights Watch interviewed more than 120 individuals, including residents, chiefs, and council members in First Nations communities; medical providers, educators, environment and health experts, academics, and staff of Indigenous-led and Indigenous representative organizations. The experiences of First Nations described in this report are illustrative of broader climate change impacts across Canada, however, each First Nation is unique, and none of their experiences can be generalized, making it imperative to tailor measures to address climate impacts and community needs in each of their traditional territories.

Climate Change as a Driver of Food Poverty

The communities Human Rights Watch visited are largely populated by First Nations people who have traditionally relied on caribou, moose, geese, salmon and other animals and fish—along with supplements of berries—to feed their families. For generations, traditional food systems have been central to the livelihoods and health of First Nations.

Climate change threatens to decimate these food systems, risking further serious consequences for livelihoods and health. In the three areas where Human Rights Watch conducted research, residents reported drastic reductions in the quantity of harvestable resources available, and increased difficulty and danger associated with harvesting. They attributed this decline in part to changes in wildlife habitat as a result of climate change, including changing ice and permafrost, wildfires, warming water temperatures, changes in precipitation and water levels, and unpredictable weather. Numerous scientific studies

support these observations and warn of further devastating impacts as the climate crisis increasingly threatens the viability of and access to traditional food sources.

With less food to be harvested, households supplement their traditional diet with more purchased food. First Nations in remote locations have a compounded risk of food poverty because higher transportation costs drive food prices higher than elsewhere in the country. This cost differential has been increasing in part due to climate-related changes in the local environment. For example, shorter, warmer winters mean shorter periods in which winter roads can be used, and such roads enable more cost-effective delivery of supplies from the South. This change means more people like Joseph and Helen choosing between going hungry or buying cheaper foods they believe contribute to making them sick or sicker. It will get significantly worse if climate change continues unchecked.

Impacts on Health and Culture

Healthy foods, such as fruits and vegetables, in remote grocery stores are often cost-prohibitive. As a result, people told Human Rights Watch they tend to eat more affordable, but less nutritious foods, compounding existing health disparities in northern communities tied to historic marginalization and poor access to health care. In particular, academic studies show that increased dependence on processed, high-calorie, store-bought foods—often less expensive and with longer shelf-lives—has contributed to serious diet-related health issues among First Nations, such as the growing and disproportionate number of First Nations people affected by obesity and diabetes.

In several of the communities where Human Rights Watch conducted research, teachers and community members said that children come hungry to school. Older people and people with chronic diseases whose health conditions can make a healthy diet all-the-more critical said they find the loss of harvested food impedes their ability to eat healthily. Medical providers told Human Rights Watch that people with chronic diseases cannot afford to follow medically recommended diets due to their inability to obtain food from the land or to afford nutritious foods sold in stores. Some of the relatively older people interviewed for this report said they have cut down on the number of meals they eat per day.

The impacts of climate change negatively affect Indigenous cultures. Limited access to traditional food sources and decreased ability of First Nations to safely spend time on the land, threatens not only communities' food supplies but also their ability to engage in related cultural practices and ultimately maintain their cultural identities. First Nations' land-based knowledge systems, known as "Indigenous knowledge," which communities use to pass information about harvesting techniques and other cultural knowledge down through the generations, are also being challenged by climate change impacts. The unpredictable weather and animal patterns linked to climate change impacts inhibit the growth and adaptation of Indigenous knowledge, and the transmission of cultural knowledge—which necessitates time spent on the land.

Community Resilience in the Face of the Climate Crisis

Across the country, First Nations are addressing the impacts of the climate crisis, including through projects such as community solar projects or local food sourcing projects like gardens and greenhouses. Some First Nations maintain strong traditional food sharing networks that have helped address climate-driven loss of food through sharing harvest with vulnerable members of the community, while others have built up community-science programs that monitor climate change impacts on their environment. Yet, all these efforts require resources and capacity which many communities cannot access given government funding complexities, especially as needs increase with rising temperatures.

Failure to Address Climate Change and its Impacts on Food Poverty

In its September 2020 Speech from the Throne, in which the federal government outlines its priorities for the upcoming parliamentary session, the government committed to "work with … First Nations … to address food insecurity in Canada." Until now, federal climate change policies have largely ignored the impacts of climate change on First Nations' right to food. Most existing policies were designed without meaningful participation of First Nations and fail to monitor—let alone address—human rights impacts in these communities. Food subsidies and health resources required to respond to the current and projected impacts are often not available, insufficient, or do not reach those who need it the most.

For example, the federal government's "Nutrition North" program subsidizes a list of nutritious foods transported from registered southern retailers. This program is the major means of supplementing inadequate supplies of locally harvested food. However, since its inception in 2011, the program has not led to remote, northern communities securing access to affordable, healthy food: food prices in community-based stores remain high with healthy food options financially unattainable for many. Ordering subsidized food from retailers in the South often requires a credit card—which can be a barrier for some low-income families. It remains to be seen whether changes to the program made in 2019, including subsidy increases, will increase access to healthy foods in First Nations. Robust community-based monitoring of actual price development in First Nations should be undertaken to determine the efficacy of these changes and adjustments made where necessary.

At the subnational level of provincial and territorial governments the response varies. The Yukon territory, for example, released a climate change policy in 2019 that acknowledges the need to monitor and address food security and unique impacts on Indigenous peoples. Ontario, by contrast, starting in 2018, cancelled numerous climate adaptation and mitigation programs that benefited First Nations.

Meanwhile, Canada is not doing its part to advance global efforts to address the change in global temperature, which is contributing to loss of traditional food sources. In 2015, it made a weak pledge to only reduce emissions by 30 percent below 2005 levels by 2030. At time of writing Canada has not set an adequately ambitious Nationally Determined Contribution, a country's domestic climate change action plan, to keep global temperature rise below 1.5°C—according to the think tank Climate Action Tracker, if all government targets were in range with Canada's level of ambition, warming would reach over 2°C and up to 3°C. While the federal government has repeatedly confirmed its commitment to exceed the 2030 goal and reach net-zero emissions by 2050 through legislated targets, including in the September 2020 Speech from the Throne, it is unclear how it will reach these goals. In any case, the government is not on track to meet either its 2030 emissions targets or net-zero by 2050, and acknowledges that more needs to be done. Despite its relatively small population of approximately 37.5 million people, Canada is still among the top 10 countries worldwide in GHG emissions, with per capita emissions approximately three to four times the global average, and growing.

Complicating efforts to cut emissions is Canada's continued subsidizing of fossil fuel production. Canada increased its financial support for fossil fuels from 2018 to 2019 to nearly CAD$600 million, and has continued to provide billions in aid to fossil fuel producers as part of the country's Covid-19 response in 2020.

The federal government's plan to cut carbon emissions through a carbon pricing policy can be an essential aspect—though insufficient on its own—of the fight against climate change. The current design of the federal carbon tax, however, will likely drive up food prices, particularly in remote communities, thereby placing a disproportionate burden on a population that bears the least responsibility for the problem. While the policy includes a tax-based rebate intended to mitigate the impacts of these price increases on lower-income people, the federal government has acknowledged this method is ineffective for First Nations given legislated tax exemptions that mean many First Nations people on-reserve do not file federal tax returns.

Ultimately, Canada's climate policies are insufficient and poorly designed, contributing to a double bind for First Nation peoples: while climate change is adversely impacting their traditional food sources, their ability to afford healthy store-bought food is being undercut by the government's main mitigation policy: the carbon tax.

Recommendations

The Canadian government should urgently strengthen its climate change policies to reduce emissions in line with the best available science, including by setting ambitious new Nationally Determined Contributions which will align their emissions reduction targets with the Paris Agreement.

Covid-19 stimulus packages should support a just transition towards renewable energy, including in First Nations. Such measures are essential for Canada to contribute to global efforts to mitigate climate change under the Paris Agreement, which are necessary to reduce further negative impacts on Indigenous peoples' rights to food and health.

First Nations should receive the financial and technical support needed to respond to current and projected climate impacts, including on food and health, and should lead the design and implementation of programs addressing these impacts.

In line with Canada's human rights obligations, including under the United Nations Declaration on the Rights of Indigenous Peoples, it is essential that climate change adaptation and mitigation policies not further harm Indigenous peoples, including older people, women, children and people with chronic diseases within First Nations who are already among the most impacted by climate change.

The Canadian government should publicly announce that it accepts the right to food as a basic human right, and part of the human right to an adequate standard of living, and realize its obligation to ensure that First Nations can realize this right by addressing climate impacts on food poverty. The announcement should include a recognition that Indigenous knowledge of climatic conditions and their impacts on traditional food sources are relevant to the realization of the right to food.

Methodology

This report documents the impacts of climate change on First Nations' rights to food, health, culture, and a healthy environment in communities in both the Far North and provincial norths of Canada. It also examines government policies related to climate change mitigation and adaptation and how the government is addressing the human rights challenges exacerbated by climate change. The report is based on interviews with more than 120 people, including 45 Indigenous people living in First Nations on and off reserve, provincial/territorial and federal government officials, and representatives of nongovernmental organizations who have worked on climate change impacts in First Nations. Human Rights Watch also interviewed more than 30 experts who currently work, or have worked, on Indigenous food security and climate change issues, including service providers and academic researchers.

The interviews were conducted in person and by phone between June 2018 and March 2020, including five weeks of field research in June and October 2018, March and December 2019, and March 2020. We also conducted group interviews, each of between five and 15 participants, in Peawanuck and Old Crow. Human Rights Watch identified interviewees through community members who had monitored climate change impacts or had volunteered during community meetings organized to introduce our work. Interviews were conducted in English, or in Cree via an interpreter. Human Rights Watch researchers obtained oral informed consent from all interview participants, and provided oral explanations about the objectives of the research and how interviewees' accounts would be used in the report. Interviewees were informed that they could stop the interview at any time or decline to answer any questions they did not feel comfortable answering. Interviewees were not compensated.

Field research for this report was conducted in First Nations in Yukon territory (Old Crow) and in Ontario (Peawanuck, Attawapiskat) and British Columbia (Skeena River watershed) provinces. These communities were chosen because they represent a variety of climatic zones and related traditional food sources, different levels of remoteness (fly-in communities as well as road accessible), different carbon pricing regimes (provincial and federal) as well as different community structures, (self-) government status and sizes.

Researchers also conducted interviews in Whitehorse (Yukon), Toronto (Ontario), Victoria (British Columbia), and Ottawa (Ontario).

Researchers also reviewed and analyzed secondary sources—including academic research and peer-reviewed scientific studies documenting and projecting the impacts of climate change, media reports, and relevant Canadian laws and policies.

Human Rights Watch sent letters to the Prime Minister's Office; the ministers of Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC), Indigenous Services Canada (ISC), Environment and Climate Change Canada (ECCC), Health Canada, and Agriculture and Agri-food Canada; relevant staff at CIRNAC, ISC, ECCC, Health Canada, and Natural Resources Canada; and to the premiers of Ontario, British Columbia, and Yukon in June and July 2020. The letters provided a summary of Human Rights Watch findings, included specific questions for the government, and offered to reflect the government's response in the report. At time of writing, written responses were received from CIRNAC, ISC, ECCC, Natural Resources Canada, Health Canada, and the governments of Yukon and Ontario and are published on the Human Rights Watch website, linked to this report. No written response was received from Agriculture and Agri-food Canada, or the government of British Columbia.

Human Rights Watch also sent letters to The North West Company and Arctic Co-op Ltd., the two largest food retailers in remote and northern communities, in July 2020. The letters provided a summary of Human Rights Watch findings, included specific questions, and offered to reflect the company's response in the report. At time of writing, The North West Company met with Human Rights Watch, in addition to providing responses via email, but no response was received from Arctic Co-op Ltd.

Each First Nation is unique and none of the experiences described in the report can be generalized.

Terminology:

Elder: In First Nations, the term "Elder" is used to refer to someone who has attained a high degree of understanding of the community's history, traditional teachings, and ceremonies, and earned the right to pass this knowledge on to others and to give advice and guidance. There is no specific age associated with the title "Elder," though most Elders are older people. [1]

Right to food: This report uses the human right to food as defined under international human rights law to refer to the right of First Nations to have access to sufficient quantities of healthy, nutritious, and culturally appropriate foods. See the "Right to Food" section for more detail.

Food insecurity and food poverty: The terms "food poverty" and "food insecurity" are sometimes used interchangeably in public debate around reliance on food aid. This report uses "food poverty" to describe lack of consistent access to adequate healthy food, or more specifically, decreasing affordability and access to nutritious and traditional food sources for First Nations, and the related impacts on health and culture. "Food security" and "food insecurity" are only used when referring to more formal, systemic measurements of access to food at the individual or household level, which may not reflect additional variables of food poverty, such as whether a household has access to culturally-acceptable food.

[1] "Elders," Ontario Institute for Studies in Education, University of Toronto (2019), https://www.oise.utoronto.ca/deepeningknowledge/Teacher_Resources/Curriculum_Resources_(by_subjects)/Social_Sciences_and_Humanities/Elders.html#:~:text=A%20resource%20compiled%20by%20Dr,%2C%20ceremonies%2C%20and%20healing%20practices (accessed July 14, 2020); S.M. Stiegelbauer, "What is an Elder? What do Elders do? First Nations Elders as Teachers in Culture-Based Urban Organizations," The Canadian Journal of Native Studies XVI, 1 (1996): pp. 37-66.

First Nations in the Report

Weenusk First Nation, Ontario

The people of Weenusk First Nation have lived in the Hudson Bay Lowlands for generations. Today, the overall membership of Weenusk First Nation is about 595, approximately 300 of whom reside in Peawanuck.[2] Peawanuck is located in Ontario's far north, on the Weenusk River along the shore of Hudson Bay and is accessible only by plane or ice-road during winter months. Weenusk First Nation became a party to Treaty #9, one of the historic treaties between First Nations and the Canadian government, in 1929-1930.[3]

Members of Weenusk First Nation hunt geese and other birds in the spring and fall when they migrate past the community. In the summer, they fish for trout, pike, and whitefish, among others, and go berry picking. In late fall they hunt moose. Caribou season runs throughout the fall and winter.

When substituting harvested food with store-bought food, community members rely on the Northern store on-reserve, though some order food from other vendors in Timmins, Ontario, over 750 km away. Only one winter road seasonally connects Peawanuck to the neighbouring province of Manitoba, stretching 772 km east along the Hudson Bay tree line and operating for about two months each winter.[4]

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[2] Weenusk First Nation and the Ontario Ministry of Natural Resources and Forestry, "Terms of Reference: Community Based Land Use Planning," November 20, 2017, https://files.ontario.ca/weenusk-terms-of-reference-english.pdf (accessed May 21, 2020), p. 3.

[3] Nishnawbe Aski Nation, "Treaty Land Entitlement Resolution Process," http://community.matawa.on.ca/wp-content/uploads/2013/12/Treaty-Land-Entitlement-Resolution-Process-booklet.pdf (accessed September 5, 2020); James Morrison for Treaties and Historical Research Centre, Indian and Northern Affairs Canada, "Treaty Research Report - Treaty No. 9 (1905-1906)," 1986, https://www.rcaanc-cirnac.gc.ca/eng/1100100028859/1564415209671 (accessed May 21, 2020). Treaty #9 was negotiated to secure lands and resources within the traditional territory of Anishinaabe and Cree peoples to make way for settlement and resource development. John F. Leslie, The Canadian Encyclopedia, "Treaty 9," June 16, 2016, https://www.thecanadianencyclopedia.ca/en/article/treaty-9 (accessed May 21, 2020).

[4] Peawanuck is isolated for, on average, 10 months of the year. Nutrition North Canada, "Eligible Communities," May 5, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415540731169/1415540791407#tpc2 (accessed May 21, 2020).

Winter road network in Ontario. © 2020 John Emerson for Human Rights Watch

Attawapiskat First Nation, Ontario

Attawapiskat First Nation is located along the Attawapiskat River, five kilometers inland from James Bay. There are over 2,800 members of Attawapiskat First Nation, but the local on-reserve population is 1,501.[5] Attawapiskat became a party to Treaty #9, one of the historical treaties, in 1930.[6]

Attawapiskat First Nation members hunt moose mainly in the fall, caribou mainly during the winter when winter roads and ice and snow cover provide better inland access by snowmobile, and waterfowl during spring and fall migration periods.

[5] Statistics Canada, "Census Profile, 2016 Census: Attawapiskat 91A, Indian reserve [Census subdivision], Ontario," August 9, 2019, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3560051&Geo2=PR&Code2=35&SearchText=Attawapiskat%2091A&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=3560051&TABID=1&type=0 (accessed May 31, 2020).

[6] James Morrison for Treaties and Historical Research Centre, Indian and Northern Affairs Canada, "Treaty Research Report - Treaty No. 9 (1905-1906)," 1986, https://www.rcaanc-cirnac.gc.ca/eng/1100100028859/1564415209671 (accessed May 21, 2020).

Community members supplement harvested food with store-bought items, purchased at the on-reserve Northern Store or a locally-owned convenience store.[7] During the summer, supplies can be delivered by barge to Attawapiskat. During winter, the community is accessible by winter road for two months on average, depending on snow and ice condition.[8]

Vuntut Gwitchin First Nation, Yukon

Vuntut Gwitchin First Nation (VGFN) has a population of approximately 800, with about 250 people living mainly in Old Crow, located at the confluence of the Crow and Porcupine Rivers in the northern Yukon without any road access.[9] The Vuntut Gwitchin have settled their land claims with the government, defining their traditional territory, approximately 50,000 square miles (roughly 129,499 square kilometers), which is located mostly in the Northern Yukon region. The VGFN final agreement, signed with the governments of Canada and the Yukon in 1993, gives the First Nation responsibility to uphold the rights and freedoms of its Citizens and enact laws on natural resource protection and harvesting of traditional food sources.[10]

The community primarily relies on caribou for food, specifically, the Porcupine Caribou Herd (PCH), who migrate through Vuntut Gwitchin lands each spring and fall.[11] The community also harvest duck and geese in the spring, and whitefish and salmon from the Porcupine River during the summer. Moose and other, smaller animals are harvested as needed year-round. Harvesting takes place up and down the Porcupine River and in Crow Flats.[12] Community members supplement harvested food with store-bought food from a locally-operated Co-op or order from vendors in Whitehorse, arranging shipping via Air North, an airline that is partly owned by the Vuntut Gwitchin.[13]

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[7] Nutrition North Canada, "Eligible Communities," May 5, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415540731169/1415540791407#tpc2 (accessed May 21, 2020).

[8] Ibid.

[9] Email correspondence with Megan Williams, Heritage Manager, Vuntut Gwitchin First Nation, September 14, 2020.

[10] Indian and Northern Affairs Canada, "Vuntut Gwitchin First Nation Self-Government Agreement," 1993, https://yukon.ca/sites/yukon.ca/files/eco/eco-ar-vg-self-government-agreement.pdf (accessed May 31, 2020), paras. 13.3.3 – 13.3.4.

[11] Government of the Vuntut Gwitchin First Nation, "Caribou Coordination," undated, https://www.vgfn.ca/caribou.php (accessed May 31, 2020).

[12] Email correspondence with Megan Williams, Heritage Manager, Vuntut Gwitchin First Nation, September 14, 2020.

[13] Ibid.

Skeena River Watershed First Nations, British Columbia

The Skeena River watershed in north western British Columbia is the homeland of the Tsimshian, Gitxsan, and Wet'suwet'en peoples, as well as the Takla First Nation and Lake Babine Nation.[14] Within the watershed, First Nations people live on and off-reserve. Their land claims are unsettled.

Salmon—principally sockeye—hold particular importance to Skeena River First Nations, both for cultural purposes and as a source of nutritious food.[15] Community members supplement harvested food with store-bought food, and most Skeena River area communities are road accessible all-year. Local food banks in nearby urban centers like Terrace, as well as soup kitchens and school lunch programs also provide key sources of food for many.

[14] Greg Knox, "First Nations Ingenuity – A Promising Approach to The Skeena Salmon Crisis," Skeena Wild, November 16, 2008, http://skeenawild.org/images/uploads/First_Nations_Ingenuity.pdf (accessed May 31, 2020); Lake Babine Nation, "Fisheries Department," https://www.lakebabine.com/about-us/fisheries/ (accessed September 8, 2020); Email from Takla Lake First Nation to Minister McKenna, March 11, 2016, https://www.ceaa-acee.gc.ca/050/documents/p80032/110980E.pdf (accessed September 8, 2020).

[15] Jenna Cocullo, "Skeena First Nations call on DFO to close recreational fishing for chinook salmon," The Interior News, July 26, 2019, https://www.interior-news.com/news/skeena-first-nations-call-on-dfo-to-close-recreational-fishing-for-chinook-salmon/ (accessed May 31, 2020); Alanna Mitchel, "Sockeye salmon stocks are crashing. Long-lost notebooks saw it coming.," Macleans, November 13, 2019, https://www.macleans.ca/news/canada/sockeye-salmon-stocks-are-crashing-long-lost-notebooks-saw-it-coming/ (accessed May 31, 2020). Kerri Garner and Ben Parfitt, Report to the Pacific Fisheries Resource Conservation Council, "First Nations, Salmon Fisheries and the Rising Importance of Conservation," April 2006, https://salmonwatersheds.ca/libraryfiles/lib_207.pdf (accessed May 31, 2020), pp. 3 & 5.

Background

First Nations in Canada

The Canadian Constitution recognizes three Indigenous groups—First Nations (referred to in the Constitution as "Indians"), Inuit, and Métis—as "Aboriginal peoples."[16] More than 1.67 million people in Canada (4.9 percent of the population) identify as First Nations, Inuit, or Métis according to the 2016 Census.[17] This population is the youngest in Canada and was the fastest growing population between 2006 and 2016.[18]

First Nations make up the largest group of Indigenous people in Canada, numbering over 900,000.[19] "First Nations" is a collective term for what is a diverse group of more than 630 communities, representing more than 50 First Nations, and speaking more than 50 languages across Canada.[20]

Before colonization, First Nations occupied large swaths of territory on which they harvested animals and plants for social, political, economic, and cultural purposes as well as for sustenance. However, the Indian Act, a law passed in 1876 and recognized as an instrument to suppress and destroy First Nations' cultures and economies, sets out the framework of the reserve system, whereby federally-recognized First Nations, known as

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[16] Constitution Acts, 1867 to 1982, Sec. 35, https://laws-lois.justice.gc.ca/eng/const/page-16.html (accessed May 31, 2020). The Constitution, along with other legal instruments, enshrines certain terms such as "Indian" and "Aboriginal" into Canadian law. However, these terms have become outdated and, in some cases, offensive. In this report, "Indigenous," or, where more specificity is appropriate, "First Nations," are used instead of "Aboriginal" or "Indian" unless required when referring to a specific, legal term. "First Nations" and "Indigenous" are not interchangeable terms in this report, the former refers specifically to First Nations peoples, while "Indigenous" is used more broadly to encompass First Nations and other Indigenous peoples, such as the Inuit or Métis. The Inuit are an Indigenous people who, in Canada, live primarily in "Inuit Nunangat," the land, water, and ice stretching from the westernmost Arctic, across Nunavut and northern Quebec, to the eastern shores of Newfoundland and Labrador, primarily in communities along the Arctic coast. Inuit Tpiriit Kanatami, "About Canadian Inuit," 2020, https://www.itk.ca/about-canadian-inuit/ (accessed May 31, 2020). The Métis are a distinct society that emerged from the meeting of Indigenous and European cultures in the 1700s, when European fur traders married First Nations women, developing their own unique culture and language (Michif). The Métis Nation, "The Métis Nation," 2020, https://www.metisnation.ca/index.php/who-are-the-metis (accessed May 31, 2020).

[17] Statistics Canada, "2016 Census: Aboriginal peoples," April 4, 2018, https://www12.statcan.gc.ca/census-recensement/2016/as-sa/fogs-spg/Facts-CAN-eng.cfm?Lang=Eng&GK=CAN&GC=01&TOPIC=9 (accessed May 31, 2020). The most recent census was taken in 2016 and the next is scheduled for 2021.

[18] Crown Indigenous Relations and Northern Affairs, "Indigenous peoples and communities," December 4, 2017, https://www.rcaanc-cirnac.gc.ca/eng/1100100013785/1529102490303 (accessed May 31, 2020).

[19] Statistics Canada, "2016 Census: Aboriginal peoples."

[20] Crown Indigenous Relations and Northern Affairs, "First Nations," December 4, 2017, https://www.rcaanc-cirnac.gc.ca/eng/1100100013791/1535470872302 (accessed May 31, 2020).

"bands," are allotted small parcels of land for their use.[21] Reserves, often in remote areas, were selected without consulting First Nations, and are a fraction of the size of many First Nations' traditional territories.[22] Almost half (44.2 percent) of First Nations people still live on-reserve, with the vast majority of reserves found in British Columbia, followed by Ontario and Manitoba.[23]

First Nations and the Canadian State

The Canadian constitution establishes two levels of government: federal and provincial.[24] In 1982, the Canadian constitution was amended to recognize the "existing aboriginal and treaty rights of the aboriginal peoples of Canada," a set of rights that includes the inherent right of self-government.[25] However, Section 91(24) of the Canadian Constitution also grants the federal government jurisdiction over First Nations, while the Indian Act, along with other federal legislation, controls most aspects of life on-reserve, and continues to impose a paternalistic relationship between the Canadian state and First Nations governments with limited powers delegated from the federal government.[26] While the government of Prime Minister Trudeau has, since 2016, repeatedly committed to establishing a "nation-to-nation, government-to-government" relationship with First Nations, based on recognition of

[21] Truth and Reconciliation Commission of Canada, Honouring the Truth, Reconciling for the Future Summary of the Final Report of the Truth and Reconciliation Commission of Canada, 2015, http://www.trc.ca/assets/pdf/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf (accessed May 31, 2020), pp. 54-55, 62.

[22] Traditional territory is the geographic area identified by a First Nation as the area of land historically occupied by the First Nation and used for traditional purposes, such as cultural ceremonies and harvesting. BC Open Textbooks, "The Reserve System," undated, https://opentextbc.ca/indigenizationfoundations/chapter/the-reserve-system/ (accessed May 31, 2020).

[23] Statistics Canada, "2016 Census: Aboriginal peoples;" Indigenous and Northern Affairs Canada, "Reports – Canada," September 15, 2010, https://www.aadnc-aandc.gc.ca/eng/1100100034846/1100100034847#analysis (accessed May 31, 2020).

[24] Two of the three territories, meanwhile, have power devolved from the federal government. Nunavut was established through a comprehensive land claim (see below re: land claims). Municipalities, in turn, have powers devolved from provincial or territorial governments.

[25] Crown Indigenous Affairs, "The Government of Canada's Approach to Implementation of the Inherent Right and the Negotiation of Aboriginal Self-Government," https://www.rcaanc-cirnac.gc.ca/eng/1100100031843/1539869205136#:~:text=The%20Government%20of%20Canada%20recognizes,relationship%20with%20treaty%20First%20Nations (accessed July 15, 2020).

[26] Section 91(24) of the Canadian Constitution grants the federal government jurisdiction over "Indians and lands reserved for the Indians." See also, http://www.fngovernance.org/publication_docs/Self-Governance_Right_CFNG.pdf; https://www.oecd-ilibrary.org/sites/b4446f31-en/index.html?itemId=/content/component/b4446f31-en.

their right to self-determination, including self-government, progress toward realizing this goal has been slow. [27]

Looming Food Poverty in First Nations

As a direct result of historic marginalization, First Nations face a host of socio-economic inequalities, including inadequate and substandard housing, lack of safe drinking water, and obstacles to accessing healthcare services. [28] The federal government's main measure of socio-economic well-being, the Community Well-Being Index, has found a substantial gap between the average well-being of First Nations and non-Indigenous communities from 1981 to 2016. [29]

While the majority of Canadians are "food secure," meaning they have access to food to meet their dietary needs and food preferences, First Nations households are much more

[27] "Principles Respecting the Government of Canada's Relationship with Indigenous Peoples," Department of Justice (2018), https://www.justice.gc.ca/eng/csj-sjc/principles.pdf (accessed July 14, 2020). Since 2016, the federal government has been working with First Nations to co-develop a new fiscal relationship that would address the impacts of historic and current underfunding of First Nations, and provide flexible and predictable funding allowing First Nations to exercise their right to self-government. The current arrangement, the government acknowledges is inadequate: "For many programs and services, current funding levels do not compare equitably with funding available to other levels of government and are insufficient to allow for progress in reducing socio-economic gaps between First Nations citizens and other Canadians." Indigenous and Northern Affairs, "A new approach: Co-development of a new fiscal relationship between Canada and First Nations," (2018), https://www.aadnc-aandc.gc.ca/eng/1516389497863/1516389603336#chp6 (accessed July 16, 2020); "Honouring our ancestors by trailblazing a path to the future: Interim Report of the Joint Advisory Committee on Fiscal Relations - for Engagement Purposes" (June 2019), https://www.sac-isc.gc.ca/eng/1561371591558/1561371616958?wbdisable=true (accessed July 16, 2020).

[28] UN Human Rights Council, Report of the Special Rapporteur on the rights of indigenous peoples, Addendum: The situation of indigenous peoples in Canada, A/HRC/27/52/Add.2, July 4, 2014, paras. 14-15; Statistics Canada, "The housing conditions of Aboriginal people in Canada," October 15, 2017, https://www12.statcan.gc.ca/census-recensement/2016/as-sa/98-200-x/2016021/98-200-x2016021-eng.cfm (accessed May 31, 2020); Indigenous Services Canada, "Monthly progress update through August 2019 on drinking water advisories on public systems on reserves," September 6, 2019, https://www.canada.ca/en/indigenous-services-canada/news/2019/09/monthly-progress-update-through-august-2019-on-drinking-water-advisories-on-public-systems-on-reserves.html (accessed May 31, 2020); B. Allan & J. Smylie, First Peoples, second class treatment: The role of racism in the health and well-being of Indigenous peoples in Canada, The Wellesley Institute, 2015, https://www.wellesleyinstitute.com/wp-content/uploads/2015/02/Summary-First-Peoples-Second-Class-Treatment-Final.pdf (accessed May 31, 2020).

[29] The Community Well-Being is comprised of 4 components (education, labour force activity, income, and housing), which are combined to provide each community with a well-being "score." The average First Nation community score is 19.1 points lower than the average score for non-Indigenous communities. Indigenous Services Canada, "Report on trends in First Nations communities, 1981 to 2016," January 24, 2020, https://www.sac-isc.gc.ca/eng/1345816651029/1557323327644 (accessed May 31, 2020).

likely to face food insecurity.[30] The 2017-2018 Canadian Community Health Survey (CCHS) by Statistics Canada reported that 28.2 percent of Indigenous households off-reserve experienced food insecurity compared to 11.1 percent of white households.[31] The First Nations Regional Health Study, meanwhile, reports that approximately half of First Nations households on-reserve and in Northern communities nationwide were moderately or severely food insecure. Of those households with children, 43.2 percent were classified as food insecure.[32]

Poor Health Outcomes in First Nations

The health outcomes of First Nations tend to be significantly poorer than the average Canadian. Life expectancy at birth is lower by 11.2 years in areas with high concentrations of First Nations compared to areas with low concentrations of Indigenous people.[33] Only 37.8 percent of First Nations adults nationally reported that their health was excellent or

30 According to the UN Food and Agriculture Organization (FAO), food security "exists when all people, at all times, have physical, social, and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Food and Agriculture Organization of the United Nations, "Declaration of the World Summit on Food Security," November 2009, http://www.fao.org/tempref/docrep/fao/Meeting/018/k6050e.pdf (accessed May 31, 2020). Regarding Indigenous food insecurity see, e.g. First Nations Information Governance Centre, First Nations Regional Health Survey (RHS) 2008/10: National report on adults, youth, and children living in First Nations communities (Ottawa: FNIGC, 2012); FNIGC, National Report of the First Nations Regional Health Survey: Phase 3, Volume 2, 2018; First Nations Food, Nutrition, and Environment Study, accessed September 18, 2019, http://www.fnfnes.ca/download. Indigenous status as an indicator of higher rates of food insecurity remains even after adjusting for socio-demographic variables like income and province/territory of residence. See, e.g., Valerie Tarasuk, Andy Mitchell, and Naomi Dachner, Canadian Institutes of Health Research and Research to Identify Policy Options to Reduce Food Insecurity, Household Food Insecurity in Canada, 2017-2018 (Toronto: PROOF, 2018); First Nations Information Governance Centre, National Report of the First Nations Regional Health Survey: Phase 3, Volume 2 (Ottawa: FNIGC, 2018).

31 Statistics Canada is a federal agency commissioned with producing statistics to help better understand Canada, its population, resources, economy, society, and culture. Valerie Tarasuk, Andy Mitchell, and Naomi Dachner, Household Food Insecurity in Canada, 2017-2018. This survey does not include First Nations peoples living on-reserve, as well as other populations at high risk of experiencing food insecurity. A national study focusing on food security in First Nations indicates that half of Indigenous peoples on First Nations reserves and in Northern Canada are food insecure, so excluding this population from the CCHS likely decreases the rate of food insecurity reported in Canada. See FNIGC, National Report of the First Nations Regional Health Survey: Phase 3, Volume 2, 2018. The Aboriginal Peoples' Survey in 2012 reports that 19 percent of First Nations individuals off-reserve experience low or very low food security, see Statistics Canada, "Food security by Aboriginal Identity," 2012, https://doi.org/10.25318/4110000901-eng (accessed May 31, 2020).

32 First Nations Information Governance Centre, First Nations Regional Health Survey (RHS) 2008/10: National report on adults, youth, and children living in First Nations communities (Ottawa: FNIGC, 2012); FNIGC, National Report of the First Nations Regional Health Survey: Phase 3, Volume 2, 2018.

33 Public Health Agency of Canada, Key Health Inequalities in Canada A National Portrait, 2018, https://www.canada.ca/en/public-health/services/publications/science-research-data/key-health-inequalities-canada-national-portrait-executive-summary.html (accessed May 31, 2020), p. 60.

very good, while 59 percent of all Canadians rated their health as excellent or very good.[34] A 2018 parliamentary report, for example, found that First Nations people are much more likely to have chronic health conditions at a younger age compared to the general Canadian population and are likely to experience multiple chronic conditions.[35]

Exceptionally high rates of diabetes pose a specific concern for many First Nations populations, with estimated rates three to five times higher among First Nations populations than the general population.[36] The increased rate of diabetes among First Nations is tied, in part, to the erosion of harvesting practices and increased reliance on processed, store-bought foods.[37] Traditional diets are often based on a combination of food sources that provide a protective effect from diabetes.[38]

The health care available in First Nation communities is often limited and of lower quality compared with the care offered to the non-Indigenous population, partly due to inadequate and inequitable government funding.[39] The complexity of overlapping responsibilities between levels of government also contributes to gaps in care.[40]

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[34] RHS, phase 3, vol 2, p. 134; Public Health Agency of Canada, "Health Status of Canadians 2016," December 2016, https://healthycanadians.gc.ca/publications/department-ministere/state-public-health-status-2016-etat-sante-publique-statut/alt/pdf-eng.pdf (accessed May 31, 2020), p. 15.

[35] House of Commons Standing Committee on Indigenous and Northern Affairs, The Challenges of Delivering Continuing Care in First Nations Communities: Report of the Standing Committee on Indigenous and Northern Affairs, December 2018, https://www.ourcommons.ca/Content/Committee/421/INAN/Reports/RP10260656/inanrp17/inanrp17-e.pdf (accessed May 31, 2020).

[36] RHS Phase 3 Vol 1, p. 43; Regine Halseth, The prevalence of Type 2 diabetes among First Nations and considerations for prevention (National Collaborating Centre for Aboriginal Health, 2019), https://www.nccih.ca/docs/health/RPT-Diabetes-First-Nations-Halseth-EN.pdf (accessed May 31, 2020), pp. 5, 7.

[37] Regine Halseth, The prevalence of Type 2 diabetes, p. 12; Public Health Agency of Canada, Diabetes in Canada.

[38] Public Health Agency of Canada, Diabetes in Canada.

[39] A 2016 ruling by the Canadian Human Rights Tribunal affirmed that the federal government knowingly underfunded child welfare and medical services for 165,000 First Nations children living on reserves and in the Yukon. First Nations Child and Family Caring Society of Canada et al. v. Attorney General of Canada (for the Minister of Indian and Northern Affairs Canada), Canadian Human Rights Tribunal, 2016 CHRT 11, May 5, 2016.

[40] House of Commons Standing Committee on Indigenous and Northern Affairs, The Challenges of Delivering Continuing Care in First Nations, pp. 44-47. Provision of health services is shared among the federal and provincial governments, First Nations organizations and communities, and third-party service providers, resulting in a complicated and ambiguous health care framework. *Ibid.*

I. Impacts of the Climate Crisis on First Nations' Right to Food

Across Canada, climate change is making it increasingly difficult for First Nations to harvest food and live off the land in the ways their families have for generations. As global temperatures rise, there are fewer animals migrating and traditional plants growing on First Nations' traditional territories. Unpredictable weather patterns and changing climactic conditions, meanwhile, are making harvesting costlier and more dangerous, and sometimes even impossible.

These impacts are projected to worsen as the climate warms. Canada, warming by about twice the global average, is bracing for continued increases in temperatures, more extreme weather, thawing permafrost and reduced snow and ice, and more wildfires, among other changes.

Climate change impacts are also increasing the cost of, and decreasing remote communities' access to, store-bought foods. The combined impact of diminishing supplies of food for harvest and increasing reliance on less healthy purchased food can have dire consequences for community health and well-being, particularly for those who are already marginalized.

Changes to Canada's Climate and Physical Environment

Between 1948 and 2016, mean annual temperature increase for all of Canada is estimated at 1.7˚C [3˚F] (roughly twice the mean global warming rate) and 2.3˚C [4.1˚F] for northern Canada (roughly three times the mean global warming rate).[41] Across Canada, the greatest warming has occurred during winter, with a mean temperature increase of 3.3˚C [5.9˚F].[42]

A 2019 report from Environment and Climate Change Canada outlines the consequences of rapid climate change for the country's future, including more extreme heat, shorter snow

[41] Environment and Climate Change Canada (ECCC), "Canada's Changing Climate," 2019, pp. 116, 118, 125, https://changingclimate.ca/CCCR2019/ (accessed June 3, 2020).

[42] The mean temperature for all of Canada increased by 3.3˚C [5.9˚F] in winter, 1.7˚C [3˚F] in spring, 1.5˚C [2.7˚F] in summer, and 1.7˚C [3˚F] in autumn between 1948 and 2016. Ibid., p. 127.

and ice cover seasons, thinning glaciers, thawing permafrost, rising sea level, and an increased risk of summer water shortages.[43] Increasing temperatures will intensify some weather extremes, and increase the severity and risk of heat waves, droughts, and wildfires.[44]

Old Crow, Yukon

Community members in Old Crow, Yukon reported warmer temperatures.[45] Robert Bruce, a 70-year-old resident, expressed concern: "I have seen lots of changes [on the land]. It's gotten a lot warmer. Some lakes are drying out."[46] Annual mean temperature in Old Crow has increased by roughly 1.8°C [3.2°F] from 1950-2013.[47] Warming during winter has been particularly significant across the Yukon, ranging from an increase of 4-6°C [7.2-10.8°F] from 1948 to 2012.[48]

Rising temperatures have been accompanied by decreased snow and ice cover.[49] Community members described what that looks like on their land: thinner ice or lack of ice, rivers freezing later, and snow melting early.[50] Some people recounted dramatic recent changes. Darius Elias, who works for the Vuntut Gwitchin First Nation government, observed, "Last year [2018], the river was open year-round for the first time. The amount of times that the river freezes has reduced dramatically."[51]

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[43] Ibid., p. 5.

[44] Ibid.

[45] Human Rights Watch interviews with Darius Elias, Old Crow, June 7, 2018; Robert Bruce, Old Crow, June 7, 2018; Erin Linklater, Old Crow, June 8, 2018; and Esau Schafer, Old Crow, June 8, 2018.

[46] Human Rights Watch interview with Robert Bruce, Old Crow, June 7, 2018.

[47] Climate Atlas of Canada, "Municipality: Old Crow," July 10, 2019, https://climateatlas.ca/data/city/244/annual_meantemp_2030_45/line (accessed May 31, 2020).

[48] Lucie Vincent et al., "Observed trends in Canada's climate and influence of low-frequency variability modes," Journal of Climate, vol. 28 (2015), p. 4549.

[49] ECCC, "Canada's Changing Climate," p. 205. Northern Yukon has seen a decrease in winter snow cover (approximately -0.5 to -1 percent per decade) from 1981–2015. Ibid.

[50] Human Rights Watch interviews with Erin Linklater, Old Crow, June 8, 2018; James His, Old Crow, June 11, 2018; Joel Peter, Old Crow, June 11, 2018; Roger XX, Old Crow, June 11, 2018.

[51] Human Rights Watch interview with Darius Elias, Old Crow June 7, 2018.

Some people in Old Crow also noted, and scientific studies confirm, increasing incidences of unusually deep snow.[52] Snowfall in Yukon is projected to become more variable, with periods of little snow and intense snowfall events likely becoming more common.[53]

Old Crow is also experiencing permafrost degradation, increasing the risk of landslides, ground instability, and draining of lakes.[54] Some community members, like Esau Schafer, who grew up living on the land with his family, also reported an increase of mudslides and riverbank erosion around Old Crow.[55]

Elias told Human Rights Watch that a lake has drained in the area of the Old Crow Flats wetlands where his family has traditionally harvested.[56] The Old Crow Flats have been an essential site for harvesting and cultural practices for centuries, its many lakes supporting diverse species, from migrating birds and caribou, to moose and fish.[57] This area is experiencing significant lake drainage as a result of permafrost thaw and, according to a study, "catastrophic lake drainage" has become more than five times more frequent in

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[52] Human Rights Watch interview with Elizabeth Kyikavichik, Old Crow, June 7, 2018. While rising temperatures are increasing the rate of snowmelt, they are also increasing extreme and unpredictable weather, including extreme precipitation events. The median increase in extreme precipitation is about 7 percent per 1˚C [1.8˚F] increase in global mean temperature. ECCC, "Canada's Changing Climate," p. 168.

[53] Research Northwest and Morrison Hershfield, "Yukon 'State of Play': Analysis of Climate Change Impacts and Adaptation," 2017, https://yukon.ca/sites/yukon.ca/files/env/env-yukon-state-play-analysis-climate-change-impacts-adaptation.pdf (accessed June 3, 2020), p. I.

[54] In the Yukon, comparison of recent ground temperature measurements with those made in the late 1970s and early 1980s suggests warming of approximately 0.2˚C [0.36˚F] per decade. ECCC, "Canada's Changing climate," p. 234. Permafrost is rock or soil that remains at or below 0˚C [32˚F] for at least two consecutive years, and is made up of an active, upper layer of variable thickness that thaws and refreezes annually, and a deeper base layer that is more permanent. National Research Council Canada, "Glossary of Permafrost and Related Ground-Ice Terms," Technical Memorandum No. 142, 1988, http://globalcryospherewatch.org/reference/glossary_docs/permafrost_and_ground_terms_canada.pdf (accessed June 1, 2020); Renee Cho, "Why Thawing Permafrost Matters," post to "State of the Planet" (blog), Earth Institute, Columbia University, January 11, 2018, https://blogs.ei.columbia.edu/2018/01/11/thawing-permafrost-matters/ (accessed June 1, 2020); Leslie Anthony, "Arctic permafrost is thawing. Here's what that means for Canada's North — and the world," Canadian Geographic, April 2, 2019, https://www.canadiangeographic.ca/article/arctic-permafrost-thawing-heres-what-means-canadas-north-and-world (accessed June 1, 2020); Terry D. Prowse et al., "Implications of climate change for economic development in Northern Canada: Energy, resource, and transportation sectors," Ambio, vol. 38(5), 2009, pp. 272-281; Lakes typically controlled or supported by permafrost risk draining as underground ice thaws and surface ground degrades. ECCC, "Canada's Changing Climate," p. 304.

55 Human Rights Watch interviews with Esau Schafer, Old Crow, June 8, 2018; Tracy Rispin, Old Crow, June 8, 2018; Erin Linklater, Old Crow, June 8, 2018; Mary Jane Moses, Old Crow, June 9, 2018; Joel Peter, Old Crow, June 11, 2018; Teresa Frost, Old Crow, June 11, 2018.

[56] Human Rights Watch interview with Darius Elias, Old Crow, June 7, 2018.

[57] Government of Yukon, "Van Tat K'atr'anahtii (Old Crow Flats) Special Management Area," 2020, https://yukon.ca/en/van-tat-katranahtii-old-crow-flats-special-management-area (accessed June 1, 2020).

recent decades.[58] Elias described the impact of these changes: "When I was a kid I lived on the land from March to June … [but given the dramatic changes in the Old Crow Flats] only a few people still go there."

Other people Human Rights Watch interviewed in Old Crow also expressed concern about increased forest fires.[59] Robert Bruce, a grandfather from Old Crow who tries to live off traditional food sources because of health reasons, told Human Rights Watch that he worries forest fires may alter the migratory route of caribou.[60] In recent years, fires have burned a larger swathe of territory in Yukon than is usual: in 2019, about 50 percent more area was burned in Yukon than average, while 2017 marked the largest area burned in a decade.[61]

Climate Tipping Point: Boreal Forest

Three First Nations visited by Human Rights Watch are located within the boreal forest biome, which stretches from Yukon to Newfoundland and Labrador. Like the Amazon, the Canadian boreal is an essential forest system, which serves an important role in storing carbon, and regulating the climate.[62] Fires are a natural part of the boreal

[58] One study found that, between 1951 and 2007, Old Crow Flats experienced a decline of around 6000 hectares in total lake area, but gained 232 lakes. Close to half (49 percent) of the difference in lake area was driven by the rapid and persistent drainage of 38 large lakes. T. C. Lantz and K. W. Turner, "Changes in lake area in response to thermokarst processes and climate in Old Crow Flats, Yukon," Journal of Geophysical Research: Biogeosciences, vol. 120 (2015), http://ale.uvic.ca/Publications/Lantz_Turner_2015.pdf (accessed June 1, 2020), pp. 513, 517-523.

[59] Human Rights Watch interviews with Robert Bruce, Old Crow, June 7, 2018; Brandon Kyikavichik, June7, 2018; Jane Moses, Old Crow, June 9, 2018; https://www.cbc.ca/news/canada/north/old-crow-residents-nervous-about-nearby-fires-1.4206649. Eric Kasischke et al., "Alaska's changing fire regime — implications for the vulnerability of its boreal forests," Canadian Journal of Forest Research, vol. 40, 2010, Table 2, p. 1317.

[60] Human Rights Watch interview with Robert Bruce, Old Crow, June 7, 2018.

[61] Carrie Tait, "'Climate change makes it worse': Arctic fires threaten more dark days in the North," The Globe and Mail, August 1, 2019, https://www.theglobeandmail.com/canada/article-climate-change-makes-it-worse-arctic-fires-threaten-more-dark-days/ (accessed June 1, 2020).

[62] Natural Resources Canada, "Boreal forest," February 25, 2020, https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/sustainable-forest-management/boreal-forest/13071 (accessed June 1, 2020); Jimmy Thomson, "Why Canada's boreal forest is gaining international attention," The Narwhal, February 26, 2019, https://thenarwhal.ca/why-canadas-boreal-forest-is-gaining-international-attention/ (accessed June 1, 2020).

renewal cycle, but climate change is putting the boreal forest at risk.[63] About 300 kilometers from Old Crow, in the Yukon Flats region of Alaska, for example, one study found evidence that climate change-enhanced fires have already broken millennia-long ecosystem resiliency due to exceptionally high fire frequency and extent of burning.[64] Canada's boreal forest may become a net source—instead of a sink—of carbon.[65]

Skeena River Watershed, British Columbia

Urban localities in the Skeena River watershed have experienced a roughly 1°C increase in annual mean temperature from 1950 to 2013.[66] Across northern British Columbia, winter warming has been particularly significant, ranging from 4-6°C [7.2-10.8°F] from 1948 to 2012.[67]

Community members told Human Rights Watch how these changes are impacting First Nations. Chief Malii (Glen Williams) a Gitanyow Hereditary Chief in the Skeena River watershed said: "We used to have long and cold winters… Really cold, -30 or -40 degrees

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[63] Natural Resources Canada, "8 facts about Canada's boreal forest," July 27, 2018, https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/sustainable-forest-management/boreal-forest/8-facts-about-canadas-boreal-forest/17394 (accessed June 1, 2020); Kirchmeier-Young et al., "Attributing extreme fire risk in Western Canada to human emissions," Climatic Change, vol. 144 (2017): pp. 365–379, doi:10.1007/s10584-017-2030-0; Simon F.B. Tett et al., "Anthropogenic forcings and associated changes in fire risk in western North America and Australia during 2015/16," Bulletin of the American Meteorological Society, vol. 98 (2018), pp. S60–S64, doi:10.1175/ BAMS-D-17-0096.1; Partain et al., "An assessment of the role of anthropogenic climate change in the Alaska fire season of 2015," Bulletin of the American Meteorological Society, vol. 97 (2016), pp. S14–S18, doi:10.1175/BAMS-D-16-0149.1; Ellen Whitman et al., "Variability and drivers of burn severity in the northwestern Canadian boreal forest," Ecosphere, vol. 9(2) (Feb 2018), doi:e02128. 10.1002/ecs2.2128.

[64] Ryan Kelly et al., "Recent burning of boreal forests exceeds fire regime limits of the past 10,000 years," PNAS Early Edition (2013), doi:10.1073/pnas.1305069110.

[65] Xanthe Walker et al., "Increasing wildfires threaten historic carbon sink of boreal forest soils" Nature, vol. 572 (2019), pp. 520-523, doi:10.1038/s41586-019-1474-y; Robert McSweeny, "Explainer: Nine 'tipping points' that could be triggered by climate change," Carbon Brief, February 10, 2020, https://www.carbonbrief.org/explainer-nine-tipping-points-that-could-be-triggered-by-climate-change (accessed June 1, 2020). Data from 2017 indicates that Canada's forests were a net source of CO_2 because of the 1.5 million hectares of area burned that year. Natural Resources Canada, "Indicator: Carbon emissions and removals," May 20, 2020, https://www.nrcan.gc.ca/our-natural-resources/forests-forestry/state-canadas-forests-report/how-does-disturbance-shape-canad/indicator-carbon-emissions-removals/16552 (accessed June 1, 2020).

[66] Terrace experienced a 1.1°C [33.9 °F] increase in annual mean temperature from 1950-2013. Climate Atlas of Canada, "Municipality: Terrace," July 10, 2019, https://climateatlas.ca/data/city/386/annual_meantemp_2030_45/line (accessed June 1, 2020). Smithers, a 0.9°C [33.6 °F] increase in annual mean temperature from 1950-2013. Climate Atlas of Canada, "Municipality: Smithers," July 10, 2019, https://climateatlas.ca/data/city/388/annual_meantemp_2030_45/line (accessed June 1, 2020).

[67] Lucie Vincent et al., "Observed trends in Canada's climate and influence of low-frequency variability modes," Journal of Climate, vol. 28 (2015), p. 4549.

[Celsius] [-22 or -40°F] at Christmas… Now you sometimes don't see snow until Christmas. We have rains and thunder instead." [68]

Warmer winters have been accompanied by significant decreases in snow, and dropping water levels. [69] The Skeena River has experienced record lows in recent years, and extreme drought conditions have caused some river channels to dry out completely in late August through October. [70] Warmer winters, decreased snow pack, and reduced glacier meltwater are projected to result in decreasing summer streamflow in British Columbia. [71] Hereditary Chief Malii observed: "We get less snow in the mountains… Hotter summers… Last year were the lowest water levels in 100 years. This year, it is worse." [72]

Consistent with warming surface air temperatures and lower summer water levels, water temperature is also rising in the Skeena River watershed. [73]

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[68] Human Rights Watch interview with Chief Malii, Skeena River watershed, October 21, 2018. While the Indian Act imposed one form of government on First Nations—that of elected band councils and Chiefs—many First Nations maintain varied traditional forms of governance that have existed since before colonization. Numerous communities in the Skeena River watershed, for example, are governed by both traditional leadership in the form of Hereditary Chiefs in addition to federally-recognized, elected Chiefs and Councils. Under traditional governance systems, Hereditary Chiefs are responsible for making decisions relating to their traditional territory, while elected Chiefs and Councils only have authority under the Indian Act and are thus limited in their mandate to matters on-reserve.

[69] The north coast of British Columbia has seen significant decreases in winter snow cover from 1981–2015 (approximately -2 to -5 percent per decade ECCC, "Canada's Changing Climate," pp. 157 and 205; Human Rights Watch interview with Chief Madeek, Moristown, October 19, 2018. Human Rights Watch interview with Ronnie Matthew West, hereditary chief, Babine Lake, October 19, 2018; consistent with provincial Ministry of Environment monitoring, see Scott Jackson, Environmental Protection Division, BC Ministry of Environment, "Streamflow Trends in Skeena Region," September 2014, http://a100.gov.bc.ca/appsdata/acat/documents/r43821/43821_Apr_22_1429816412723_9812613246.pdf (accessed June 1, 2020), p. 3.

[70] Human Rights Watch interviews with Chief Madeek, Moristown, October 19, 2018; Glen Williams, October 21, 2018; Yvette Brend, "B.C. drought fears surge as rivers dry up across the province," CBC, June 13, 2019, https://www.cbc.ca/news/canada/british-columbia/drought-bc-rivers-creeks-running-low-summer-heat-in-spring-temperature-records-1.5174220 (accessed June 1, 2020); Quinn Bender, "Rain forecast won't help Skeena River levels, say scientists," Terrace Standard, October 23, 2018, https://www.terracestandard.com/news/rain-forecast-wont-help-skeena-river-levels/ (accessed June 1, 2020); "Skeena Watershed Group Concerned Over Drought Conditions," Water Canada, August 16, 2016, https://www.watercanada.net/skeena-watershed-group-concerned-over-drought-conditions/ (accessed June 1, 2020).

[71] M. R. Najafi and F. Zwiers, "Attribution of the Observed Spring Snowpack Decline in British Columbia to Anthropogenic Climate Change" Journal of Climate, vol. 30 (2017), pp. 4113–4130, doi:10.1175/JCLI-D-16-0189.1; Najafi et al., "Attribution of observed streamflow changes in key British Columbia drainage basins," Geophysical Research Letters, vol. 44 (2017), pp. 11012–11020, doi:10.1002/2017GL075016.

[72] Human Rights Watch interview with Chief Malii, Skeena River watershed, October 21, 2018.

[73] Human Rights Watch interview with Brian Michell, Smithers, October 20, 2018. A 2015 Department of Fisheries and Oceans study of Babine River, which feeds into the Skeena River, found that while mean summer water temperature remains below 15°C [59°F], there is a trend of increased mean water temperature (0.15°C per decade), and continuous peak temperature events (>20°C [68°F]) have doubled in frequency since the 1970s. H.W. Stiff et al., Fisheries and Oceans Canada, "Water Temperature, River Discharge, and Adult Sockeye Salmon Migration Observations in the Babine Watershed, 1946-2014," Canadian Manuscript Report of Fisheries and Aquatic Sciences 3053, 2015, pp. 20, 23, and 33.

There has also been an increase in forest fire activity in the Skeena River watershed.[74] In northern British Columbia, 2017 and 2018 were record fire years, in part as a result of climate change.[75] Hereditary Chief Ja Dim Ska Nes (Ronnie Matthew West), from the Lake Babine First Nation, said: "We have had many wildfires. This year, [people in my community] were the only ones who were safe in the entire [Babine Lake] area. It was never hot like that in the old days, so we have more fires today."[76] The risk of large and prolonged fire seasons is projected to increase as temperatures rise.[77]

Attawapiskat and Peawanuck, Ontario

Both Attawapiskat and Peawanuck have experienced a roughly 1.6°C [2.8°F] increase in annual mean temperature from 1950 to 2013, and changing snow and ice conditions.[78]

Community members told Human Rights Watch how ice and snow cover has become thin and unstable, while the time between the winter freeze and spring thaw has shortened.[79] Elder John from Attawapiskat expressed concern about the impacts of warming

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[74] Human Rights Watch interviews with Ronnie Matthew West, hereditary chief, Babine Lake, October 19, 2018; Birdy Market, Smithers, October 20, 2018. The British Columbia "Fire Atlas," shows that the Skeena River watershed did not experience 100 ha+ burns until 2004, but then again in 2009, 2010, 2012, 2013, 2014, and 2015. BC Wildfire Service, "Fire Atlas," undated, http://bcfireinfo.for.gov.bc.ca/History/FireAtlas/?year=2016&type=all (accessed June 1, 2020).

[75] Government of British Columbia, "Wildfire Averages," undated, https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-statistics/wildfire-averages (accessed June 1, 2020); Jennie Wang and Katharine Strong, Statistics Canada, "British Columbia's forest fires, 2018," p. 3; M.C. Kirchmeier-Young et al., "Attribution of the Influence of Human-Induced Climate Change on an Extreme Fire Season," Earth's Future, vol. 7 (2018), pp. 2–10, doi:10.1029/2018EF001050; N.P. Gillett et al., "Detecting the effect of climate change on Canadian forest fires," Geophysical Research Letters, vol. 31 (2004), p. 4, doi:10.1029/2004GL020876.

[76] Human Rights Watch interview with Ronnie Matthew West, hereditary chief, Babine Lake, October 19, 2018.

[77] A 2019 provincial climate risk assessment determined that wildfires will pose the highest risk to the province in 2050. British Columbia Ministry of Environment and Climate Change Strategy, "Preliminary Strategic Climate Risk Assessment for British Columbia," July 2019, https://www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/prelim-strat-climate-risk-assessment.pdf (accessed June 1, 2020).

[78] Climate Atlas of Canada, "Municipality: Attawapiskat," July 10, 2019, https://climateatlas.ca/data/city/162/annual_meantemp_2030_45/line (accessed June 1, 2020); Climate Atlas of Canada, "Municipality: Peawanuck," July 10, 2019, https://climateatlas.ca/data/city/30/annual_meantemp_2030_45/line (accessed June 1, 2020). Northern Ontario has seen significant decreases in snow cover and sea ice from 1981–2015, as much as 10 percent per decade. ECCC, "Canada's Changing Climate," p. 205.

[79] Human Rights Watch interviews with Ignace Gull, Chief, Attawapiskat, October 4, 2018; Mary Jane Wabano, Peawanuck, October 4, 2018; Marietta N., Attawapiskat, October 5, 2018. On average, the annual ice-free period in the western Hudson Bay, southern Hudson Bay, and James Bay has increased by around more than three weeks since the mid 1970s. Alexandre Gagnon and William Gough, "Trends in the Dates of Ice Freeze-up and Breakup over Hudson Bay, Canada," Arctic, vol. 58(4) (December 2005), pp. 370– 382, doi:10.14430/arctic451. See also, Denise Golden et al., ""Blue-ice": framing climate change and reframing climate change adaptation from the indigenous peoples' perspective in the northern boreal forest of Ontario, Canada" Climate & Development, vol. 7(5) (2015), pp. 401–413, doi:10.1080/17565529.2014.966048.

temperatures on the migratory routes of animals: "The weather is just crazy. Natural law has been broken." [80]

Abraham Hunter, a councillor from Peawanuck, explained the drastic change in conditions: "We don't see ice on the Bay anymore. We used to see it in June…The snow disappears in three days now. The water just runs off and does not stay…" [81]

On land, decreased snow and ice cover and shorter frozen periods have been accompanied by permafrost loss. [82]

Climate Tipping Point: Permafrost and Peatlands

There is a high risk of widespread thawing in northern Ontario, and some models project that the Hudson Bay Lowlands have already surpassed the temperature threshold for maintaining permafrost. [83] Sam Hunter from Peawanuck remarked: "[Y]ou can actually see [the permafrost] thawing and turning into swampland, and trees are dying. Trees that sink right into the muskeg were once four or six feet on dry land." [84] Permanent permafrost loss could have serious repercussions for the ability of this biome to maintain its significant contribution to global carbon-cycling and climate regulation. [85]

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[80] Human Rights Watch interview with Elder John, Attawapiskat, October 5, 2018.

81 Human Rights Watch interview with Abraham Hunter, Peawanuck, October 10, 2018.

[82] One study found that permafrost stretching north from Attawapiskat First Nation degraded by more than 26 percent between 1954 and 2011. Zlatka Pironkova, "Mapping Palsa and Peat Plateau Changes in the Hudson Bay Lowlands, Canada, Using Historical Aerial Photography and High-Resolution Satellite Imagery," Canadian Journal of Remote Sensing, vol. 43 (2017), pp. 455-467, doi:10.1080/07038992.2017.1370366. Human Rights Watch interview with Ignace Gull, Chief, Attawapiskat, October 4, 2018.

[83] Charles Tarnocai, "The Impact of Climate Change on Canadian Peatlands," Canadian Water Resources Journal, vol. 34(4) (2009): pp. 454 and 459, Fig. 3, doi:10.4296/cwrj3404453; Jim McLaughlin and Kara Webster, "Effects of Climate Change on Peatlands in the Far North of Ontario, Canada: A Synthesis," Arctic, Antarctic, and Alpine Research, vol. 46(1) (2014): p. 91, doi:10.1657/1938-4246-46.1.84.

[84] Nick Dunne, "What climate change means for Ontario's largest provincial park," TVO, December 12, 2019, https://www.tvo.org/article/what-climate-change-means-for-ontarios-largest-provincial-park (accessed June 1, 2020).

[85] Federal, Provincial and Territorial Governments of Canada, "Canadian Biodiversity: Ecosystem Status and Trends 2010," Canadian Councils of Resource Ministers, 2011, pp. 50-51, https://biodivcanada.chm-cbd.net/sites/biodivcanada/files/2018-01/EN_CanadianBiodiversity_FULL.pdf (accessed June 1, 2020).

Climate-Driven Loss of Traditional Food Sources

In recent decades, the percentage of food harvested from traditional sources in Indigenous diets has declined as a result of decreased access to land, loss of harvesting skills, increasing costs or restrictions on hunting and increased access to store-bought foods. [86] However, many First Nations continue to rely on harvested foods as a significant component of their overall diet. [87]

Gitanyow Hereditary Chief Malii told Human Rights Watch, "When we [as the leadership of the for the Gitanyow] did a study in 2010, about 80 percent of our people used traditional food." [88] He described how his grandfather called the animals and plants that make up their traditional diet "dinner table" in his Indigenous language. He recalled: "[My grandfather] described the moose, berries, and fish like that. He also referred to it as [a] bank." [89] Hereditary Chief Malii, like many First Nations people Human Rights Watch spoke to, worries that the bank is nearly empty and the impacts will be devastating. This concern reflects the situation in many First Nations.

Changes in Species Availability

Impacts of climate change have altered the availability of First Nations' traditional food sources in multiple ways. Community members told Human Rights Watch that they observed significant and increasing declines in the quantity of animals and plants available for harvesting due, in part, to changes in the environment they believe are a result of climate change, including changing ice and permafrost, wildfires, warming water temperatures, changes in precipitation and water levels, and unpredictable weather.

Changing Migration Patterns

First Nations members told Human Rights Watch that climate change is impacting the migration patterns of bird species and caribou they harvest.

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[86] National Collaboration Centre for Aboriginal Health, "Nutrition Fact Sheet," 2013, https://www.nccih.ca/docs/health/FS-Nutrition-EN.pdf (accessed June 1, 2020).

[87] The First Nation Food, Nutrition, and Environment Study assessed traditional food intake across the provinces, for example, and found that almost all adults reported eating traditional food, with higher reliance on traditional food in western and northern ecozones. Across all areas, average daily intake of traditional food was 61 grams (¼ cup) while some adults reported eating more than 1,000 grams (4 cups). Traditional food intake was the highest in BC. pp 34-46.

[88] Human Rights Watch interview with Chief Malii, Skeena River watershed, October 21, 2018.

[89] Human Rights Watch interview with Chief Malii, Skeena River watershed, October 21, 2018.

Community members in Peawanuck described how early and quick snow melts impact the availability of migrating geese, such as snow geese.[90] Mary Jane Wabano said: "If the snow melts, the geese won't fly closer to the community; they used to fly closer when there was lots of snow… Geese go where the snow is."[91] An Elder in Peawanuck agreed: "We have warm weather in March, all the snow is gone before the geese come and it impacts how they fly. They fly higher and are harder to get."[92]

Peawanuck community members also said that caribou has become less available due to changing migration routes.[93] Sam Hunter, a hunter and community climate change monitor, says the unpredictability of caribou migration is tied to changing seasonal freeze-thaw cycles: if there's an early or late freeze up, "[the caribou] won't be walking in their migration route. They'll be walking way out there on the bay or way inland."[94] Surveys undertaken since 2000 suggest the range of Hudson Bay caribou has shifted eastward.[95] Climate change, which has wrought abrupt ecological change in the region since the

[90] In general, a fast break-up in spring reduces availability of geese because Canada Geese are able to disperse quickly to nesting areas, and Snow Geese do not linger long at James Bay en route to more northerly breeding grounds. J. P. Prevett, "Waterfowl Kill by Cree Hunters of the Hudson Bay Lowland, Ontario," Arctic, vol. 36(2) (1983), p. 191.

[91] Human Rights Watch interview with Mary Jane Wabano, Peawanuck, October 4, 2018. This phenomenon has also been documented in Alaskan lesser snow geese populations who abandon snow-free areas during their spring migration in favour of areas where snow cover remains present. Hupp et al., "Snow cover and snow goose Anser caerulescens distribution during spring migration," Wildlife Biology, vol. 7(3) (2001): pp. 65-76, doi:10.2981/wlb.2001.010.

[92] Human Rights Watch group interview with Elders, Peawanuck, October 3, 2018. Scientists have documented how Arctic geese skip stopovers during migration to reach summer breeding grounds in the Arctic sooner during warmer springs. Thomas K. Lameris et al. "Arctic Geese Tune Migration to a Warming Climate but Still Suffer from a Phenological Mismatch," Current Biology, vol. 28 (2018), pp. 2467–2473, doi:10.1016/j.cub.2018.05.077.

[93] Human Rights Watch notes from community meeting in Peawanuck, October 2, 2018. Historically, Peawanuck community members harvested caribou in close proximity to the community in fall or winter, and along the coast of Hudson Bay in winter. F. Berkes et al., "The Persistence of Aboriginal Land Use: Fish and Wildlife Harvest Areas in the Hudson and James Bay Lowland, Ontario," Arctic, vol. 48(1) (1995), pp. 86 and 90.

[94] Human Rights Watch interview with Sam Hunter, Peawanuck, December 13, 2019. A study of Eastern migratory caribou (the species hunted along the Hudson Bay coast) in Quebec and Labrador found that during fall, caribou adjusted their migration to conditions en route, arriving earlier if November was snowy and mild, possibly to limit the costs of moving through deep snow, but also leaving early in years with mild winters. Mael Le Corre et al., "Weather conditions and variation in timing of spring and fall migrations of migratory caribou," Journal of Mammalogy, vol. 98(1) (2017): pp. 260–271. The Mushkegowuk Guardian Program provides one example of a community climate change impact monitoring program, which Peawanuck is involved in. It enables youth, Elders, and harvesters to work with environmental stewards using traditional knowledge to collect information on climate change for mapping purposes. "Mushkegowuk Council - Mushkegowuk Guardian Program," Indigenous Guardians Toolkit, undated, https://www.indigenousguardianstoolkit.ca/communities/mushkegowuk-council-mushkegowuk-guardian-program (accessed July 17, 2020).

[95] K.F. Abraham and L.M. McKinnon, Hudson Plains Ecozone+ evidence for key findings summary: Canadian Biodiversity: Ecosystem Status and Trends 2010, Evidence for Key Findings Summary Report No. 2, Canadian Councils of Resource Ministers (Ottawa, ON), p. 58, https://biodivcanada.chm-cbd.net/sites/biodivcanada/files/2018-02/Hudson_Plains_EKFS_Jan2013_E.pdf (accessed June 1, 2020).

1990s, pushing the southern Hudson Bay area toward a climate "tipping point," has likely contributed to this shift. [96]

Old Crow residents, meanwhile, worry that climate change-enhanced forest fires are causing caribou to shift migration routes farther from the community, decreasing numbers of caribou physically accessible to harvest. [97] The Porcupine Caribou Herd (PCH) usually passes near the community each spring (April /May) and autumn (August/September). [98] However, recent fires near Old Crow may be altering this pattern. [99] Elizabeth Kyikavichik, a 72-year old childcare worker, told Human Rights Watch: "I am concerned about the caribou. Already now there is less caribou [nearby]... They might have changed the route because of the wildfires." [100]

Research shows that caribou alter their distributions in response to wildfires. [101] It can take more than 60 years for caribou to return after a fire because of the slow growth of their key-food source, lichens. [102] As the climate continues to warm, increasing the frequency and severity of wildfires, this timeframe may lengthen, risking a severe disturbance of PCH migration patterns. [103]

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[96] A study found that since the mid-1990s the climate of the Hudson Bay Lowlands has passed a tipping point, introducing a new period of abrupt regional warming and ecological change. K.M. Rühland et al., "Global warming triggers the loss of a key Arctic refugium," Proceeds of the Royal Society B, vol. 280, no. 1772 (2013), doi:10.1098/rspb.2013.1887.

[97] Human Rights Watch interviews with Robert Bruce, Old Crow, June 7, 2018; Brandon Kyikavichik, Old Crow, June 7, 2018; Elizabeth Kyikavichik, Old Crow, June 7, 2018; Esau Schafer, Old Crow, June 8, 2018.

[98] Government of the Vuntut Gwitchin First Nation, "Caribou Coordination." The PCH, with a population of about 218,000, is one of the largest migratory barren ground caribou herds in North America. Porcupine Caribou Management Board, "About the Herd," undated, https://www.pcmb.ca/herd (accessed June 1, 2020).

[99] For example, in 2017, in the PCH range just south of Old Crow experienced significant forest fire activity. Wildland Fire Management Department of Community Services, Government of Yukon, "2017 Yukon Wildland Fires Overview," 2017, https://yukon.ca/sites/yukon.ca/files/cs/cs-2017-wildfire-map.pdf (accessed June 1, 2020).

[100] Human Rights Watch interview with Elizabeth Kyikavichik, Old Crow, June 7, 2018.

[101] David D. Gustine et al., "Climate-Driven Effects of Fire on Winter Habitat for Caribou in the Alaskan-Yukon Arctic," PLOS ONE, vol. 9, no. 7 (2014), doi:10.1371/journal.pone.0100588; William B. Collins et al., "Fire, Grazing History, Lichen Abundance, and Winter Distribution of Caribou in Alaska's Taiga," Journal of Wildlife Management, vol. 75, no. 2 (2011), pp. 369–377, doi: 10.1002/jwmg.39.

[102] William B. Collins et al., "Fire, Grazing History, Lichen Abundance," pp. 369–377; Juha M. Metsaranta, "Assessing the length of the post-disturbance recovery period for woodland caribou habitat after fire and logging in west-central Manitoba," Rangifer, Special Issue No. 17 (2007), pp. 103-109, doi:10.7557/2.27.4.324.

[103] Randi Jandt et al., "Slow Recovery of Lichen on Burned Caribou Winter Range in Alaska Tundra: Potential Influences of Climate Warming and Other Disturbance Factors," Arctic, Antarctic, and Alpine Research, vol. 40, no. 1 (2008), pp. 89-95, doi:10.1657/1523-0430(06-122)[JANDT]2.0.CO;2; David D. Gustine et al., "Climate-Driven Effects of Fire on Winter Habitat for Caribou."

Reduced and Different Animal Populations

Members of communities reported significant changes in the population of traditionally harvested species in their territories as a result of climate change impacts on habitat.

Moose

First Nations members in the Skeena River watershed in British Columbia are concerned about decreasing moose populations.[104] For example, in the 5,000 km² Nass Wildlife Area near Terrace, there was a 70 percent reduction in the moose population from 1997 to 2011.[105] While the exact cause of this decline is unclear, it may be tied, in part, to habitat loss caused by climate change-inflated mountain pine beetle infestations and salvage logging of infested forests.[106] Mountain pine beetle infestations are predicted to worsen with climate warming as drought-stressed forests are more vulnerable to infestation.[107]

In British Columbia, warming temperatures are also increasing the risk of moose mortality from winter ticks, a dangerous parasite that previously could not survive the colder climate at northern latitudes.[108]

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[104] Human Rights Watch interviews with Hereditary Chief Ronnie Matthew West, Babine Lake, October 19, 2018; Chief Madeek, Moricetown, October 19, 2018; George Muldoe, Kispiox First Nation, October 21, 2018.

[105] Ministry of Forests, Lands and Natural Resource Operations, "Factsheet: Moose population estimates down in Cariboo, Omineca," Government of British Columbia, May 11, 2012, http://www.env.gov.bc.ca/fw/wildlife/management-issues/docs/factsheet_provincial_moose_population_may2012.pdf (accessed June 1, 2020). More recent declines have also been reported in other areas in the Skeena River watershed. Most recently, two moose surveys were conducted in the Tweedsmuir-Entiako areas, finding that moose density has decreased by 19 percent from 2013 to 2019. Ministry of Forests, Lands and Natural Resource Operations, "Factsheet: Moose in B.C.," Government of British Columbia, October 2019, https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/wildlife-wildlife-habitat/moose/2019_moose_factsheet_final_oct_28_2019.pdf (accessed June 1, 2020).

[106] Since the 2000s, Western Canada has experienced record breaking beetle infestations, both in terms of spread and severity, as winters warm, bringing temperatures too high to keep beetle populations in check. In parts of the Skeena River watershed, moose declines were found to coincide with a mountain pine beetle epidemic that led to increased salvage logging and associated road building. In addition to increased predation caused by clear cuts, mountain pine beetle infestations can significantly degrade moose habitat in unsalvaged forests. Amalesh Dar et al., "Aftermath of Mountain Pine Beetle Outbreak in British Columbia: Stand Dynamics, Management Response and Ecosystem Resilience," Forests, vol. 7, no. 8 (2016), doi: 10.3390/f7080171; Gerald w. Kuzyk, "Provincial Population and Harvest Estimates of Moose in British Columbia," ALCES, vol. 52, 2016, p. 5; Ann C. Allaye Chan-McLeod, "A review and synthesis of the effects of unsalvaged mountain-pine-beetle-attacked stands on wildlife and implications for forest management," BC Journal of Ecosystems and Management, vol 7, no 2 (2006), pp. 121-122.

[107] Adrianna C. Foster et al., "Modeling the interactive effects of spruce beetle infestation and climate on subalpine vegetation," Ecosphere, vol. 9, no. 10 (2018), doi:10.1002/ecs2.2437.

[108] Studies have shown that winter tick can survive in regions of the Yukon and Alaska where originally, they were thought to be unable to survive due to long winters and very low temperatures. Courtney Jones, "Provincial Moose Winter Tick Surveillance Program," BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, 2019, https://www2.gov.bc.ca/assets/gov/environment/plants-animals-and-ecosystems/wildlife-wildlife-habitat/wildlife-health/wildlife-health-documents/provincial_moose_winter_tick_program_report.pdf (accessed June 1, 2020), p. 13; Courtney Jones, "Provincial Moose Winter Tick Surveillance Program," pp. 13-14.

Caribou

Across Canada, caribou herds are declining due to deterioration of their habitat and increased human disturbance, primarily caused by resource development. [109] Climate change is likely accelerating the decline of some populations as it affects the nutrient composition of caribou food sources, as well as access to food, including important lichens, and calving grounds. [110] Eastern migratory caribou, the type of caribou harvested by members of Peawanuck, for example, were listed as endangered in 2018 due to an 80 percent decline over the past three generations, caused in part by decrease in habitat quality associated with climate change and development. [111]

Caribou are particularly susceptible to climate-driven impacts such as altered forage quality and quantity during summer and winter, increased icing in winter, change in spring timing, and increased summer insect harassment. [112] When their numbers decrease due to mortality, reduced birth rates, or range alteration, it obviously affects the communities who rely on them for food. [113] A 2004 study projects that while warming will likely increase summer food sources for the PCH, other climate change impacts such as increased insect

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[109] Aaron Kylie, "Mapping the decline of Canada's caribou," Canadian Geographic, October 30, 2018, www.canadiangeographic.ca/article/mapping-decline-canadas-caribou (accessed June 1, 2020).

[110] John Streicker, "Yukon Climate Change Indicators and Key Findings 2015," Northern Climate ExChange, Yukon Research Centre, Yukon College, 2016, www.yukoncollege.yk.ca/sites/default/files/inline-files/Indicator_Report_Final_web.pdf (accessed June 1, 2020). pp. 35-36; Committee on the Status of Endangered Wildlife in Canada, "COSEWIC assessment and status report on the Caribou Rangifer tarandus, Barren-ground population, in Canada," 2016, https://www.registrelep-sararegistry.gc.ca/virtual_sara/files/cosewic/sr_Caribou%20Barren-ground_2016_e.pdf (accessed June 1, 2020), pp 32-33; Environment Canada, "Recovery Strategy for the Woodland Caribou (Rangifer tarandus caribou), Boreal population, in Canada – 2012," 2012, www.canada.ca/en/environment-climate-change/services/species-risk-public-registry/recovery-strategies/woodland-caribou-boreal-population-2012.html (accessed June 1, 2020); Ed Struzik, "How Thawing Permafrost Is Beginning to Transform the Arctic," Yale Environment 360, January 21, 2020, https://e360.yale.edu/features/how-melting-permafrost-is-beginning-to-transform-the-arctic (accessed September 5, 2020).

[111] Committee on the Status of Endangered Wildlife in Canada, "Response Statement - Caribou, Eastern Migratory population," January 18, 2018, https://wildlife-species.canada.ca/species-risk-registry/virtual_sara/files/statements/rs_1342_884_2017-10_e.pdf (accessed June 1, 2020).

[112] Conor D. Mallory and Mark S. Boyce, "Observed and predicted effects of climate change on Arctic caribou and reindeer," Environmental Reviews, vol. 26, no. 1 (2018), doi:10.1139/er-2017-0032; Quinn E. Barber, "Potential impacts of climate change on the habitat of boreal woodland caribou," Ecosphere, vol. 9, no. 10 (2018); Susan Leech and Carolyn Whittaker, "Madziih (caribou) Tsáá? ché ne dane Traditional Knowledge and Restoration Study," Firelight Group, December 2016, firelight.ca/wp-content/uploads/2016/12/CaribouTEKAndRestorationWEB.pdf (accessed June 1, 2020); David D. Gustine et al., "Climate-Driven Effects of Fire on Winter Habitat for Caribou."

[113] Brenda L. Parlee et al., "Undermining subsistence;" Steeve d. Côté et al., "Chapter 9: Caribou herd dynamics: impacts of climate change on traditional and sport harvesting," in Canadian Eastern Subarctic IRIS (2010); Sapna Sharma et al., "Impacts of climate change on the seasonal distribution of migratory caribou," Global Change Biology (2009); Melissa Guyot et al., "Local observations of climate change and impacts on traditional food security in two northern Aboriginal communities," International Journal of Circumpolar Health, vol. 65, no. 5 (2006).

harassment and greater snow depths could result in a herd decline of up to 85 percent in the next 40 years. [114] "[W]ithout the caribou there is no Gwitchin people," said Elias. [115]

Salmon

Climate change also affects key habitable areas for salmon in Canada, as their river and/or oceans migration, spawning, incubation, and rearing are sensitive to temperature increases and changes in water levels. In simple terms, less hospitable habitable areas for salmon—less salmon. In British Columbia, scientific studies have found that salmon populations have been negatively affected by increasing temperatures in rivers. [116] Many provincial salmon stocks are considered at moderate to high risk of extinction, and further threatened by climate change impacts. [117]

First Nations see less salmon in the Skeena River watershed in British Columbia, a population decline they believe is linked, in part, to warming temperatures. [118] Brian

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[114] J.A. Kruse et al., "Modeling Sustainability of Arctic Communities: An interdisciplinary Collaboration of Researchers and Local Knowledge Holders," Ecosystems, vol. 7 (2004), p. 824. A 2017 report commissioned by Environment Yukon's Climate Change Secretariat also notes that deeper snowpack and changes to freeze-thaw cycles that lead to thicker layers of ice will result in more difficult winter and spring feeding for some animals. Research Northwest and Morrison Hershfield, "Yukon 'State of Play'," p. 29. A dramatically warming climate in the Arctic poses an additional threat to the herd's tundra habitat in the lowlands of Yukon's North Slope, which is predicted to vanish under shrubs within 100 years. Environment Canada and Canadian Wildlife Service, "Yukon Species at Risk 2018," 2018, https://yukon.ca/sites/yukon.ca/files/env/env-yukon-species-risk.pdf (accessed June 1, 2020), p. 5.

[115] Human Rights Watch interview with Darius Ellias, Old Crow, June7, 2018.

[116] Sue C.H. Grant, Bronwyn L. MacDonald, and Mark L. Winston, "State of Canadian Pacific Salmon;" S. G. Hinch et al., "Dead fish swimming: a review of research on the early migration and high premature mortality in adult Fraser River sockeye salmon Oncorhynchus nerka," Journal of Fish Biology, vol. 81 (2012), pp. 576-599, doi:10.1111/j.1095-8649.2012.03360.x. Salmon tolerate temperatures of up to about 24.5˚C [76.1˚F] but prefer temperatures from 12-15˚C [53.6-59 ˚F]. Temperatures above 15˚C [59 ˚F] can cause stress in sockeye, depleting their energy reserves, making them more susceptible to disease, and reducing their capacity to reproduce. Thomas White et al., "Indicators of Climate Change for British Columbia 2016 Update," BC Ministry of Environment, https://www2.gov.bc.ca/assets/gov/environment/research-monitoring-and-reporting/reporting/envreportbc/archived-reports/climate-change/climatechangeindicators-13sept2016_final.pdf (accessed June 1, 2020), pp. 20.

[117] Thomas White et al., "Indicators of Climate Change for British Columbia 2016 Update," p. 28.

[118] There are five species of salmon in the Skeena River watershed, sockeye carry the most cultural importance to numerous First Nations, and many communities, including from the Tsimshian, Gitxsan, Gitanyow, Wet'suwet'en and Lake Babine First Nations, rely heavily on sockeye for food and cultural well-being. Sockeye and other Skeena River salmon population have significantly decreased in recent years resulting in provincial and First Nations fishing bans in 2017-2019. Gordon Hoekstra, "Skeena River sockeye returns forecast at all-time low, sports fishing closed," Vancouver Sun, June 23, 2017 https://vancouversun.com/business/local-business/skeena-river-sockeye-returns-forecast-at-all-time-low-sports-fishing-closed/ (accessed June 1, 2020); Shannon Lough and Quinn Bender, "Salmon closures a devastating blow to North Coast business," The Abbotsford News, May 10, 2018, https://www.abbynews.com/news/salmon-closures-a-devastating-blow-to-north-coast-business/ (accessed June 1, 2020); Quinn Bender, "Salmon closures blanket Skeena watershed," The Northern View, August 1, 2019, https://www.thenorthernview.com/news/salmon-closures-spreading-through-skeena/ (accessed June 1, 2020).

Michell, a fisheries technologist at the Office of the Wet'suwet'en, who monitors fish in the area, said: "The sockeye [salmon] went down from 30,000 in 1990 to 6,000 today... Every year we have been getting less and less... The river and the creeks are warming up to 20 degrees. This year has been the lowest I have ever seen [since monitoring started in 1994]." [119]

Community members from Old Crow also told Human Rights Watch that warming waters have reduced their ability to fish. [120] "We have a problem with our salmon because the [river] water has warmed," said Robert Bruce from Old Crow. He has diabetes and tries to live off of traditional food sources, but struggles to do so: "It is more difficult to fish. Last year, we did not find any salmon in the river." [121]

Communities within British Columbia's Skeena River watershed are also concerned about low water levels, which make it more difficult for salmon to spawn. Hereditary Chief Ja Dim Ska Nes, from Lake Babine First Nation, said: "Salmon is… what we live from… Salmon is food security for us, that is no longer guaranteed." [122]

Berries and Other Plants

Changing temperatures linked to climate change also affect berries and plants used for food and traditional medicines, often picked by women. [123] For example, climate change will likely cause large shifts in the range and seasonal growth of the huckleberry in British Columbia, which could impact First Nations' harvests. [124] Some studies connect drier

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[119] Human Rights Watch interview with Brian Mitchell, Smithers, October 20, 2018. A 2019 study based on genetic testing of a newly discovered collection of salmon scales from as early as 1913 reveals that wild Skeena sockeye salmon populations have declined by 56 percent to 99 percent. Michael H. H. Price et al., "Genetics of century-old fish scales reveal population patterns of decline," Conservation Letters, vol. 12 (2019), doi:10.1111/conl.12669.

[120] Human Rights Watch interviews with Darius Elias, Old Crow, June 7, 2018; Robert Bruce, Old Crow, June 7, 2018; Erin Linklater, Old Crow, June 8, 2018; Sue C.H. Grant, Bronwyn L. MacDonald, and Mark L. Winston, "State of Canadian Pacific Salmon."

[121] Human Rights Watch interview with Robert Bruce, Old Crow, June 7, 2018.

[122] Human Rights Watch interview with Ronnie Matthew West, Babine Lake, October 19, 2018.

[123] See, e.g., Ashleigh Downing and Alain Cuerrier, "A synthesis of the impacts of climate change on the First Nations and Inuit of Canada," pp. 57-70; C. J. Krebs et al., "Climatic determinants of berry crops in the boreal forest of the southwestern Yukon," Botany, vol. 87 (2009), pp. 401-408, doi:10.1139/B09-013; Unikkaaqatigiit: Putting the Human Face on Climate Change: Perspectives from Nunavik Communities, Inuit Tapiriit Kanatimi, Nasivvik Centre for Inuit Health and Changing Environments at Université Laval, and the Ajunnginiq Centre at the National Aboriginal Health Organization (2005), https://www.itk.ca/wp-content/uploads/2016/07/Nunavik.pdf (accessed June 1, 2020), p. P9.

[124] Janet S. Prevéy et al., "Climate change shifts in habitat suitability and phenology of huckleberry (Vaccinium membranaceum)," Agricultural and Forest Meteorology, vol. 280 (2020), doi:10.1016/j.agrformet.2019.107803.

weather with reduced number and size of berries that community members rely on. [125] Berries have also undergone a distributional change in some locations, decreased in others, and been subject to disease in yet others. [126]

Marietta, a junior Elder from Attawapiskat, said: "This summer we did not have strawberries and raspberries. It was too cold. We used to have lots of berries." [127]

In the Skeena River watershed, where massive wildfires in the past few years resulted in the evacuation of entire communities, the fires have affected traditional berry picking. [128]

New Species

First Nations members interviewed by Human Rights Watch described seeing new, unfamiliar species in their traditional territories. In Peawanuck, Sam Hunter, a community climate monitor, includes garter snakes and mountain lions among the list of new species. [129] Elders in Peawanuck, meanwhile, noted that in addition to warmer water the community is seeing Atlantic salmon and other "big water" fish more common along the Atlantic coast. [130] Warmer weather impacts migratory birds as well. One Elder noted: "We see new species… 15 years ago, pelicans arrived, then turkey vultures came. We have no

[125] Melissa Guyot et al., "Local observations of climate change and impacts;" Benita Y. Tam et al., "The impact of climate change on the well-being and lifestyle of a First Nation community in the western James Bay region," The Canadian Geographer, vol. 57, no. 4 (2013), pp. 441-456, doi:10.1111/j.1541-0064.2013.12033.x; C. J. Krebs et al., "Climatic determinants of berry crops," pp. 401-408.

[126] K.M. Youngblood, "'My Food is My Medicine, My Medicine is My Food' First Nations and Metis People of Grey and Bruce: a forage into traditional food use, climate change and health," Grey Bruce Health Unit (2017), https://www.publichealthgreybruce.on.ca/Portals/0/Topics/Healthy_Environments/Food%20is%20My%20Medicine-climate%20change%20FN.pdf (accessed June 1, 2020), p. 24; H. Lemelin et al., "Climate change, wellbeing and resilience in the Weenusk First Nation at Peawanuck: the Moccasin Telegraph goes global," Rural and Remote Health, vol. 10, no. 1333 (2010), pp. 7-10; Nancy J. Turner and Helen Clifton, "'It's so different today:'' Climate change and indigenous lifeways in British Columbia, Canada," Global Environmental Change, vol. 19 (2009), pp.180-190.

[127] Human Rights Watch interview with Marietta N.N., Attawapiskat, October 5, 2018. A "junior Elder" is an Elder in training.

[128] "2018 Wildfire Season Summary," Government of British Columbia, https://www2.gov.bc.ca/gov/content/safety/wildfire-status/about-bcws/wildfire-history/wildfire-season-summary (accessed June 1, 2020).

[129] Human Rights Watch phone call with Sam Hunter, September 4, 2020.

[130] Human Rights Watch group interview with Elders, Peawanuck, October 3, 2018.

name for that [in our language] because we'd never seen it before." [131] Chief Ignace Gull has seen similar changes to migratory birds in Attawapiskat, "water is getting warmer, the ice melts early. Other things—what we see today are pelicans migrating North; cormorants, we see many of them." [132]

Challenges in Accessing Harvesting Areas

Accessing traditional food sources is based on harvesters' ability to safely get out on the land in a timely and cost-effective manner, which is affected by changing weather, ice conditions, wildfires, and water levels. In general, climate change is causing more extreme and unpredictable weather patterns that make it more difficult and dangerous for First Nations to access harvesting opportunities. These changes will likely worsen as the climate warms.

Shorter Harvesting Seasons

Community members from Peawanuck and Attawapiskat described how changes in snow and ice conditions have resulted in a reduced period of solid ice and sufficient snow cover necessary to support transport by snowmobile, commonly used to hunt moose and caribou. [133] In Peawanuck, community leadership described a winter where exceptionally early snowmelt resulted in only two weeks of winter hunting, instead of the usual month. [134] In Old Crow, warmer weather has caused a much shorter winter harvesting season in recent years, preventing access to caribou and trap lines for smaller mammals that provide an income for community members. [135]

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[131] Human Rights Watch group interview with Elders, Peawanuck, October 3, 2018. On James Bay, Fort Albany First Nation residents also report significant increases in novel bird species, such as pelicans. Benita Y. Tam, "The impact of climate change on the well-being and lifestyle of a First Nation," pp. 441-456. Pelicans (a threatened species in Ontario) are now increasingly sited in the Hudson Bay Lowlands. K.F. Abraham and L.M. McKinnon, Hudson Plains Ecozone+, p. 53. The turkey vulture has also been found to be expanding its range northward. "Cathartes aura: Turkey Vulture," post on borealforest.org, undated, http://www.borealforest.org/birds/vulture.htm#:~:text=The%20summer%20range%20has%20been,Lake%2C%20north%20of%20Thunder%20Bay (accessed June 1, 2020).

[132] Human Rights Watch Interview with Ignace Gull, Chief of Attawapiskat First Nation, Ontario, October 4, 2018.

[133] Human Rights Watch interviews with Ignace Gull, Peawanuck, October 4, 2018; Marietta N., Attawapiskat, October 5, 2018.

[134] Human Rights Watch interview with Peawanuck Chief and Council, Peawanuck, October 2, 2018; Human Rights Watch phone call with Sam Hunter, September 4, 2020.

[135] Human Rights Watch interviews with Roger N., Old Crow, June 11, 2018; Joel Peter, Old Crow, June 11, 2018.

In the Skeena River watershed, 2018 record forest fires reduced access to harvesting areas.[136] In Burns Lake, British Columbia, Wilf Plasway Junior told Human Rights Watch: "When the fires started they closed off one area where we go fishing. People could not fish to fill up their winter stocks."[137]

Even where conditions permit travel to harvesting areas, Sam Hunter, a community member from Peawanuck, said changing climatic conditions can impact the success of a harvesting trip: "Sometimes the snow just disappears in two, three days, and... before winter, when it freezes kind of late, sometimes we miss the [hunting] seasons that we used to follow, like caribou hunts, or in the spring goose hunts. Sometimes we can't get anything."[138]

Dangerous and Difficult Conditions

Climate change has made harvesting more dangerous. Ice thinning can lead to harvesters breaking through the ice, becoming injured and losing equipment.[139] Increased storms, unpredictable weather, and flooding have made harvesting more dangerous.[140] The results in less food harvested to eat for that season; and fewer youth joining hunts, missing out on opportunities to learn harvesting methods.

Margaret Mack, a nurse from Peawanuck who regularly takes her grandkids hunting, said: "We used to know the weather and conditions of the river, and it's a whole lot different now [… Now] the rivers are dangerous. My brother broke into the ice with a skidoo. It's

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[136] The Northwest experienced the highest level of hectares burned (837,379). Government of British Columbia, "2018 Wildfire Season Summary."

[137] Human Rights Watch interview with Wilf Plasway Junior, Burns Lake, October 19, 2018.

[138] Human Rights Watch interview with Sam Hunter, Peawanuck, December 17, 2019.

[139] Denise Golden et al., "Blue-ice," p. 408; Ashleigh Downing and Alain Cuerrier, "A synthesis of the impacts of climate change on the First Nations and Inuit of Canada," p. 65; Christopher Furgal and Jacinthe Seguin, "Climate Change, Health, and Vulnerability in Canadian Northern Aboriginal Communities," Environmental Health Perspectives, vol. 114, no. 12 (2006), pp. 1964-1970, doi:10.1289/ehp.8433.

[140] Marie-Jeanne S. Royer and Thora Martina Herrmann, "Socioenvironmental changes in two traditional food species of the Cree First Nation of subarctic James Bay," Cahiers de géographie du Québec, vol. 55, no. 156 (2011), p. 591; Ashleigh Downing and Alain Cuerrier, "A synthesis of the impacts of climate change on the First Nations and Inuit of Canada," p 65; Amanda Sheedy, "The Impacts of Climate Change on Traditional and Local Food Consumption in the Yukon," Arctic Institute of Community-Based Research (2018), pp. 20 and 33; Muhammad-Arshad K. Khalafzai, "Flooding in the James Bay region of Northern Ontario, Canada: Learning from traditional knowledge of Kashechewan First Nation," International Journal of Disaster Risk Reduction, vol. 36 (2019), doi:10.1016/j.ijdrr.2019.101100.

gotten unpredictable. The river gets unstable… Spring hunt is dangerous for kids because it is a flood zone." [141]

Wabano, from Peawanuck, explained: "I only wish that we had the same winter we used to have so we could go hunt. It is difficult for us to go on the land when the spring thaw is too rapid." [142]

Old Crow residents are also worried about the risks of unstable ice conditions. [143] The changing and unpredictable environment also makes harvesting difficult in the summer. First Nations members from Peawanuck and Old Crow described how unusually shallow and slow rivers make it harder to travel and sometimes prevents community members from going hunting and fishing. [144] Esau Schafer from Old Crow observed the widening of the river because of erosion over the years. [145] He said: "The water spreads and gets wider. It's hard to travel in shallow water with modern boats." [146]

Increased Financial Costs Related to Climate Change

Increasing costs due to climate impacts can also be a barrier to harvesting: preparing for unpredictable weather requires extra food, gas, and supplies, shifting snow and ice conditions mean altering traditional travel routes, which can result in higher fuel costs and

[141] Human Rights Watch interview with Margaret Mack, Peawanuck, October 3, 2018.

[142] Human Rights Watch interview with Mary Jane Wabano, Peawanuck, October 4, 2018.

[143] ECCC, "Canada's Changing Climate," p. 128. Human Rights Watch interview with Darius Elias, Old Crow, June 7, 2018. There are anecdotal reports from Inuit and First Nations of an increase in the number of accidents and drownings associated with poor or uncharacteristic ice conditions during times of the year that are predictable and typically very safe. Christopher Furgal and Jacinthe Seguin, "Climate Change, Health, and Vulnerability," pp. 1964-1970; Benita Y. Tam, "The impact of climate change on the well-being and lifestyle of a First Nation," pp. 441-456; Ashleigh Downing and Alain Cuerrier, "A synthesis of the impacts of climate change on the First Nations and Inuit of Canada," p. 65.

[144] Human Rights Watch interviews with Margaret Mack, Peawanuck, October 3, 2018; Mary Jane Wabano, Peawanuck, October 4, 2018. Reduced stream flow has been documented on the Winisk River and other northern Ontario rivers. K.L. Webster, "Effects of a Changing Climate on Peatlands in Permafrost Zones: A Literature Review and Application to Ontario's Far North," Ministry of Natural Resources, 2013, https://cfs.nrcan.gc.ca/pubwarehouse/pdfs/34839.pdf (accessed June 1, 2020), p. 58.

[145] P. Roy-Léveillée and C. R. Burn, "Permafrost conditions near shorelines of oriented lakes in Old Crow Flats, Yukon Territory," 63rd Canadian Geotechnical Conference & 6th Canadian Permafrost Conference, Calgary, Alberta, December 2009, doi:10.13140/2.1.1332.4167.

[146] Human Rights Watch interview with Esau Schafer, Old Crow, June 8, 2018.

longer travel times, while shifting migration patterns increase the likelihood of needing to undertake multiple trips. [147]

In general, harvesting is expensive, requiring equipment, transportation, fuel, and food for the time hunting, trapping, or fishing. Peawanuck community member and hunter, Sam Hunter, explained: "Especially when we don't get anything, it's expensive…With gas and grub… it's like, CAD$1000 a time. And if you keep going out, if you don't get anything, it adds up." [148] In Attawapiskat, for example, 40 percent of households that harvest spend over half of their income on harvesting. [149]

As community members need to spend longer periods of time to harvest species that are further away or in unfamiliar locations, the cost of harvesting also extends to lost work and school time. [150] Georgina Wabano, from Peawanuck, described how the time needed to secure an adequate harvest is increasing, requiring the additional expense of multiple or longer trips: "When I hear my grandparents talking, they say, when they used to go hunting, there was such an abundance of food. Like, … you would only hunt like a day or two. And then you would have what you needed to feed your family. Nowadays you will have people that will go out, all spring. They leave by Ski-Doo, and they end up coming home by boat. So, about a month, they're … hunting daily to get what they need." [151]

Limited Alternatives to Traditional Food Sources

The impacts of climate change on First Nations' ability to access traditional foods are compounded by the limited availability of affordable, nutritious alternatives.

Transported foods—the main supplement to traditional harvested foods—have historically been disproportionately expensive in remote and northern communities due to in part to

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[147] David Fawcett et al., "Inuit adaptability to changing environmental conditions over an 11-year period in Ulukhaktok, Northwest Territories," Polar Record, vol. 54(275) (2018), pp. 123-126, doi:10.1017/S003224741800027X; Kelly Skinner et al., "Giving voice to food insecurity in a remote indigenous community in subarctic Ontario, Canada: traditional ways, ways to cope, ways forward," Public Health, vol. 13, no. 427 (2013), p. 6.

[148] Human Rights Watch interview with Sam Hunter, Peawanuck, December 17, 2019. As of October 7, 2020, CAD$1 roughly equals US$0.75.

[149]. "Victor Diamond Project Comprehensive Study Report," undated, https://iaac-aeic.gc.ca/80C30413-docs/report_e.pdf (accessed June 2, 2020), p. 5-34.

[150] Human Rights Watch interview with Mary Jane Wabano, Peawanuck, October 4, 2018.

[151] Human Rights Watch interview with Georgina Wabano, Peawanuck, December 18, 2019.

high operating costs.[152] To reach northern and remote communities, food sourced in the south must be transported over vast distances, past the reach of all-season roads and rail, requiring expensive, weather-dependent transport by air, sea, or seasonal winter roads, dramatically increasing food costs.[153]

The high costs of transport particularly impact access to nutritious food, especially produce. Fruits and vegetables (fresh, frozen, and canned) are more expensive than low-nutrient, processed store-bought foods (foods high in sugar, fat, and starch, like cereal, grains, potato chips, and candy) in northern markets, often by several orders of magnitude.[154] Some of this price differential can be attributed to increased transport costs for fruits and vegetables, which are generally more susceptible to spoilage during shipment, have shorter shelf lives, and require a controlled temperature during shipment and storage,[155] while less nutritious foods like cereal, grains, potato chips, and candy are typically dry, resist spoilage, and have stable shelf lives.[156]

Sometimes foods are spoiled by the time they reach communities.[157] In one survey of northern First Nations, 82 percent of respondents stated their store often or sometimes

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[152] Council of Canadian Academies, Aboriginal Food Security in Northern Canada: An Assessment of the State of Knowledge, The Expert Panel on the State of Knowledge of Food Security in Northern Canada (2014), pp. 110-111, https://cca-reports.ca/wp-content/uploads/2018/10/foodsecurity_fullreporten.pdf (accessed June 2, 2020).

[153] Council of Canadian Academies, Aboriginal Food Security in Northern Canada, pp 107-109. The least expensive form of transportation available to communities with open water access is seasonal sealifts, typically limited to two or three deliveries per year. Helicopters and airplanes are expensive and cargo space is limited. Trucks can ship cargo to remote communities on temporary ice roads, which are subject to weight load restrictions and the risks of climate change. The costs of building one kilometre of ice road over tested routes can range from $3,500 to $6,000. Over 5,000 kilometres of ice roads are constructed in Manitoba and Ontario annually, and they tend to be open from late January to early March, though this period is shortening due to climate change. *Ibid.*, pp. 101-114. A study of food costs in Manitoba First Nations found lack of access to all-weather roads considerably influenced prices, while distance from Winnipeg itself did not have an effect on food prices. Mengistu Assefa Wendimu et al., "Access and affordability of "healthy" foods in northern Manitoba? The need for Indigenous food sovereignty," Canadian Food Studies, vol. 5, no. 2 (2018), p. 60, doi:10.15353/cfs-rcea.v5i2.302.

[154] T-A Kenny et al., "Calories are cheap, nutrients are expensive – The challenge of healthy living in Arctic communities," Food Policy (2018), p. 7, doi:10.1016/j.foodpol.2018.08.006; Teresa Socha et al., "Food Availability, Food Store Management, and Food Pricing in a Northern Community First Nation Community," International Journal. of Humanities and Social Science, vol. 1, no. 11, August 2011, pp. 51, 57, 61, http://www.ijhssnet.com/journals/Vol_1_No_11_Special_Issue_August_2011/6.pdf (accessed June 2, 2020).

[155] N. Darmon, A. Briend, A. Drewnowski, "Energy-dense diets are associated with lower diet costs: a community study of French adults," Public Health Nutr. Vol. 7 (2004), pp. 21–27, doi.10.1079/PHN2003512; Kanika Agarwal et al., "Association of Cost and Quality of Diets with Risk of Non-Communicable Diseases: A Review," American J. of Pub. Health Research, vol. 3, no. 4 (2015), pp. 167-173, doi:10.12691/ajphr-3-4-7.

[156] Kanika Agarwal et al., "Association of Cost and Quality of Diets," pp. 167–173; A. Drewnowski and N. Darmon, "The economics of obesity: dietary energy density and energy cost," Am. J. Clin. Nutr., vol. 82 (2005), pp. 265S–273S.

[157] Interis | BDO, "Nutrition North Canada Engagement 2016: Final report of what we heard," Nutrition North Canada, August 7, 2017, https://www.nutritionnorthcanada.gc.ca/eng/1491505202346/1491505247821 (accessed June 2, 2020).

sold expired food, while 57 percent said that perishable food was not usually in good condition.[158] Kyle Linklater, a community member from Peawanuck said: "[Vegetables] don't last too long. And by the time we get them, they're either rotten or just about to be."[159]

In remote communities visited by Human Rights Watch, families spend a significantly larger percentage of their income to secure healthy and nutritious food than they would in southern or urban locations.[160] In Old Crow, a family of four spends roughly 41 percent of their monthly budget to eat a healthy diet.[161] In Yukon's capital, Whitehorse, by contrast, a family would only need to spend 17.5 percent of their monthly budget on the same diet.[162] In Attawapiskat and Peawanuck, a family of four would spend almost half their monthly budget for food (47 percent in Attawapiskat; 45.8 percent in Peawanuck).[163] The same family's food budget would go twice as far in Toronto, where a family of four spends 17.4

[158] Kristin Burnett et al., "Retail food environment, shopping experiences, First Nations and the provincial Norths," Health Promotion and Chronic Disease Prevention in Canada, vol. 37, no. 10 (2017), p. 337, doi:10.24095/hpcdp.37.10.03.

[159] Human Rights Watch interview with Kyle Linklater, Peawanuck, January 17, 2020.

[160] While food costs don't differ dramatically for those living in road-accessible communities in the Skeena River watershed compared to British Columbia as a whole, reduced financial resources in First Nations like Kispiox First Nation, mean community members must allocate significantly more of their monthly budget (over 35 percent) to secure nutritious store-bought food compared to a family in nearby Terrace, who would only need to spend 18.5 percent of their monthly budget on the same food.

[161] In Old Crow, the household median after-tax income in 2015 was $63,232 compared to $73,935 for Yukon in general. Statistics Canada, "Census Profile, 2016 Census: Old Crow, Settlement [Census subdivision], Yukon and Yukon, Territory [Census division], Yukon," 2016, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=6001043&Geo2=CD&Code2=6001&SearchText=old%20crow&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0 (accessed June 2, 2020).

[162] In Whitehorse, the median after-tax income in 2015 was $81,768. Statistics Canada, "Census Profile, 2016 Census Whitehorse [Population centre], Yukon and Whitehorse, City [Census subdivision], Yukon," 2016, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=POPC&Code1=1023&Geo2=CSD&Code2=6001009&SearchText=Whitehorse&SearchType=Begins&SearchPR=01&B1=All&GeoLevel=PR&GeoCode=6001009&TABID=1&type=0 (accessed June 2, 2020).

[163] In Attawapiskat, the median after-tax household income in 2015 was $48,341, compared to $58,264 in Toronto. Statistics Canada, "Census Profile, 2016 Census: Attawapiskat 91A, Indian reserve [Census subdivision], Ontario and Toronto, Census division [Census division], Ontario" 2016, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3560051&Geo2=CD&Code2=3520&SearchText=attawapiskat&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0 (accessed June 2, 2020). In Peawanuck, the median household after-tax income in 2015 (the most recent year for which census data is available) was $46,976 compared to $59,934 in the larger Kenora district in northern Ontario. Statistics Canada, "Census Profile, 2016 Census: Peawanuck, Indian Settlement [Census subdivision], Ontario and Kenora, District [Census division], Ontario" 2016, https://www12.statcan.gc.ca/census-recensement/2016/dp-pd/prof/details/page.cfm?Lang=E&Geo1=CSD&Code1=3560091&Geo2=CD&Code2=3560&SearchText=Peawanuck&SearchType=Begins&SearchPR=01&B1=All&TABID=1&type=0 (accessed June 2, 2020).

percent of their monthly budget on healthy food.[164] Families whose income falls below the median income reported in each community would have to allocate even more of their monthly budget to secure a healthy diet from store-bought food.

Climate change will further increase the cost of imported nutritious food options. According to one report, climate change impacts on agriculture contributed to an over 17 percent increase in the cost of vegetables in Canada in 2019.[165] As the agricultural sector continues to face climate change impacts such as unpredictable crop yields, heat-wave livestock threats, pasture availability and pest and disease outbreaks, costs will continue to rise.[166] Overall, "annual food expenditure for the average Canadian family is predicted to rise by $487 in 2020."[167] These price hikes will be felt much more intensely in northern and remote communities where food costs, particularly the cost of produce, is already a barrier to healthy eating.

Climate change and transport costs are not the only drivers of high food costs in northern markets. Research suggests that limited retail competition in small, remote communities may also play a role.[168] The Northern Store operator, The North West Company (NWC), a for-profit company traded on the Toronto Stock Exchange, is the only grocery store in 54 percent of communities in the territories and provincial Norths that do not have year-round road access.[169] In communications with Human Rights Watch, NWC said that while it may not face on-the-ground retail competition, it competes with customers "out-shopping" in major regional centres when they leave their home communities for vacation, business, or medical reasons.[170]

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[164] In Toronto the same family would spend only $847.16 each month. 2015 City of Toronto report, estimate for a family of four eating according to the Nutritious Food Basket (like the Revised Northern Food Basket – a prescribed list of 67 foods in grocery stores). Medical Officer of Health, City of Toronto, "Cost of the Nutritious Food Basket – Toronto 2015," October 5, 2015, http://www.toronto.ca/legdocs/mmis/2015/hl/bgrd/backgroundfile-84588.pdf (accessed June 2, 2020).

[165] Canada Food Pricing Report, 10th edition, Dalhousie University and the University of Guelph (2020), https://cdn.dal.ca/content/dam/dalhousie/pdf/sites/agri-food/Canada%20Food%20Price%20Report%20Eng%202020.pdf (accessed June 2, 2020), p.11.

[166] Canada Food Pricing Report, pp. 7-8.

[167] Canada Food Pricing Report, p. 6.

[168] Tracey Galloway, "Canada's northern food subsidy Nutrition North Canada: a comprehensive program evaluation," Int J Circumpolar Health, vol. 76(1) (2017), doi: 10.1080/22423982.2017.1279451; Kristin Burnett et al., "Retail food environment, shopping experiences, First Nations and the provincial Norths," Health Promotion and Chronic Disease Prevention in Canada, vol. 37, no. 10 (2017), doi:10.24095/hpcdp.37.10.03.

[169] Kristin Burnett et al., "Retail food environment," p. 336.

[170] Video conference with Edward Kennedy and Gary Merasty, NWC, August 17, 2020.

Some community members have criticized NWC for failing to provide affordable healthy, nutritious food options.[171] As Mack explained, a system that is dominated by one retailer raises concerns about limited health options: "Northern [Store] controls what you eat."[172] Retailers in northern markets have limited incentive to stock nutrient dense, but perishable fresh produce due to the high cost of transport, and risk of spoilage.[173] The North West Company's website does note a 20 percent increase in sales since 2017 from Health Happy, a program that makes lower sugar, salt, fat, and caffeine content food products more accessible in remote communities, but the company told Human Rights Watch that the demand for these products remains limited.[174]

In 2019, NWC set a three-year commitment to "invest in lower food pricing" in stores in northern Canada.[175] The company attributes increased sales in northern Canadian stores 2020 in part to lower food prices.[176]

In order to have more control over their food supply, some communities operate their own grocery stores. Old Crow, for example, decided not to renew operating contracts with the NWC, instead, turning to the Arctic Co-operatives Ltd., a co-operative federation owned and controlled by 32 community-based co-operative business enterprises located in

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[171] Human Rights Watch interviews with Maurice Mack, Peawanuck, October 2, 2018; Margaret Mack, Peawanuck, October 3, 2018; Joseph Koostachin, October 3, 3018. See also, Kristin Burnett et al., "Retail food environment;" "Yukon Community Seeks Exemption From Canada's Nutrition North Program," CBC, February 9, 2011, https://www.rcinet.ca/eye-on-the-arctic/2011/02/09/yukon-community-seeks-exemption-from-canadas-nutrition-north-program/ (accessed June 2, 2020). In recent years, the company's Health Happy program, the company writes, has "increased the selection of healthy food options in stores that contain reduced salt, fat or caffeine content." North West Company, "Peawanuck community members embrace Health Happy Products," August 13, 2018, https://www.northwest.ca/community/community-engagement/123/article-123 (accessed August 4, 2020).

[172] Human Rights Watch interview with Margaret Mack, Peawanuck, October 3, 2018.

[173] T-A Kenny et al., "Calories are cheap, nutrients are expensive – The challenge of healthy living in Arctic communities," Food Policy (2018), p. 9, doi:10.1016/j.foodpol.2018.08.006; Teresa Socha et al., "Food Availability, Food Store Management, and Food Pricing in a Northern Community First Nation Community," International Journal. of Humanities and Social Science, vol. 1, no. 11, August 2011, p. 53, http://www.ijhssnet.com/journals/Vol_1_No_11_Special_Issue_August_2011/6.pdf (accessed June 2, 2020).

[174] Video conference with Edward Kennedy and Gary Merasty, NWC, August 17, 2020. https://www.northwest.ca/community/community-engagement/38/article-38

[175] North West Company, "Report to Shareholders," January 2020, pg. 9; https://www.northwest.ca/uploads/documents/Q4%202019%20-%20Report%20to%20Shareholders%20-%20JAN31-20.pdf (accessed October 2020).

[176] North West Company, "Report to Shareholders," January 2020, pg. 2; https://www.northwest.ca/uploads/documents/Q4%202019%20-%20Report%20to%20Shareholders%20-%20JAN31-20.pdf (accessed October 2020).

Nunavut, the Northwest Territories, and Yukon.[177] But the Co-op faces the same logistical challenges as NWC, and according to some interviewees, cost and limited selection of fresh produce remains an issue.[178] Councillor Esau Schafer told Human Rights Watch: "Even though the community now owns the store, many don't find food they can afford."[179] Tracy Rispin, the store manager in Old Crow, said: "We get criticized a lot and visitors take pictures of the price tags. But groceries are flown in from Edmonton or Calgary [which makes them expensive]."[180]

Another option for households to buy healthier, affordable food is to order it from southern stores. While individual orders may offer access to more variety of foods than are available in community, they still face the challenge and cost of long-distance transport, and without the added savings that retailers secure through bulk orders. Further, while a limited number of registered retailers offer a variety of purchase methods, ordering food often requires a credit card—which can be a barrier for some low-income families.[181] Community members without bank accounts or credit history face significant challenges in accessing credit.[182] In general, First Nations members are underserved by financial institutions and

[177] Simon T. Berge, "Pedagogical Pathways for Indigenous Business Education: Learning from Current Indigenous Business Practices," The International Indigenous Policy Journal, vol. 11, no. 1 (2020), pp. 6-7, doi:10.18584/iipj.2020.11.1.9374; "Old Crow, Yukon's most northern town, welcomes Co-op store," CBC, May 19, 2015, https://www.cbc.ca/news/canada/north/old-crow-yukon-s-most-northern-town-welcomes-co-op-store-1.3078357 (accessed June 2, 2020); Arctic Co-operatives Limited, "Servicing and empowering diverse Co-operative businesses in Canada's Arctic," undated, https://arctic-coop.com/ (accessed June 2, 2020).

[178] Human Rights Watch interviews with Robert Bruce, Old Crow, June 7, 2018; Mary Jane Moses, Old Crow, June 9, 2018; James His, Old Crow, June 11, 2018; Megan Williams, Old Crow, June 11, 2018.

[179] Human Rights Watch interview with Esau Schafer, Old Crow, June 8, 2018.

[180] Human Rights Watch interview with Tracy Rispin, Old Crow, June 8, 2019.

[181] Human Rights Watch interview with Lisa Van Fleet, Old Crow, June 8, 2018; Email correspondence with Megan Williams, September 14, 2020.

[182] Joe Fantauzzi, "Predatory Lending: A Survey of High Interest Alternative Financial Service Users," Canadian Centre for Policy Alternatives Ontario Office, December 2016, https://www.policyalternatives.ca/sites/default/files/uploads/publications/Ontario%20Office/2016/12/CCPA-ON%20predatory%20lending%20Dec%201.pdf (accessed June 2, 2020), p. 5.

are more likely to be unbanked.[183] For remote communities, travel to financial institutions in urban centers to open an account can be a barrier.[184]

Climate Change Increasing Food Transport Costs: Winter Roads

The already high costs of imported foods in northern and remote communities are increasing further due to warming temperatures, resulting in later freeze-up and earlier thaw, thereby shortening the winter road season. Built seasonally over frozen land and water, winter roads are constructed out of compounded snow and ice that is regularly flooded and frozen until it reaches the required thickness to support transport.[185] In Ontario alone, there are more than 3000 kilometers of winter roads, built and maintained by 29 First Nations and one municipality with financial and technical backing from provincial and federal governments.[186] The cost of building and maintaining winter roads is significant, but still much less than permanent roads.[187]

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[183] According to the 2011 Canadian Financial Capability Survey, 2.2 percent of the lowest net worth Canadians say they do not have a bank account and 4.2 percent of Indigenous respondents noted the same. Financial Consumer Agency of Canada, "The Future of Financial Education: Report of the 2011 FCAC-OECD Conference on Financial Literacy," 2011, https://www.canada.ca/content/dam/canada/financial-consumer-agency/migration/eng/resources/researchsurveys/documents/futuree-eng.pdf (accessed June 2, 2020), p. 16. Other studies estimate the rate of unbanked individuals in Canada to be as high as 15 percent. Paul Bowles, Keely Dempsey, and Trevor Shaw, "Fringe Financial Institutions, the Unbanked, and the Precariously Banked: Survey Results from Prince George, B.C.," Aboriginal Business Development Centre, 2010, https://www.abdc.bc.ca/uploads/Fringe_Financial_Institutions_Report.pdf (accessed June 2, 2020), p. 9. In Ontario, as of November 2015, there were only five First Nations with a bank or credit union located in their community. Prosper Canada Centre for Financial Literacy, "Financial Literacy and Aboriginal Peoples," 2015, http://prospercanada.org/getattachment/f988e655-6033-40b1-8445-cd539bfdcf09/Financial-Literacy-and-Aboriginal-Peoples.aspx (accessed June 2, 2020), p. 5.

[184] Keith Martell and Adam Spence, "Can the First Nations poverty trap be broken?," The Globe and Mail, December 18, 2017, https://www.theglobeandmail.com/report-on-business/rob-commentary/can-the-first-nations-poverty-trap-be-broken/article37377449/ (accessed June 2, 2020).

[185] Council of Canadian Academics, Aboriginal Food Security in Northern Canada, pp. 101-114.

[186] Clarence Woudsma and Will Towns, "Chapter 6: Ontario," in Climate risks and adaptation practices for the Canadian transportation sector (Ottawa, ON: Government of Canada, 2016), https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/earthsciences/pdf/assess/2016/Chapter-6e.pdf (accessed June 2, 2020), p. 146; Ministry of Northern Development and Mines, "Ontario Winter Roads Community Contact Information (2018-19)," undated, https://www.mndm.gov.on.ca/sites/default/files/ontario_winter_roads_community_contact_information_2018-19.pdf (accessed June 2, 2020); Ministry of Northern Development and Mines, Transportation Network Map, undated https://www.mndm.gov.on.ca/sites/default/files/en_-_northern_ontario_winter_roads_map_2019.pdf (accessed June 2, 2020).

[187] IBI Group | Hemson Consulting Ltd., "Winter Roads," prepared for Ontario Ministry of Transportation and Ministry of Northern Development and Mines, November 2016, https://northernontariommts.files.wordpress.com/2016/11/ttr_winter_roads_techbackgrounder_2016-11-10.pdf (accessed June 2, 2020), p. 7. National Research Council, Abrupt Impacts of Climate Change: Anticipating Surprises (2013), https://www.nap.edu/catalog/18373/abrupt-impacts-of-climate-change-anticipating-surprises (accessed June 2, 2020), pp. 140-141 (citing Smith, L. C. 2010. The World in 2050: Four Forces Shaping Civilization's Northern Future. New York: Dutton).

Winter roads are essential to remote and northern First Nations to deliver supplies, access traditional foods; maintain social networks through social and cultural events; and to access basic social services such as health care. [188] They are essential in lowering cost of living, including food costs. [189]

Winter roads are dependent on weather patterns that are becoming increasingly variable due to climate change. [190] Winter road construction requires sub-zero temperatures and little snow to form a frozen base, followed by enough snow to compact into adequate road thickness and build crossings over water. [191] If temperatures rise above freezing during the winter road season, it risks eroding or weakening. [192]

In recent years, winter road seasons have been increasingly unreliable. For example, the 2019-2020 winter road season started as much as two weeks late for some northern Ontario First Nations, with some communities only being able to transport partial loads because of inadequate ice thickness. [193] The quality of winter roads is also increasingly variable, limiting the weight of vehicles that can safely travel the roads and decreasing the

[188] Denise Golden et al., "Blue-ice;" Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road in the western James Bay region, Ontario, Canada," Theoretical and Applied Climatology (2016), doi:10.1007/s00704-016-1855-1.

[189] Ministry of Energy, Northern Development, and Mines, "Northern Ontario Winter Roads," December 20, 2019, https://www.mndm.gov.on.ca/en/northern-development/transportation-support/northern-ontario-winter-roads (accessed June 2, 2020); Centre for Indigenous Environmental Resources, "Climate Change Impacts on Ice, Winter Roads, Access Trails, and Manitoba First Nations," undated, http://www.yourcier.org/uploads/2/5/6/1/25611440/findings_pamphlet2_3.pdf (accessed June 2, 2020).

[190] "Geology and Winter Roads across the north," Wawatay News, December 1, 2015: http://www.wawataynews.ca/environment/geology-and-winter-roads-across-north (accessed June 2, 2020); Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road," pp. 1309–1320; K. E. Knowland et al., "A study of the meteorological conditions associated with anomalously early and late openings of a Northwest Territories winter road," Arctic, vol. 63 (2010), pp. 227–239.

[191] Paul Dominique Barrette, "The Canadian winter road infrastructure and climate change adaptation: prospective solutions through R&D," National Research Council of Canada, April 30, https://nrc-publications.canada.ca/eng/view/ft/?id=46ba2a4c-b74f-4ca0-9562-fd56bb870a46 (accessed June 2, 2020), pp. 6 and 21; Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road."

[192] Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road," pp. 1309-1320. In northern Ontario, where the winter road system crosses muskeg, road maintenance requires that temperatures remain cold, or risk thawing that quickly turns the road to mud, see "Geology and Winter Roads across the north," Wawatay News.

[193] Heather Kitching, "Warm temperatures still hampering winter road access to northern First Nations," CBC, March 9, 2020, https://www.cbc.ca/news/canada/thunder-bay/northwestern-ontario-winter-roads-1.5489375 (accessed June 2, 2020). In Manitoba meanwhile, a study found: "The number of days that winter roads are safe to use has fallen from an average of 50 or 55 days to as low as 20 days in 1999/2000." ... "There seems to be a definite trend toward the inability of the east side of Lake Winnipeg to maintain a winter road." Karime Abdel-Hay et al., "Transportation & Climate Change in Manitoba – Proceedings," prepared for: Manitoba Transportation & Government Services, March 2003, https://umanitoba.ca/faculties/management/ti/media/docs/climate.pdf (accessed June 2, 2020), p. 20.

frequency with which transport can bring supplies to remote communities.[194] In Attawapiskat, then Chief Ignace Gull told Human Rights Watch: "[Winter road season] is only two months now, previously it was December to April…The road is a lifeline for people to visit family. They use it to buy bulk shopping."[195]

In Ontario, government and independent reports have projected increasingly limited windows of operation for winter roads.[196] A 2014 report by consulting firm Deloitte, for example, projected that operating windows for winter roads serving Ontario's central and northern First Nations' communities would decline 12 to 20 percent by 2050, and 20 to 40 percent by 2100.[197]

Impact of Increasing Food Poverty on First Nations Health and Culture

Existing inequalities facing First Nations, combined with climate impacts on access to food have adversely affected their health and culture. Community members described having to skip meals or purchase less healthy, but more affordable food in local stores to supplement inadequate supplies of traditional food. These coping mechanisms are associated with serious health concerns, especially for older people, children, and those with chronic illnesses. The impact on cultural identity associated with loss of traditional

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[194] Denise Golden et al. "Blue-ice," p. 408; Paul Dominique Barrette, "The Canadian winter road infrastructure and climate change adaptation," pp. A-1 – A-3; CIER, "Climate Change Impacts on Ice, Winter Roads, Access Trails and Manitoba First Nation – 2006," 2006, http://www.yourcier.org/climate-change-impacts-on-ice-winter-roads-access-trails-and-manitoba-first-nations-2006.html (accessed June 2, 2020); Leslie B. Knoll et al., "Consequences of lake and river ice loss on cultural ecosystems," Limnology and Oceanography Letters, vol. 4 (2019), p 127, doi: 10.1002/lol2.10116. The required thickness of that ice/snow layer depends on vehicle weight, weight distribution and frequency of passages. Paul Dominique Barrette, "The Canadian winter road infrastructure and climate change adaptation," p. 5.

[195] Human Rights Watch interview with Ignace Gull, Chief, Attawapiskat, October 4, 2018. When winter roads are not passable, store-bought food prices rise to reflect the increased cost of flying in supplies. "Communities still waiting on winter road supply runs," Wawatay News, December 1, 2015, http://www.wawataynews.ca/home/communities-still-waiting-winter-road-supply-runs (accessed June 2, 2020); Jim Coyle, "The James Bay Winter Road links Attawapiskat and Moosonee in Northern Ontario," Toronto Star, February 3, 2012, https://www.thestar.com/news/ontario/2012/02/03/the_james_bay_winter_road_links_attawapiskat_and_moosonee_in_northern_ontario.html (accessed June 2, 2020).

[196] Clarence Woudsma and Will Towns, "Chapter 6: Ontario," p. 141; Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road." As far back as 2007, the government of Canada was aware of the vulnerabilities of the winter road network to climate change. A report prepared for the government of Canada, noted that projected increases in winter temperatures of 4-6°C by 2050 "will undoubtedly affect the viability" of the winter transportation network, adding that modifications of winter road construction will not be able to compensate in the long term. Government of Canada, "From Impacts to Adaptation," pp. 257 261.

[197] Clarence Woudsma and Will Towns, "Chapter 6: Ontario," p 157, (original study conducted by consulting firm, Deloitte not available online).

food also imposes a toll on physical and mental health at both an individual and community level.

Negative Health Outcomes

Studies have shown that loss of traditional food and related harvesting practices, along with increased reliance on processed, lower-nutrient imported foods is tied to increased negative health outcomes in northern and remote communities, such as increased chronic diseases, and in particular, higher rates of obesity and diabetes, including among First Nations children. [198]

One Elder from Peawanuck explained: "We survive only on wild food. If the season is bad, we have to rely on the store, and it is not very good. I suspect that's where all the diabetes come from… in 1950, there were no known cases of diabetes. The average person in 1950s would only go to the store three times a year, [and] otherwise lived off the land." [199]

Now, climate-exacerbated food poverty is adding to these risks: increasingly requiring community members to skip meals or buy more low-nutrient store-bought food. [200] Older people interviewed for this report, for example, have cut down the number of meals they eat daily as sourcing traditional food becomes more difficult. One 77-year-old Elder from Old Crow who typically hunts for caribou and traps during winter months, said: "This year it

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[198] Council of Canadian Academies, Aboriginal Food Security in Northern Canada, pp. 53-55. Government of Canada, "Chapter 6: Diabetes in Canada: Facts and figures from a public health perspective – First Nations, Inuit, and Métis," December 15, 2011, https://www.canada.ca/en/public-health/services/chronic-diseases/reports-publications/diabetes/diabetes-canada-facts-figures-a-public-health-perspective/chapter-6.html (accessed June 2, 2020); Lyndon Crowshoe et al., Diabetes Canada Clinical Practice Guidelines Expert Committee, "Chapter 38: Type 2 Diabetes and Indigenous Peoples," in *Diabetes Canada 2018 Clinical Practice Guidelines for the Prevention and Management of Diabetes in Canada*, Canadian Journal of Diabetes, 2018, https://guidelines.diabetes.ca/cpg/chapter38 (accessed August 3, 2020); Public Health Agency of Canada, "Obesity in Canada – Prevalence among aboriginal populations," 2011, https://www.canada.ca/en/public-health/services/health-promotion/healthy-living/obesity-canada/prevalence-among-aboriginal-populations.html#:~:text=Key%20points,compared%20with%20non%2DAboriginal%20populations.&text=Obesity%20among%20children%20and%20youth,data%20from%20the%202006%20APS (accessed August 3, 2020); Public health Ontario, "Addressing Obesity in Children and Youth: Evidence to Guide Action for Ontario," September 2013, pp. 28-30, https://www.publichealthontario.ca/-/media/documents/A/2013/addressing-child-obesity.pdf?la=en (accessed August 3, 2020).

[199] Human Rights Watch group interview with elders, Peawanuck, October 3, 2018. Diabetes was rare among the Indigenous population in North America before 1940, but the rates have increased rapidly since 1950 and have now reached epidemic levels in some communities. Government of Canada, "Chapter 6: Diabetes in Canada."

[200]. Council of Canadian Academies, Aboriginal Food Security in Northern Canada, pp. X. Malnutrition and obesity are risk factors for diabetes. WG Smith, Whitney Gowanlock, Kim Babcock, "Type 2 diabetes in First Nation children: A collaborative effort to assess and prevent disease," Pediatrics & Child Health, vol. 6, no. 2 (2001), pp. 755-759, doi:10.1093/pch/6.10.755.

was hard for us to go to the land because there was not much snow. . . [which means] not eating very much. I only eat one meal per day." [201]

Skipping meals is particularly dangerous for people with type 2 diabetes, which is present in elevated rates among First Nations people. [202] One study found that among older adults with type 2 diabetes, those diagnosed with malnutrition are nearly 70 percent more likely to die of any cause versus those without diagnosed nutrition deficiencies. [203] This study takes on a particular urgency and concern in the context of the global Covid-19 pandemic, where pre-existing conditions such as diabetes have been associated with increased severity of the disease and risk of mortality, and as Covid-19 is causing delays and interruptions to food production and transport, making for even less reliable access to nutritious food in remote communities. [204]

As climate impacts increasingly reduce availability of and access to traditional foods, skipping meals will likely be an increasingly common tactic given the high costs of purchased foods. A nurse in Peawanuck explained, "our diet is geese. You have to get as much as you can. You have to plan out your food. It has to last until the geese arrive [again]... I have an elderly mother, we provide for her. To supplement [with store food] is very expensive." [205] Research carried out in Ontario First Nations indicates that 32 percent of households worry that their traditional food supplies would run out before they could get more. [206]

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[201] Human Rights Watch interview with Elder, Old Crow, June 11, 2018.

[202] Skipping meals can increase blood sugar levels in people with type 2 diabetes, which in turn increases risks of serious adverse health impacts if left untreated. CDC, "10 Surprising Things That Can Spike Your Blood Sugar," March 2, 2020, https://www.cdc.gov/diabetes/library/spotlights/blood-sugar.html (accessed June 2, 2020); Mayo Clinic, "Hyperglycemia in diabetes," November 3, 2018, https://www.mayoclinic.org/diseases-conditions/hyperglycemia/symptoms-causes/syc-20373631 (accessed June 2, 2020).

[203] N. Ahmed et al., "Impact of malnutrition on survival and healthcare utilization in Medicare beneficiaries with diabetes: a retrospective cohort analysis," BMJ Open Diabetes Research & Care (2018), doi:10.1136/bmjdrc-2017-000471.

[204] W. Guan et al., "Clinical Characteristics of Coronavirus Disease 2019 in China," New England Journal of Medicine, vol. 382, no.18 (2020), doi:10.1056/NEJMoa2002032; CDC, "People Who Are at Higher Risk for Severe Illness," May 14, 2020, https://www.cdc.gov/coronavirus/2019-ncov/need-extra-precautions/people-at-higher-risk.html (accessed June 2, 2020); Marsha Mcleod and Kristy Kirkup, "First Nations ramping up efforts to address food insecurity," The Globe and Mail, April 30, 2020, https://www.theglobeandmail.com/canada/article-first-nations-ramping-up-efforts-to-address-food-insecurity/ (accessed June 2, 2020); Teresa Wright, "Canada's Indigenous leaders say more help is needed as COVID-19 outbreaks rise," The Canadian Press, May 8, 2020, https://globalnews.ca/news/6923971/coronavirus-canada-indigenous-concerns/ (accessed June 2, 2020).

[205] Human Rights Watch interview with Margaret Mack, Peawanuck, October 3, 2018.

[206] Laurie Chan et al., "First Nations Food, Nutrition and Environment Study (FNFNES): Results from Ontario (2011/2012)," Ottawa: University of Ottawa, 2014, p. xvii.

Adults often hide hunger, so when families face food shortages at home it is most visible to educators and school administrators when children go to school. In several First Nations Human Rights Watch visited, teachers reported that some children do not get enough food at home. [207] Social stigma surrounding poverty and fears related to the removal of First Nations children from their families by social services for poverty related reasons influence how these issues are managed. [208] Elias from Old Crow said: "[I]f people do not have enough, they will not admit it. They are proud." [209] Roger, a councillor from Attawapiskat, said: "People go hungry, but don't show it." [210]

Some studies suggest that malnutrition at an early age may increase risks of developing Type 2 diabetes. [211] While diabetes tends to be present in individuals 50 years and older, it has been appearing earlier and at increasing rates among First Nations children. [212]

In road-accessible communities, low income families often rely on food banks to make up for the challenges of obtaining traditional foods. [213] Wet'suwet'en Hereditary Chief Na'Moks (John Risdale), from the Skeena River watershed, said: "Low income families go to the food bank when we should be going out to the territories. When we were growing up we never

[207] Human Rights Watch interviews with Paul Josie, Old Crow, June 8, 2018; Meredith Barker, Peawanuck, October, 3, 2018; Tim Sharp, Smithers, October 20, 2018.

[208] For decades, First Nations children have been taken from their home and cultures, first as part of a forced assimilation program known as the Indian Residential School program (see below), and later, through the disproportionate apprehension of First Nations children by child welfare services. Poverty and inadequate housing—issues tied directly to historic marginalization and systematic underfunding of on-reserve services—often served as a basis for the removal of First Nations children from their homes. To this day, poverty contributes to the removal of First Nations children from their families and communities, and First Nations children make up a disproportionately high number of children in care. See,e.g. Melissa Brittain and Cindy Blackstock, "First Nations Child Poverty: A Literature Review and Analysis," First Nations Children's Action Research and Education Service (2015), https://fncaringsociety.com/sites/default/files/First%20Nations%20Child%20Poverty%20-%20A%20Literature%20Review%20and%20Analysis%202015-3.pdf (accessed July 14, 2020); Katie Hyslop, "How Poverty and Underfunding Land Indigenous Kids in Care," The Tyee (May 18, 2018), https://thetyee.ca/News/2018/05/14/Indigenous-Kids-Poverty-Care/ (accessed July 14, 2020).

[209] Human Rights Watch interview with Darius Elias, Old Crow, June 7, 2018.

[210] Human Rights Watch interview with Roger [last name not shared], Attawapiskat, October 5, 2018

[211] Samuel N Uwaezuoke, "Childhood Diabetes Mellitus and the 'Double Burden of Malnutrition': An Emerging Public Health Challenge in Developing Countries," Journal of Diabetes and Metabolism, vol. 6, no. 9 (2015), doi:10.4172/2155-6156.1000597; O.G. Zabuga and A.M. Vaiserman, "Malnutrition in early life and risk of type 2 diabetes: Theoretical framework and epidemiological evidence" Moscow Univ. Biol.Sci. Bull., vol. 72 (2017), doi: 10.3103/S0096392517020067.

[212] Regine Halseth, The prevalence of Type 2 diabetes among First Nations.

[213] Human Rights Watch interview with Bobbi Morgan, Prince Rupert, October 22, 2018.

thought we'd need a food bank." [214] For remote communities, food banks are not common. [215]

School food programs offer another support for families. One counsellor from Old Crow put it simply, "Some kids go hungry to school…." [216] A teacher in Smithers, British Columbia said: "There is a lot of kids who do not eat on the weekends. We have programs here where kids take food home for the weekend. Lots of schools have lunch-programs but they do not offer traditional food." [217]

Loss of traditional food also impacts what community members purchase for food. Tracy Rispin, Co-op store manager in Old Crow, observed: "People buy differently when they have traditional food. Not having the caribou is devastating." [218] For instance, studies show that some First Nations' people tend to stock up on less expensive dry foods (like rice and pasta) when it is cheaper, changing nutrition intake. [219] One study of First Nations in British Columbia found that eating traditional foods was associated with a decreased intake of ultra-processed foods. [220]

First Nations older people and people with chronic diseases are particularly vulnerable to the health implications of food poverty making it imperative to eat a healthy diet. For many First Nations older people, access to traditional food is an essential part of eating healthy. Medical providers interviewed by Human Rights Watch expressed concern that people with chronic diseases such as diabetes do not follow the recommended diet for cost reasons. [221] A 58-year-old Elder from Peawanuck who has lost his vision and lives off disability benefits

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[214] Human Rights Watch interview with Chief Na'Moks, Smithers, October 20, 2018.

[215] See, e.g. Feed Ontario, "Shipping Food To Ontario's Most Remote Communities," undated, https://feedontario.ca/shipping-food-to-ontarios-most-remote-communities/ (accessed June 2, 2020). Some communities have their own food banks and, in some communities, the Northern Store operates a food bank. For many communities, however, their version of a food bank – a community supplied freezer where community members will store meat and fish to be shared with those who need it—depends on supply of traditional food.

[216] Human Rights Watch interview with Paul Josie, Old Crow, June 8, 2018.

[217] Human Rights Watch interview with Birdie Market, Smithers, October 20, 2018.

[218] Human Rights Watch interview with Tracy Rispin, Old Crow, June 8, 2019.

[219] F. Haman et al., "Obesity and type 2 diabetes in Northern Canada's remote First Nations communities: the dietary dilemma," Int J Obes (2010), doi:10.1038/ijo.2010.236.

[220] Malek Batal et al., "Sociodemographic associations of the dietary proportion of ultra-processed foods in First Nations peoples in the Canadian provinces of British Columbia, Manitoba, Alberta and Ontario," International Journal of Food Sciences and Nutrition, 2017, doi: 10.1080/09637486.2017.1412405.

[221] Human Rights Watch interview with Margaret Mack, Peawanuck, October 3, 2018; Melinda Arnett, Old Crow, June 11, 2018.

said: “We cannot eat vegetables, they are too expensive. We buy ground beef, milk and cereals at the store.” [222]

Parents struggling to provide food for their children are also sometimes left with few options beyond cheaper, less healthy, imported foods. An educator in Peawanuck said: “kids are impacted by poor food options...teeth are rotting out of their mouth.” [223] First Nations children in Yukon obtain over 90 percent of their dietary intake from grains and other foods high in sugar and fat, creating a high risk for chronic disease such as diabetes and heart disease. [224]

Climate-induced food insecurity adds to an already significant mental health crisis facing many First Nations as a result of historical and intergenerational trauma, discriminatory government policies, enforced separation of children from families and communities, insufficient access to mental health care and psychosocial support, and more. [225] Indigenous people die by suicide at a rate three times higher than non-Indigenous people. [226]

[222] Human Rights Watch interview with Joseph Koostachin, Peawanuck, October 3, 2018.

[223] Human Rights Watch interview with Meredith Barker, Peawanuck, October 3, 2018.

[224] Harriet V. Kuhnlein and Olivier Receveur, “Local Cultural Animal Food Contributes High Levels of Nutrients for Arctic Canadian Indigenous Adults and Children,” Journal of Nutrition 137(4) (2007), DOI: 10.1093/jn/137.4.1110.

[225] Patricia Boksa, Ridha Joober, and Laurence J. Kirmayer, “Mental wellness in Canada’s Aboriginal communities: striving toward reconciliation,” J Psychiatry Neurosci. 2015 Nov; 40(6): 363–365, doi: 10.1503/jpn.150309; Norah Kielland and Tonina Simeone, Legal and Social Affairs Division, “Current Issues in Mental Health in Canada: The Mental Health of First Nations and Inuit Communities,” Library of Parliament (2014), https://lop.parl.ca/sites/PublicWebsite/default/en_CA/ResearchPublications/201402E (accessed June 2, 2020).

[226] Mohan B. Kumar and Michael Tjepkema, “Suicide among First Nations people, Métis and Inuit (2011-2016): Findings from the 2011 Canadian Census Health and Environment Cohort (CanCHEC),” Statistics Canada, June 28, 2019, https://www150.statcan.gc.ca/n1/pub/99-011-x/99-011-x2019001-eng.htm (accessed June 2, 2020).

Impact of Canada's Historic First Nations Polices on Culture, Food, and Health

Canada's long history of assimilationist government policies and practices have eroded, and at times expressly prohibited, First Nations cultural traditions, taken First Nations children away from their communities, and systematically marginalized First Nations people to this day. [227]

The Indian Residential School System, which spanned the 1870s through 1996, offers one stark example of how Canada's assimilationist approach to First Nations populations has had long-term impacts on their well-being, food poverty, and health. The Canadian government oversaw the forced removal of over 150,000 Indigenous children to residential schools explicitly intended to break the cultural ties between Indigenous children and their communities. [228] At these schools, children were subject to egregious verbal, physical, and sexual violence. [229]

Food poverty played a significant role in the trauma and negative impacts of residential schools. Children taken from their home community and traditional lands were deprived of access to traditional food, and the ability to harvest. As one residential survivor told the Truth and Reconciliation Commission, which was established in 2008 to document impacts of the residential school system on survivors, "the people that went back [to their home communities] had to relearn how

[227] Royal Commission on Aboriginal Peoples, Report of the Royal Commission on Aboriginal Peoples, 1996, https://www.bac-lac.gc.ca/eng/discover/aboriginal-heritage/royal-commission-aboriginal-peoples/Pages/final-report.aspx (accessed June 2, 2020). The national Truth and Reconciliation Commission (TRC), concluded that governments in Canada have carried out a systematic assault on Indigenous cultures and traditions. Truth and Reconciliation Commission, "Honouring the Truth, Reconciling for the Future: Summary of the Final Report of the Truth and Reconciliation Commission of Canada," June 2015, http://www.trc.ca/assets/pdf/Honouring_the_Truth_Reconciling_for_the_Future_July_23_2015.pdf (accessed June 2, 2020). The National Inquiry into Missing and Murdered Indigenous Women and Girls in its September 2016 report concluded that the pattern of violence against Indigenous women, girls, and two spirit people amounts to a race-based genocide of Indigenous Peoples, which has been empowered by colonial structures, leading directly to increased rates of violence, death, and suicide in Indigenous populations as well as higher rates of poverty, homelessness, and food insecurity. National Inquiry into Missing and Murdered Indigenous Women and Girls, Reclaiming Power and Place, 2019, https://www.mmiwg-ffada.ca/final-report/.

[228] The Truth and Reconciliation Commission characterized these schools as "a systematic, government-sponsored attempt to destroy Aboriginal cultures and languages and to assimilate Aboriginal peoples so that they no longer existed as distinct peoples." TRC, "Honouring the Truth, Reconciling for the Future," p. 153.

[229] TRC, "Honouring the Truth, Reconciling for the Future;" TRC, They Came for the Children, 2012, http://www.trc.ca/assets/pdf/resources_2039_T&R_eng_web[1].pdf (accessed June 2, 2020).

to survive. And at that time, survival was fishing, hunting, and trapping." [230] Mack from Peawanuck explained to Human Rights Watch: "I went to Fort Albany to residential school. We were taken away from our traditional life. We never left that building. We did not come home for Christmas. We were always confined to that building. We only went outside for half an hour [a day]. When we came back as teenagers, we needed to learn how to live off the land." [231]

At residential schools, prolonged hunger and malnutrition were a common occurrence. [232] According to the Truth and Reconciliation Commission, the "government knowingly chose not … to ensure that kitchens and dining rooms were properly equipped... and, most significantly, that food was purchased in sufficient quantity and quality for growing children." [233] Students were forced to consume spoiled or rotten food, and even, in some instances, forced to eat their own vomit. [234]

This program of neglect and abuse has had long-term, generational health implications for First Nations in Canada, and studies have found that physical health outcomes of survivors and their descendants, such as increased risk of obesity and diabetes, are almost certainly tied to prolonged malnutrition experienced by residential school students. [235]

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[230] The Truth and Reconciliation Commission (TRC) was established as part of a legal settlement with Indian Residential School survivors. Over a six-year period, the TRC heard more than 1,300 hours of testimony and received almost 7,000 statements from witnesses. The TRC's "calls to action" set out 94 measures to meet the needs of residential school survivors, address the lasting harms done, and build a new relationship between Indigenous peoples and Canada. TRC, The Survivors Speak, 2015, http://www.trc.ca/assets/pdf/Survivors_Speak_English_Web.pdf (accessed June 2, 2020), p. 107.

[231] Human Rights Watch interview with Margaret Mack, Peawanuck, October 3, 2018.

[232] TRC, The Survivors Speak, pp. 71-77; Ian Mosby and Tracey Galloway, ""Hunger was never absent": How residential school diets shaped current patterns of diabetes among Indigenous peoples in Canada," CMAJ, vol. 189 (2017), doi:10.1503/cmaj.170448; Ian Mosby, "Administering Colonial Science: Nutrition Research and Human Biomedical Experimentation in Aboriginal Communities and Residential Schools, 1942-1952," Histoire Sociale / Social History, vol. XLVI, no 91 (May 2013), https://muse.jhu.edu/article/512043/pdf (accessed June 2, 2020).

[233] TRC, "Honouring the Truth, Reconciling for the Future," pp. 89-90.

[234] TRC, *The Survivors Speak*, p 74.

[235] Ian Mosby and Tracey Galloway, ""Hunger was never absent," pp. E1043-5; Ian Mosby and Tracey Galloway, "'The abiding condition was hunger': assessing the long-term biological and health effects of malnutrition and hunger in Canada's residential schools," *British Journal of Canadian Studies*, vol. 30, no. 2 (2017), doi:10.3828/bjcs.2017.9.

Negative Impacts on First Nations Cultures

The centrality of traditional food and going out on the land to First Nations cultures means that climate change is threatening not only the food supply, but also the land-based knowledge systems related to it, and ultimately the very identity and socio-cultural fabric of First Nations.

It All Comes Back to the Land

Although there is significant cultural variation between First Nations, connection to the land is central to all.[236] Many First Nations maintain a system of belief centered on maintaining a relationship to the land based on reciprocity: care for the land, take only what you need, and the land will care for you, supplying all of the necessities of life, including food.[237]

First Nations' control over their traditional lands is limited in Canada, sometimes as a result of colonial treaties that remain in place to this day.[238] Reserve lands account for only about 0.3 percent of Canada's land mass, and are still classified as federal Crown land, meaning First Nations do not have title to the land.[239] For many First

[236] See e.g. Chiefs of Ontario, "Understanding First Nations Sovereignty," undated, http://www.chiefs-of-ontario.org/first-nations/sovereignty/ (accessed June 2, 2020); Laurie-Ann Lines, Yellowknives Dene First Nation Wellness Division, and Cynthia G. Jardine, "Connection to the land as a youth-identified social determinant of Indigenous Peoples' health," BMC Public Health (2019) 19:176, doi: 19) 19:176, doi:10.1186/s12889-018-6383-8; Thunderbird Partnership Foundation, "Land for Healing: Developing a First Nations Land-based Service Delivery Model," (2018), https://thunderbirdpf.org/wp-content/uploads/2018/07/Thunderbirdpf-LandforHealing-Document-SQ.pdf (accessed June 2, 2020).

[237] Assembly of First Nations, "Honouring Earth," undated, https://www.afn.ca/honoring-earth/ (accessed June 2, 2020); Thunderbird Partnership Foundation, "Land for Healing," pp, 9 and 23; Laurie-Ann Lines, Yellowknives Dene First Nation Wellness Division, and Cynthia G. Jardine, "Connection to the land;" Indigenous Corporate Training, "First Nation Relationship to the Land," May 7, 2015, https://www.ictinc.ca/blog/first-nation-relationship-to-the-land (accessed June 2, 2020).

[238] Dayna Nadine Scott, "The Environment, Federalism, and the Charter," in The Oxford handbook of the Canadian constitution, edited by Peter Oliver, Patrick Macklem, and Nathalie Des Rosiers (Oxford University Press, 2017), p. 501. Most of central Canada (Ontario, Manitoba, Saskatchewan, and Alberta), for example, is covered by historic treaties that have been interpreted by the Canadian government (and courts) as ceding First Nations' land in exchange for lump sum payments, annuities, small "reserve" lands for the community to live on, and the promise of the community's continued right to hunt, fish, and trap. Other areas of Canada—including much of British Columbia and Quebec—remain unceded, meaning that First Nations in these regions never entered into agreements with the Canadian government that would relinquish any rights to lands or resources.

[239] Indigenous and Northern Affairs Canada, "Lands," September 26, 207, https://www.aadnc-aandc.gc.ca/eng/1100100034731/1100100034735 (accessed June 2, 2020). BC Open Textbooks, "The Reserve System."

Nations, their surrounding traditional territory is now provincial Crown land, leading to a confusion of jurisdiction when it comes to exercising traditional harvesting rights. [240]

Since 1973—when the Supreme Court of Canada recognized that Indigenous peoples have a legal right to the lands they occupied before the arrival of European settlers—the Canadian government has attempted to clarify the specifics of Indigenous land rights through modern treaties addressing self-government, land ownership and management, resource benefits, and more. [241] However, while land claims and self-government agreements are an important way for First Nations to secure their land and assert their harvesting rights, the processes to resolve land claims in Canada are slow and onerous, taking years to resolve. [242]

As climate change impacts result in reduced access to traditional food sources and decreased ability of First Nations to safely spend time on the land, it threatens not only communities' food supplies but also their ability to engage in cultural practices and ultimately maintain their cultural identities. In key part, climate change is threatening the

[240] V.P. Neimanis, "Crown Land," The Canadian Encyclopedia, December 16, 2013, https://www.thecanadianencyclopedia.ca/en/article/crown-land (accessed June 2, 2020).

[241] Calder et al. v. Attorney-General of British Columbia, [1973] S.C.R. 313. Crown Indigenous Relations and Northern Affairs, "Modern Treaties and Self-Government Agreements," May 14, 2019, https://www.aadnc-aandc.gc.ca/DAM/DAM-INTER-HQ-AI/STAGING/texte-text/mprm_pdf_modrn-treaty_1383144351646_eng.pdf (accessed June 2, 2020).

[242] Indigenous and Northern Affairs Canada, "Comprehensive Claims," www.aadnc-aandc.gc.ca/eng/1100100030577/1100100030578. In response to a petition brought by the Hul'qumi'num Treaty Group on behalf of six First Nations on Vancouver Island in British Columbia, the Inter-American Commission on Human Rights (IACHR) concluded that the available means to resolve outstanding land and title disputes in Canada, whether through negotiation or legal action, are too slow and onerous to meet basic standards of access to justice, which require timely and effective remedy. IACHR, Report No 105/09 on the admissibility of Petition 592-07, Hul'qumi'num Treaty Group, Canada, 30 October 2009, paras. 37-39. A study found that of 107 claims filed between January 1, 2014 and November 10, 2015, Canada failed to respond to 92 (86 percent) within the three-year deadline. BC Specific Claims Working Group, "Back to the Backlog: Canada's Inaction on Late Specific Claims Assessments," May 2, 2019. As of 2018, modern treaties with First Nations and Inuit, have clarified responsibility over management and/or ownership of 40 percent of Canada's land mass, but the majority of this territory is in the North—in the Yukon, Northwest Territories, Nunavut, and northern Quebec and Labrador—where there are sparse populations and fewer competing claims and land uses, see Crown Indigenous Relations and Northern Affairs, "Treaties and agreements," September 11, 2018, https://www.rcaanc-cirnac.gc.ca/eng/1100100028574/1529354437231 (accessed June 2, 2020); Crown Indigenous Relations and Northern Affairs, "Modern Treaties and Self-Government Agreements;" Crown Indigenous Relations and Northern Affairs, "General Briefing Note on Canada's Self-government and Comprehensive Land Claims Policies and the Status of Negotiations," August 16, 2016, https://www.rcaanc-cirnac.gc.ca/eng/1373385502190/1542727338550 (accessed June 2, 2020).

land-based knowledge systems that are essential to harvesting. [243] First Nations peoples use these knowledge systems, called "Indigenous knowledge" or "traditional knowledge," to predict and determine seasonal cycles and optimum timing for harvesting activities, but this knowledge, based on generations of land-based observations, is increasingly unreliable as climate change makes seasonal patterns and weather conditions less predictable. [244]

An Elder in Attawapiskat First Nation explained the change: "A lot of people […] can't read weather anymore. My father would go out and predict the weather. My mother would say 'Old man, what's the weather going to be like tomorrow' and he used to look at the formation of clouds, and could say 'in three or four days [will be] bad weather… [now] it's crazy, the weather is hard to predict, suddenly it's good, suddenly it's bad… animals and birds change." [245]

Indigenous knowledge is not static, but climate change is challenging First Nations' ability maintain and grow their land-based knowledge systems. Indigenous knowledge, including knowledge about harvesting and cultural histories, is taught and passed down the generations through hands-on learning, requiring time spent on the land harvesting. [246] Georgina Wabano, from Peawanuck, affirmed, "[O]ur people learn from seeing and doing,

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[243] Ruth Lane and Rebecca McNaught, "Building gendered approaches to adaptation in the Pacific," Gender and Development 17 (2009): 1; Boris Orlowsky and Sonia I. Seneviratne, "Global changes in extreme events: regional and seasonal dimension," Climatic Change 110 (2012): 3/4; Jianping Huang et al., "Accelerated dryland expansion under climate change," Nature Climate Change 6 (2016); John Morton, "Climate change and African agriculture: unlocking the potential of research and advisory services," in Making Climate Compatible Development Happen, ed. Fiona Nunan (London: Routledge, 2017).

[244] See, for example, Melissa Guyot et al., "Local observations of climate change and impacts on traditional food security in two northern Aboriginal communities;" Amanda Sheedy, "The Impacts of Climate Change on Traditional and Local Food Consumption in the Yukon;" Lauren V. Weatherdon et al., "Projected Scenarios for Coastal First Nations' Fisheries Catch Potential under Climate Change: Management Challenges and Opportunities," PLoS ONE, vol. 11(1), January 2016, p. 2 doi:10.1371/journal.pone.0145285.

[245] Human Rights Watch interview with Elder John, Attawapiskat First Nation, October 4, 2018.

[246] "Traditional Indigenous knowledge can be defined as a network of knowledges, beliefs, and traditions intended to preserve, communicate, and contextualize Indigenous relationships with culture and landscape over time . . . s. Indigenous knowledges are conveyed formally and informally among kin groups and communities through social encounters, oral traditions, ritual practices, and other activities. They include: oral narratives that recount human histories; cosmological observations and modes of reckoning time; symbolic and decorative modes of communication; techniques for planting and harvesting; hunting and gathering skills; specialized understandings of local ecosystems; and the manufacture of specialized tools and technologies (e.g., flintknapping, hide tanning, pottery-making, and concocting medicinal remedies)." Margaret Buchac, "Indigenous Knowledge and Traditional Knowledge," in *Encyclopedia of Global Archaeology* (Ed. Claire Smith, New York, NY: Springer Science and Business Media, 2014), https://repository.upenn.edu/cgi/viewcontent.cgi?article=1172&context=anthro_papers (accessed July 16, 2020).

right? You can't teach a culture by writing it out on a paper." [247] As climate change degrades habitat and increases the danger of harvesting, limiting harvesting opportunities, communities face less opportunities to develop and transmit Indigenous knowledge. [248]

These impacts on Indigenous knowledge and harvesting practices also carry significant implications for mental health and wellbeing among First Nations people. Studies report a sense of loss related to the inability to pass on Indigenous knowledge, leading to feelings of anxiety, sadness, depression, fear, and anger as a result of climate change. [249] Research also shows that certain populations, who are disproportionately affected by climate change, are more prone to experiencing harm to their mental health. [250]

"My biggest fear of climate change [is] losing everything. Losing our tradition over the weathers, over melting ice," said father and hunter Kyle Linklater from Peawanuck. "[I]f we lose what we have now, what will we have to show our children in the future?" [251]

Inability or difficulty maintaining cultural and spiritual practices due to climate impacts on culturally important wildlife and sacred places also impact mental health. [252] "When I talk about [loss of traditional food] I just end up crying," said Lorraine Netro, from Old Crow, noting she thinks of Elders in their last stages of life, newborns, and expectant mothers, who are supposed to be fed traditional food at these stages. [253] Some people interviewed for this report said that anxiety surrounding climate change impacts and loss of

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[247] Human Rights Watch interview with Georgina Wabano, Peawanuck, December 18, 2019.

[248] IPCC, Global Warming of 1.5°C, p. 337.

[249] More generally, mental health issues such as depression and anxiety over the future of the planet and environment, or trauma following natural disasters, are likely to increase, as a number of scholars have documented. See e.g. Katie Hayes et al., "Climate change and mental health: risks, impacts and priority actions," International Journal of Mental Health Systems, vol. 12, no. 28 (2018); Nick Obradovich, Robyn Migliorini, Martin P. Paulus, and Iyad Rahwan, "Empirical evidence of mental health risks posed by climate change," Proceedings of the National Academy of Sciences of the United States of America, vol. 115, no. 43 (2018); Marshall Burke et al., "Higher temperatures increase suicide rates in the United States and Mexico," Nature Climate Change, vol. 8 (2018); Susan Clayton et al., Ashlee Cunsolo Willox et al., "Examining relationships between climate change and mental health in the Circumpolar North."

[250] Colin Wayne Rigby et al., "If the land's sick, we're sick: The impact of prolonged drought on the social and emotional well-being of Aboriginal communities in rural New South Wales," Australian Journal of Rural Health, vol. 19, no. 5 (2011); Fritze et al., "Hope, despair and transformation: Climate change and the promotion of mental health and wellbeing," International Journal of Mental Health Systems.

[251] Human Rights Watch interview with Kyle Linklater, Peawanuck, December 17, 2019.

[252] Rigby et al., "If the land's sick, we're sick: The impact of prolonged drought on the social and emotional well-being of Aboriginal communities in rural New South Wales," Australian Journal of Rural Health; Devin C. Bowles, "Climate Change and Health Adaptation: Consequences for Indigenous Physical and Mental Health," Annals of Global Health, vol. 81, no. 3 (2015).

[253] Human Rights Watch interview with Lorraine Netro, Whitehorse, March 4, 2020.

connection to the land has exacerbated mental health conditions. Erin Linklater, former Director of Health and Social Programs with the Vuntut Gwitchin Government said: "We have had many suicides in Old Crow. There are many factors, but the loss of culture plays a role." [254]

Further, climate change impacts can reduce First Nations access to community-based mental health resources. Being on the land and maintaining land-based harvesting practices are essential to First Nations' wellbeing. [255] Studies have shown that being on the land enhances Indigenous mental health, and climate change impacts are reducing time spent on the land. [256] Wabano, a traditional adviser from Peawanuck who helps run a provincial program to prevent suicide, reported: "Our program is land based and we have planned activities outside, like camping and hunting and fishing, to prevent suicide… [but] every spring is now different. It is difficult to go out and hunt." [257] Furthermore, the climate impacts on infrastructure—degradation of ice roads, damage to roads and airstrips—also limit access to mental health services and psychosocial support. [258]

Community Resilience in the Face of Diminishing Traditional Food

As climate change puts traditional food sources in jeopardy, many are coming together—both within communities and across Nations—to maintain cultural identity and food

[254] Human Rights Watch interview with Erin Linklater, Old Crow, June 8, 2018. The suicide rate among First Nations people was three times higher than in non-Indigenous populations between 2011 and 2016 in Canada, according to Statistics Canada. Mohan B. Kumar and Michael Tjepkema, "Suicide among First Nations people, Métis and Inuit (2011-2016): Findings from the 2011 Canadian Census Health and Environment Cohort (CanCHEC)," Statistics Canada, 2019, https://www150.statcan.gc.ca/n1/pub/99-011-x/99-011-x2019001-eng.htm (accessed July 17, 2020).

[255] Thunderbird Partnership Foundation, "First Nations Mental Wellness Continuum Framework," undated, https://thunderbirdpf.org/first-nations-mental-wellness-continuum-framework/ (accessed June 2, 2020); First Nations Health Authority, "First Nations Perspective on Health and Wellness," undated, https://www.fnha.ca/wellness/wellness-and-the-first-nations-health-authority/first-nations-perspective-on-wellness (accessed June 2, 2020).

[256] Agata Durkalec et al., "Climate change influences on environment as a determinant of Indigenous health: Relationships to place, sea ice, and health in an Inuit community," Social Science & Medicine, vols. 136–37 (2015); Joanna Petrasek et al., "Protective factors for mental health and well-being in a changing climate: Perspectives from Inuit youth in Nunatsiavut, Labrador," Social Science & Medicine, vol. 141 (2015).

[257] Human Rights Watch interview with Mary Jane Wabano, Peawanuck, October 4, 2018.

[258] Ashlee Willox Cunsolo, et al., "Examining relationships between climate change and mental health in the Circumpolar North," Regional Environmental Change, vol. 15, no. 1 (2015).

sovereignty in the face of this threat. [259]

As an alternative to relying on costly store-bought foods transported from the South, some remote and northern First Nations are investing in local food-production projects such as gardens and greenhouses. [260] Others, including several visited by Human Rights Watch, maintain strong traditional food sharing networks that have helped address climate-driven loss of traditional food. Kyle Linklater from Peawanuck, said: "There's always someone in the community… that's going to help us ... Give us caribou, if they got some, or if they went fishing out in the Bay, they would bring us back fish. Someone's always there to help us." [261] In Attawapiskat, 95 percent of households who harvest, share, and about 70 percent of households receive harvested food from others. [262] In Old Crow community hunts remain a way to conserve harvesting resources and share food during lean years. [263]

In the Skeena River watershed, communities initiated a new form of inter-community food sharing in 2017 when salmon returns were at an all-time low, visiting the neighbouring Nisga'a territory to access healthier fish stocks. Chief Na'Moks, a Wet'suwet'en Hereditary Chief said: "I've never had to do that before; I've always had access to salmon. This was the first time we had to reach out to [the Nisga'a]. There was an opportunity for us to get some salmon, in particular for our elders, and we were fortunate enough to get some." [264]

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[259] Across Canada, Indigenous peoples have emphasized the nexus between community resilience to climate change and food sovereignty, "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems." While First Nations-led food sovereignty efforts across Canada vary, they often emphasise traditional food, self-determination, and connection to the land Vía Campesina, "Declaration of Nyéléni," Nyéléni Village, February 27, 2007, https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf (accessed June 2, 2020); Indigenous Food systems Network, "Indigenous Food Sovereignty," http://www.indigenousfoodsystems.org/food-sovereignty; T. Robin, "Our hands at work: Indigenous food sovereignty in Western Canada," Journal of Agriculture, Food Systems, and Community Development, 9(Suppl. 2), pp. 85–99, doi:10.5304/jafscd.2019.09B.007.

[260] See for example, "Building a Farm-in-a-Box," Aki Energy (2015), http://www.akienergy.com/whats-new/2015/7/27/building-a-farm-in-a-box; "Little Salmon Carmacks First Nation Greenhouse & Farm (YK)," Public Health Agency of Canada (2016), https://cbpp-pcpe.phac-aspc.gc.ca/aboriginalwtt/little-salmon-carmacks-first-nation-greenhouse-farm-yk/; "New greenhouse set to bring food, medicine to Sask. First Nations," CJME News (June 27, 2019), https://www.cjme.com/2019/07/27/539976/ (accessed July 15, 2020).

[261] Human Rights Watch interview with Kyle Linklater, Peawanuck, January 18, 2019.

[262] "Victor Diamond Project Comprehensive Study Report," https://iaac-aeic.gc.ca/80C30413-docs/report_e.pdf

[263] J. A. Kruse et al., "Modeling Sustainability," pp. 815-828.

[264] Dan Mesec, "The Last Salmon Stronghold," Northword Magazine, September 11, 2017, http://northword.ca/features/the-last-salmon-stronghold/ (accessed June 1, 2020).

As communities witness decreasing harvesting opportunities they are also marshalling their resources to monitor and track climate impacts, often with limited fiscal support from federal, provincial, or territorial governments. [265] Sam Hunter from Peawanuck is monitoring the thawing permafrost, but despite the significant implications of this thaw—for community food, infrastructure, and more— government support has been mixed: "[The provincial government] cut all climate change funding… there's been no support at all… the federal government is helping, but, what kind of direction they're taking, I'm not sure, because I'm running the climate change program in Peawanuck, [and I] kind of feel like I'm on my own." [266]

First Nations are also taking steps to reduce their own contribution to global emissions by transitioning to cleaner energy. [267] Old Crow, for example, which declared a climate emergency in May 2019, has undertaken the largest solar power project in Yukon with financial support from the federal and territorial governments. [268] The Vuntut Gwitchin government also set up a wind measurement tower in summer 2020 to investigate the potential for wind energy to meet Old Crow's electricity demand in the winter months. [269] "Technology is changing, and so are we," said Old Crow community member Erika Tizya. [270]

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[265] See adaptation section.

[266] Human Rights Watch interview with Sam Hunter, Peawanuck, December 13, 2019.

[267] Margo McDiarmid, "Indigenous communities embracing clean energy, creating thousands of jobs," CBC, October 11, 2017, https://www.cbc.ca/news/politics/first-nations-renewable-energy-projects-1.4348595 (accessed June 2, 2020).

[268] Heather Avery, "Old Crow, Yukon, declares climate change state of emergency," CBC, May 21, 2019, https://www.cbc.ca/news/canada/north/old-crow-climate-change-emergency-1.5144010#:~:text=Heather%20Avery%2FCBC)-,Officials%20in%20the%20Yukon's%20most%20northern%20community%20have%20declared%20a,under%20threat%20from%20climate%20change.&text=Tizya%2DTramm%20said%20climate%20change,his%20people's%20culture%20in%20jeopardy (accessed July 16, 2020); Association of Consulting Energy Companies, "Old Crow Solar Project," 2019, https://www.acec.ca/awards/2019/a13.html (accessed June 2, 2020); Government of Yukon, "Renewable energy investments in Old Crow ," August 23, 2018, https://yukon.ca/en/news/renewable-energy-investments-old-crow (accessed June 2, 2020). The solar farm will meet 24 percent of Old Crow's electricity demand and enable diesel generators to be turned off for 2,200 hours each year. Yukon Government, Our Clean Future: What We're Doing, 2020, https://yukon.ca/en/our-clean-future#what-we039re-doing (accessed September 29, 2020).

[269] Yukon Government, Our Clean Future: What We're Doing, 2020, https://yukon.ca/en/our-clean-future#what-we039re-doing (accessed September 29, 2020).

[270] Vuntut Gwitchin Government, "Old Crow Solar Project," March 2, 017, https://www.youtube.com/watch?v=dnYkbuIUknc (accessed June 2, 2020). The project will also allow community members to continue berry picking along the solar array.

Food Sovereignty

Indigenous peoples in Canada have increasingly referred to "food sovereignty" as a more relevant standard than food security. [271] Food sovereignty, first defined by La Vía Campesina, a movement in Latin America, is the "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems." [272]

Across Canada, Indigenous people have emphasized the important nexus between food sovereignty and community resiliency to climate change, underscoring the need to support local food production and traditional harvesting. [273] While Indigenous-led food sovereignty efforts across Canada vary from place to place and nation to nation, reflecting the diversity of Indigenous food systems, First Nations expressions of food sovereignty often share an emphasis on the sacredness of traditional food, self-determination, connection to the land, and revitalization of Indigenous languages. [274]

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[271] Cathleen Kneen, "The People's Food Policy Project: Introducing Food Sovereignty in Canada," People's Food Policy Project, August 2012, https://foodsecurecanada.org/files/PFPPforJapan.pdf (accessed June 2, 2020); Hannah Wittman and Annette Aurélie Desmarais, "Food Sovereignty In Canada: Movement growing to control our own food and agriculture," Canadian Centre for Policy Alternatives, September 1, 2012, https://www.policyalternatives.ca/publications/monitor/food-sovereignty-canada. In Canada, food sovereignty means, produce food for local consumption (accessed June 2, 2020).

272 Vía Campesina, "Declaration of Nyéléni," Nyéléni Village, February 27, 2007, https://nyeleni.org/IMG/pdf/DeclNyeleni-en.pdf (accessed June 2, 2020).

[273] During the 2017 federal government consultations on a food policy for Canada, "[g]reater support for local food production in Indigenous and isolated northern communities was seen by many consultation participants as a solution to food system issues in these communities. Throughout consultations, participants emphasized the importance of acknowledging the role of hunting, harvesting, and fishing as key food provisioning activities in these communities. They called on the Government to address issues that limit the production, distribution, retail, and consumption of country/traditional food such as the high costs of harvesting supplies and equipment, restrictive wildlife quotas, and the impact of climate change and natural resource extraction activities." Government of Canada, "What we heard report – Food Policy for Canada," 2018, https://www.canada.ca/en/campaign/food-policy/consulting-with-canadians/fullreport.html (accessed June 2, 2020), p. 26.

[274] Indigenous Food systems Network, "Indigenous Food Sovereignty," http://www.indigenousfoodsystems.org/food-sovereignty. See also, Indigenous Food Sovereignty in Canada: Policy Paper 2019, https://www.researchgate.net/publication/336563818_Indigenous_Food_Sovereignty_in_Canada_Policy_Paper_2019; Nimíciwinán, nipimátisiwinán – "Our food is our way of life": On-Reserve First Nation perspectives on community food security and sovereignty through oral history in Fisher River Cree Nation, Manitoba (2019), https://canadianfoodstudies.uwaterloo.ca/index.php/cfs/article/view/218; Robin, T. (2019). Our hands at work: Indigenous food sovereignty in Western Canada. Journal of Agriculture, Food Systems, and Community Development, 9(Suppl. 2), 85–99, https://doi.org/10.5304/jafscd.2019.09B.007.

II. Foreseeable Harms: Government Obligations to Address Climate Impacts on First Nations' Food Poverty

When Liberal party leader Justin Trudeau was first elected Canada's Prime Minister in October 2015, ending a near-decade rule by the Conservative party, he promised to foster a "renewed, nation-to-nation relationship" with First Nations. [275] However, in the four years of its first term, the Liberal government repeatedly pursued an adversarial relationship with First Nations in court. [276]

Positively, Trudeau's government acknowledged the need to address climate change, developing the 2016 Pan-Canadian Framework on Clean Growth and Climate Change (PCF). [277] While First Nations were largely excluded from the drafting of the framework, the federal government made efforts to work collaboratively with Indigenous peoples during its implementation, including through the creation of high-level climate change policy tables for First Nations, Inuit, and Métis. [278] The federal government said: "These tables will provide a structured, collaborative approach for ongoing engagement with Indigenous

[275] Justin Trudeau, Prime Minister of Canada, "Prime Minister Justin Trudeau delivers a speech to the Assembly of First Nations Special Chiefs Assembly," (December 8, 2015), https://pm.gc.ca/en/news/speeches/2015/12/08/prime-minister-justin-trudeau-delivers-speech-assembly-first-nations (accessed June 2, 2020). Trudeau promised to give First Nations "sufficient, predictable and sustained funding" for on-reserve social programs and infrastructure, and to fully implementing the United Nations Declaration on the Rights of Indigenous Peoples. However, promised federal legislation to implement the UN Declaration, expected to be introduced in February 2020, has yet to be tabled. Jorge Barrera, "Liberals postponing planned tabling of UNDRIP bill because of blockade crisis, says Mohawk chief," CBC, February 19, 2020, https://www.cbc.ca/news/indigenous/undrip-bill-tabling-postponed-1.5468543 (accessed June 2, 2020). British Columbia, however, was the first Canadian government to pass legislation implementing the UN Declaration in November 2019. Government of British Columbia, "B.C. Declaration on the Rights of Indigenous Peoples Act," undated, https://www2.gov.bc.ca/gov/content/governments/indigenous-people/new-relationship/united-nations-declaration-on-the-rights-of-indigenous-peoples (accessed June 2, 2020).

[276] The federal government failed to comply with multiple Canadian Human Rights Tribunal orders to ensure funding to First Nations child welfare services equivalent to provincial levels, and opposed compensation for 16,000 individuals taken from their communities to be adopted into non-Indigenous families in the "Sixties Scoop." "Tribunal orders Canada, again, to comply with its ruling on First Nation child welfare," APTN, September 15, 2016, https://aptnnews.ca/2016/09/15/tribunal-orders-canada-again-to-comply-with-its-ruling-on-first-nation-child-welfare/ (accessed June 2, 2020); "Ottawa must apologize for "Sixties Scoop" and compensate survivors: Editorial," Toronto Star, August 22, 2016, https://www.thestar.com/opinion/editorials/2016/08/22/ottawa-must-apologize-for-sixties-scoop-and-compensate-survivors-editorial.html (accessed June 2, 2020).

[277] Government of Canada, Pan-Canadian Framework on Clean Growth and Climate Change, 2016, http://publications.gc.ca/collections/collection_2017/eccc/En4-294-2016-eng.pdf (accessed June 2, 2020), p. 1.

[278] Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change: Second Annual Synthesis Report on the Status of implementation," December 2018, http://publications.gc.ca/collections/collection_2018/eccc/En1-77-2018-eng.pdf (accessed June 2, 2020), p. 42.

Peoples in the implementation of the Pan-Canadian Framework and on broader clean growth and climate change priorities. This will help ensure that Indigenous Peoples are full and effective partners in advancing clean growth and addressing climate change." [279] However, Environment and Climate Change Canada told Human Rights Watch that these tables are still in their "infancy" despite now being in place for three years, as it has taken time to build needed trust. [280] Regarding the senior table with First Nations, the First Nations-Canada Joint-Committee on Climate Action (JCCA) Co-Chair Tonio Sadik told Human Rights Watch that the JCCA has made "significant progress building mutual understanding between federal government officials and First Nations," but that "there is still significant work ahead including the need to explore innovative, self-determined funding models for First Nations-led climate action, and to position First Nations as full and effective partners in the federal carbon pollution pricing system." [281]

In 2019, Trudeau was re-elected as head of a minority government. In his mandate letters to the new cabinet, Trudeau again emphasized the importance of Canada's relationship with Indigenous peoples. [282] He further highlighted the need to address climate change as a key priority, and committed to, among other steps: providing financial support to Indigenous communities transitioning away from diesel reliance, and introducing a plan, to be grounded in Indigenous knowledge, to conserve 25 percent of Canada's land by 2025

[279] Pan-Canadian Framework on Clean Growth and Climate Change first annual report, 2017, https://www.canada.ca/en/environment-climate-change/services/climate-change/pan-canadian-framework-reports/first-annual-report.html.

[280] Phone call with Abigail Lixfeld, ECCC, August 24, 2020.

[281] Email correspondence with Tonio Sadik, JCCA Co-Chair, October 9, 2020.

[282] Justin Trudeau, Prime Minister of Canada, "Minister of Indigenous Services Mandate Letter," December 13, 2019, https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-indigenous-services-mandate-letter (accessed June 2, 2020).

as parks, protected areas, or conservation areas, working toward 30 percent by 2030. [283] That same year, Trudeau pledged to put Canada on track to reach net-zero emissions by 2050. [284]

In the September 2020 Speech from the Throne—which outlines the federal government's priorities at the start of a new session of parliament—the government reiterated its commitment to reach net-zero emissions by 2050 and promised to legislate this target. The government also committed to "continue to work with partners – including directly with First Nations, Inuit, and Métis Nation partners – to address food insecurity in Canada." [285]

While the Trudeau government has taken some steps to meet its commitments, it has not doing enough to address climate change impacts on food poverty and health outcomes in First Nations, as documented by this report, nor taken adequate steps to reach its mitigation targets and prevent potentially catastrophic impacts that climate change could bring in the coming years.

Obligation to Monitor Climate Impacts and Help Communities Adapt

Governments have an obligation to monitor and address harms that result from the impacts of climate change on the realization of the rights to food, health, and culture, and to support communities in adapting to climate change impacts in a non-discriminatory

[283] Justin Trudeau, Prime Minister of Canada, "Minister of Infrastructure and Communities Mandate Letter," December 13, 2019, https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-infrastructure-and-communities-mandate-letter (accessed June 2, 2020); Justin Trudeau, Prime Minister of Canada, "Minister of Fisheries, Oceans and the Canadian Coast Guard Mandate Letter," December 13, 2019, https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-fisheries-oceans-and-canadian-coast-guard-mandate-letter (accessed June 2, 2020). In total, 16 members of Trudeau's cabinet were given explicit directives to work on climate issues. Sean Craig, "Climate change at the heart of Trudeau government's new mandate letters ," National Observer, December 13, 2019, https://www.nationalobserver.com/2019/12/13/news/climate-change-heart-trudeau-governments-new-mandate-letters (accessed June 2, 2020). As of 2019, only 12 percent has been protected, and it is not clear how the 2020 target will be met. Marieke Walsh, "Canada's more ambitious emissions targets, other climate change programs delayed by COVID-19," Globe and Mail, May 21, 2020, https://www.theglobeandmail.com/politics/article-canadas-more-ambitious-emissions-targets-other-climate-change/ (accessed June 2, 2020). The Liberal government put CAD$20 million toward a three-year program to reduce diesel reliance in remote Indigenous communities. Natural Resources Canada, "Canada Launches Off-Diesel Initiative for Remote Indigenous Communities," February 13, 2019, https://www.canada.ca/en/natural-resources-canada/news/2019/02/canada-launches-off-diesel-initiative-for-remote-indigenous-communities.html (accessed June 2, 2020).

[284] Amanda Connolly, "Liberals pledge Canada will have net-zero emissions by 2050 — but details are scarce," Global News (September 24, 2019), https://globalnews.ca/news/5943543/canada-net-zero-emissions-2050/.

[285] Speech from the Throne, September 23, 2020, https://www.canada.ca/en/privy-council/campaigns/speech-throne/2020/stronger-resilient-canada.html (accessed September 25, 2020).

manner that will help prevent, and at a minimum mitigate to the fullest extent possible, deteriorating the level of enjoyment of these rights.

If governments fail to support First Nations' adaptation efforts—including by addressing underlying causes of vulnerability such as systemic marginalization and underfunding—communities will continue to feel the impacts of climate change most harshly while having limited access to resources needed to address and adapt to climate-induced changes that exacerbate existing inequalities, and which are expected to become more acute in coming years.

Government policies and programs are failing to monitor and address climate impacts on First Nations food and culture, and federal and provincial governments have not provided the necessary resources to enable First Nations to carry out their own monitoring. Food subsidies and health resources urgently required to respond to current impacts are often not available, insufficient, or do not reach the people who need them most.

Insufficient Monitoring of Climate Impacts

In order to address climate change impacts and realize the rights to food and health in First Nations, governments should, as a basic step, have adequate assessment and monitoring programs in place to be able to identify impacts and understand the efficacy of measures taken to address these impacts. However, there remain significant gaps in federal and provincial government efforts to assess and monitor climate change impacts on the rights to food and health, or to consistently enable First Nations to do their own monitoring.

At the provincial and territorial level, a 2018 independent review by the Auditor General of Canada concluded that most governments "have not assessed and, therefore, do not fully understand what risks they face and what actions they should take to adapt to a changing climate." [286]

[286] Office of the Auditor General of Canada, "Perspectives on Climate Change Action in Canada—A Collaborative Report from Auditors General," March 2018, https://www.oag-bvg.gc.ca/internet/English/parl_otp_201803_e_42883.html#hd3f (accessed June 2, 2020).

The release of the 2019 Canada's Changing Climate Report—the "first in-depth, stand-alone assessment of how and why Canada's climate has changed, and what changes are projected for the future"—marked a positive step toward a foundational climate assessment. [287] However, the report does not discuss specific impacts on First Nations or their adaptation needs, and fails to address significant gaps in data on key climate warming impacts with particular significance for the realization of the rights to food and health in First Nations. [288] For example, there is a lack of data on ice thickness or winter road duration in northern Ontario, in part due to reductions in government monitoring since the 1990s. [289]

While some climate change studies are underway that may address some of these gaps, they are not a substitute for regular, sustained monitoring. [290]

A lack of robust, regular collection of First Nations health data, including on food security, has already contributed to a lack of clarity on the extent of First Nations' food insecurity. [291]

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[287] ECCC, "Canada's climate is warming twice as fast as global average," April 2, 2019, https://www.newswire.ca/news-releases/canada-s-climate-is-warming-twice-as-fast-as-global-average-872457447.html (accessed June 2, 2020).

[288] Ibid.

[289] See, Y. Hori et al., "Trends in the seasonal length and opening dates of a winter road," p. 1311; K.L. Webster, "Effects of a Changing Climate on Peatlands in Permafrost Zones," p. 1. The Canadian Ice Thickness Program used to monitor ice thickness and snow depth measurements for 195 sites, across Canada, including northern Ontario), but ended in the 1990s. In 2002, a new iteration of the program continued monitoring, but only at 11 sites, mostly in Nunavut. Environment and Climate Change Canada, "Ice Thickness Program Collection, 1947-2002," November 21, 2018, http://donnees.ec.gc.ca/data/ice/products/ice-thickness-program-collection/ice-thickness-program-collection-1947-2002/?lang=en (accessed June 2, 2020); Government of Canada, "Ice Thickness Program Collection, 2002-," January 16, 2017, https://open.canada.ca/data/en/dataset/8b624b7b-2e8f-436b-b9bd-f31c2e6613cf (accessed June 2, 2020).

[290] These include Ontario's promised climate change impact assessments scheduled to be completed by 2022, and a federal report set to be released in 2021 on the "Health of Canadians in a Changing Climate" that will address "food security and safety" as well as "Indigenous populations and communities." "Ontario Taking Action to Help Communities Fight the Effects of Climate Change" Government of Ontario, November 1, 2019, https://news.ontario.ca/ene/en/2019/11/ontario-taking-action-to-help-communities-fight-the-effects-of-climate-change.html (accessed June 2, 2020). The federal government has announced a series of follow-up reports to the "Canada's Changing Climate Report." See, e.g. Government of Canada, "Health of Canadians in a Changing Climate," February 14, 2020, https://www.nrcan.gc.ca/maps-tools-publications/publications/climate-change-publications/canada-changing-climate-reports/health-canadians-changing-climate/21189 (accessed June 2, 2020). The federal government also made funding available to Indigenous researchers and research organizations to study the food security impacts of climate change in the territories and provincial norths. "Funding Opportunity Details," ResearchNet, 2020, https://www.researchnet-recherchenet.ca/rnr16/vwOpprtntyDtls.do?prog=3269&view=currentOpps&org=CIHR&type=EXACT&resultCount=25&sort=program&next=1&all=1&masterList=true (accessed June 2, 2020); Letter from Matt Jones, ECCC, August 13, 2020.

[291] Gaps in coverage of First Nations health data is partly due to the absence or inconsistency of ethnic identifiers in vital registration systems, primary care and hospital administration datasets, as well as acute and chronic disease surveillance systems. National health surveys, meanwhile, provide little First Nations specific information but exclude on-reserve populations. J. Smylie, "Achieving strength through numbers: first nations, Inuit and Metis health information," National Collaborating Centre for Aboriginal Health, 2010, https://www.ccnsa-nccah.ca/docs/context/FS-AchievingStrengthNumbers-Smylie-EN.pdf (accessed June 2, 2020).

National-level surveys have commonly excluded on-reserve populations. [292] Various First Nations-led surveys and studies have attempted to assess food security among Canada's First Nations population in the absence of complete government data. [293]

Currently, monitoring of climate change impacts on land and species, and related impacts on traditional food sources largely falls to First Nations. Few have the resources, or authority to divert funding to such monitoring, and so often must seek out additional funding to support these initiatives. [294] Where funding is available, it is most often for limited, one-off projects, and not sustained programs. [295] While First Nations with settled land claims, like the Vuntut Gwitchin, often have access to more predictable funding, capacity and adequate resources continue to be an issue. [296]

The federal government, for example, made funding available to support Indigenous community-based climate monitoring, but only covered 2018-2019 and is no longer accepting applications from First Nations. [297] In 2020, funding for 10 projects was also made available through the Indigenous Guardian Pilot Program to support First Nations' efforts to monitor ecological health, maintain cultural sites, and protect sensitive areas

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[292] J. Smylie, "Achieving strength through numbers;" First Nations Information Governance Centre, National Report of the First Nations Regional Health Survey, Phase 3: Volume One, p. 105.

[293] This includes the First Nations Regional Health Study, a nationwide study carried out by the First Nations Information Governance Centre, and the First Nations Food, Nutrition, and Environment Study led by the University of Ottawa, the Université de Montréal, and the Assembly of First Nations.

[294] "Funding Opportunities," Climate Telling, http://www.climatetelling.info/funding-opportunities.html (accessed June 2, 2020). First Nations governments already face significant red tape and burdensome levels of paperwork to ensure basic funding levels. Report of the Special Rapporteur on the rights of indigenous peoples, James Anaya, A/HRC/27/52/Add.2, para. 43.

[295] There is a complicated patchwork of funding programs which have variable amounts available depending on annual budget commitments and shifting policy priorities. Indigenous and Northern Affairs Canada, "Funding Programs," February 1, 2019, https://www.aadnc-aandc.gc.ca/eng/1425576051772/1425576078345 (accessed June 2, 2020). The First Nations Adapt Program, for example, provides variable funding opportunities for First Nations south of the 60th parallel to conduct risk assessments of climate change impacts on community infrastructure, such as winter roads, or emergency management. Indigenous and Northern Affairs Canada, "First Nations Adapt Program," May 19, 2020, https://www.aadnc-aandc.gc.ca/eng/1481305681144/1481305709311 (accessed June 2, 2020). The Climate Change Preparedness in the North Program offers the same for communities north of the 60th parallel. Indigenous and Northern Affairs Canada, "Climate Change Preparedness in the North Program," May 19, 2020, https://www.aadnc-aandc.gc.ca/eng/1481305554936/1481305574833 (accessed June 2, 2020).

[296] Email correspondence, Megan Williams, September 14, 2020.

[297] Indigenous and Northern Affairs Canada, "Indigenous Community-Based Climate Monitoring Program," January 28, 2019, https://www.aadnc-aandc.gc.ca/eng/1509728370447/1509728402247 (accessed June 2, 2020); Indigenous and Northern Affairs Canada, "List of projects funded from 2018 to 2019," June 7, 2019, https://www.aadnc-aandc.gc.ca/eng/1546537342810/1546537435429 (accessed June 2, 2020). As of June 2020, the program has supported 42 community-based monitoring projects led by First Nations, a number of which relate to tracking changes in traditional foods, such as fish, caribou, and berries. Letter from Daniel Vandal, Minister of Northern Affairs, September 29, 2020.

and species, possibly including climate change impacts, but funding was limited to one year, 2020–2021. [298]

The Ontario government, meanwhile, cut funding for climate impact monitoring intended to support First Nations in 2018, scrapping a Northern Ontario climate change impact study, and a project for 40 Indigenous communities to collect traditional knowledge, assess community vulnerabilities, and develop adaptation plans. [299] While the province has committed to completing a provincial climate change impact assessment by 2022, it is not clear to what extent it will assess impacts on First Nations' right to food, if at all. [300]

Yukon, by contrast, launched a project with the Arctic Institute of Community Based Research in 2017, with financial support from the federal government, to explore the relationship between climate change, traditional foods, and local food production. [301] Yukon has also committed to track data on climate-related illness (e.g. heat stroke, respiratory illness, and vector-borne diseases) and to "[r]egularly gather data on food insecurity to understand how many Yukoners are food insecure and why." [302]

In response to Human Rights Watch research the government of Yukon acknowledged that Yukon's failure to actively monitor food security results in a critical data gap. [303] While the government of Yukon, in a letter to Human Rights Watch, committed to "establishing a

[298] Environment and Climate Change Canada, "Government of Canada continues to support First Nations leadership in conservation," July 22, 2020, https://www.newswire.ca/news-releases/government-of-canada-continues-to-support-first-nations-leadership-in-conservation-806436624.html (accessed September 29, 2020); https://www.canada.ca/en/environment-climate-change/services/environmental-funding/indigenous-guardians-pilot-program/first-nations.html#toc3.

[299] Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change: Second Annual Synthesis Report," p. 31; Maria Church, "Ontario cancels cap and trade, ends GreenON programs," Canadian Biomass, July 4, 2018, https://www.canadianbiomassmagazine.ca/ontario-cancels-cap-and-trade-ends-greenon-programs-6936/ (accessed June 2, 2020).

[300] Government of Ontario, November 1, 2019, https://news.ontario.ca/ene/en/2019/11/ontario-taking-action-to-help-communities-fight-the-effects-of-climate-change.html (accessed June 2, 2020).

[301] "Linking a Changing Climate with a Changing Traditional Diet: Mobilizing Knowledge for Adaptation (2017-2021)," https://www.aicbr.ca/linking-a-changing

[302] Government of Yukon, "Our Clean Future," November 2019, https://yukon.ca/sites/yukon.ca/files/env/env-our-clean-future-draft.pdf (accessed June 2, 2020), pp. 46 and 48.

[303] Letter from Aynslie Orgden, Government of Yukon, July 24, 2020.

system for tracking food insecurity moving forward," it is unclear when continuous monitoring will begin. [304]

Yukon is also working on a climate change risk assessment for the territory to be released in 2021. All Yukon First Nations were invited to sit on a working group to inform the assessment. [305] Building off of this assessment, the government of Yukon plans to assess climate hazards and vulnerabilities every three to four years between 2020 and 2030. [306]

A 2018 climate change risk preparedness assessment by the Office of the Auditor General of British Columbia noted that while a number of provincial ministries and partners run networks of monitoring stations to collect climate data (e.g. temperature, precipitation, snow depth), data gaps remain, particularly in the northern regions of the province. [307] The government of British Columbia did not respond to questions about its climate or food security monitoring efforts.

Inadequate Adaptation Planning and Programming

Federal and provincial governments have not put in place adequate plans to address the rights implications of current and projected climate change on First Nations. With the exception of Yukon, most current adaptation planning and programming does not address distinct climate impacts on First Nations food poverty.

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[304] Letter from Aynslie Orgden, Government of Yukon, July 24, 2020; Email correspondence with Sabrina Kinsella, Office of the Science Advisor, government of Yukon, September 22, 2020. The government has allotted two years to assess and analyze existing food security information, and up to five years to inform future research, information gathering and decision making around food security.

[305] Email correspondence with Sabrina Kinsella, Office of the Science Advisor, government of Yukon, September 22, 2020.

[306] Government of Yukon, "Our Clean Future," November 2019, https://yukon.ca/en/our-clean-future#what-we039re-doing.

[307] "Managing Climate Change Risks," Office of the Auditor General of British Columbia, P. 59-64, https://www.bcauditor.com/sites/default/files/publications/reports/Climate_Change_FINAL_0.pdf (accessed October 2020).

Complex Responsibilities for Management of Harvestable Resources

Responsibility for environmental regulation is shared between all levels of government in Canada. [308] This shared jurisdiction for environmental regulation also applies on First Nations reserves. [309] First Nations that have concluded a land claim, as many in the Yukon have, are also able to make laws concerning environmental protection on its settlement land, provided those laws "meet or beat" federal, provincial, or territorial standards. [310] This jurisdictional overlap is further complicated by the fact that traditional food sources may cross international, provincial, and territorial borders, and pass between federal and provincial lands—known as "Crown lands." [311]

Federal Government

At the federal level, the 2016 Pan-Canadian Framework on Clean Growth and Climate Change (PCF) is the main policy instrument meant to guide efforts to help communities adapt to climate change. It commits to increased government support for Indigenous communities to undertake adaptation projects that protect public health, and further commits governments to "work[ing] in partnership with Indigenous communities to address climate change impacts." [312]

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[308] The Canadian Constitution divides jurisdiction between the federal and provincial levels of government. However, neither level of government has jurisdiction over the environment as a whole. Constitution Act, 1867.

[309] While matters relating to First Nations and First Nations reserves are within federal jurisdiction, provincial legislatures can make laws that are "applicable to Indians and on Indian reserves, so long as the law is in relation to a matter coming within a provincial head of power." Peter Hogg, Constitutional Law of Canada (Toronto: Thomson Reuters, 2016). However, provincial laws and regulations generally do not apply on reserves and cannot be enforced there, and federal regulations often fail to establish equivalent protections on reserve. Office of the Auditor General of Canada, "2009 Fall Report of the Auditor General," para. 6.93, http://www.oag-bvg.gc.ca/internet/English/parl_oag_200911_06_e_33207.html (accessed June 2, 2020); J Berry Hykin, "Contaminated Sites on First Nation Lands" Woodward & Company Lawyers LLP, September 20, 2016, http://www.woodwardandcompany.com/wp-content/uploads/pdfs/2016-09-20-Contaminated_Sites_on_First_Nation_Lands-Final.pdf (accessed June 2, 2020).

[310] Indigenous and Northern Affairs Canada, "Natural Resources and the Environment," September 15, 2010, https://www.aadnc-aandc.gc.ca/eng/1100100022281/1100100022282 (accessed June 2, 2020).

[311] The Porcupine Caribou Herd provides one stark example of this complexity. As a result of the herd's cross-border migration, it is managed by representatives from both the United States and Canada, in addition to Indigenous governments. Within Canada, the Porcupine Caribou Management Board includes representation from various Indigenous governments, two territorial governments, and the Government of Canada. Government of Northwest Territories, "Barren-ground Caribou: Porcupine Herd," undated, https://www.enr.gov.nt.ca/en/services/caribou-de-la-toundra/porcupine-herd (accessed June 2, 2020).

[312] Government of Canada, Pan-Canadian Framework on Clean Growth and Climate Change, pp. 27, 32, and 35.

Since 2016, the federal government has taken steps to meet these commitments, allocating funds to a variety of programs that support First Nations adaptation projects.[313] Some of this funding has gone toward projects related to food security.[314] However, climate impacts exacerbate existing food poverty and current programs are not sufficient to address its impacts, as documented in this report. If funding for First Nations in the provinces from the Climate Change Health and Adaptation Program were allocated across all First Nations, for example, this would mean roughly CAD$14,000 in adaptation funding per community since 2016.[315]

Indigenous Services Canada told Human Rights Watch, "[t]he Government of Canada recognizes that food security is a critical issue, one that significantly impacts the health and well-being of individuals, families and communities," and acknowledged that "food security is linked to a variety of factors, including climate change."[316]

The federal government does not currently have a climate change adaptation strategy to effectively address climate impacts on existing Indigenous food poverty. Environment and Climate Change Canada and Minister of Northern Affairs, Daniel Vandal, told Human Rights Watch that federal efforts to develop a Northern Adaptation Strategy were abandoned in 2018 because "other initiatives came to replace this work," including the Inuit-led development of a National Inuit Climate Change Strategy, the release of territorial

[313] For example, the Government of Canada's Climate Change Health and Adaptation Program for First Nations and Inuit (CCHAP) funded "projects related to food security, vulnerability assessments, adaptation planning, emergency management, mental health and water quality." Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change: Second Annual Synthesis Report," p. 29. Similarly, the First Nation Adapt program aimed to identify "region-specific priorities, impacts and opportunities for climate change projects," prioritizing First Nations "most impacted by climate change related to sea level rise, flooding, forest fires, and winter road failures." The program was expanded in 2017 to include a focus on floodplain mapping on-reserve." Government of Canada, "Pan-Canadian Framework on Clean Growth and Climate Change: First Annual Synthesis Report on the Status of Implementation," December 2017, http://publications.gc.ca/collections/collection_2018/eccc/En1-77-2017-eng.pdf (accessed June 2, 2020), p. 25.

[314] Approximately half of all projects supported by the Climate Change Health and Adaptation Program relate to food security, including, for example, harvest trail routing, community gardens, and research on diseases in cervid populations. Since 2016, the program has provided approximately CAD$8.1 million to Frist Nations in the provinces and CAD$8.7 million to First Nations and Inuit in the territories and in the Inuit homelands of Nunvik (northern Quebec) and Nunatisiavut (northern Newfoundland and Labrador). Letter from Dr. Evan Adams, Indigenous Services Canada, August 7, 2020.

[315] There are 575 First Nation communities across the provinces; "First Nations People in Canada," Government of Canada, https://www.rcaanc-cirnac.gc.ca/eng/1303134042666/1534961203322 (accessed October 2020).

[316] Correspondence with Dr. Evan Adams, Indigenous Services Canada, August 7, 2020.

government adaptation plans in Yukon and the Northwest Territories, and the First Nations-led development of a National First Nations Climate Change Strategy. [317]

The federal government launched an Arctic and Northern Policy Framework in September 2019, intended "to address the economic, social, environmental, infrastructure, and climate change needs of northern communities." [318] While one of the framework's eight priorities is to "face the effects of climate change and support healthy ecosystems in the Arctic and North," the framework does not include First Nations across the provincial norths within its geographic scope. [319]

Meanwhile, a 2018 independent review by the Auditor General of Canada found a broad lack of adequate adaptation planning and programming at all levels of government. Some governments had not developed detailed adaptation plans, and where plans were in place they commonly failed to include interim steps for reaching high-level commitments, timelines indicating when actions would be accomplished, or funding sources for planned actions. [320]

Human Rights Watch examined the policies of British Columbia, Ontario, and Yukon and found that only one—Yukon—was taking its obligation to address climate change impacts on First Nations, including on their right to food, seriously.

Yukon

The Yukon government is leading on efforts to address climate change impacts on First Nations food security and health in its adaptation planning. Its 2019 climate change plan, "Our Clean Future," developed in collaboration with Yukon First Nations and trans-boundary Indigenous groups sets out specific measures, including natural disaster

[317] Letter from Matt jones, ECCC, August 13, 2020; Letter from Daniel Vandal, Minister of Northern Affairs, September 29, 2020.

[318] Letter from Daniel Vandal, Minister of Northern Affairs, September 29, 2020.

[319] Only two provinces participated in developing the framework, Quebec (home of the Inuit homeland, Nunavik) and Manitoba. CIRNAC, "Canada's Arctic and Northern Policy Framework," https://www.rcaanc-cirnac.gc.ca/eng/1560523306861/1560523330587 (accessed September 29, 2020).

[320] Office of the Auditor General of Canada, "Perspectives on Climate Change Action in Canada."

preparation, and monitoring and addressing climate change impacts on Yukon's natural environment.[321]

In response to Human Rights Watch research, the Government of Yukon acknowledged the importance of healthy traditional and store-bought foods for First Nations, and the potential for climate change to result in short term interruptions and longer-term impacts to these food sources.[322]

The territory's plan acknowledges the need to address food security as part of climate adaptation efforts by strengthening local harvesting and food production to decrease reliance on imported foods.[323] It also commits to training for health and social service care providers to identify and respond to the physical and mental health impacts of climate change starting in 2023.[324]

First Nations Land Use Plans and Climate Change Adaptation

Land use plans can also be an important means of mainstreaming climate change considerations into government decision-making. In Yukon, regional land use plans, mandated by First Nations land claims, address climate impacts on traditional food, and mainstream these impacts throughout government planning and natural resource development approval processes.[325]

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[321] Government of Yukon, "Our Clean Future," pp. 3, 12, 21, 32, 40, 45-46, 56. Steps to address impacts on the natural environment include: building knowledge of how climate change is affecting ecosystems, wild species and their habitats; applying landscape conservation science to build a network of protected areas and other lands that allow native species to move, adapt and survive in the face of climate change; continuing to track new and invasive species that could impact ecosystems and biodiversity. Ibid., p. 13. In 2020, the Yukon government also committed to work with First Nations to develop wildfire protection plans by 2026, and to complete emergency management plans for all Yukon communities by 2022. https://yukon.ca/en/our-clean-future#what-we039re-doing.

[322] Letter from Aynslie Orgden, Government of Yukon, July 24, 2020. See also, https://yukon.ca/sites/yukon.ca/files/hss/climate_change_report_web_feb.2020_0.pdf.

[323] Government of Yukon, "Our Clean Future," p. 26 and 45. Government of Yukon, "Our Clean Future," p. 46. "Steps to support harvesting practices include: Increased search and rescue capacity through training, retention and volunteer recruitment; Continuing to offer hunter education courses to promote environmental stewardship and safety."

[324] Government of Yukon, "Our Clean Future," p. 48; https://yukon.ca/en/our-clean-future#what-we039re-doing.

[325] The North Yukon Regional Land Use Plan comes out of the Vuntut Gwitchin First Nation Final Agreement and the Peel Watershed Regional Land Use Plan comes out of the Final Agreements of Tr'ondëk Hwëch'in, First Nation of Na-cho Nyäk Dun, and Vuntut Gwitchin Government, and the Gwich'in Comprehensive Land Claim Agreement. A third plan, for the Dawson region, is underway. Government of Yukon, "Learn about regional land use planning," 2020, https://yukon.ca/en/science-and-natural-resources/landscape-and-ecology/learn-about-regional-land-use-planning (accessed June 2, 2020).

For example, the 2009 North Yukon Regional Land Use Plan addresses climate change as a major planning issue and affirms that sensitive wetland habitats and Porcupine Caribou Herd habitats at risk "should be managed more cautiously."[326] The 2019 Peel Watershed Regional Land Use Plan explicitly mainstreams climate impacts on First Nations traditional food by calling for increased protection of north-south unfragmented landscapes because of a need for species to be able to shift their ranges in response to climate change.[327]

British Columbia

British Columbia's current adaptation strategy, Preparing for Climate Change, released in 2010, refers to Indigenous peoples as "partners" of the provincial government, but does not discuss their role in adaptation planning, nor does it address how climate change is likely to impact food poverty.[328] The government committed to developing a new provincial Adaptation Strategy by 2020, and has taken steps to collaboratively engage with First Nations in developing this strategy.[329]

The absence of any concrete climate adaptation programs in British Columbia was felt by First Nations in the wake of the 2017/2018 wildfires, when timelines for the recovery of fire-damaged traditional food sources were uncertain, and a lack of programs to address these

[326] Vuntut Gwitchin Government and Yukon Government, North Yukon Regional Land Use Plan, June 2009, https://yukon.ca/sites/yukon.ca/files/emr/emr-north-yukon-regional-land-use-plan.pdf (accessed June 2, 2020), pp. 5-6, 5-9. The Plan also notes the importance of harvesting as a means to offset the high cost of imported food, the particular cultural significance of the Porcupine Caribou Herd, and the likelihood of climate change impacts altering the herd's range and distribution, as well as impacting Old Crow residents' ability to travel on the land. Ibid., p. 5-6. However, the plan concludes that "[s]pecific recommendations relating to traditional economic activities are not required at this time." Ibid., p. 5-28.

[327] Peel Watershed Regional Land-use Plan, August 2019, pp. 98, 102, 105, https://yukon.ca/sites/yukon.ca/files/emr/emr-peel-watershed-regional-land-use-plan_0.pdf (accessed June 2, 2020).

328 Government of British Columbia, "Preparing for Climate Change," February 2010, https://www2.gov.bc.ca/assets/gov/environment/climate-change/adaptation/adaptation_strategy.pdf?bcgovtm=CSMLS (accessed June 2, 2020).

[329] Government of British Columbia, "Indigenous Climate Adaptation Technical Working Group Application (Reposting for Omineca and Northern B.C.)," undated, https://www2.gov.bc.ca/gov/content/environment/climate-change/adaptation/working-group (accessed June 2, 2020); Government of British Columbia, "Clean BC," 2019, pp. 61-62, https://cleanbc.gov.bc.ca/app/uploads/sites/436/2020/03/2019-ClimateChange-Accountability-Report-web.pdf?2 (accessed June 2, 2020).

impacts left communities scrambling for resources to support recovery efforts.[330] In response to First Nations' requests for assistance, in May 2018, the provincial disaster recovery team suggested various longer-term food production options including gardening, fish hatcheries, and poultry farms for First Nations to consider, adding the caveat that "[i]t is the individual community's responsibility to acquire its own funding sources."[331] In August 2018, BC First Nations issued a call for the federal and provincial governments to resource BC First Nations Communities to effectively respond to impacts of wildfires.[332]

Ontario

Since 2018, when Premier Doug Ford's Conservative government came to power in Ontario, the province has cancelled a number of climate change programs, including a climate change monitoring program that would have benefitted First Nations.[333] Rescinding funding for renewable energy projects also disproportionately impacted First Nations, as eight of the 10 canceled projects were backed by First Nations.[334] Additionally, the Ontario government lessened environmental protections and cut funding for key environmental ministries, including for flood planning and response as well as emergency forest

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[330] Government of British Columbia, "Long-Term Food Security Initiatives," May 18, 2018, https://www2.gov.bc.ca/assets/gov/public-safety-and-emergency-services/emergency-preparedness-response-recovery/local-government/2018_05_18_final_long_term_food_security_initiatives_package.pdf?bcgovtm=Monthly_eNewsletters (accessed June 2, 2020); Environment and Climate Change Canada, "Canada's scientists conclude that human-induced climate change had a strong impact on forest fires in British Columbia," January 8, 2019, https://www.canada.ca/en/environment-climate-change/news/2019/01/canadas-scientists-conclude-that-human-induced-climate-change-had-a-strong-impact-on-forest-fires-in-british-columbia.html (accessed June 2, 2020); UBCIC, "BC First Nations being devastated by Wildfire Season of 2018, immediate resources needed," August 22, 2018, https://www.ubcic.bc.ca/bc_first_nations_being_devastated_by_wildfire_2018 (accessed June 2, 2020).

[331] Government of British Columbia, "Long-Term Food Security Initiatives."

[332] UBCIC, "BC First Nations being devastated by Wildfire Season of 2018, immediate resources needed."

[333] Ontario cancelled the Green Ontario Fund, that incentivized reducing energy consumption through rebates for energy retrofitting, electric vehicle infrastructure and purchasing incentives, and support for Indigenous communities. Tess Kalinowski, "Green Ontario cancellation leaves homeowners, industry scrambling," Toronto Star, June 20, 2018, https://www.thestar.com/business/real_estate/2018/06/20/green-ontario-cancellation-leaves-homeowners-industry-scrambling.html (accessed June 2, 2020). The Ontario government also scrapped a tree-planting program which initially began as a sequestration effort and saved landowners much of the cost of planting trees, but other benefits like cleaner air and water, protected shorelines, and decreased erosion also follow from more trees. "Ontario cancels program that aimed to plant 50 million trees," CBC, April 25, 2019, https://www.cbc.ca/news/canada/toronto/ontario-tree-planting-program-cut-1.5110282 (accessed June 2, 2020). Other measures cancelled by the government include 227 emissions reducing projects that received funding from the now-cancelled cap-and-trade program,758 renewable energy contracts, and flood management funding. Fatima Syed, "EXCLUSIVE: Doug Ford didn't tell you Ontario cancelled 227 clean energy projects," Jul7 9, 2019, https://www.nationalobserver.com/2019/07/09/news/exclusive-doug-ford-didnt-tell-you-ontario-cancelled-227-clean-energy-projects (accessed June 2, 2020).

[334] Diane Saxe, Energy Commissioner of Ontario, 2018 Greenhouse Gas Progress Report of the Environmental Commissioner of Ontario (2018), https://docs.assets.eco.on.ca/reports/climate-change/2018/Climate-Action-in-Ontario.pdf (accessed June 2, 2020), p. 78.

firefighting, despite projections of increased floods and fires as a result of climate change. [335]

Meanwhile, the province's 2018 Made-in-Ontario Environment Plan, which aims to prepare the province for the impacts of climate change, offers very limited guidance on adaptation in First Nations. [336] In response to Human Rights Watch research, Ontario Minister of Environment, Conservation and Parks, Jeff Yurek, acknowledged that climate change "threatens food security and road access for remote First Nations" but offered no details on how the government of Ontario intends to address these impacts. [337]

Nutrition North Canada Food Subsidy

In 2011, the federal government introduced Nutrition North Canada (NNC) to make perishable, nutritious food more affordable and more accessible for Northern remote communities. [338] While NNC was not developed to address climate change impacts on First Nations' right to food, it offers some support to communities where climate impacts are increasing the cost of already expensive imported food.

The program subsidizes eligible foods—such as fresh fruit, frozen vegetables, bread, meat, milk, and eggs—as well as some non-food items, sold by registered retailers and suppliers,

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[335] Ford lessened protections for endangered species; reduced funding to the Ministry of Natural Resources and Forestry, the Ministry of the Environment, Conservation, and Parks, and the Anishinabek/Ontario Fisheries Resource Centre; eliminated the office of the Environmental Commissioner of Ontario, and repealed the Toxics Reductions Act. Lisa Xing, "Doug Ford government one of the most 'anti-environmental' in generations, says Green Party leader," CBC, April 22, 2019, https://www.cbc.ca/news/canada/toronto/doug-ford-climate-change-environment-plan-1.5104740 (accessed June 2, 2020); FLARE staff, "Everything Doug Ford Cut or Cancelled During His First Year as Premier," Chatelaine, June 7, 2019, https://www.chatelaine.com/living/politics/doug-ford-cuts/ (accessed June 2, 2020); Legislative Assembly of Ontario, Bill 66, Restoring Ontario's Competitiveness Act, 2019, https://www.ola.org/en/legislative-business/bills/parliament-42/session-1/bill-66 (accessed June 2, 2020).

[336] Ontario Ministry of the Environment, Conservation and Parks, "Preserving and Protecting our Environment for Future Generations: A Made-in-Ontario Environment Plan," 2018, https://prod-environmental-registry.s3.amazonaws.com/2018-11/EnvironmentPlan.pdf (accessed June 2, 2020). Other adaptation measures planned include modernizing building codes, reviewing the Municipal Disaster Recovery Assistance Program, tax policy options to protect homeowners against extreme weather, reviewing land use planning, using technology to help facilities withstand extreme weather, and enhancing the resilience of agriculture. Ibid.

[337] Letter from Jeff Yurek, Minister of Environment, Conservation and Parks, October 1, 2020.

[338] Nutrition North Canada, "How Nutrition North Canada works," Government of Canada, 2019, www.nutritionnorthcanada.gc.ca/eng/1415538638170/1415538670874 (accessed June 2, 2020).

and, in Old Crow, commercially processed traditional food. [339]

Registered retailers are "responsible for passing on the full subsidy to consumers," which is intended to promote "efficiency, cost-effectiveness and transparency." [340] The NNC is also available to individual customers in eligible communities through a direct order program, which allows customers to personally purchase subsidized food from registered southern retailers or suppliers. [341]

In the fiscal year 2018–19, The North West Company received 51 percent of NNC subsidy funds (CAD$39.58 million), while its closest competitor, Arctic Co-operatives Limited received 17 percent (CAD$12.91 million). [342] The company states that it passes on all of the subsidy savings to its customers. [343] Nevertheless, the NNC subsidy program does not regulate retailers' prices, leaving room for significant price variability between communities, stores, and provinces and territories. [344]

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[339] Nutrition North Canada, "Eligible food and non-food items," Government of Canada, April 14, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415548276694/1415548329309 (accessed June 2, 2020); Nutrition North Canada, "Foods and non-food items eligible for a subsidy in Old Crow starting January 1, 2019," Government of Canada, July 2, 2019, https://www.nutritionnorthcanada.gc.ca/eng/1369230082316/1369230105932 (accessed June 2, 2020). In April-June 2019, NNC provided over $22.1 million in subsidy funds, with more than 70 percent going toward ten foods subsidized by the program's highest subsidy level: all fresh fruits and vegetables, meat, bread, frozen potato products, eggs, yogurt, poultry and unsweetened juice of 250 ml and less. Nutrition North Canada, "2019 to 2020: 1st quarter (April, May and June 2019)," Government of Canada, April 23, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1582909535808/1582909657743 (accessed June 2, 2020).

[340] Nutrition North Canada, "How Nutrition North Canada works."

[341] Nutrition North Canada, "Eligible communities," Government of Canada, May 15, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415540731169/1415540791407 (accessed June 2, 2020).

[342] Nutrition North Canada, "2018-2019: Full Fiscal Year," Government of Canada, April 23, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1583247671449/1583247805997 (accessed June 2, 2020).

[343] The North West Company, "The North West Company supports recommendations to improve Nutrition North program," November 25, 014, https://www.northwest.ca/uploads/documents/mr-2014-11-25.pdf (accessed June 2, 2020); The North West Company, "Additional Nutrition North subsidies announced," undated, https://www.northwest.ca/community/community-engagement/275/additional-nutrition-north-subsidies-announced (accessed June 2, 2020).

[344] Nutrition North Canada, "Cost of the Revised Northern Food Basket in 2017-2018," Government of Canada, February 18, 2019, https://www.nutritionnorthcanada.gc.ca/eng/1548078467819/1548078497301 (accessed June 2, 2020); [344] Nutrition North Canada, "Cost of the Revised Northern Food Basket in 2016-2017," Government of Canada, March 22, 2018, https://www.nutritionnorthcanada.gc.ca/eng/1519997966920/1519998026166 (accessed June 2, 2020); Tracey Galloway, "Nutrition North Canada update fails to make retailers accountable," Nunatsiaq News, December 12, 2018, https://nunatsiaq.com/stories/article/nutrition-north-canada-update-fails-to-make-retailers-accountable/ (accessed June 2, 2020); Tracey Galloway, "Canada's northern food subsidy Nutrition North Canada: a comprehensive program evaluation," Int J Circumpolar Health, vol. 76(1) (2017), doi: 10.1080/22423982.2017.1279451.

While NNC has helped maintain food prices in remote and northern communities, it has not significantly reduced them. In response to Human Rights Watch research, Minister of Northern Affairs, Daniel Vandal, said that from the launch of NNC in 2011 to March 2019, the cost of a nutritious diet has decreased by 1.03 percent in communities eligible for the subsidy, as compared to the south where prices increased by 10.5 percent during the same time period.[345] Positively, the federal government invested CAD$25 million in NNC in 2020 to ensure access to nutritious food during Covid-19. According to Minister Vandal, this investment has resulted in more significant, if short-term food cost reductions.[346]

Lack of Transparency and Accountability in Nutrition North Program

Historically, NNC has been criticized for lack of transparency about how retailers pass on the subsidy to communities, and the fact there is limited accountability to ensure retailers pass on the full subsidy.[347] Recent reforms aimed to address this concern, but little progress has been made.

Since 2015, the federal government has added program requirements in their contracts with registered retailers and suppliers intended to increase transparency and accountability: first, requiring retailers to display individual subsidy savings on customers' receipts, and second, requiring retailers to submit data outlining profit margins and freight costs to facilitate third-party audits.[348]

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[345] Price estimates based on the Revised Northern Food Basket (a nutritious diet for a family of four for one week). Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[346] For example, in Iqaluit, Nunavut, the price of a 10-kilogram bag of flour dropped from $21.49 to $11.49, representing a 47 percent reduction. Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[347] "Nutrition North Canada—Aboriginal Affairs and Northern Development Canada," Report of the Auditor General of Canada (2014), www.oag-bvg.gc.ca; Madeleine Chin-Yee & Benjamin H. Chin-Yee, "Nutrition North Canada: Failure and Facade within the Northern Strategy," UTMJ, Vol 92, No 3 (May 2015); Is Nutrition North Canada on Shifting Ground: A Food Banks Canada Report (April 2016); Tracey Galloway, "Canada's northern food subsidy Nutrition North Canada: a comprehensive program evaluation."

[348] Nutrition North Canada, "How Nutrition North Canada works;" Government of Canada, "Statement by Minister Valcourt on the NNC Advisory Board's Recommendations for the Wider Application of a Point-of-Sale System," June 4, 2015, https://www.newswire.ca/news-releases/statement-by-minister-valcourt-on-the-nnc-advisory-boards-recommendations-for-the-wider-application-of-a-point-of-sale-system-517855401.html (accessed June 2, 2020); NNC Advisory Board, "Nutrition North Canada Advisory Board Second Report," 2017, https://www.nutritionnorthcanada.gc.ca/eng/1508938932551/1508938956924 (accessed June 2, 2020); "Nutrition North retailers must hand over profit margin data," CBC, April 2, 2015, https://www.cbc.ca/news/canada/north/nutrition-north-retailers-must-hand-over-profit-margin-data-1.3019298 (accessed June 2, 2020).

The federal government does not make individual retailer's profit margins publicly available.[349] Only the federally-commissioned independent compliance reviews, conducted annually for a sample of registered retailers and suppliers, provide a mechanism for ensuring that the full benefit of the subsidy is passed from retailers to consumers in northern and remote communities.[350] The federal government has not published any compliance reports since 2015-2016, and has only published audits for a handful of retailers from 2011-2016.[351] In response to Human Right Watch research, Minister of Northern Affairs, Daniel Vandal committed to publishing the compliance reports for audits conducted since 2016 on the Nutrition North Canada website in the fall of 2020.[352]

The federal government has few means of ensuring retailer compliance and lacks effective grievance mechanisms for communities. Where a retailer is in noncompliance, for example by failing to pass on the full subsidy, the federal government can make public recommendations on needed reforms, but retailers face no repercussions, barring the termination of funding agreements with continually non-

[349] The Office of the Auditor General in 2014 highlighted it was impossible to judge whether the full subsidy was being passed on to communities without looking at retailers' profit margins over time, but that "commercial confidentiality may make profit margins unavailable." However, Minister of Northern Affairs, Daniel Vandal, told Human Rights Watch that the federal government monitors "information on the current profit margins and profit margins over time." Office of the Auditor General of Canada, "Chapter 6—Nutrition North Canada—Aboriginal Affairs and Northern Development Canada," in 2014 Fall Report of the Auditor General of Canada, 2014, https://www.oag-bvg.gc.ca/internet/English/parl_oag_201411_06_e_39964.html (accessed June 2, 2020); Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[350] https://www.nutritionnorthcanada.gc.ca/eng/1415538638170/1415538670874

[351] Nutrition North Canada, "How Nutrition North Canada works;" Nutrition North Canada, "Reports," April 23, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415647255632/1415647437113 (accessed June 2, 2020). The North West Company, the largest subsidy recipient, was last reviewed in 2015, at which time the third-part auditor, Deloitte, affirmed that the company's "approach to pricing would ensure that all of the subsidy is passed along to the recipient." However, Deloitte was not able to compare profit margins on subsidized products versus unsubsidized products, or to fully review the company's own margin analysis, conducted in 2014, as it fell outside the timeframe under audit. Deloitte LLP, "Compliance assessment report North West Company," 2015, https://www.nutritionnorthcanada.gc.ca/eng/1472845148790/1472845165041 (accessed August 4, 2020).

[352] Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

compliant retailers, an option that would severely impact community members.[353] Community members themselves are encouraged to directly contact their local retailer if they have concerns about food costs, even if that entity is the source of their concerns.[354]

In August 2019, the federal government announced that a Northern-based compliance and audit review committee would be established in the coming months to improve transparency and accountability by providing Northern representatives and firms the opportunity to participate in the review of the audit reports.[355] According to the Minister of Northern Affairs, the federal government is currently "canvassing Indigenous partners for feedback and recommendations on Committee membership and objectives," though Covid-19 has hampered this process.[356]

Following continued criticism, the federal government launched an "engagement" process in 2016 to improve the program.[357] The engagement's final report found that Northerners were worried about the overall quality and availability of nutritious perishable food, adding that "NNC was not having a big enough effect on the price of food."[358] Engagement participants also expressed "significant concern regarding how climate change will impact

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[353] Nutrition North Canada, "How Nutrition North Canada works." Some retailers have been found non-compliant, for example for applying the wrong subsidy rate, using listing inaccurate or incorrect weights of subsidy-eligible items, or selling to ineligible customers, specifically local mining camps. See, for example, Deloitte LLP, "Compliance Assessment Summary Report: Le Marché Central du Nord Inc.," October 11, 2016, https://www.nutritionnorthcanada.gc.ca/eng/1513109541502/1513109564240 (accessed July 30, 2020); Deloitte LLP, "Compliance assessment report Rampart Rentals," October 1, 2015, https://www.nutritionnorthcanada.gc.ca/eng/1472843064511/1472843080102 (accessed July 30, 2020); Samson & Associates, "Compliance Review Report - Arctic Co-operatives Ltd.," December 2013, https://www.nutritionnorthcanada.gc.ca/eng/1411144279766/1411144351602 (accessed July 30, 2020); Samson & Associates, "Compliance Review Report - North West Company LP," December 2012, https://www.nutritionnorthcanada.gc.ca/eng/1411152419722/1411152435672 (accessed July 30, 2020).

[354] Nutrition North Canada, "How Nutrition North Canada Works," https://www.nutritionnorthcanada.gc.ca/eng/1411152419722/1411152435672 (accessed July 30, 2020).

[355] Crown Indigenous Relations and Northern Affairs, "Government of Canada announces additional changes to Nutrition North Canada," August 21, 2019, https://www.newswire.ca/news-releases/government-of-canada-announces-additional-changes-to-nutrition-north-canada-861426967.html (accessed June 2, 2020).

[356] Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[357] Interis | BDO, "Nutrition North Canada Engagement 2016," p. 13; A/HRC/22/50/Add.1. Concluding Observations following Canada's report to the Committee on Economic, Social and Cultural Rights in 2016, E/C.12/CAN/CO/6.

[358] Interis | BDO, "Nutrition North Canada Engagement 2016," pp. 5, 19-20. Participants also emphasized the need for support in accessing foodstuffs needed to maintain a traditional diet, i.e. an increased subsidy for the ingredients to bake bannock and bread, as well as for dry staples like rice, pasta, and nutritious dehydrated/dry foods. Ibid. pp. 5-6.

food availability" and asked for support for traditional food, including by subsidizing harvesting costs including snowmobiles, ammunition, and fuel.[359]

In January 2019, the government of Canada began implementing changes to NNC intended to increase access to nutritious food and traditional food, including a revised subsidized foods list, a new highest-level subsidy rate specifically for milk, frozen fruit, frozen vegetables, infant formula, and infant food; and an increase to the two existing subsidy rates to help further lower the cost of perishable, nutritious food.[360] The reform also promised more flexibility for paying for personal orders and a harvesters' support grant program to help offset the costs of traditional harvesting.

Payment flexibility has increased at most registered southern retailers to now include debit, cheques, or electronic funds transfers, and a few locations accept cash.[361] However, lack of access to a credit card remains a barrier for some First Nations people, although the number of people impacted is unknown.[362]

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359. Interis | BDO, "Nutrition North Canada Engagement 2016," pp. 5-6, 19. See also, "Feds consider Nutrition North 'experiments' to support hunters," CBC, July 19, 2016, https://www.cbc.ca/news/canada/north/nutrition-north-consultations-traditional-food-1.3685295 (accessed June 2, 2020).

360 Crown Indigenous Relations and Northern Affairs, "Government of Canada announces improvements to Nutrition North Canada including support for country food," December 10, 2018, https://www.canada.ca/en/crown-indigenous-relations-northern-affairs/news/2018/12/government-of-canada-announces-improvements-to-nutrition-north-canada-including-support-for-country-food.html (accessed June 2, 2020). Changes were announced after a May 2019 Canadian Medical Association Journal study concluded that food insecurity in Nunavut has risen from 31.1 percent to 46 percent since the program began in 2011. James Ford, Dylan Clark, and Angus Naylor, "Food insecurity in Nunavut: Are we going from bad to worse?," CMAJ 191(20), doi:10.1503/cmaj.190497.

361 Nutrition North Canada, "Registered southern suppliers," Government of Canada, February 14, 2020, https://www.nutritionnorthcanada.gc.ca/eng/1415813680494/1415813739446 (accessed June 2, 2020). However, direct orders have been historically underutilized by community members. In its first year, "only eight percent of subsidy dollars was accessed outside local stores" and NNC notes, "the number of personal orders seems to have gone down." Aboriginal Affairs and Northern Development, "Implementation Evaluation of the Nutrition North Canada Program," September 2013, https://www.rcaanc-cirnac.gc.ca/DAM/DAM-CIRNAC-RCAANC/DAM-AEV/STAGING/texte-text/ev_nnn_1395347742084_eng.pdf (accessed June 2, 2020). In part, this underutilization is because of lack of access to a credit card. Nutrition North Canada Advisory Board, "First Report of the Advisory Board for the period February 2011 to March 2012," 2012, https://www.nutritionnorthcanada.gc.ca/eng/1415903230200/1415903253645?wbdisable=false (accessed June 2, 2020), p. 19. The NNC Advisory Board's second report (2012 - 2016), notes that "community members are largely unaware of the direct or personal order aspect of the program" – it is unclear how the government has addressed this lack of awareness. Nutrition North Canada Advisory Board, "Nutrition North Canada Advisory Board Second Report," 2017, https://www.nutritionnorthcanada.gc.ca/eng/1508938932551/1508938956924 (accessed June 2, 2020).

362 Human Rights Watch interview with Lisa Van Fleet, Old Crow, June 8, 2018; Email correspondence with Megan Williams, September 14, 2020. See, also. Union of BC Indian Chief, Resolution No. 2019-27, Fair and Equitable Access for First Nations to Credit Rating System, June 2019, https://d3n8a8pro7vhmx.cloudfront.net/ubcic/pages/132/attachments/original/1562194772/UBCIC_CC06-17_FinalResolutions_Combined.pdf?1562194772 (accessed October 20, 2020).

As of April 2020, the promised harvesters' support grant has been made available to most NNC-eligible communities, with funding available for up to five years. [363]

In response to Human Rights Watch research, Crown-Indigenous Relations and Northern Affairs Canada (CIRNAC) acknowledged that there are gaps in government programming to support First Nations' access to food, and noted that the harvesters support program was designed to fill some of these gaps. [364] "While the [NNC] program was established to improve affordability and accessibility of nutritious foods… it was not designed to address the full range of complex issues leading to food insecurity," Minister Vandal told Human Rights Watch. [365] Minister Vandal added that the introduction of the harvesters support grant, currently funded at CAD$8 million per year, stems from a recognition that "improving access to food locally is central to food security."[366]

In order to more fully address food poverty in remote and northern First Nations, CIRNAC should monitor the impacts of recent reforms to better understand how they contribute to food poverty reduction efforts, including ensuring the subsidy is fully passed on to communities. As climate change impacts increase, it is likely that further NNC reforms, including to the harvesters support program, will be needed to account for increased transport and harvesting costs. First Nations need to be full and active partners in developing such measures.

With regard to climate change impacts on food poverty, the Minister of Northern Affairs acknowledged that climate change may require Nutrition North to expand its support as communities lose access to year-round surface transportation entirely or face extended periods of isolation as a result of climate change impacts, for example on winter roads. [367]

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[363] Out of 116 communities eligible for Nutrition North, 108 currently receive support through the Harvesters Support Grant. Nutrition North Canada, "Harvesters Support Grant," April 14, 2020. According to the Minister of Northern Affairs, Grant provides flexibility in funding to recipient land claim, self-government, and Indigenous organizations, allowing communities to determine their individual needs, and could be used to study climate change impacts on traditional food sources, Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020. https://www.nutritionnorthcanada.gc.ca/eng/1586274027728/1586274048849 (accessed June 2, 2020); Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[364] Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[365] Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

[366] *Ibid.*

[367] Letter from Minister of Northern Affairs, Daniel Vandal, September 29, 2020.

Other Food Policies and Programs

The federal government unveiled the country's first national food policy in 2019, which aims to increase access and affordability of healthy food, promote local food, support Indigenous peoples, reduce food waste, and create a more sustainable food system. [368] One of the four key action areas is supporting food security in Northern and Indigenous communities, including through recognizing the unique rights, interest, and circumstances of First Nations, Inuit, and Métis, and respecting Indigenous knowledge. [369]

However, the policy does not identify specific steps to address First Nations food needs, both in general and related to the impacts of climate change on traditional food. Furthermore, the policy does not recognize the right to food, nor mandate food security data collection in the provinces and territories, or address the ways in which climate impacts should guide food policy including with respect to disproportionate impacts on women, children, and older people. [370]

In 2019, as part of the implementation of the food policy, the federal government created a five-year, CAD$50 million Local Food Infrastructure Fund for community-based and not-for-profit organizations "to strengthen food systems and to facilitate access to safe and nutritious food for at-risk populations." [371] Although Indigenous organizations are eligible to apply, the fund is targeted broadly at not-for-profit organizations, and it is not clear what percentage of the fund has been allocated to projects supporting food infrastructure, such as community gardens and community freezers, in First Nations. [372]

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[368] Agriculture and Agri-Food Canada, "Food policy for Canada: Everyone at the Table," 2019, https://www.canada.ca/content/dam/aafc-aac/documents/20190614-en.pdf (accessed June 2, 2020).

[369] Ibid.

[370] Agriculture and Agri-Food Canada, "Food policy for Canada: Everyone at the Table;" "Everyone at the Table: the federal government announces A Food Policy for Canada," Community Food Centres Canada, https://cfccanada.ca/en/News-Events/Latest-News/Announcements/Everyone-at-the-Table-the-federal-government-anno (accessed June 2, 2020).

[371] Government of Canada, "Local Food Infrastructure Fund: Step 1. What this program offers," June 9, 2020, https://www.agr.gc.ca/eng/agricultural-programs-and-services/local-food-infrastructure-fund/?id=1560701480448 (accessed September 29. 2020).

[372] Ibid.

Few provincial or territorial instruments exist to complement or fill the gaps of the federal food policy. [373] In addressing First Nations food poverty, Ontario, British Columbia, and Yukon currently rely on a patchwork of programs and initiatives that they support or run, such as school lunch programs, farmers' market coupons, food skills workshops, programs for Indigenous youth, and campaigns and programs encouraging growth and consumption of local food. [374]

Some of these programs offer positive steps toward supporting access to food for low-income and marginalized groups, including Indigenous people. However, they do not address climate change-related loss of traditional food sources and the increasing costs of

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[373] Neither Ontario nor British Columbia have provincial level food policies. Ontario underwent consultations to create a food sovereignty strategy in 2017, but the Ford government did not continue the process. Government of Ontario, "Archived - Building Ontario's First Food Security Strategy," published 2017, updated 2019, https://www.ontario.ca/page/building-ontarios-first-food-security-strategy. "Core Public Health Functions for BC: Model Core Program Paper Food Security," BC Ministry of Public Health, March 2014, https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/public-health/healthy-living-and-healthy-communities/food_security_-_model_core_program_paper_2014.pdf (accessed June 2, 2020); "Core Public Health Functions for BC: Evidence Review Food Security," BC Ministry of Public Health, September 2013, https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/public-health/healthy-living-and-healthy-communities/food-security-evidence-review.pdf (accessed June 2, 2020). Yukon's 2016 "Local Food Strategy" provides some support for First Nations agricultural endeavors, including community gardens, but does not put in place any measures to respond to climate change impacts on traditional food. Designed "to complement existing hunting and gathering opportunities," the strategy commits government to "support infrastructure to develop farmers' markets and First Nation and community gardens and greenhouses." "Local Food Strategy for Yukon," Yukon Government, https://yukon.ca/sites/yukon.ca/files/emr/emr-local-food-strategy-for-yukon.pdf (accessed June 2, 2020), pp. 5, 17.

[374] Ontario's Northern Fruit and Vegetable Program delivers fruits and vegetables to students in three school districts at least twice a week from January to June, and the First Nations Student Nutrition Program provides nutritious meals and snacks in 120 sites in 63 First Nations, but neither program incorporates traditional food. Porcupine Health Unit, "Northern Fruit and Vegetable Program," undated, http://www.porcupinehu.on.ca/en/audiences/educators/nfvp/ (accessed June 3, 2020); government of Ontario, "Healthy Choices," March 28, 2019, https://www.ontario.ca/page/healthy-choices?_ga=2.108468225.205670840.1560364369-1561680193.1559751038 (accessed June 3, 2020); Ontario Ministry of Children, Community and Social Services, "Student Nutrition Program," May 7, 2018, http://www.children.gov.on.ca/htdocs/English/professionals/studentnutrition/studentnutrition.aspx (accessed June 3, 2020). Ontario's Local Food Act also encourages local food use, helps increase access to local food, improves local food literacy, and encourages increased use of local food by public sector organizations. Local Food Act, 2013, S.O. 2013, c. 7, https://www.ontario.ca/laws/statute/13l07 (accessed June 3, 2020). In the Yukon, the "From the Ground Up" fundraiser connects schools and daycares with local farmers to sell fresh vegetables. The program also helps supply the Whitehorse food bank. While the program has operated in Old Crow, it is otherwise focused almost exclusively in Whitehorse. Yukon From the Ground Up, "From the Ground Up," undated, https://yukonfromthegroundup.ca/ (accessed June 3, 2020). In British Columbia the BC School Fruit and Vegetable Nutritional Program provides fresh fruits and vegetables to many BC schools every other week, and the Farmers' Market Nutrition Coupon Program provides coupons to lower income families and seniors participating in their food literacy programs, which can be spent at participating farmers' markets to purchase vegetables, fruits, nuts, eggs, dairy, cut herbs, meat, and fish. The CommunityLINK program, meanwhile, offers funding designed to support academic achievement and social functioning of vulnerable students, including breakfast, lunch, and snack programs. BC Agriculture in the Classroom, "BC School Fruit & Vegetable Nutritional Program," https://www.bcaitc.ca/bc-school-fruit-vegetable-nutritional-program (accessed June 3, 2020); BC Farmers' Markets, "BC Farmers' Market Nutrition Coupon Program," https://bcfarmersmarket.org/coupon-program/how-it-works/ (accessed June 3, 2020); Government of British Columbia, "CommunityLINK Funding Information," https://www2.gov.bc.ca/gov/content/education-training/k-12/administration/program-management/communitylink (accessed June 3, 2020).

transporting purchased food to remote Indigenous communities. Further, most existing food security programs in Canada fail to account for the importance of supporting access to culturally appropriate food and thereby fail to consider the particular and disparate impacts climate change has on First Nations' right to food.

Positively, in British Columbia, where the federal government has transferred health care authority for First Nations to the First Nations Health Authority, the First Nations-led "Aboriginal Head Start on Reserve" program supports nutrition awareness in communities as well as access to traditional food by providing children with opportunities to participate in traditional harvesting activities. [375]

However, as Norma Kassi, co-founder and Director of Indigenous Collaboration at the Arctic Institute of Community-Based Research, has emphasized, while provinces and territories are "working on food security issues to various extents," the lack of coordination between different levels of government means that food security is not addressed in a comprehensive way. [376]

Isolated and piecemeal provincial and territorial programs are inadequate to address the full scope and many root causes of First Nations food poverty, much less the foreseeable consequences of continued global warming on First Nations food systems. A successful strategy to address First Nations food poverty requires coordinated action within and across all levels of government, in consultation with impacted communities.

Obligation to Drastically Cut Emissions to Prevent Foreseeable Harms

States have a human rights obligation to address climate change, including by implementing robust and rights-respecting climate mitigation policies that are consistent

[375] First Nations Health Authority, "Our Story," undated, https://www.fnha.ca/Documents/FNHA_Our_Story.pdf (accessed June 3, 2020); FNHA, "Aboriginal Head Start On Reserve," undated, https://www.fnha.ca/what-we-do/maternal-child-and-family-health/aboriginal-head-start-on-reserve (accessed June 3, 2020). The province, which still maintains responsibility for provincial health policy and collaborates with the FNHA to provide services for First Nations, has a limited number of programs which offer some support to First Nations. Government of BC, "First Nations Health Authority," undated, https://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/partners/health-authorities/first-nations-health-authority (accessed June 3, 2020).

[376] Norma Kassi, "Food Insecurity in Canada's North," Food Secure Canada Assembly, Halifax Nova Scotia, November 15, 2014, https://foodsecurecanada.org/sites/foodsecurecanada.org/files/nkassi_on_food_insecurity_in_the_north.pdf (accessed June 3, 2020).

with the best available science, thereby preventing the deterioration of the protection of rights of marginalized populations.

In Canada, climate change is already putting the health, wellbeing, and survival of Indigenous peoples, including First Nations, at risk. In 2016, Canada signed and ratified the Paris Agreement, which aims to limit global average temperature rise to well below 2°C above pre-industrial levels, while pursuing efforts to limit the increase to 1.5°C. [377] Yet, the government is not doing enough to keep warming below 1.5°C to avoid the worst impacts of climate change. [378]

Canada as a Major Greenhouse Gas Emitter

Despite its relatively small population of around 37.8 million people, Canada is still a top 10 contributor to global GHG emissions. [379] With per capita emissions three to four times the global average, Canada has one of the highest per capita emissions in the world, and is among the most carbon-intensive members of the Organisation for Economic Co-operation and Development (OECD). [380]

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[377] Government of Canada, "The Paris Agreement," January 6, 2016, https://www.canada.ca/en/environment-climate-change/services/climate-change/paris-agreement.html (accessed June 3, 2020). 189 parties have ratified to this date. "Paris Agreement - Status of Ratification," UN Climate Change, https://unfccc.int/process/the-paris-agreement/status-of-ratification (accessed June 3, 2020).

[378] According to the IPCC, even an increase of 1.5°C will lead to dramatic impacts on a global scale, and if global warming continues down its current path, it will have catastrophic consequences for hundreds of millions of people around the world. Global Warming of 1.5°C, especially pp. 238–40.

[379] Canada produces about 1.5 percent of global emissions. Statistics Canada, "Population Estimates, quarterly," https://www150.statcan.gc.ca/t1/tbl1/en/tv.action?pid=1710000901 (accessed June 3, 2020); Government of Canada, "Global greenhouse gas emissions," 2020, https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/global-greenhouse-gas-emissions.html (accessed June 3, 2020) (2016 data for emissions).

[380] The OECD is an intergovernmental economic organization with 37 member countries. "The Carbon Brief Profile: Canada," Carbon Brief, October 8, 2019, https://www.carbonbrief.org/the-carbon-brief-profile-canada (accessed June 3, 2020); "Fossil CO2 and GHG emissions of all world countries, 2019 report," Emissions Database for Global Atmospheric Research, 2019, https://edgar.jrc.ec.europa.eu/overview.php?v=booklet2019&dst=GHGpc (accessed June 3, 2020); Global Historical Emissions," Climate Watch, https://www.climatewatchdata.org/ghg-emissions (accessed June 3, 2020); Carbon Dioxide Information Analysis Center, https://cdiac.ess-dive.lbl.gov/ (accessed June 9, 2020), Global Carbon Atlas, http://www.globalcarbonatlas.org/en/content/welcome-carbon-atlas (accessed June 9, 2020).

Canada is consistently in the top ten emitters globally. Different rankings include: 8 (Climate Watch Data using 2014 data of all GHGs), 10 (Carbon Dioxide Information Analysis Center using 2014 data of CO2), 10 (Emissions Database for Global Atmospheric Research using 2015 data of all GHGs), and 10 (Global Carbon Atlas using 2017 data of CO2). All these sources also consistently place Canada near the top for GHG emissions per capita: 16 in the world and 4 among G20 countries (Carbon Dioxide Information Analysis Center using 2014 data of CO2), 15 in the world and 3 among G20 countries (Emissions Database for Global Atmospheric Research using 2015 data of all GHGs), 14 in the world and 4 among G20 countries (Global Carbon Atlas using 2017 data of CO2), and 7 in the world and 1 among G20 countries (World Resources Institute Climate Watch Data using 2014 data of all GHGs).

Canada's cumulative emissions are much higher than in other countries with high emissions today. For example, while countries like the United Arab Emirates, Saudi Arabia, or Kuwait have climbed extraordinarily through the ranks of annual GHG emissions, Canada is still among the top 10 cumulative emitters.[381] On a per capita basis, Canada moves even higher up the list of top emitters.[382]

Between 1990 and 2017, Canada's emissions increased by 18.9 percent (114 megatonnes), driven mainly by mining and oil and gas production.[383] Meanwhile, a 15 megatonne increase in emissions from 2017 to 2018, has nearly erased Canada's minimal progress in emissions reductions since 2005.[384]

Canada is projected to emit 673 megatonnes in 2030, 162 megatonnes more than its Paris Agreement commitment (511 megatonnes).[385] Even if additional measures announced but not yet implemented are taken into account, Canada is still set to emit 603 megatonnes by 2030.[386]

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[381] From 1850 to 2014, in terms of GHG emissions per capita world rankings, Saudi Arabia went from 117th to 14th, Kuwait went from 138th to 44th, and the United Arab Emirates went from 141st to 42nd. As for cumulative emissions, Canada is ranked variously as 9th (World Resources Institute using CO_2 emissions from 1850 to 2007; https://www.theguardian.com/environment/2011/apr/21/countries-responsible-climate-change); 9th (World Resources Institute using CO_2 emissions from 1990 to 2011; https://www.wri.org/blog/2014/11/6-graphs-explain-world-s-top-10-emitters); and 9th (Global Carbon Project and Carbon Dioxide Analysis Centre using CO_2 emissions from 1751 to 2017; https://ourworldindata.org/co2-and-other-greenhouse-gas-emissions#cumulative-co2-emissions).

[382] Canada's cumulative per capita GHG emissions placed it eighth in the world according to the World Resources Institute, using numbers from 1850 to 2007. More recently, this same data shows Canada remaining near the top of GHG emissions per capita, necessarily keeping its cumulative number high. See https://www.wri.org/blog/2014/11/6-graphs-explain-world-s-top-10-emitters (accessed June 3, 2020); https://ourworldindata.org/uploads/2019/10/Cumulative-CO2-treemap.png (accessed June 3, 2020).

[383] Environment and Climate Change Canada, "Canadian Environmental Sustainability Indicators Greenhouse gas Emissions," 2019, https://www.canada.ca/content/dam/eccc/documents/pdf/cesindicators/ghg-emissions/2019/national-GHG-emissions-en.pdf (accessed June 3, 2020).

[384] "Canada 2020 National Inventory Report," UNCC, April 14, 2020, https://unfccc.int/documents/224829 (accessed June 3, 2020), pp. 3-4. The oil and gas sector was the largest source of GHG emissions in 2017, accounting for 27 percent of total national emissions. Environment and Climate Change Canada, "Canadian Environmental Sustainability Indicators Greenhouse gas Emissions."

[385] Government of Canada, "Greenhouse gas and air pollutant emissions projections: 2019," https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/projections/2019.html (accessed June 3, 2020).

[386] Government of Canada, "Greenhouse gas and air pollutant emissions projections: 2019."

Canada's economy is dependent on natural resource development—often on the traditional territories of Indigenous peoples.[387] Canada is the fourth largest producer and fourth largest exporter of oil in the world, and 96 percent of Canada's proven oil reserves are located in the carbon-intensive Alberta oil sands.[388]

A series of controversial resource development projects have pitted the Canadian government's climate change commitments against the realities of a resource-dependent economy. Most recently, on February 23, 2020, Teck Resources Ltd. withdrew its application to develop a massive oil sands project in northern Alberta, days before the federal government was expected to issue its decision on whether to approve the 260,000-barrel-per-day project.[389] Explaining this decision, Teck's CEO pointed to the Canadian government's need to find a way to reconcile climate change considerations with resource development.[390]

The year before, in 2019, one day after the House of Commons declared a climate emergency, the Canadian government approved the expansion of a pipeline project that will significantly increase the country's oil production.[391] Announcing the government's decision, Prime Minister Trudeau outlined the need to strike a balance between economic

[387] "10 Facts on Canada's Natural Resources," 2019, https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/emmc/pdf/2019/2019-KFF-EN.pdf (accessed June 3, 2020).

[388] Natural Resources Canada, "Crude Oil Facts," 2020, https://www.nrcan.gc.ca/science-data/data-analysis/energy-data-analysis/energy-facts/crude-oil-facts/20064 (accessed June 3, 2020); Benjamin Israel, "The Real GHG trend: Oilsands among the most carbon intensive crudes in North America," Pembina Institute, October 4, 2017, https://www.pembina.org/blog/real-ghg-trend-oilsands (accessed June 3, 2020); John Liggio et al., "Measured Canadian oil sands CO_2 emissions are higher than estimates made using internationally recommended methods," Nature Communications vol. 10, April 2019, https://www.nature.com/articles/s41467-019-09714-9 (accessed June 3, 2020).

[389] Sarah Rieger, "Teck withdraws application for $20B Frontier oilsands mine," CBC, February 23, 2020, https://www.cbc.ca/news/canada/calgary/teck-frontier-1.5473370 (accessed June 3, 2020).

[390] Letter from Don Lindsey to Minister Jonathan Wilkinson, February 3, 2020, https://www.teck.com/media/Don-Lindsay-letter-to-Minister-Wilkinson.pdf (accessed June 3, 2020).

[391] "House of Commons declares a climate emergency ahead of pipeline decision," CBC, June 18, 2019, https://www.cbc.ca/news/politics/climate-emergency-motion-1.5179802 (accessed June 3, 2020); Environment and Climate Change Canada, "Trans Mountain Pipeline ULC - Trans Mountain Expansion Project: Review of Related Upstream Greenhouse Gas Emissions Estimates," November 2016, https://iaac-aeic.gc.ca/050/documents/p80061/116524E.pdf (accessed June 3, 2020).

development and environmental protection, and pledged to invest profits from the government-owned pipeline in clean energy development. [392]

Thus far, Canada has favoured short-term economic interests over meeting emissions targets. In particular, federal and provincial governments support fossil fuel producers through subsidies and direct investment in fossil fuel infrastructure. Federal financial support for fossil fuel producers alone increased to nearly CAD$600 million from 2018 to 2019. [393] As of 2018, Canada was the second largest public financer of fossil fuels among G20 countries, supporting oil and gas to the tune of CAD$13.9 billion a year. [394] Federal, provincial, and territorial governments have further entrenched support for fossil fuels in their Covid-19 responses, providing fossil fuel producers more than CAD$16 billion in aid, compared to around CAD$8 billion for clean energy. [395]

The province of Alberta, meanwhile, has invested CAD$1.1 billion in the construction of the controversial Keystone XL pipeline, which would connect the province's oil sands with American refineries. [396]

The debate over resource development has also divided First Nations. For many remote communities, resource extraction offers one of the only sources of income and employment, an attractive proposition for communities dealing with decades of systematic

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[392] Mia Rabson, "Trans Mountain pipeline expansion gets second green light from Ottawa," Financial Post, June 18, 2019, https://business.financialpost.com/pmn/business-pmn/newsalert-trans-mountain-pipeline-expansion-gets-second-green-light-from-ottawa (accessed June 3, 2020); Justin Trudeau, Prime Minister of Canada, "Minister of Finance Mandate Letter," December 13, 2019, https://pm.gc.ca/en/mandate-letters/2019/12/13/minister-finance-mandate-letter (accessed June 3, 2020).

[393] Vanessa Corkal, Julia Levin and Philip Gass, "Canada's Federal Fossil Fuel Subsidies in 2020," IISD, February 2020, https://www.equiterre.org/sites/fichiers/canada-fossil-fuel-subsidies-2020-en.pdf (accessed June 3, 2020).

[394] Bronwen Tucker, Kate DeAngelis, and Alex Doukas, "Still Digging: G20 Government Continue to Finance the Climate Crisis," Oil Change International and Friends of the Earth, May 2020, http://priceofoil.org/content/uploads/2020/05/G20-Still-Digging.pdf (accessed June 3, 2020) (based on data from 2016-2018).

[395] "Canada," energy policy tracker, International Institute for Sustainable Development, The Institute for Global Environmental Strategies, Oil Change International, Overseas Development Institute, Stockholm Environment Institute, and Columbia University, 2020, https://www.energypolicytracker.org/country/canada (accessed August 4, 2020); Mia Rabson, "Aid for Canada's energy sector heavily weighted towards fossil fuels in COVID-19 response," Global News, July 15, 2020, https://globalnews.ca/news/7183008/canada-fossil-fuels-aid-coronavirus/ (accessed August 4, 2020).

[396] Nicholas Kusnetz, "Alberta's $5.3 Billion Backing of Keystone XL Signals Vulnerability of Canadian Oil ," Inside Climate News, April 6, 2020, https://insideclimatenews.org/news/03042020/Keystone-pipeline-alberta-oil-coronavirus-canada-saudi-arabia-russia-climate-chante (accessed June 3, 2020).

underfunding and socio-economic marginalization.[397] For others, the risks posed by resource development projects are too great. Beaver Lake Cree Nation, for example, has taken the Alberta and Canadian governments to court over the cumulative impacts of the oil sands on traditional harvesting.[398]

Not on Track to Meet Weak Targets

As a party to the Paris Agreement, Canada has to submit a Nationally Determined Contribution (NDC), a country's domestic climate change action plan. Canada's NDC, set in 2015 under the previous administration, pledges to reduce GHG emissions by 30 percent below 2005 levels by 2030, and to phase out coal use, improve energy efficiency, protect carbon sinks, and support Indigenous peoples, among other goals.[399]

Canada's GHG emissions reductions target is one of the weakest and insufficient to contribute to meeting global goals. Only nine out of 36 OECD countries have targets on par with or less ambitious than Canada's.[400] The Climate Action Tracker, an independent think tank tracking government climate action, classifies Canada's commitments as "insufficient," as Canada's NDC is "not consistent with holding warming below 2°C let alone with the Paris Agreement's stronger 1.5°C limit." If all government targets were in this range, warming would reach over 2°C and up to 3°C.[401] The OECD similarly concluded

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[397] Laura Kane, "Pipeline at centre of B.C. conflict is creating jobs for First Nations: chief," CTV, January 15, 2020, https://vancouverisland.ctvnews.ca/pipeline-at-centre-of-b-c-conflict-is-creating-jobs-for-first-nations-chief-1.4768621 (accessed June 3, 2020); Kelly Cryderman and Shawn McCarthy, "Anti-pipeline accord could deepen divide in indigenous communities," Globe and Mail, September 23, 2016, https://www.theglobeandmail.com/report-on-business/industry-news/energy-and-resources/anti-pipeline-accord-could-deepen-divide-in-indigenous-communities/article32032426/ (accessed June 3, 2020); "Kinder Morgan pipeline debate is dividing First Nations, B.C. chief says," APTN, May 25, 2018, https://aptnnews.ca/2018/05/25/kinder-morgan-pipeline-debate-is-dividing-first-nations-b-c-chief-says/ (accessed June 3, 2020).

[398] The Nation, party to a historical treaty that promised the right to hunt, trap, fish, and gather in perpetuity throughout their traditional territory, allege they are no longer able to harvest throughout significant stretches of their territory due to the scale and scope of industrial development authorized on their land without their free, prior, and informed consent. "TarSands Trial Legal Backgrounder," RAVEN Trust, https://raventrust.com/2018/04/19/tarsands-trial-legal-backgrounder/ (accessed June 3, 2020).

[399] Margo McDiarmid, "Canada sets carbon emissions reduction target of 30% by 2030," May 15, 2015, CBC, https://www.cbc.ca/news/politics/canada-sets-carbon-emissions-reduction-target-of-30-by-2030-1.3075759 (accessed June 3, 2020).

[400] Canada needs to speed up efforts to green its energy and transport sectors, December 19, 2019, https://www.oecd.org/canada/canada-needs-to-speed-up-efforts-to-green-its-energy-and-transport-sectors.htm (accessed June 9, 2020).

401 "Canada," Climate Action Tracker, September 19, 2019, https://climateactiontracker.org/countries/canada/ (accessed June 3, 2020).

in 2017 that Canada must drastically reduce emissions between 2030 and 2050 to remain consistent with keeping warming below 2°C. [402]

Canada has thus far not stated its intention to enhance its commitments for the next NDC, due in 2020, which would cover 2021 through 2025. [403]

Despite modest emissions reduction targets, Canada is not on track to meet its commitments under the Paris Agreement. In 2018, the Canadian Commissioner of the Environment and Sustainable Development and Canada's Auditors General found that the federal and most sub-national governments are not on track to meet their own emission reduction targets. [404] With 2018 emissions only cut by 0.1 percent since 2005, Canada is essentially back at square one in its efforts to meet its commitment to cut emissions to 30 percent of what they were in 2005 by 2030. [405]

In response to Human Rights Watch research, Environment and Climate Change Canada (ECCC) acknowledged that "more work is needed" to reach carbon neutrality by 2050 and thereby limit warming to 1.5°C. [406] Nevertheless, ECCC emphasized that emission reductions have been made since the adoption of the Pan-Canadian Framework in 2016 and claimed, "Canada's climate plan puts the country on the path" toward meeting the government's reduction targets. [407] ECCC did not provide any details on how these targets will be achieved.

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[402] OECD Environmental Performance Reviews: Canada 2017, https://read.oecd-ilibrary.org/environment/oecd-environmental-performance-reviews-canada-2017_9789264279612-en#page184 (accessed June 3, 2020), p. 156. It also recommended that Canada should implement more comprehensive and higher "environmentally related taxation," better manage the overlapping powers of the federal and provincial/territorial governments and reduce extremely high emissions from the transportation and oil sectors. *Ibid.*, p. 156.

[403] Noëmie Leprince-Ringuet, "Which Countries Will Step Up Climate Commitments in 2020? What We Know Now," WRI, November 21, 2019, https://www.wri.org/blog/2019/11/which-countries-will-step-climate-commitments-2020-what-we-know-now (accessed June 3, 2020).

[404] The AG of Canada is an officer of Parliament, appointed on a 10-year term to audit operations of the federal and territorial governments, and the ESD Commissioner is appointed by the AG to provide parliamentarians with independent analysis and recommendations on federal government efforts to protect the environment and foster sustainable development. Office of the Auditor General of Canada, "Perspectives on Climate Change Action in Canada—A Collaborative Report from Auditors General," March 2018; Office of the Auditor General of Canada, "Report 1—Progress on Reducing Greenhouse Gases—Environment and Climate Change Canada," in 2017 Fall Reports of the Commissioner of the Environment and Sustainable Development to the Parliament of Canada, https://www.oag-bvg.gc.ca/internet/English/parl_cesd_201710_01_e_42489.html (accessed June 3, 2020).

[405] "Canada 2020 National Inventory Report," p. 4.

[406] Letter from Matt Jones, ECCC, August 13, 2020.

[407] https://www.canada.ca/en/environment-climate-change/services/climate-change/greenhouse-gas-emissions/fourth-biennial-report-climate-change.html; Letter from Matt Jones, ECCC, August 13, 2020.

In June 2019, Canada's Parliamentary Budget Officer released a report assessing the effectiveness of one central component of the federal government's climate policy – a carbon pricing mechanism for reducing emissions.[408] It concluded that the current carbon price is insufficient to meet Canada's NDC targets, contributing to the country's failure to reach the 2030 goal (513 megatonnes) by 79 megatonnes.[409] The report recommended that Parliament imposed an additional carbon price in 2023 that would increase until 2030.[410] Catherine McKenna, then Canada's Minister of Environment and Climate Change, responded by saying the government had no intention of increasing the carbon price beyond the 2022 increase already planned.[411] While the government referenced other measures announced in June 2019, including tackling plastic pollution, planting more trees, and investing in clean technology, it did not announce a clear plan on how to close the emissions reduction gap.[412]

Provincial and territorial governments have also fallen short in their efforts to help meet Canada's mitigation targets. Experts have critiqued Ontario's environment plan, released in November 2018, for setting insufficient emissions reduction targets, inconsistent with keeping warming below 1.5°C; costing taxpayers twice as much as the federal carbon price, while having no rebates or incentives for low-income people; being insufficiently funded; and vague on timelines, plans, and accountability.[413] This plan was released the same year

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[408] "Closing the Gap: Carbon pricing for the Paris target," Parliamentary Budget Officer, 2019, https://www.pbo-dpb.gc.ca/en/blog/news/closing-gap-carbon-pricing-paris-target (accessed June 8, 2020).

[409] "Closing the Gap: Carbon pricing for the Paris target," Parliamentary Budget Officer, pp. 1-2, 11.

[410] "Closing the Gap: Carbon pricing for the Paris target," Parliamentary Budget Officer, p. 12.

[411] Aaron Wherry, "Here's what everyone seems to be missing in the PBO's climate policy math," CBC, June 15, 19, https://www.cbc.ca/news/politics/parliamentary-budget-officer-climate-carbon-tax-1.5175774 (accessed June 3, 2020); Joldon Lim, "Feds rule out increasing carbon tax after 2022 despite PBO report," ipolitics, June 13, 2019, https://ipolitics.ca/2019/06/13/feds-rule-out-increasing-carbon-tax-after-2022-despite-pbo-report/ (accessed June 3, 2020).

[412] *Ibid.*

[413] Shawn McCarthy, "Ontario to scale back climate-change goals," Globe and Mail, November 29, 2018, https://www.theglobeandmail.com/canada/article-ontario-to-scale-back-climate-change-goals/; Dave Sawyer and Seton Stiebert, "The Cost Implications of Ontario's Environment Plan to Reduce Greenhouse Gas Emissions," June 2, 2019, https://ontarioclimateplan.ca/wp-content/uploads/2019/06/Made-in-Ontario-Report-Draft-vF-June-2-19.pdf (accessed June 3, 2020); Sarah Buchanan, "Ontario's new climate change plan gets a failing grade," Environmental Defence, December 3, 2018, https://environmentaldefence.ca/2018/12/03/19341/ (accessed June 3, 2020); Environmental Commissioner of Ontario, "A Healthy, Happy, Prosperous Ontario 2019 Energy Conservation Progress Report," 2019, https://docs.assets.eco.on.ca/reports/energy/2019/why-energy-conservation.pdf (accessed June 3, 2020); Colleen Lynch, "A Look at Ontario's New Environment Plan," February 4, 2019, https://www.toronto350.org/a_look_at_ontarios_new_environment_plan (accessed June 3, 2020); "State of Ontario's climate policy is 'frightening,' environmental commissioner says," CBC, March 27, 2019, https://www.cbc.ca/news/canada/toronto/ontario-climate-policy-frightening-1.5073595 (accessed June 3, 2020).

the provincial government spent CAD$700 million to expand natural gas, fund tax exemptions for aviation and rail, and support tax cuts for colored fuel use in agriculture. [414] Ontario, meanwhile, is not on track to meet emissions reduction targets after cuts to programs intended to mitigate emissions contributed to a spike in the province's 2018 emissions. [415]

While British Columbia's 2018 plan, CleanBC, is a positive step for its overall emission reduction targets, environmental and policy groups consider that the plan's measures are insufficient to meet those targets. [416] As of 2018, the most recent year for which emissions data is available, British Columbia has made no progress in reducing emissions from 2007 levels, and instead has seen a six percent increase in emissions since 2007. [417] In late October 2019, British Columbia announced amendments to existing laws that will increase accountability through an independent oversight body and detailed tracking of carbon reduction efforts, as well as sector-specific emission reductions targets to help better

[414] Written by Vanessa Corkal and Philip Gass, "The (Public) Cost of Pollution: Ontario's fossil fuel subsidies," IISD, 2019, https://www.iisd.org/sites/default/files/publications/public-cost-of-pollution.pdf (accessed June 3, 2020).

[415] Colin D'Mello, "Ontario 'not likely' to achieve emissions targets under Ford: Auditor," CTV News, December 4, 2019, https://toronto.ctvnews.ca/ontario-not-likely-to-achieve-emissions-targets-under-ford-auditor-1.4714462 (accessed June 3, 2020); Mike Crawley, "Doug Ford's government has made 'next to no progress' on plan to cut carbon emissions: report," CBC, October 10, 2019, https://www.cbc.ca/news/canada/toronto/doug-ford-made-in-ontario-environment-plan-climate-change-1.5313763 (accessed June 3, 2020); Environmental Defense, Failure to Launch: A Progress Report on Ontario's Climate Change Actions," 2019, https://d36rd3gki5z3d3.cloudfront.net/wp-content/uploads/2019/10/ENVIRONMENTAL-DEFENCE-Report-Failure-To-Launch-A-Progress-Report-on-Ontarios-Climate-Actions.pdf?x19835 (accessed June 3, 2020).

[416] See, for example, Marc Lee, "BC's shiny new climate plan: A look under the hood," Policy Note, December 17, 2018, https://www.policynote.ca/clean-bc/ (accessed June 3, 2020); Jock Finlayson, Ken Peacock , "The messy mathematics of British Columbia's CleanBC plan," BIV, 2019, https://biv.com/article/2019/05/messy-mathematics-british-columbias-cleanbc-plan (accessed June 3, 2020); David Suzuki Foundation, "B.C. invests in climate and clean transportation, goes silent on methane pollution promise," February 19, 2019, https://davidsuzuki.org/press/b-c-invests-in-climate-and-clean-transportation-goes-silent-on-methane-pollution-promise/ (accessed June 3, 2020); Wilderness Committee, "New environment funding welcome but B.C. budget falls short of bold action required," February , 2018, https://www.wildernesscommittee.org/news/new-environment-funding-welcome-bc-budget-falls-short-bold-action-required (accessed June 3, 2020); Vanessa Corkal and Philip Gass, "Locked In and Losing Out: British Columbia's fossil fuel Subsidies," IISD, November 2019, https://www.iisd.org/sites/default/files/publications/locked-in-losing-out.pdf (accessed June 3, 2020); Karen Tam Wu, "After promising start, CleanBC still a long way from finish line," Pembina institute, August 20, 2019, https://www.pembina.org/op-ed/cleanbc-progress (accessed June 3, 2020); Hadrian Mertins-Kirkwood, "Heating Up, Backing Down: Evaluating recent climate policy progress in Canada," Canadian Centre for Policy Alternatives, https://www.policyalternatives.ca/sites/default/files/uploads/publications/National%20Office/2019/06/Heating%20Up%2C%20Backing%20Down.pdf (accessed June 3, 2020).

[417] Government of British Columbia, "Provincial Greenhouse Gas Emissions Inventory," undated, https://www2.gov.bc.ca/gov/content/environment/climate-change/data/provincial-inventory#:~:text=In%202018%2C%20British%20Columbia's%20gross,for%20our%20emission%20reduction%20targets. (accessed June 3, 2020).

assess progress and meet overall goals.[418] Regardless of the impact of existing mitigation measures, a 2020 report from the Canadian Centre for Policy Alternatives found that British Columbia will exceed its 2050 climate target by at least 227 percent if all proposed LNG projects go ahead.[419] The BC government also provides substantial financial support to the oil and gas sector in the province, including by establishing new subsidies and increased access to existing ones for the liquefied natural gas sector.[420]

Yukon's "Our Clean Future" climate plan commits to reducing GHG emissions by 30 percent from 2010 levels by 2030.[421] The territory plans to meet this target through increased renewable energy generation, using "cleaner fuels" for heavy transport, and offering mitigation incentives such as rebates for zero-emission vehicles and low-interest financing for housing retrofits.[422] The territory has also committed to working with industry to develop intensity-based emissions targets for mining—targets based on the amount of emissions generated per unit of production.[423] These targets, which will not be in place until 2022, leave scope for mines to increase production, and therefore emissions, as long as emissions per unit of production does not increase. The Yukon government told Human Rights Watch that its recent commitment to reaching net-zero by 2050 "addresses concerns that Yukon's total emissions could rise in the short-term under the intensity-based approach to mining."[424] The measures outlined in *Our Clean Future* will only result in three-quarters of the targeted emissions reduction, a gap, the government said it will address in 2024 through updated actions based on the territory's progress and new information that emerges.[425] It is unclear how the Yukon government will manage to address this gap, and by how much mining emissions will develop under the proposed

[418] Dirk Meissner, "B.C. climate plan changes hold government accountable, minister says," CBC, October 30, 2019, https://www.cbc.ca/news/canada/british-columbia/bc-climate-change-plan-amendments-1.5342082 (accessed June 3, 2020); Rob Shaw, "New bill mandates annual reports on B.C.'s climate pollution reduction," The Province, October 30, 2019, https://theprovince.com/news/politics/new-bill-mandates-annual-reports-on-b-c-s-climate-pollution-reduction/wcm/b1ee53c3-1922-4b21-8d64-a037435763ab (accessed June 3, 2020).

[419] David Hughes, "BC's Carbon Conundrum: Why LNG exports doom emissions-reduction targets and compromise Canada's long-term energy security," Canadian Centre for Policy Alternatives (July 2020), https://www.policyalternatives.ca/bc-carbon-conundrum (accessed July 16, 2020), p. 10.

[420] A 2019 report from IISD found that in 2017–18 total subsidies for fossil fuels were at least CAD$830 million. https://www.iisd.org/system/files/publications/locked-in-losing-out.pdf.

[421] Government of Yukon, "Our Clean Future," p. 13.

[422] Government of Yukon, "Our Clean Future," p. 15.

[423] Government of Yukon, "Our Clean Future," pp. 13 & 16.

[424] Correspondence with Sabrina Kinsella, Office of the Science Advisor, government of Yukon, September 22, 2020.

[425] Government of Yukon, "Our Clean Future," https://yukon.ca/sites/yukon.ca/files/env/env-our-clean-future.pdf

intensity-based regulation. Yukon's GHG emissions have increased by 11.8 percent between 2009 and 2017, and have only decreased by 1 percent since 1990.[426] Positively, in 2020, the government of Yukon committed to create a Clean Energy Act by 2023 that legislates their greenhouse gas reduction targets.[427]

Disproportionate Impacts of Climate Policies on First Nations: Carbon Pricing

There is growing consensus that carbon pricing is an efficient way to mitigate climate change and an essential aspect—though insufficient on its own—of the fight against climate change.[428] Carbon pricing policies typically increase the cost of fossil fuels, among other carbon-intensive commodities, thereby encouraging people to buy products that are less harmful to the climate.

Carbon prices can be used to make polluters pay for the negative consequence they impose on others, either through a tax or emission caps combined with a trading system. However, the current framework in Canada will ultimately do more harm than good for First Nations because it does not account for the disproportionate impact of carbon pricing on remote, Indigenous communities.

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[426] Government of Yukon, "Greenhouse gas emissions in Yukon," February 2020, https://yukon.ca/sites/yukon.ca/files/env-greenhouse-gas-emissions-yukon.pdf (accessed June 3, 2020); Canada Energy Regulator, "Provincial and Territorial Energy Profiles – Yukon," April 8, 2020, https://www.cer-rec.gc.ca/nrg/ntgrtd/mrkt/nrgsstmprfls/yt-eng.html (accessed June 3, 2020).

[427] Government of Yukon, "Our Clean Future: What We're Doing," https://yukon.ca/en/our-clean-future#what-we039re-doing (accessed October 2020).

428 Franziska Funke and Linus Mattauch, "Why is carbon pricing in some countries more successful than in others?," Our World in Data, August 10, 2018, https://ourworldindata.org/carbon-pricing-popular#note-4 (accessed June 3, 2020); OECD, "Effective Carbon Rates Pricing CO2 through Taxes and Emissions Trading Systems, 2016, https://www.oecd.org/tax/tax-policy/summary-effective-carbon-rates.pdf (accessed June 3, 2020); "What is a carbon price and why do we need one?," LSE, May 17, 2018, http://www.lse.ac.uk/GranthamInstitute/faqs/what-is-a-carbon-price-and-why-do-we-need-one/ (accessed June 3, 2020).

In 2016, the PCF introduced carbon pricing to mitigate climate change on a national level.[429] The federal carbon pricing scheme began in 2019 and currently, fully or partially, applies to Ontario, Saskatchewan, Alberta, and Manitoba (involuntarily), and Yukon and Nunavut (voluntarily).[430] British Columbia, Quebec, New Brunswick, Nova Scotia, Prince Edward Island, Newfoundland and Labrador, and the Northwest Territories have all devised their own plans for pricing carbon emissions that were deemed sufficiently stringent under the federal legislation.[431] Since 2008, British Columbia has had a carbon tax, while other provinces, including Quebec and Ontario, were the first to introduce cap-and-trade systems, though Ontario later scrapped theirs.[432] At time of writing, four provinces

[429] As part of its plan, Canada passed the Greenhouse Gas Pollution Pricing Act (GGPPA) in 2018, the legislation enacting the federal carbon price. Government of Canada, "How we're putting a price on carbon pollution," June 28, 2019, https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work/putting-price-on-carbon-pollution.html (accessed June 3, 2020); Greenhouse Gas Pollution Pricing Act (S.C. 2018, c. 12, s. 186), https://laws-lois.justice.gc.ca/eng/acts/G-11.55/ (accessed June 3, 2020). The carbon price in the GGPPA consists of two broad elements: (1) a charge on fossil fuels that will increase annually through 2022, payable by fuel producers or distributors; and (2) a trading system for industrial emitters (the OBPS). Essentially, the OBPS is a trading scheme that sets a threshold for industrial emissions. If a facility is under the threshold, it gets credits that it can sell or use in the future to pay for emitting over the threshold. For facilities over the threshold, they either (1) pay the carbon price; (2) remit a compliance unit; or (3) some combination of these two. A compliance unit can be the surplus credits mentioned above, federal offset credits, or other recognized units. Offset credits are credits given to facilities for a certain amount of CO_2 removed or reduced by an offset project. Right now, the only "other" units allowed are provincial offset units. Under the GGPPA provinces and territories have two options: design and implement a sufficiently stringent carbon pricing mechanism, or be subject to the federal scheme. Some provinces and territories accepted the federal scheme voluntarily, whereas Parliament forced others to comply in response to their lack or insufficient stringency of a pricing plan.

[430] Manitoba has proposed its own, lower carbon price, but it is not clear if the federal government will accept this plan. "A look at carbon prices in all provinces and territories," Energetic City, https://energeticcity.ca/2020/03/05/a-look-at-carbon-prices-in-all-provinces-and-territories/; "A look at carbon prices in all provinces and territories," Global News https://globalnews.ca/news/7348494/nb-ont-carbon-prices-bi-emitters-approved/; "Manitoba government changes course, plans to adopt its own carbon tax," The Globe and Mail, https://www.theglobeandmail.com/canada/article-manitoba-government-changes-course-adopts-carbon-tax/.

[431] Although Prince Edward Island has a sufficiently stringent fuel charge, the federal government will apply its OBPS to the province. Government of Canada, "How we're putting a price on carbon pollution." While the federal government approved New Brunswick's carbon price plan, concerns remain about whether the province's plan will actually curb emissions: while New Brunswick adopted the federal carbon price, the province also lowered provincial taxes so that consumers will not see the intended cost increase, and the province adopted a facility-based rather than industry-based emissions threshold for big emitters, which allows for a higher threshold in some cases than would be permitted under the federal system; https://globalnews.ca/news/7348494/nb-ont-carbon-prices-bi-emitters-approved/.

[432] Since that time, a new administration in Ontario cancelled the cap-and-trade system. Government of British Columbia, "British Columbia's Carbon Tax," undated, https://www2.gov.bc.ca/gov/content/environment/climate-change/planning-and-action/carbon-tax (accessed June 3, 2020); Government of Quebec, "The Carbon Market, a Green Economy Growth Tool!," undated, http://www.environnement.gouv.qc.ca/changementsclimatiques/marche-carbone_en.asp (accessed June 3, 2020); Government of Ontario, "Archived - Cap and trade in Ontario," September 30, 2016, https://www.ontario.ca/page/cap-and-trade-ontario (accessed June 3, 2020).

(Ontario, Saskatchewan, Alberta, and Manitoba) formally oppose the implementation of a carbon price. [433]

While carbon pricing is central to Canada's mitigation efforts, the current framework does not account for the disproportionate impact of increased carbon costs on Indigenous peoples. Carbon pricing increases the cost of most consumer goods, and unless mitigating efforts are taken, can have a greater impact on lower-income and marginalized populations who typically spend a high percentage of their income on carbon-intensive goods. [434] Indigenous households across Canada have lower average incomes than non-Indigenous households. [435]

Additionally, increasing the price of fuel has broader impacts on northern and remote First Nations, increasing living costs, including food prices. [436] A federal study of the potential impact of carbon pricing on households in Yukon found that Old Crow households faced

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[433] Government of Canada, "How we're putting a price on carbon pollution." Three provinces (Ontario, Alberta, and Saskatchewan) have legally challenged the federal government's authority to establish GHG emissions standards, and the Ontario and Saskatchewan cases are now before the Supreme Court of Canada, whose decision is expected in fall of 2020. Manitoba, New Brunswick and Quebec, are intervening at the Supreme Court to argue the law is unconstitutional. Reference re Greenhouse Gas Pollution Pricing Act, 2019 ONCA 544 http://www.ontariocourts.ca/decisions/2019/2019ONCA0544.htm (accessed June 3, 2020); 2019 SKCA 40; https://sasklawcourts.ca/images/documents/CA_2019SKCA040.pdf (accessed June 3, 2020); Reference re Greenhouse Gas Pollution Pricing Act, 2020 ABCA 74, https://www.canlii.org/en/ab/abca/doc/2020/2020abca74/2020abca74.html; "Carbon Pricing Encroaches on Provincial Powers," The Globe and Mail, https://www.theglobeandmail.com/canada/article-arguments-that-federal-carbon-pricing-encroaches-on-provincial-powers/; "Manitoba to Push Ahead with Carbon Tax Challenge in Court," Global News, https://globalnews.ca/news/6609742/manitoba-to-push-ahead-with-carbon-tax-challenge-in-court-says-premier-brian-pallister/.

[434] Karen Bubna-Litic and Nathalie J. Chalifour, "Are Climate Change Policies Fair to Vulnerable Communities? The Impact of British Columbia's Carbon Tax and Australia's Carbon Pricing Proposal on Indigenous Communities," Dalhousie Law Journal vol. 35, no. 1, 2012, p. 160.

[435] Statistics Canada, "Income," https://www150.statcan.gc.ca/n1/pub/89-645-x/2015001/income-revenu-eng.htm (accessed June 3, 2020).

[436] Working Group on Carbon Pricing Mechanisms Final Report, Government of Canada, 2016, http://publications.gc.ca/collections/collection_2016/eccc/En4-287-2016-eng.pdf (accessed June 3, 2020), p. 33; Karen Bubna-Litic and Nathalie J. Chalifour, "Are Climate Change Policies Fair to Vulnerable Communities?," pp. 154-158.

the greatest total direct and indirect pricing increases compared to rural and Whitehorse households. [437]

In general, fuel cost increases typically affect populations more in rural or remote locations where public transport is not readily available. [438] Further, securing adequate food—whether from the land or from the store—also comes at a high fuel cost due to fuel costs for transport. [439] Remote and northern Indigenous communities in Canada face additional fuel burdens as they are often cut off from the national energy grid and dependent on diesel to produce electricity and heat homes, with poor housing quality further increasing the fuel needed to heat homes. [440] Positively, the federal government committed CAD$20 million in 2019 to support some remote Indigenous communities in moving off diesel, often the only source of electricity. [441] The Clean Energy for Rural and Remote Communities program running from 2018-2024, which similarly provides CAD$220 million to support for communities transitioning off diesel, received over 400 applications requesting more than CAD$1 billion and is fully allocated supporting 88 projects in 131 communities, of which 123 are Indigenous communities. [442]

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[437] "Carbon Pricing in the Yukon: Potential Impact Analysis," Government of Yukon, https://yukon.ca/sites/yukon.ca/files/fin/fin-federal-carbon-pricing-analysis.pdf. The federal government conducted impact studies in all three territories but none in the provinces; "Carbon Pricing Analysis," Environment and Climate Canada, https://www.fin.gov.nt.ca/sites/fin/files/resources/nwt_carbon_pricing_analysis_by_eccc_final_feb_2018.pdf; Carbon "Pricing in Nunavut: Potential Impact Analysis," https://www.gov.nu.ca/sites/default/files/carbon_pricing_analysis_-_nunavut_-_jan_2018.pdf. Households in the three territories were projected to see an average annual cost increase of CAD$41 - CAD$45 per household for food purchases made from stores under a CAD$10/tonne carbon price; the carbon pricing system took effect in 2019 at $20/tonne, and rises $10/year up to $50/tonne in 2022. Letter from Matt Jones, ECCC, August 13, 2020.

[438] *Ibid.*; Karen Bubna-Litic and Nathalie J. Chalifour, "Are Climate Change Policies Fair to Vulnerable Communities?" pp. 166–67.

[439] Human Rights Watch interviews with Sam Hunter, Peawanuck, December 17, 2019; Ignace Gull, Chief, Attawapiskat, October 4, 2018; "Giving voice to food insecurity in a remote indigenous community in subarctic Ontario, Canada: traditional ways, ways to cope, ways forward," Public Health, vol. 13, no. 427 (2013), pp. 6-7; Chalifour and Bubna-Litic, "Are Climate Change Policies Fair to Vulnerable Communities?," pp 136, 155.

[440] Remote communities in Canada collectively consume more than 90 million litres of diesel fuel every year just for electricity generation. Dave Lovekin and Dylan Heerema, "Diesel, renewables, and the future of Canada's remote communities," Pembina Institute, January 15, 2019, https://www.pembina.org/blog/remote-microgrids-intro (accessed June 3, 2020); Chalifour and Bubna-Litic, "Are Climate Change Policies Fair to Vulnerable Communities?," pp, 136, 155.

[441] This funding allocation went to support projects in 25 communities. Natural Resources Canada, "Canada Launches Off-Diesel Initiative for Remote Indigenous Communities," February 13, 2019, https://www.canada.ca/en/natural-resources-canada/news/2019/02/canada-launches-off-diesel-initiative-for-remote-indigenous-communities.html (accessed June 2, 2020). There is a selection of other funding opportunities spread across various federal departments including Environment and Climate Change Canada, Natural Resources Canada, Crown-Indigenous Relations and Northern Affairs, and Indigenous Services—that support projects to reduce reliance on diesel, but much of this funding is focused on the territories as opposed to the provincial norths. See ,e.g., https://www.nrcan.gc.ca/sites/www.nrcan.gc.ca/files/energy/pdf/CERRC%20EN%20Webinar%20Mar72018.pdf (slide 3).

[442] Email correspondence with Jay Storfer, Natural Resources Canada, August 26, 2020.

Acknowledging that carbon pricing disproportionately impacts certain groups, the federal government has exempted some from all or part of the fuel charge, including farmers and fishers.[443] While farmers and fishers need not be registered to benefit from the exemption, farmers and fishers are defined as persons who carry on a farming or fishing business "with a reasonable expectation of profit."[444] First Nations who harvest in order to provide food for themselves and their family or community would not meet this definition unless also engaged in commercial sale of traditional food, an undertaking that is restricted by food safety regulations.[445] There is currently no similar exemption for Indigenous harvesters.

Positively, the federal government acknowledged the high-reliance of the territories on air transportation by exempting aviation fuel from carbon pricing.[446] This exemption, however, only applies in the territories and not in the provincial norths, where communities are equally reliant on air transport for basic goods. The federal government has also exempted remote power plant operators where fuel is used exclusively to generate electricity.[447]

Many First Nations members are also unlikely to benefit from carbon pricing proceeds under the current framework. To mitigate any regressive impact of the tax, Canada has implemented the Climate Action Incentive, which functions like a tax rebate.[448] Payments

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[443] Department of Finance, "Backgrounder: Targeted Relief for Farmers and Fishers, and Residents of Rural and Remote Communities," 2018, https://www.canada.ca/en/department-finance/news/2018/10/backgrounder-targeted-relief-for-farmers-and-fishers-and-residents-of-rural-and-remote-communities.html (accessed June 3, 2020).

[444] Greenhouse Gas Pollution Pricing Act (S.C. 2018, c. 12, s. 186), https://laws-lois.justice.gc.ca/eng/acts/G-11.55/page-1.html (accessed June 3, 2020); Government of Canada, "Definitions related to the fuel charge," 2020, https://www.canada.ca/en/revenue-agency/services/tax/technical-information/fuel-charge-definitions.html (accessed June 3, 2020).

[445] Corey Mintz, "The history of Food in Canada is the History of Colonialism," The Walrus, March 12, 2019, https://thewalrus.ca/the-history-of-food-in-canada-is-the-history-of-colonialism/ (accessed October 6, 2020); "Indigenous advocates calling for fewer restrictions on sharing of wild game," CBC, December 15, 2018, https://www.cbc.ca/news/canada/saskatchewan/indigenous-traditional-food-wild-meat-sharing-regulations-1.4947088 (accessed October 6, 2020). Food safety regulations also restrict the ability of First Nations people to donate wild meat to food banks. "Be Prepared to Handle Hunted Game," Food Banks Canada, 2020, https://www.foodbankscanada.ca/Safe-Food-Handling/Be-Prepared-to-Handle-Hunted-Game.aspx (accessed October 6, 2020).

[446] The exemption applies to aviation gasoline and aviation turbo fuel. Department of Finance, "Backgrounder: Targeted Relief for Farmers and Fishers, and Residents of Rural and Remote Communities."

[447] These operators are also free from the fuel charge on light fuel oil, including diesel, and marketable natural gas. Department of Finance, "Backgrounder: Targeted Relief for Farmers and Fishers, and Residents of Rural and Remote Communities;" Government of Canada, "Definitions related to the fuel charge."

[448] Government of Canada, "Line 45110 – Climate action incentive," 2020, https://www.canada.ca/en/revenue-agency/services/tax/individuals/topics/about-your-tax-return/tax-return/completing-a-tax-return/deductions-credits-expenses/line-45110-climate-action-incentive.html (accessed June 3, 2020).

to individuals are delivered through federal tax returns, and the government indicated that most people should receive more in rebates than they pay as a result of the fuel charge.[449] The federal government further offers a 10 percent increase to the baseline rebate for residents of rural and small communities, in recognition of their increased energy needs and reduced access to alternative transports.[450]

However, to receive the rebate, individuals must file a federal tax return, a method the federal government has acknowledged is ineffective for First Nations given legislated tax exemptions that mean many First Nations people on-reserve do not file federal tax returns.[451] Estimates suggest that at least 30 to 40 percent of eligible families on-reserve do not file tax returns and thus do not receive the tax rebate.[452]

A 2017 report prepared for the Canada Revenue Agency, found that awareness of available tax credits and benefits was "relatively limited" on-reserve and identified barriers to filing such as the cost of filing; limited financial literacy; limited computer or Internet access;

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[449] ECCC, "Estimated Results of the Federal Carbon Pollution Pricing System," 2018, https://www.canada.ca/content/dam/eccc/documents/pdf/reports/estimated-impacts-federal-system/federal-carbon-pollution-pricing-system_en.pdf (accessed June 3, 2020); Justin Trudeau, Prime Minister of Canada, "Government of Canada fighting climate change with price on pollution," October 23, 2018, https://pm.gc.ca/en/news/news-releases/2018/10/23/government-canada-fighting-climate-change-price-pollution (accessed June 3, 2020).

[450] Department of Finance Canada, "Backgrounder: Targeted Relief for Farmers and Fishers, and Residents of Rural and Remote Communities," 2018, https://www.canada.ca/en/department-finance/news/2018/10/backgrounder-targeted-relief-for-farmers-and-fishers-and-residents-of-rural-and-remote-communities.html (accessed June 3, 2020). This is also determined through the federal tax return. Eligible applicants indicate if their primary residence is located outside of a prescribed area on their tax return, and the rebate then includes the additional 10 percent. Government of Canada, "Find out if you qualify for the supplement for residents of small and rural communities," 2020, https://www.canada.ca/en/revenue-agency/services/tax/individuals/topics/about-your-tax-return/tax-return/completing-a-tax-return/deductions-credits-expenses/line-449-climate-action-incentive/qualify-for-the-supplement.html (accessed June 3, 2020).

[451] According to Canadian law, First Nations people who have status under the Indian Act are not liable for taxes on personal and real property on a reserve, including for any income earned on-reserve. Even where status First Nations earn income off-reserve, if it does not exceed the taxable income threshold they are not required to file. "Are Climate Change Policies Fair to Vulnerable Communities?" p. 160. The federal government has previously acknowledged that the tax rebate method was failing to reach those most in need, including First Nations families, in part because they did not file federal income tax. "There is some concern that the tax filing may act as an impediment to uptake, particularly among the on-reserve population," reads an August 2016 Employment and Social Development Canada briefing note obtained by CBC under the federal Access to Information Act. David McKie, "Many Indigenous families not applying for Canada child benefit: documents," CBC, July 1, 2017, https://www.cbc.ca/news/politics/canada-child-benefit-indigenous-1.4211545 (accessed June 3, 2020).

[452] Increasing Indigenous Benefit Take-Up in Canada, 2018 Federal Budget Submission, Revised Feb 13, 2018, http://prospercanada.org/getattachment/f4add5df-0edb-4883-b804-60661f500c56/Increasing-Indigenous-benefit-take-up-in-Canada.aspx. A CBC investigation found that the federal government hoped to increase the number of tax returns filed by Indigenous peoples by 10 percent in 2020. David McKie, "Many Indigenous families not applying for Canada child benefit."

lack of access to filing assistance in community; and difficulty assembling the required documents. [453]

First Nations people on-reserve who do not file do not receive the rebate, and thus face the negative impacts of climate change, including a decline of traditional food sources, while also shouldering higher expenses due to carbon pricing. [454]

The Canadian government has expanded two federal programs that aim to increase tax filing in First Nations and could, in the long term, help address this issue. [455] However, neither program is specific to the carbon tax and the federal government has failed to respond to concerns from First Nations about the rebate. [456]

In the September 2020 Speech from the Throne, the federal government committed to "work to introduce free, automatic tax filing for simple returns to ensure citizens receive the benefits they need." [457] This initiative could be a positive way to ensure that many infrequent filers receive much needed tax benefits, however it is not clear whether individuals who have never filed would be able to benefit, as the Canadian Revenue Agency may not have enough data to compile their paperwork.

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[453] Canada Revenue Agency, "The experiences of indigenous communities with tax filing," 2017, https://www.canada.ca/en/revenue-agency/services/about-canada-revenue-agency-cra/public-opinion-research-executive-summaries/experiences-indigenous-tax-filing.html (accessed June 3, 2020).

[454] When First Nations sign self-governing agreements, then the First Nation tax exemption no longer applies, and is phased out over time to allow members of the community to prepare for this change. Indigenous and Northern Affairs Canada, "Taxation," www.aadnc-aandc.gc.ca/eng/1100100022290/1100100022291 (accessed June 3, 2020). British Columbia, which passed the *Carbon Tax Act* in 2008, has stated that Indigenous peoples are exempt from carbon taxes, so long as certain conditions are met. "Exemption for First Nations: Provincial Sales Tax Act" Provincial Sales Tax (PST) Bulletin, British Columbia, http://www2.gov.bc.ca/assets/gov/taxes/sales-taxes/publications/pst-314-exemptions-first-nations.pdf (accessed June 3, 2020); "Sales to First Nations, and the Exempt Fuel Retailer Program" Ministry of Finance, http://www2.gov.bc.ca/assets/gov/taxes/sales-taxes/publications/mft-ct-002-sales-first-nations-exempt-fuel-retailer-program.pdf (accessed June 3, 2020).

[455] Department of Finance Canada, "Backgrounder: Climate Action and Indigenous Peoples," 2018, https://www.canada.ca/en/department-finance/news/2018/10/backgrounder-climate-action-and-indigenous-peoples.html (accessed August 4, 2020); Letter from Matt Jones, ECCC, August 13, 2020.

[456] ECCC told Human Rights Watch this has been a long-standing concern by First Nations and the federal government do not currently have an alternative model, Video conference with Dennis Price, Alexandre Harvey, Paul Martin, Leslie-Ann Robertson, ECCC, September 9, 2020.

[457] Government of Canada, "Speech from the Throne to open the Second Session of the Forty-Third Parliament of Canada," https://www.canada.ca/en/privy-council/campaigns/speech-throne/2020/stronger-resilient-canada.html (accessed October 2020).

Regardless, the rebate may not be enough to counteract its impacts on First Nations people's right to food. While the rebate increases annually as the carbon price increases, the amount is based on household size (as opposed to income), and so awards the same rebate to both high and low-income households. The rebate also does not account for the carbon tax's disproportionate impacts on remote First Nations where costs of transport, harvesting, and importing essential supplies are already high and likely to increase as fuel costs increase. [458]

British Columbia, by contrast, has implemented a carbon tax rebate that is based on both income and household members, therefore combatting any regressive impact of the tax. [459]

So far, Indigenous peoples have benefitted very little from the distribution of carbon pricing revenue. Currently, 10 percent of the carbon pricing proceeds are allocated to support climate change and energy cost reduction projects. Around 40 percent (CAD$153.46 million) of this amount is allocated to supporting small- and medium-sized businesses to undertake retrofit projects, just over 17 percent (CAD$67.9 million) has been allocated to a fund for municipalities, universities, schools, and hospitals to undertake energy efficiency projects, and less than two percent (CAD$7.3 million) has been allocated to support to First Nations and Métis Communities. [460] The government promised additional details on a carbon tax relief program for Indigenous peoples to be outlined in early 2019, but this program has yet to be developed. [461]

Since before the PCF's introduction, First Nations have called on the government to work with First Nations so as to "ensure equity in the allocation of these funds." [462] While

[458] Government of Canada, "Pricing pollution: how it will work," 2019, https://www.canada.ca/en/environment-climate-change/services/climate-change/pricing-pollution-how-it-will-work.html (accessed June 3, 2020).

[459] Government of BC, "Climate Action Tax Credit," May 21, 2020, https://www2.gov.bc.ca/gov/content/taxes/income-taxes/personal/credits/climate-action (accessed June 3, 2020).

[460] Email correspondence with Dennis Price, ECCC, September 25, 2020.

[461] Department of Finance, "Backgrounder: Climate Action and Indigenous Peoples," 2018, https://www.canada.ca/en/department-finance/news/2018/10/backgrounder-climate-action-and-indigenous-peoples.html (accessed June 3, 2020); Video conference with Dennis Price, Alexandre Harvey, Paul Martin, Leslie-Ann Robertson, ECCC, September 9, 2020.

[462] Assembly of First Nation, "Honouring Promises: 2019 Federal Election Priorities for First Nations and Canada," https://www.afn.ca/wp-content/uploads/2019/09/Honouring-Promises_ENG_Rev.pdf (accessed June 3, 2020).

distributing revenues to individuals will help move towards a progressive scheme, it is insufficient to mitigate the disproportionate impacts on First Nations. [463]

Governments should consider improving housing in remote communities, and direct payments as opposed to carbon tax rebates for on-reserve populations who often do not file income tax returns. Where carbon tax rebates are used, they should be targeted at individuals as opposed to households, and be administratively accessible.

[463] "Are Climate Change Policies Fair to Vulnerable Communities?" p. 161.

III. Canada's Domestic and International Human Rights Obligations

Through numerous human rights instruments, Canada is obligated to respect, protect, and fulfill a number of rights related to the food needs of Indigenous peoples in Canada, including the rights to food, health, culture, and a healthy environment in a non-discriminatory manner.[464] This includes the obligation not to take retrogressive measures, i.e. measure which will diminish the protection of their rights.

In the context of climate change, Canada has specific obligations with respect to these rights. In 2018, the UN Committee on Economic, Social and Cultural Rights (CESCR), the body of independent experts that monitors compliance with the International Covenant on Economic, Social and Cultural Rights, warned states that "a failure to prevent foreseeable human rights harm caused by climate change, or a failure to mobilize the maximum available resources in an effort to do so, could constitute a breach" of their human rights obligations.[465] The Committee reminded governments that their human rights obligations under the ICESCR should guide them in the design and implementation of measures to address climate change.[466] Other UN human rights treaty bodies have also recognized

[464] International Covenant on Civil and Political Rights, 16 December 1966, 999 U.N.T.S. 171, Can. T.S. 1976 No. 47, 6 I.L.M. 368 (entered into force 23 Mar. 1976, accession by Canada 19 May 1976); International Covenant on Economic, Social and Cultural Rights, 16 December 1966, 993 U.N.T.S. 3, Can. T.S. 1976 No. 46, 6 I.L.M. 360 (entered into force 3 Jan. 1976, accession by Canada 19 May 1976); International Convention on the Elimination of All Forms of Racial Discrimination, 21 December 1965, 660 U.N.T.S. 195, 5 I.L.M. 352 (entered into force 4 Jan. 1969, accession by Canada 14 Oct. 1970); Convention on the Rights of the Child, 20 November 1989, (entered into force 2 September, 1990, accession by Canada 13 Dec. 1991); Convention on the Rights of Persons with Disabilities, 13 Dec. 2006, (entered into force , accession by Canada 11 March 2010); United Nations Declaration on the Rights of Indigenous Peoples, Index: A/RES/61/295, 2 October 2007 (fully endorsed by Canada May 2016).

[465] Committee on Economic, Social, and Cultural Rights, "Climate change and the International Covenant on Economic, Social, and Cultural Rights," October 8, 2018, para 6, https://www.ohchr.org/en/NewsEvents/Pages/DisplayNews.aspx?NewsID=23691&LangID=E.

[466] *Ibid*., para 3.

states' affirmative obligation to take effective measures to prevent and redress climate change impacts. [467]

For example, the UN Human Rights Committee, in its legal guidance on the right to life under the International Covenant on Civil and Political Rights, has warned governments that "[i]mplementation of the obligations to respect and ensure the right to life, and in particularly life with dignity, depends, inter alia, on measures taken by States parties to preserve the environment and protect it against harm, pollution and climate change cause by public and private actors. [468] In February 2018, the Committee on the Elimination of Discrimination against Women adopted General Recommendation No. 37 on "Gender-related dimensions of disaster risk reduction in the context of climate change," which addresses examples of the disproportionate impacts of disasters on women and identifies many of the key climate change issues that governments should consider when implementing the Convention on the Elimination of All Forms of Discrimination Against Women. [469] The Committee on the Rights of the Child in its General comment No. 15 (2013) on the right of the child to the enjoyment of the highest attainable standard of health, identified climate change as "one of the biggest threats to children's health and exacerbates health disparities." [470]

Canada has also adopted the Paris Agreement, stating in its preamble that "[p]arties should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, [and] the rights of

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[467] For an overview of commentary about states' duties to address climate change in order fulfil their human rights obligations see Centre for International Environmental Law and The Global Initiative for Economic, Social and Cultural Rights, "States' Human Rights Obligations in the Context of Climate Change," 2018, https://www.ciel.org/wp-content/uploads/2018/01/HRTBs-synthesis-report.pdf (Accessed June 3, 2020); Centre for International Environmental Law and The Global Initiative for Economic, Social and Cultural Rights, "States' Human Rights Obligations in the Context of Climate Change: 2019 Update," 2019, https://www.ciel.org/wp-content/uploads/2019/03/HRTB-Feb.-2019-update-2019-03-25.pdf (accessed June 3, 2020); Centre for International Environmental Law and The Global Initiative for Economic, Social and Cultural Rights, "States' Human Rights Obligations in the Context of Climate Change: 2020 Update," 2020, https://www.ciel.org/wp-content/uploads/2020/03/States-Human-Rights-Obligations-in-the-Context-of-Climate-Change_2020-Update.pdf (accessed June 3, 2020).

[468] Human Rights Committee, General Comment 36 (2018) on article 6, on the right to life, October 30, 2018, para. 62, UN Doc. CCPR/C/CG/36. At time of publication, the Human Rights Committee is also seized with a complaint from Torres Strait Islanders, alleging that Australia's contribution to emissions, together with its failure to establish adequate adaptation measures gives rise to violations of the ICCPR, specifically the right to life (article 6), the right to be free of arbitrary interference with privacy, family and the home (article 17) and the right to culture (article 27).

[469] CEDAW Committee, General Recommendation 37, March 13, 2018, UN Doc. CEDAW/C/CG/37.

[470] CRC Committee, General Recommendation 15 (2013) on the right of the child to the enjoyment of the highest attainable standard of health (art. 24), April 17, 2013, UN Doc. CRC/C/CG/15.

indigenous peoples."[471] The Agreement also recognizes that adaptation action should be guiding by knowledge of indigenous peoples.[472] Parties to the Paris Agreement have also established the Local Communities and Indigenous Platform that is developing further guidance to governments on how to protect Indigenous peoples' rights when implementing the Agreement.[473]

Right to Food

The right to food is a right in and of itself, and a component part of the right to an adequate standard of living.[474] Canada is subject to a number of international treaty obligations to ensure the right to food for specific groups, including children, people who are pregnant or breastfeeding, and people with disabilities.[475]

CESCR has said that the right to food is "realized when every man, woman and child, alone or in community with others, have physical and economic access at all times to adequate food or means for its procurement."[476] The right has four main components: availability, accessibility, adequacy, and sustainability, which require that food be available "in a quantity and quality sufficient to satisfy the dietary needs of individuals, free from adverse substances, and acceptable within a given culture," and that it be accessible "in ways that are sustainable and that do not interfere with the enjoyment of other human rights."[477] The UN Special Rapporteur on the Right to Food has used this guidance to articulate the right to food as "the right to have regular, permanent and unrestricted access, either directly or by means of financial purchase, to quantitatively and qualitatively adequate and sufficient

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[471] Paris Agreement, adopted December 12, 2015, entered into force November 4, 2016, ratified by Canada on October 5, 2016, https://unfccc.int/sites/default/files/english_paris_agreement.pdf, preamble (accessed July 31, 2020).

[472] Ibid, Article 7.5.

[473] For more information on relevant COP decisions related to Indigenous peoples see International Indigenous Peoples' Forum on Climate Change and Center for International Environmental Law, Indigenous Peoples and Traditional Knowledge in the Context of the UN Framework Convention on Climate Change, 2019 update, https://www.ciel.org/wp-content/uploads/2019/08/Indigenous-Peoples-and-Traditional-Knowledge-in-the-Context-of-the-UNFCCC-2019-Update.pdf (accessed July 31, 2020).

[474] UN Food and Agriculture Organization, "The right to food within the international framework of human rights and country constitutions," 2014, http://www.fao.org/3/a-i3448e.pdf (accessed September 11, 2019).

[475] UN Convention on the Rights of the Child, Art. 27 (3), UN Convention on the Elimination of Discrimination Against Women, Art. 12 (2); UN Convention on the Rights of Persons with Disabilities, Art. 25 (f) and 28 (1).

476 United Nations Committee on Economic, Social and Cultural Rights (CESCR), General Comment No. 12, The Right to Adequate Food, U.N. Doc. E/C.12/1999/5 (1999), para. 6.

[477] CESCR, General Comment 12: The Right to Adequate Food," May 12, 1999, para 8. UN Office of the High Commissioner of Human Rights, "Special Rapporteur on the Right to Food," https://www.ohchr.org/EN/Issues/Food/Pages/FoodIndex.aspx.

food corresponding to the cultural traditions of the people to which the consumer belongs, and which ensures a physical and mental individual and collective, fulfilling and dignified life free of fear." [478]

States' obligations under the International Covenant on Economic, Social and Cultural Rights are subject to progressive realization, however there are also minimum core obligations, which governments are obliged to fulfill immediately. For example, the obligation of non-discrimination means that states must not discriminate in access to food as well as to means and entitlements for its procurement, on the grounds of race, colour, sex, language, age, religion, political or other opinion, national or social origin, property, birth or other status. [479]

States are generally prohibited from taking retrogressive measures, i.e. deliberate measures which result in the deterioration of current level of protection of the right to food. [480]

When governments fail to address a decline in rights standards attributable to their policy choices, such inaction is likely to give rise to a violation of their obligations. Not maintaining records in order to monitor trends, when it already has demonstrated it has the capacity and resources to do so, or failing to do so transparently, is one way that a government can fall short of its international rights obligations. [481]

In relation to climate change, the 2015 report of the UN Special Rapporteur on the Right to Food recommended that "Policy coherence at the international level be ensured by fostering cooperation between the parties to the UN Framework Convention on Climate Change and other international treaties relevant to climate change and food security, while providing a human rights approach in the entire agenda to promote climate justice and the right to food." [482]

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[478] Report of the Special Rapporteur on the Right to Food, UN Doc. A/HRC/7/5, January 10, 2008, para. 17.

[479] ICESCR, Article 2; CESCR, General Comment 12, para 18.

[480] UN Office of the High Commissioner of Human Rights, "Special Rapporteur on the Right to Food;" CESCR General Comment No. 3, The nature of states parties obligations (Art. 2, par.1), 14/12/90.Para 9; CESCR, General Comment No. 13, para. 45.

[481] CESCR General Comment No, 3, para 11.

[482] "Promotion and protection of human rights: human rights questions, including alternative approaches for improving the effective enjoyment of human rights and fundamental freedoms," United Nations, A/70/287 (2015).

Canada has also signed the UN Food and Agriculture Organization's (FAO) 1996 Rome Declaration, which specifically sets food security as an objective, adding: "governments, in partnership with all actors of civil society, as appropriate, will: (a) Develop and periodically update, where necessary, a national food insecurity and vulnerability information and mapping system, indicating areas and populations, including at local level, affected by or at-risk of hunger and malnutrition, and elements contributing to food insecurity..."

Subsequent voluntary guidelines issued by the FAO set out further specifics on mapping food insecurity for specific vulnerable populations and establishing "food safety nets to protect those who are unable to provide for themselves" and articulates all the guidelines explicitly under the "right to adequate food." [483]

Right to Health

The right to the highest attainable standard of physical and mental health is enshrined in numerous international treaties binding Canada, including the ICESCR and the CRC. [484] Fulfillment of the right to health requires a holistic approach, as the right to health is "an inclusive right extending not only to timely and appropriate health care but also to the underlying determinants of health, such as access to safe and potable water and adequate sanitation, an adequate supply of safe food, nutrition and housing, healthy occupational and environmental conditions, and access to health-related education and information." [485]

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[483] "Intergovernmental Working Group for the Elaboration of a Set of Voluntary Guidelines to Support the Progressive Realization of the Right to Food in the Context of National Food Security," Food and Agriculture Organization, http://www.fao.org/3/J1444E/J1444E.htm.

[484] Among other human rights instruments, the Universal Declaration of Human Rights, the International Covenant on Economic, Social and Cultural Rights (CESCR), the Convention on the Rights of the Child, the Convention on the Elimination of All Forms of Discrimination against Women, and the Declaration on the Rights of Indigenous Peoples oblige states to respect, promote, protect and fulfil the right to health. International Covenant on Economic, Social and Cultural Rights, Article 12. See also, HRC, Analytical study on the relationship between climate change and the human right of everyone to the enjoyment of the highest attainable standard of physical and mental health. A/HRC/32/23. (2016).

[485] CESCR, General Comment No. 14: The Right to the Highest Attainable Standard of Health (Art. 12), E/C.12/2000/4. (2000), para 11. Full discharge of the right to health also entails "timely and appropriate prevention, health promotion, curative, rehabilitative and palliative services," as well as the "implementation of programmes that address the underlying determinants of health." Committee on the Rights of the Child, General Comment No. 15 (2013) on the right of the child to the enjoyment of the highest attainable standard of health (art. 24), UN Doc CRC/C/GC/15, para. 2.

States have an obligation to ensure that health facilities, goods, and services are available and accessible to everyone without discrimination, and are culturally appropriate.[486] The CESCR has stated that a "violation of the obligation to fulfill" the right to health can occur when there is "insufficient expenditure or misallocation of public resources which results in the non-enjoyment of the right to health by individuals or groups."[487]

In respect of Indigenous communities, human rights standards further recognize that health has a collective dimension, encompassing ties to culture, community, and the land.[488] As a result, fulfilment of the right to health for Indigenous peoples requires not only provision of culturally appropriate health services, but also protection of traditional sources of nutrition and medicine, as well as protection of the relationship between Indigenous peoples and their lands and sources of nutrition.[489]

The right to health of Indigenous peoples is also inextricably linked to self-determination, requiring that states provide "resources for [I]ndigenous peoples to design, deliver and control" their own health services.[490]

The right to health also requires action to prevent, to the greatest extent possible, the foreseeable negative impacts of climate change.[491] Failing to take affirmative measures, in the form of mitigation and adaptation, to protect those most at risk of negative health impacts from climate change, such as Indigenous peoples, would constitute a breach of a state's human rights obligations.[492]

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[486] CESCR, General Comment No. 14, para 12.

[487] CESCR General Comment No. 14, para. 52. The SR on health, concluding a country visit to Canada in 2018, notes the particular need for the Canadian government to develop culturally appropriate responses and address underlying determinants of health inequalities for Indigenous peoples in Canada. UN Special Rapporteur on the right of everyone to the enjoyment of the highest attainable standard of physical and mental health Mr. Dainius Pūras, Preliminary Observations – Country visit to Canada (2018), https://www.ohchr.org/EN/NewsEvents/Pages/DisplayNews.aspx?NewsID=23896&LangID=E .

[488] CESCR, General Comment No. 14, para. 27.

[489] CESCR, General Comment No. 14, para. 27; United Nations Declaration on the Rights of Indigenous Peoples, Articles 25 and 26.

[490] CESCR, General Comment No. 14, para. 27. When it comes to the health of Indigenous youth, Canada also has particular human rights obligations under the Convention on the Rights of the Child (CRC). This binding treaty calls on states parties, like Canada, to ensure to the maximum extent possible the survival and development of the child and to realize the child's right to health. UN Convention on the Rights of the Child, Articles 6 and 24.1.

[491] OHCHR, Key Messages on Human Rights and Climate Change (2015), https://www.ohchr.org/Documents/Issues/ClimateChange/KeyMessages_on_HR_CC.pdf.

[492] *Ibid.*; Committee on the Rights of the Child, General Comment No. 15, para. 50.

Right to Culture

Indigenous peoples have the right to practice and revitalize their cultural traditions. [493] This right encompasses broad protection for Indigenous peoples' traditional lands and resources. [494] The CESCR explained:

> The strong communal dimension of [I]ndigenous peoples' cultural life is indispensable to their existence, well-being and full development, and includes the right to the lands, territories and resources which they have traditionally owned, occupied or otherwise used or acquired. Indigenous peoples' cultural values and rights associated with their ancestral lands and their relationship with nature should be regarded with respect and protected, in order to prevent the degradation of their particular way of life, including their means of subsistence, the loss of their natural resources and, ultimately, their cultural identity. States parties must therefore take measures to recognize and protect the rights of indigenous peoples to own, develop, control and use their communal lands, territories and resources, and, where they have been otherwise inhabited or used without their free and informed consent, take steps to return these lands and territories. [495]

Indigenous peoples have the right "to act collectively to ensure respect for their right to maintain, control, protect and develop their cultural heritage," including their Indigenous knowledge. [496]

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[493] The right to culture – and the right to take part in culture – is recognized under Article 15 of the ICESCR and Article 27 of the ICCPR. Article 27 specifically stipulates that persons belonging to ethnic, religious or linguistic minorities "shall not be denied the right, in community with other members of their group, to enjoy their own culture." The UN Declaration on the Rights of Indigenous Peoples further affirms that states are under a positive obligation to protect Indigenous peoples' full enjoyment of their human rights either as individuals or as a collective, including the right to culture. See, e.g., UN Declaration, Article 8 (prohibiting forced assimilation of Indigenous culture) and Article 11 (protect Indigenous peoples "right to practice and revitalize their cultural traditions and customs."). The Declaration also underlines the particular importance of maintaining cultural connection for children. UN Declaration, Article 14.3.

[494] UN Declaration on the Rights of Indigenous Peoples, Articles 25 and 26. See also, Inter-American Commission on Human Rights, Missing and Murdered Indigenous Women in British Columbia, Canada, OEA/Ser.L/V/II. Doc.30/14, 21 December 2014, para. 117.

[495] CESCR, General Comment No. 21 Right of everyone to take part in cultural life (art. 15, para. 1 (a), of the International Covenant on Economic, Social and Cultural Rights), E/C.12/GC/21 (2009), para 36.

[496] CESCR, General Comment No. 21, para 37.

States are obligated to respect and protect Indigenous cultural heritage "in economic development and environmental policies and programmes."[497] States are also obligated to respect and protect Indigenous "cultural productions," such as Indigenous knowledge and "natural medicines," including protection from illegal or unjust exploitation of their lands, territories and resources by State entities or private or transnational enterprises and corporations.[498]

Right to a Healthy Environment

A safe, clean, healthy, and sustainable environment is necessary for the full enjoyment of a range of human rights, including the rights to life, health, food, water, and culture.[499] It is also a right in and of itself, recognized in several regional human rights instruments and many national constitutions.[500] The Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment has identified the substantive elements of this right to include a safe climate, clean air, clean water and adequate sanitation, healthy and sustainably produced food, non-toxic environments in which to live, work, study and play, and healthy biodiversity and ecosystems.[501] Regarding climate change, states have obligations to protect human rights from environmental harm including through emissions reduction.[502]

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[497] CESCR, Op.Cit., para 50(b).

[498] CESCR, General Comment No. 21, para 50(c).

[499] Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, A/73/188, http://srenvironment.org/sites/default/files/Reports/2018/Boyd%20Knox%20UNGA%20report%202018.pdf.

[500] Since the UN Conference on the Human Environment (Stockholm Declaration) of 1972 the right to a healthy environment has gained widespread, global recognition, and more than 150 states have established legal recognition of this right. Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, A/73/188, Paras 28-36. Canada is one among only a handful of states that do not officially recognize the right to a healthy environment in domestic legislation. http://srenvironment.org/. Ontario, Quebec and the three territories recognize the right in environmental legislation. https://davidsuzuki.org/wp-content/uploads/2013/11/history-right-healthy-environment-canada.pdf.

[501] Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, A/74/161 (2019), para 43.

[502] Report of the Special Rapporteur on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, A/74/161; Report of the Independent Expert on the issue of human rights obligations relating to the enjoyment of a safe, clean, healthy and sustainable environment, John H. Knox, A/HRC/25/53 (2013), https://undocs.org/en/A/HRC/25/53; UN Framework Convention on Climate Change (1992). The Human Rights Committee has stated that fulfilling the obligation to respect and protect the right to life requires governments to take measures "to preserve the environment and protect it against harm, pollution and climate change …." (Emphasis added.) UN Human Rights Committee, "General Comment No. 36 (2018) on article 6 of the International Covenant on Civil and Political Rights, on the right to life," October 30, 2018, CPR/C/GC/36, para. 62.

Recommendations

To the Government of Canada

- Set and implement ambitious greenhouse gas emissions reduction goals in line with the best available science, taking into account obligation not to further increase food poverty, in particular for those populations most affected, such as Indigenous peoples.
- Set an ambitious new Nationally Determined Contribution (NDC) that aligns emissions reduction targets with the imperative to keep the increase of global average temperature no higher than 1.5°C above pre-industrial levels and which explicitly references the rights of Indigenous peoples in line with the preamble of the Paris Agreement. The impact of Covid-19 should not be used as a pretext to unreasonably delay fulfilling obligations under the Paris Agreement, such as the timely submission of the new NDC.
- Ensure that Covid-19 stimulus packages support a just transition towards renewable energy, including prioritizing First Nations.
- In line with the obligation to prevent foreseeable harms from climate change, refrain from entrenching fossil fuel dependence and promoting further fossil fuel development through the use of tax exemptions, subsidies, and other forms of financial support for fossil fuel companies.
- Ensure meaningful participation of, and partnership with, First Nations, including women, youth, and older people, in the design and implementation of Canada's climate change policies and ensure that any action to address climate change is in-line with human rights obligations, including the UN Declaration on the Rights of Indigenous Peoples. In particular, ensure that climate change policies protect marginalized populations, including Indigenous peoples, older people, women, children, and people with chronic diseases, already most impacted by climate change.
- Enable meaningful participation of First Nations in the federal carbon pollution pricing system.
- Publicly acknowledge the right to food as a basic human right, and part of the human right to an adequate standard of living, and accept the duty to ensure that nobody in Canada has to go hungry.
- Support Indigenous-led food security initiatives such as community freezers and community garden projects.

- Recognize that Indigenous knowledge systems about climatic conditions and their impacts on traditional food sources are relevant to the realization of the right to food.
- Co-develop with First Nations long-term, sufficient, predictable, and sustainable funding programs to respond to climate change impacts on infrastructure (including winter roads), food supply, and health.

To Environment and Climate Change Canada

- Ensure the meaningful participation of and partnership with First Nations in the design and implementation of Canada's climate change policies, including the 2020 NDCs and Covid-19 stimulus packages.
- Revise Canada's 2030 target to bring emissions reductions in line with what the IPCC says is necessary to prevent a global temperature rise above 1.5 degrees and to meet Canada's commitment to reach net zero emissions by 2050.
- Revise the federal carbon tax system to ensure that First Nations benefit from equitable revenue-sharing and those on reserve can easily access the equivalent of a tax rebate and that revenue sharing benefits First Nations.
- Ensure the meaningful participation of and partnership with First Nations in the design and implementation of Canada's climate change adaptation policies, including by:
    - Ensuring consistent and long-term funding and support for Indigenous-led programs to monitor climate change impacts on the realization of the rights to food and health, in line with human rights obligations and the UN Declaration on the Rights of Indigenous Peoples, including through the expansion of the Indigenous Guardians Pilot Program.
    - Creating a comprehensive framework of Indigenous-led adaptation policies and programs to address impacts of climate change on Indigenous food poverty and health.

To Crown-Indigenous Relations and Northern Affairs Canada

- Monitor the efficacy of the Nutrition North Canada subsidy, including impacts of the 2018 reforms, and revise the program to ensure that:
    - Those most in need can access the subsidies and will be able to afford healthy and nutritious food in community stores or by ordering from the nearest major city.

    - Specific impacts of climate change on food poverty in eligible First Nations are assessed and considered in determination of subsidies.
- Consider expanding the Nutrition North subsidy program eligibility criteria to support food banks in remote and northern communities.
- Ensure that the promised Northern-based compliance and audit review committee is developed in meaningful partnership with northern Indigenous communities and addresses outstanding concerns about the lack of transparency and accountability regarding how retailers and suppliers pass on the NNC subsidy to consumers.
- Work with Environment and Climate Change Canada to fund and support comprehensive Indigenous-led monitoring of climate change impacts on the realization of the rights to food and health.
- Collaborate with Environment and Climate Change Canada to create a comprehensive framework of Indigenous-led adaptation policies and programs to address impacts of climate change on Indigenous food poverty and mental health.
- Work with Environment and Climate Change Canada to fund and support comprehensive (and self-determined) Indigenous climate solutions, including those that relate to upholding their rights to food, water, and health.
- Respect Indigenous peoples' decision-making authority over their traditional territories and harvesting resources through appropriate measures, for example: co-management of natural resources; increased protection of areas having high importance for cultural and harvesting purposes, at the direction of, and under the leadership of Indigenous peoples; and the timely resolution of comprehensive and specific land claims.

To Health Canada

- Collaborate with Environment and Climate Change Canada to develop a plan for Indigenous-led monitoring of climate change impacts on the rights to food and health and to create a comprehensive framework of Indigenous-led adaptation policies and programs to address impacts of climate change on Indigenous food poverty and mental health.
- Improve access to mental health care and psychosocial support on the basis of free and informed consent in First Nations, including by allocating targeted funding for community-based services, filling any healthcare worker vacancies in First Nations, and training Indigenous community members as counselors.
- In collaboration with the Ministry of Education, establish a national school food program to provide healthy food in all public schools, with a particular focus on

ensuring that First Nations children have prompt access to the program and are provided with traditional or other culturally appropriate food.
- Promote programs serving traditional or other culturally sensitive food at hospitals and other institutions.

To Agriculture and Agri-Food Canada

- Implement the Food Policy to address the impacts of climate change on Indigenous food poverty. In collaboration with First Nations and other relevant ministries, develop a plan for monitoring climate change impacts on rights to food and health.

To Provincial and Territorial Governments

- Ensure the meaningful participation of First Nations in the design and implementation of climate change adaptation and mitigation policies.
- In collaboration with First Nations, develop a plan for monitoring climate change impacts on rights to food, health, and culture. Give independent provincial or territorial human rights bodies a mandate to oversee monitoring and ensure transparency and accountability.
- Working with the federal government, provide financial and technical support to First Nations to be able to respond to climate change impacts on infrastructure (including winter roads), food supply, and health.
- In line with the obligation to prevent foreseeable harms from climate change, refrain from using tax exemptions, subsidies, and other forms of financial incentives to support fossil fuel development.

To the Government of the Yukon

- Work to rapidly implement robust, regular monitoring of food insecurity impacted by climate change, including in First Nations, as committed to in the Our Clean Future plan.

To the Government of Ontario

- In line with previous efforts to build climate change monitoring capacity in First Nations, and in collaboration with First Nations, develop a plan for monitoring climate change impacts on rights to food, health, and culture and ensure its implementation.

To the British Columbia Government

- Revise the provincial carbon tax system so that First Nations on-reserve can quickly and easily access the equivalent of the Climate Action Tax Credit. Ensure that revenue sharing from the carbon tax benefits Indigenous communities, for example by protecting biodiverse carbon stores, supporting Indigenous agriculture programs, or funding Indigenous energy efficiency programs.
- Ensure that the 2020 provincial Adaptation Strategy includes Indigenous-led monitoring of climate change impacts on the rights to food and health and provide technical support enabling First Nations to develop adaptation policies.

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“My Fear is Losing Everything”

The Climate Crisis and First Nations’ Right to Food in Canada

Canada, one of the world’s leading greenhouse gas emitters, is contributing to a climate crisis that impacts the rights of people around the globe. Indigenous peoples in First Nations are among those most impacted in the country. Yet the Canadian government is not adequately supporting First Nations’ efforts to adapt to the mounting crisis and is failing to do its part to reduce the global greenhouse gas emissions that are driving it.

“My Fear is Losing Everything” finds that climate change impacts—including more extreme weather, thawing permafrost, reduced snow and ice, and more wildfires—are depleting First Nations’ traditional food sources, increasing the danger and difficulty of harvesting, driving up the cost of imported alternatives, and contributing to a growing problem of food poverty and related negative health impacts.

These impacts are particularly acute for children, older people, and people with chronic diseases whose health conditions can make a healthy diet all the more critical. Climate change impacts on traditional food sources also affect First Nation’s abilities to practice and maintain their cultures, resulting in significant impacts on mental health and wellbeing. With Canada warming at about twice the global average, the worst is yet to come.

It is imperative for the Canadian government to adequately support First Nations’ efforts to adapt to climate change and take urgent action to reduce global greenhouse gas emissions.

Weenusk First Nation member, Mike Wabano, sets up camp for caribou hunting on a frozen river near Peawanuck, December 14, 2019. As a result of warming temperatures, ice and snow cover is often thinner and more unstable.