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Nutritional Science, Health, and Changing Northern Environments

Liza Piper

The boundaries of “northern Canada” have never been universally defined. For some, the North begins at the southern limit of discontinuous permafrost; for others, it embraces the territories (the Yukon, Northwest Territories, and Nunavut), but not necessarily the provincial norths (the northernmost regions of some of Canada’s ten provinces); for others, it is confined to the High Arctic—the northernmost part reaches Ellesmere Island, or the Arctic Archipelago.¹ To further complicate matters, relations between residents of the North and the state historically varied depending on whether one was First Nations (Indian), Métis, Inuit (Eskimo), or non-aboriginal.² For instance, the federal Indian Act (the earliest precedents to this act lay in the Canada of the 1850s, i.e. present-day Ontario and Quebec) applied only to First Nations and some Métis people, not to the Inuit. Finally, the treaties signed by the federal government with northern aboriginal populations governed relationships between northern peoples, their lands, and the state.

However, much of the North remained outside of treaty areas for much of the twentieth century. Specifically, most aboriginals living in the Yukon Territory did not have a treaty agreement with the federal government, even though they called for such a settlement in the first decade of the twentieth century.³ Aboriginals who lived to the east of Treaty 11 (in the central and eastern Arctic), and who were predominantly Inuit, likewise did not have land claim or treaty settlements with the federal government until the creation of Nunavut. Even for those who lived in the lands ceded by Treaty 11, the treaty process was rushed and the federal government ultimately failed to meet its obligations under that document. Claims to Treaty 11 lands thus remained unresolved.⁴

The author gratefully acknowledges the Gwich’in Social and Cultural Institute and the Inuvialuit Cultural Resource Centre for granting access to unpublished interview transcripts with Gwich’in and Inuvialuit elders as part of the research for this project. The Social Sciences and Humanities Research Council of Canada and the Killam Trusts funded this research.

- 1 The first is the definition of the “North” employed by the Social Sciences and Humanities Research Council of Canada; the second applies to most works of history on the North; the third is a view that I have heard expressed most commonly by physical research scientists who conduct field work in northern Canada.
- 2 The misapplication of the term “Indian” is well known; “Eskimo” was the name given to the Inuit by First Nations, and means “eater of raw meat,” where “Inuit,” which means “the people,” is the name they use for themselves.
- 3 Kenneth S. Coates, *Best Left as Indians: Native-White Relations in the Yukon Territory, 1840-1973* (Montreal-Kingston: McGill-Queen’s University Press, 1991), 162-4.
- 4 A subject I have explored in brief in *The Industrial Transformation of Subarctic Canada* (Vancouver: UBC Press, 2009).

From this almost impossibly complicated mix of people, land, and government, it is nevertheless possible to historically understand Canada's North as a region primarily comprised of the three northern territories and the provincial norths. It is the only part of Canada where the aboriginal population has either remained in the majority or is a significant and powerful minority.⁵ Nature in the North is equally varied, although its high latitudes lend important continuity to the length of daylight and the annual transitions from ice and snow to water and land, and back again. Canada's northern environments range from expansive tundra (or the "Barrens"), to the extensive coastline of the Arctic Archipelago, the boggy muskeg of the Hudson Bay lowlands, the glaciated mountain ranges of the Yukon, and the spectacular Peace-Athabasca freshwater delta.

This essay is drawn from a larger research project that examines this expansive, varied, and complex region of Canada in the nineteenth and twentieth centuries.⁶ The research takes ill health and disease in this period as its point of departure, and asks how these were linked to changed relations between people and the rest of northern nature. Diet and food figure prominently in these relations: northerners harvested the land for food—not through agriculture, but rather by relying on hunting (large game animals, marine mammals, smaller furbearers, and a range of waterfowl), fishing, and consuming a wide range of plants and berries.⁷ The health of northern lands and waters, and the health of northern people were closely intertwined, with food acting as a key intersection of people's bodies and the rest of nature.⁸ This essay explores changing nutrition across the Canadian North in the twentieth century and the impacts these changes had on relations between northerners and the federal government.⁹ Specifically, I examine how,

5 At present, aboriginal people are in the minority in the Yukon, but make up approximately half the population in the Northwest Territories, and 85 percent of the population of Nunavut.

6 Other findings from this research have been published in Liza Piper and John Sandlos, "A Broken Frontier: Ecological Imperialism in the Canadian North," *Environmental History* 12, no. 4 (2007): 759-95; Liza Piper, "Chronic Disease in the Yukon River Basin, 1890-1960," in *Locating Health: Historical and Anthropological Investigations of Place and Health*, ed. Erika Dyck and Christopher Fletcher (London: Pickering & Chatto, 2011), 129-49.

7 For details on agriculture, as limited as it was, see Piper and Sandlos, "A Broken Frontier," 775-81.

8 I have explored these ideas in greater detail in Liza Piper, "Industrial Fisheries and the Health of Local Communities in the 20th Century Canadian Northwest," in *Aboriginal History: A Reader*, ed. Kristin Burnett and Geoffrey Read (Oxford University Press, forthcoming). There is, of course, a much wider body of literature on environment and health, which includes important works such as Linda Lorraine Nash, *Inescapable Ecologies: Environment, Disease, and Culture in the History of California* (Berkeley: University of California Press, 2006); John R. McNeill, *Mosquito Empires: Ecology and War in the Greater Caribbean, 1620-1914* (Cambridge: Cambridge University Press, 2010); Gregg Mitman, "In Search of Health: Landscape and Disease in American Environmental History," *Environmental History* 10, no. 2 (April 2005): 184-210.

9 Important works in Canadian historiography that this research draws on in thinking about health, diet, and aboriginal relations with the state include Mary-Ellen Kelm, *Colonizing Bodies: Aboriginal Health and Healing in British Columbia* (Vancouver: UBC Press, 1998) and Maureen Lux, *Medicine that Walks: Disease, Medicine, and Canadian Plains Native People, 1880-1940* (Toronto: University of Toronto Press, 2001).

by the latter half of the twentieth century, the Canadian state came to use nutrition and nutritional science as the means by which to understand and to attempt to manage changing relationships between (predominantly aboriginal) northerners and their environments.

At the turn of the twentieth century, several thousand indigenous peoples and a few hundred non-natives lived in Canada's northern territories. In the Mackenzie district (along the Mackenzie River, extending to the delta that outlets in the Beaufort Sea), there were around 250 "whites," over 3,600 Dene, and no more than 1,000 Inuit.¹⁰ In 1901, in the wake of the Klondike Gold Rush, the Yukon aboriginal population was counted at 3,322, while the non-native population was remarkably high at 27,219.¹¹ To the east of the Mackenzie, between 1900 and 1920, there were over 2,500 Inuit and fewer newcomers compared to the western Arctic. By the 1921 census, 7,988 people were recorded as residents of the (then) Northwest Territories (encompassing the present-day Northwest Territories and Nunavut) and 4,157 in the Yukon.¹² With the dramatic impact of epidemic diseases between 1860 and 1930, this period was a low point in the demographic history of northern aboriginals. By the 1951 census, the population of the Northwest Territories had risen to 16,004, and that of the Yukon to 9,096.¹³ These dramatic increases reflect improved coverage by census takers and larger numbers of non-aboriginals who had moved north in the twentieth century following resource-extraction operations, in particular.¹⁴ They also reflect increased fertility and lower mortality for northern populations as a whole, although major demographic impacts of improved health care would not be apparent until the very end of the twentieth century.

10 See Martha McCarthy, *From the Great River to the Ends of the Earth: Oblate Missions to the Dene, 1847-1921* (Edmonton: University of Alberta Press & Western Canadian Publishers, 1995), Appendix A: Dene Population Statistics; René Fumoleau, *As Long as this Land Shall Last: A History of Treaty 8 and Treaty 11, 1870-1939* (Toronto: McClelland and Stewart, 1975), 17 (MacFarlane's 1884 census); June Helm, "Female Infanticide, European Diseases, and Population Levels among the Mackenzie Dene," *American Ethnologist* 7 (1980): 259-85; Eric Alden Smith et al., "Inuit Sex-Ratio Variation: Population Control, Ethnographic Error, or Parental Manipulation?" *Current Anthropology* 35, no. 5 (December 1994): 595-624; David A. Morrison, *The Kugaluk Site and the Nuvorugmiut: The Archaeology and History of a Nineteenth-Century Mackenzie Inuit Society* (Ottawa: Canadian Museum of Civilization, 1988).

11 Coates, "Table 7" in *Best Left as Indians*, 74.

12 Canada, Dominion Bureau of Statistics, *Fourth Census of Canada, 1901* (Ottawa: S.E. Dawson, 1902-06); and *Sixth Census of Canada, 1921* (Ottawa: F.A. Acland, 1924-29).

13 Breakdown: Northwest Territories (Eskimo—6,857; Indian—3,803; others—5,344); Yukon (Indians—1,533; others—7,563). Source: Canada, Dominion Bureau of Statistics, *Ninth Census of Canada, 1951* (Ottawa: E. Cloutier, 1953-1955).

14 For movements of southerners northwards in the twentieth century see Morris Zaslow, *The Northward Expansion of Canada, 1914-1967* (Toronto: McClelland and Stewart, 1988); Liza Piper, *The Industrial Transformation of Subarctic Canada* (Vancouver: UBC Press, 2009).

Significant socio-economic change occurred in northern Canada in the twentieth century; nevertheless, before 1970, it is possible to speak of patterns of settlement and resource use that prevailed across the Subarctic and Arctic. Northern community life included smaller nomadic bands (ten to forty people), who might visit a larger settlement or be visited by other native peoples, missionaries, or police officers on patrol. There were also larger settlements, such as Pond Inlet, Providence, or Fort McPherson, including hamlets or villages of a few hundred that were oriented around the fur trade and missions, with a population that spent a good portion of the year in the bush. The largest communities in this region were in places like Dawson or Yellowknife, which were based around industrial resources with more fixed-in place, but also more transient populations in terms of residency in the North. The role the government played—initially through treaty relationships and wildlife regulations and subsequently through its takeover of health and social services in the post Second World War period—created two axes around which social and community life in the North was oriented. One axis was within the North, in the camps, villages and towns, while the other bound northerners to the federal administration in the South.

By the early twentieth century, tea, bannock or biscuits, molasses, flour, and sugar were well integrated into the diets of most northerners. Nevertheless, and as should be obvious from the paucity of that list, indigenous diets (and those of non-natives in the North) continued, through most of the twentieth century, to rely upon the resources of the land for sustenance. Such resources ranged from waterfowl, fish, caribou, moose, and sea mammals, to smaller creatures, such as hares, and plants, most notably berries. All these foods were harvested from the land, but were differently available in different years or at different times of the year. As Frank Tough has detailed with regards to the seasonal subsistence cycles at Norway House and Churchill, a complex food economy prevailed across northern Canada, in which people harvested many different resources from many different sites.¹⁵ Such harvesting involved an intimate knowledge of the land and animals, but perhaps paradoxically for those of us who understand close relationships with nature to be focused upon local places, this intimacy extended over a wide area. Such complex and extensive food economies served as a strategy for resilience in a highly variable environment often visited by periods of hardship: people could turn to a range of resources to ensure health, particularly during times of scarcity.

15 Frank Tough, *"As Their Natural Resources Fail": Native Peoples and the Economic History of Northern Manitoba 1870-1930* (Vancouver: UBC Press, 1996), 24-5.

Scarcity was neither uncommon nor unanticipated. Across the North, people relied upon migratory animals whose migrations shifted, and upon species, such as the hare, with cyclic fluctuations in population. Families and traders froze and dried freshwater fish in the fall to sustain them through the long winter and in particular through the spring, which was often the hardest, most vulnerable time of the year. Climate could fluctuate dramatically, as it did, for instance, between 1910 and 1920 in the central Arctic. As Renée Fossett writes: “Increased precipitation and fluctuating temperatures created conditions particularly inhospitable to caribou.” The herds to the west of Hudson Bay disappeared for a decade.¹⁶ In the boreal forest, fires could drive game far from the expected hunting grounds. As historians Gulig, Coates, and Morrison have noted, such fires increased with the arrival of industry, whether as a consequence of prospectors burning off the brush to facilitate mineral exploration, or as a by-product of the presence of more machines.¹⁷

The periodicity of hardship could range from season to season, year to year, or decade to decade. It meant, at times, going hungry. Occasional and seasonal malnutrition was not uncommon in the Subarctic and Arctic at the turn of the century. Gwich'in elders from Fort McPherson and Tsiigehtchik (Arctic Red River) described hungry times and deaths from starvation from their childhoods in the early twentieth century.¹⁸ At other times, sustained hardship required families or communities to relocate. In longer northern history, there are many instances of places being abandoned, particularly in response to declining environmental conditions and climatic change. With the onset of the Little Ice Age in the fourteenth century, people in the Coronation Gulf area turned to new food sources (fish, caribou, and seal). Ultimately, though, Thule and their descendants abandoned sites such as Somerset Island and south Baffin in the 1300s. The same south Baffin villages abandoned by the 1300s were repopulated by 1500, with residents maintaining mobile harvesting practices needed to acquire certain materials for manufacture

16 Renée Fossett, *In Order to Live Untroubled: Inuit of the Central Arctic, 1550-1940* (Winnipeg: University of Manitoba Press, 2001), 190.

17 Anthony G. Gulig, “‘Determined to Burn off the Entire Country’: Prospectors, Caribou, and the Denesuliné in Northern Saskatchewan, 1900-1940,” *The American Indian Quarterly* 26, no. 3 (2002): 335-59; Kenneth S. Coates and William R. Morrison, *The Alaska Highway in World War II: The U.S. Army of Occupation in Canada's Northwest* (Toronto: University of Toronto Press, 1992), 86-8. See also Stephen J. Pyne, *Awful Splendour: A Fire History of Canada* (Vancouver: UBC Press, 2007).

18 Michael K. Heine and the Elders of Tsiigehtshik et. al., *Gwichya Gwich'in Googwandak: The History and Stories of the Gwichya Gwich'in, As Told by the Elders of Tsiigehtshik* (Tsiigehtchik: Gwich'in Social and Cultural Institute, 2007).

or for greater variety in their diets. As the Little Ice Age continued, and, in particular, as whale resources became scarcer off of south Baffin Island, peoples living around Frobisher Bay became more mobile, spending much of their summers in portable skin houses rather than in the stone-sod-whalebone houses better suited to whale-hunting communities.¹⁹ Other sites were famous as ancient gathering places. Such sites include the village at Kittigaryuit, where John Richardson (the naturalist and surgeon who accompanied the John Franklin expeditions) reported two hundred men in kayaks in 1826, suggesting as many as one thousand people in the village. Kittigaryuit was the site of a natural beluga whale trap,²⁰ and the length and intensity of occupation at that site, or others like Deline, or the site at the confluence of the Yukon and Klondike rivers, was indicative of the uncommon local wealth of resources.²¹ Mobility was a means to ensure adaptation to environments that, during periods of climatic variability, offered very limited ways of sustaining life.

The Canadian North was never a uniformly, or even a broadly resource-rich environment, at least not when it came to food resources. Instead, the opportunities for harvesting varied significantly across space and through time. Between 1870 and 1940, the opportunities for subsistence from the land were further affected by an increased number of people harvesting the land—in particular, newcomers to the region from the outside and new activities taking place on northern lands and in northern waters. From the late nineteenth century, whalers, scientists, and larger research expeditions contributed significantly to the depletion of musk ox, caribou, and walrus populations. There exists important anecdotal evidence of the decline of game populations. For instance, David Hanbury, in the journal recorded while he undertook geographical explorations along the western coast of Hudson Bay in 1901-2, wrote “altho’ game may not be so plentiful now as in former times, still there is plenty of it.” In April 1902, Hanbury noted as follows:

Musk ox he reports to be scarce both N and S of Backs river. Long ago they were numerous. How have they disappeared? (Red bears are scarce, this man has never seen one). Why have musk ox disappeared? The population of these northern parts

19 Fossett, *In Order to Live Untroubled*, 33.

20 Whales entering the estuary, seeking out its food-rich waters, had greater difficulty leaving, offering opportunities for Inuvialuit hunters.

21 For details on the rich fishery and whaling in the Mackenzie Delta, see David Morrison, “Inuvialuit Fishing and the Gutchiak Site,” *Arctic Anthropology* 37, no. 1 (2000): 1-42.

is the same. Certainly it has not increased. The introduction of fire arms can have no say in the matter, for they still only have their bows and arrow.²²

Aboriginal hunting of musk ox was for the meat. Although hunters traded the skin at the trade posts or with whalers, this was an occasional trade, not a robe trade on par with the bison robe trade to the south. There was no evidence of either an increase in the resident population or in their harvesting of musk ox in this period, certainly not to the extent required to significantly deplete the musk ox populations. So where had all the musk ox gone? In 1875, vessels travelling in the eastern Arctic waters stopped where game was plentiful. Such hunting was in part for meat: men on board Victorian research vessels or those who were part of search parties for the lost Franklin expedition, kept fresh meat in the holds by harvesting from northern lands. But hunting was also very much for sport.²³ Lieutenant George Gifford, with the British Arctic Expedition (a scientific expedition in search of the North Pole), wrote about a hunting excursion from Bellot Bay in August 1875:

Just as we anchored a herd of 9 Musk Oxen were seen onshore close to the water line. Immediately a shooting party was organised—I am sorry to say that I did not go but I was turned in at the time—the party consisted of the Commander, Parr, May, Fielder, Moss and White with some men. They landed and separated into parties so as to surround the herd which was so successfully done that the whole 9 were killed, they are very difficult to kill even when surrounded. Their hair and skins are very thick and tough and unless hit in the heart they require a great many bullets, alone it takes a long time as they put their heads down and stand facing you. Their heads are so large that they cover all their bodies and so thick that even at 20 yards a rifle bullet failed to penetrate one. They all had five or six bullets in them then the bull took fourteen I think, when skinned with their heads cut off and cleaned they have us 2200 lbs of meat, we sent half to the Discovery as they got on shore too late to shoot any of them. We are well set up in fresh meat now, from the number of shells etc lying about there and hare marks I should think that game was plentiful there is also plenty of vegetation here, more than we have seen since we

22 David Theophilus Hanbury, *Journal Kept During his Explorations of the Keewatin District of Canada* 1901 02, Sept. 18, MS 699 / 1; BJ, vol. 1 June December 1901; Apr. 12, MS 699 / 2; BJ vol 2 2 Dec 1901 12 May 1902, Scott Polar Research Institute [hereafter SPRI] „This man,“ referred to in the journal, is Hanbury’s indigenous informant.

23 See Greg Gillespie, *Hunting for Empire: Narratives of Sport in Rupert’s Land* (Vancouver: UBC Press, 2007).

left Cape Sabine. The meat will keep now for the rest of the winter as it freeses [sic] all day, in case we don't get anymore we shall keep some of this for Christmas.²⁴

The impact upon large animals by occasional research parties was intensified by the activities of whalers, who began wintering in the area in 1864-65, and who relied upon local game harvested by Inuit hunters for the subsistence of their crews. Elsewhere in the Canadian North, resource and research expeditions brought outsiders, along with their intensified food and recreation demands upon local wildlife, which included large game and smaller furbearers. To the west, American whalers, using Herschel Island as a base, had depleted delta and northern Yukon (Porcupine) caribou herds by the 1890s. The influx of trappers and traders prior to the First World War led especially to a direct intensification of pressures upon northern furbearers. Their activities, as well as the arrival of men and women working in the surging mining industry, continued the pressure upon all kinds of fish, fowl, and game populations well into the twentieth century. Miners at Port Radium on Great Bear Lake, where pitchblende was extracted beginning in 1929, relied upon locals who traded fish, moose meat, and other country foodstuffs for variety in a diet that otherwise consisted of canned and preserved goods that had been shipped north. As George Douglas wrote later in the twentieth century,

the opening of rail to NW, the booming fur market of the twenties, modern fire arms [and] plentiful ammunition in the hands of men who would shoot anything alive at sight—I was much disgusted with the decrease in all kinds of animal and especially bird life after 1928 even and 1931 in Great Bear Lake.²⁵

As with the scientists and hunters of the nineteenth century, there was twofold pressure upon northern food resources: immediate pressure, where potential food animals were harvested for trade or killed for sport, and secondary pressure, where game animals were killed to sustain larger newcomer populations engaged in a variety of economic or research activities.

In the first half of the twentieth century, the Dominion government greatly increased its presence in and oversight of Canada's northern territories. Government officials, fac-

24 George Gifford Journal—British Arctic Expedition, Bellot Bay. Lady Franklin Straits, Wed. Aug. 25, 1875, MS 41; BJ, SPRI.

25 George Douglas to P.G. Downes, 24 Apr. 1955, George Mellis Douglas Fonds, Library and Archives Canada [hereafter LAC]

ing pressure from hunters and concerned about sustaining the livelihoods of northern aboriginals, became attentive to the depletion of game populations.²⁶ These concerns were, moreover, situated within broader continental attention to conservation. Within a decade, the Dominion government introduced the Northwest Game Act (1917) and the Migratory Birds Act (1917), established Wood Buffalo National Park (1922) and the Thelon Game Sanctuary (1927), and expanded the 1924 ban on musk ox hunting in the Northwest Territories to include aboriginal hunters, who had previously been exempt from the ban if they were starving. In many respects, the changed relationships between people and the land that came to the fore in the early twentieth century were to be managed through the regulation of wildlife.

Regulation was a response to the depletion of northern food resources from intensified harvesting. However, regulation was also reinforced for northern aboriginals, trappers, and traders, all of whom lived off the land and faced the challenges of obtaining food. As John Sandlos and Tina Loo have examined in detail, these new regulations criminalized northern aboriginal subsistence activities. Waterfowl regulations were the most egregious in this regard, as the open and closed seasons were timed in the interests of southern, not northern hunters. While most of the new regulations were honoured as much in the breach as in the observance, they nevertheless directly impacted the ability of northerners to continue to obtain subsistence from the land in the fashion to which they had been accustomed to as recently as a few years or decades earlier. These, then, can be considered the cumulative pressures on the supply side, when it came to northern subsistence in the early twentieth century: in addition to environmental variability, which caused fluctuations in the availability of game, fish, and fowl, newcomers increased pressures upon northern food resources often to the point of depletion, while regulations introduced in response to some of these new pressures further affected the ability of aboriginal northerners, in particular, to continue with their historical harvesting practices.

From the end of the nineteenth into the early twentieth century, there were also a range of new pressures that affected the ability or desire of northerners to harvest

26 This concern was for both northern and southern interests: migratory birds act as more a product of southern hunters pressuring the government. To see these subjects addressed in detail, see John Sandlos, *Hunters at the Margin: Native People and Wildlife Conservation in the Northwest Territories* (Vancouver: UBC Press, 2007); Tina Loo, *States of Nature: Conserving Canada's Wildlife in the Twentieth Century* (Vancouver: UBC Press, 2006); Kurpatrick Dorsey, *The Dawn of Conservation Diplomacy: U.S.-Canadian Wildlife Protection Treaties in the Progressive Era* (Seattle: University of Washington Press, 1998).

food resources from the land. Perhaps most notably, from the mid-nineteenth century through until 1960 or so, northern peoples were faced with repeated outbreaks of infectious diseases. While not virgin soil epidemics per se, these epidemics did share some characteristics with the contact-era outbreaks that affected indigenous populations across the Americas. They tended to affect communities that, due to small population sizes and distance from larger centres, had acquired limited immunity to certain “crowd” diseases (measles, scarlet fever, and influenza, for instance). In turn, the outbreaks often led to significant mortality, or had complex social and economic effects upon families and communities.²⁷ Part of the reason for greater mortality and more profound impacts of infectious disease outbreaks lay with the fact that particular infections often worked synergistically, both with other disease organisms and with malnutrition, to intensify their impacts.

Epidemic disease and malnutrition have historically travelled hand-in-hand, both literally and figuratively.²⁸ Malnutrition, by weakening individual immunity, can lead to epidemic outbreaks. Seasonal malnutrition was not uncommon in the North, with the spring being the hardest period: food stores from the winter months were often low when supplies from the South (for those who relied upon imported goods for at least part of their diet) had yet to be restocked, and travel for hunting was complicated by the break up of ice. Spring malnutrition, for instance, directly contributed to the influenza outbreaks that often came with the arrival of the first boats from the South. Epidemics and ill health also made it much more difficult for people to harvest food in Subarctic and Arctic environments. The illness itself, whether it was influenza, typhoid, or another disease, weakened those who were afflicted, and healing demanded considerable energy resources that otherwise would be put to hunting, fishing, trapping, or harvesting activities. Moreover, by the late nineteenth century, hunting and trapping relied upon dog teams that also needed to be fed (typically with fish) during an outbreak. By the turn of the century, quarantines were an increasingly commonplace response to northern epidemics, as officials sought to check the spread of diseases across extensive northern territories. Yet, quarantines also acted to prevent healthy persons from harvesting as effectively as they might otherwise, because they restricted the travel necessary for extensive harvesting practices across the North.

27 A fuller examination of these processes is the main focus of the larger project from which this essay draws.

28 For the most devastating overview of this relationship, see Mike Davis, *Late Victorian Holocausts: El Niño Famines and the Making of the Third World* (London, New York: Verso, 2001).

The influenza outbreak of 1928 in the Mackenzie district offers good evidence of the synergistic relationship between an infectious disease and hunger in this period. Helge Ingstad, a non-aboriginal trapper living near Lustelk'e (Snowdrift) on the eastern shore of Great Slave Lake, wrote about his experience with the flu that summer: "I began with chills and fever and a splitting headache." The combined effects of disease and poor nutrition weakened Ingstad, as it did his neighbors:

[The flu] came at a time when I was living from hand to mouth. Fish was my sole diet, and this I had to procure by hauling in the nets. So far as I was concerned, it might just as well have stayed there till it rotted, for I was unable to swallow a mouthful of food in any event.²⁹

From his patrol in the Talston River region, Royal Canadian Mounted Police (RCMP) Inspector Gagnon reported that "these people are practically starving, as they are unable to hunt; there are only three boys attending to the fish nets and the wants of the community."³⁰ The communities in the Mackenzie Delta were among the hardest hit by the flu that summer, and reports from there indicated that, at Shingle Point, three Inuvialuit died not from the flu but from eating spoiled whale meat. They had eaten the old meat because of a shortage of fresh meat, given that the entire community was struck by the influenza.³¹ Illness could not only be intensified by malnutrition, but also led to hunger, as it weakened people beyond the point where they could engage in their necessary harvesting activities.

The interrelationship between epidemic illness and nutrition in the early twentieth century encouraged significant historical developments in the Canadian North, specifically a growing dependence upon rations and foodstuffs (typically preserved) imported from the South at the expense of country-food based diets. Rations were already a part of the treaty process, and thus with the introduction of regular treaty payments after 1898 in the Treaty 8 area and after 1921 in the Treaty 11 area, eligible individuals and families could expect to receive ammunition and twine (used for hunting and fishing) as well as rations (in particular tea, sugar, flour, and bacon).³² These rations and supplies were dis-

29 Helge Ingstad, *Land of Feast and Famine*, trans. Eugene Gay-Tiffit (New York: A. A. Knopf, 1933), 149-55.

30 Extracts from the report of Insp. M. Royal Gagnon dated at Fort Smith N.W.T., August 11, 1928, on his summer inspection patrol to Reliance. RG 85 C-1-a vol 789 file 6099, LAC.

31 Indeed, Shingle Point (the site of an Anglican mission established in 1922) was one of the communities hardest hit in the epidemic.

32 See for example Fumoleau, *As Long as this Land Shall Last*, 225, 240.

tributed at the annual treaty gatherings that took place in early summer and included a visit to the medical doctor assigned to the area. Rations were not exclusively distributed as part of the treaty process, although that was a way in which they had been normalized in northern life. They were also distributed by RCMP officers or other agents of the state to people who faced hardship, whether or not they had a formal treaty relationship to the state.

Outbreaks of infectious diseases created increased dependence on rations because of the ways in which they interfered with regular harvesting activities. This disruption could have consequences that extended long after the epidemic had passed. When an epidemic arrived during the summer, it disrupted immediate harvesting activities as well as the work necessary to ensure subsistence during the fall and winter months (harvesting, gathering, repairs, etc.). Over the longer term, camps and family groups hit repeatedly by epidemics would find themselves too weak to produce food, and relied upon rations from missionaries and RCMP officers. During the 1928 influenza outbreak, the disease was spread at the treaty gatherings themselves, and, as news of this travelled, some families chose not to travel to the treaty gathering, or fled them before rations and supplies were even distributed. These families were, in some instances, spared the infection—but not always. Some fled the treaty gathering only to later fall ill and often die at their camps elsewhere across the North. But those who had not gotten necessary rations and supplies further undermined their opportunities to produce the food needed for the rest of the year. Thus, it is apparent in the record of deaths from 1928-29 that, while many died from the infection, others perished because of the hardship they faced in the months that followed. René Fumoleau has likewise noted that dependence upon rations intensified as the tuberculosis epidemic took off in the late 1920s and 1930s in the Treaty 8 and 11 regions. Thus, disease accelerated the twentieth-century shift, apparent across northern Canada, from country-food diets to reliance upon southern, imported foods.

The expansion of the residential school system had a similar long-term dietary impact. The first residential school in the North opened in Providence, on the Mackenzie River just west of Great Slave Lake in 1867, the same year as Canadian Confederation.³³ Following the establishment of this first school, operated by the Roman Catholic

33 The earliest residential schools in Canada opened in the 1840s. For a comprehensive history of the residential school system see James R. Miller, *Shingwauk's Vision: A History of Native Residential Schools* (Toronto: University of Toronto Press, 1996).

Soeurs Grises (Grey Nuns) and the Oblates of Mary Immaculate, further institutions spread across northern Canada. The schools were initially operated by Roman Catholic and Anglican missionaries, although the majority were Roman Catholic. The federal government took over both residential and day schools in the early 1960s, and all the residential schools in the North had closed by 1970. The missionaries depended upon local food supplies to feed the resident children, although these local foods were not necessarily indigenous. The children themselves assisted in providing their own food supplies, whether by berrying in late summer, helping with the fish catch and the potato harvest, or cutting hay to feed the cattle (or the occasional ox) also found at the missions.³⁴ At Hay River, the Anglican mission hired a Métis father and son, Charlie and Frank Norn, to fish for both the mission and the school. Fish dominated in the diet of children at the Hay River school, although the missionaries also purchased moose meat for the children from local hunters.

The residential schools thus acted to create new food relationships with the land, through their encouragement of agriculture and the very fact that they kept children away from their families out on the land, where they would otherwise have learned necessary hunting, trapping, and fishing skills. For Dene and Inuit children, education was experiential: learning took place on the land by doing what they needed to know how to do in future. When children were kept off the land for part of the year, they missed out on a crucial part of their education. For instance, if they only went back to their families in the summer, as was typically the case, they missed out on much of the seasonal harvesting. The residential school system, too, created new appreciation for southern food. These new tastes were cultivated as part of school menus, which introduced children to lettuce, tomatoes, beef, and chicken, or when the missionaries distributed chocolates, gum, and sweets to the children as treats on special occasions such as Christmas or Easter. As the residential school system expanded across the North, epidemic outbreaks provided opportunities for missionaries, physicians, and RCMP officers to coerce families into sending their children to these schools. Clermont Bourget, a physician who worked in the Great Slave Lake region at the time of the 1928 influenza outbreak, bartered with a family, promising them rations and medication if they promised to send their children to school.³⁵ In multiple ways, then, the residential schools directly contributed to the twentieth-century dietary shift across the North.

34 Piper and Sandlos, "A Broken Frontier."

35 Dr. C. Bourget, Report from Great Slave Lake district, September 1928, RG 85 C-1-a vol 789 file 6099, LAC.

The other dimension of this transition lay in the broader movement from life on the land to life oriented more closely around communities. As a caveat, it is important to note that northern peoples in the nineteenth century, and even earlier, should not be characterized as “nomadic” in the sense of permanently wandering, or being without a home. Rather, the extensive harvesting described earlier demanded movement from place to place; yet these movements typically occurred between well-established places that were visited repeatedly by individuals and families time and again. The remnants of ancient villages mark the landscape of the North, from Baffin Island to the Mackenzie Delta. But if we imagine these villages as posts to which families were ultimately tethered, even as they moved great distances across the lands and waters, we must also recognize that the tethers became shorter in the twentieth century. In the late Thule period, people located their villages in such a way so as to shelter themselves from the winds coming off the sea. According to archaeologists, “most were nestled under the sheltered side of a hill where heat loss is significantly less than on the windward side. Over eighty percent faced either south or west.”³⁶ The other great asset of south-facing villages was that, over the course of the year, they captured more sunlight, which assisted in hunting, travel, and in generally making life more pleasant. Large, stable polynyas—natural holes in the ice through which seals, walrus, and whales can be hunted in winter—attracted human settlement by ensuring the availability of resources.³⁷ New environmental rationale underpinned the establishment of newcomer communities, such as at Pond Inlet, which offered a good harbour for whaling ships, but was otherwise a relatively unimportant site for the Inuit and was particularly dark in the long winter months, making it a relatively unattractive site for habitation.³⁸

Both older indigenous village sites and newcomer communities came to figure more significantly in the life of northern peoples in the twentieth century. As more children were sent to residential schools, the communities in which these schools were located (Aklavik, Fort McPherson, Providence, Fort Resolution, Fort Simpson, Hay River, Chesterfield Inlet, Carcross, Dawson, Whitehorse, Shingle Point) became home for the child-

36 Fossett, *In Order to Live Untroubled*, 28. She cites John D. Jacobs and George Sabo, “Environments and Adaptations of the Thule Culture on the Davis Strait Coast of Baffin Island,” *Arctic and Alpine Research* 10, no. 3 (1978): 608, 612.

37 James E. Woollett et al. “Palaeoecological Implications of Archaeological Seal Bone Assemblages: Case Studies from Labrador and Baffin Island,” *Arctic* 53, no. 4 (2000): 409.

38 Doug Wilkinson Daily Journal, Dec. 6, 1953, N 1992 012 file 1 4, Northwest Territories Archives [hereafter NwTA]

ren for at least part of the year. These communities, in turn, became destinations for the parents, who, while they were not permitted to visit their children while in school, would come to pick them up for the months that they spent fishing, hunting, and harvesting out on the land. Individuals and families came into communities to trade and, after 1898 and 1921, to receive treaty payments. They also increasingly came to collect relief (first from trade posts, then from missions, and ultimately from the government). From the nineteenth century if not earlier, northerners had gathered in communities for trade, or to celebrate holidays such as New Years. By the mid-twentieth-century, many had adapted their subsistence strategies so that they now came to communities to collect relief as well, and many stayed on longer in the village or town. Tester and Kulchyski argue, for instance, that by the 1950s, the Inuit in the Garry Lake region had shifted from “a condition of total independence and reliance on caribou and fishing, to a reliance on caribou, fishing, and relief to tide them over.”³⁹ These new subsistence strategies undermined families’ abilities to obtain necessary sustenance from the land. Moreover, the greater dependence upon relief was ultimately at odds with the government, who saw relief as demeaning and wanted to keep northern indigenous people as independent as possible. As a result, relief from the government was far from generous and instead created conditions of poverty for those who altered their livelihoods in response to its availability.

For historians, these dietary shifts signal major changes in relationships between northerners and their environments; indeed, the histories of nutrition and diet are critical ways of examining the environmental history of places like northern Canada. For southern researchers at the time, including the renowned Vilhjalmur Stefansson, and for government administrators responsible for northern territories, diet and nutrition similarly illuminated the major transformations underway in the modern North and provided opportunities to manage some of the negative consequences of these transformations.⁴⁰ By the 1960s, specifically, the federal government came to wholeheartedly embrace the issue of nutrition and the findings of nutritional science as the optimal means by which a southern administration could control problems that ensued from changed relationships with the northern environment.

A series of tuberculosis surveys, conducted across Canada’s northern territories in the 1940s, provided a crucial model for subsequent health and nutrition research. Tubercu-

39 Frank J. Tester and Peter Kulchyski, *Tammarniit (Mistakes): Inuit relocation in the Eastern Arctic* (Vancouver: UBC Press, 1994), 238

40 See Vilhjalmur Stefansson, *Cancer: Disease of Civilization? An Anthropological and Historical Study* (New York: Hill and Wang, 1960).

losis had a long history in the North. The disease was well established among newcomer populations in the nineteenth century, and had spread to most indigenous families and villages by the early decades of the twentieth.⁴¹ Nevertheless, at the beginning of the twentieth century, TB was left largely untreated in the North, as treatment required sanatoria or hospital stays that were neither readily available in the North nor a feasible part of the annual harvesting round. With the greatly increased southern interest and presence in the North during the Second World War, it became clear that tuberculosis was a serious health problem. An initial survey of the northern population for tuberculosis was conducted in 1943 along the Mackenzie River. This survey principally consisted of the systematic x-raying of people to see whether they had an active tuberculosis infection. When the results were published in 1945, it became clear that tuberculosis was a foremost health problem in Canada's northern territories, and, indeed, the problem across the North was considered to be staggering. For the Inuit population alone, the death rate was 314 per 100,000, compared to 53 per 100,000 for the rest of Canada.⁴² In the next few years, Eastern Arctic, Western Arctic, and Yukon surveys followed. The aim of these surveys was to x-ray the entire population, aboriginal and non-aboriginal, and then to isolate those who had active tuberculosis and send them south for treatment. Given the size of the region, the fact that most northerners lived off the land rather than being concentrated in communities, and the relative inexperience of southern doctors with Subarctic and Arctic environments, these comprehensive surveys were a massive undertaking. Every few years, more followed as the federal government (including bureaucrats with the Department of National Health and Welfare (DNHW) and the Department of Northern Affairs and National Development (DNAND) and its successors) sought to assess whether or not the problem was under control.

By the 1950s, the research methods were well established, and enabled annual health surveys of northern populations. Such large-scale surveillance contributed to growing interest in nutrition and malnutrition in the North. Nutrition was central to tuberculosis treatment, particularly prior to the advent of effective antibiotics in the 1940s. In the North, malnutrition was seen as having played a direct role in the tuberculosis epidemic.⁴³ There were also wider issues around nutrition in the North in this period. A poliomyelitis epidemic in Chesterfield Inlet in 1949 brought international attention to this tiny

41 See Robert Fortuine, *Chills and Fever: Health and Disease in the Early History of Alaska, Part 1* (University of Alaska Press, 1989); Piper, "Chronic Disease in the Yukon."

42 Pat Sandiford Grygier, *A Long Way from Home: The Tuberculosis Epidemic among the Inuit* (Montreal: McGill-Queen's University Press, 1994), 64.

43 Grygier, *A Long Way from Home*, 55.

community, and raised the issue of whether growing reliance upon imported southern foodstuffs had played a direct role in the appearance of this modern epidemic.⁴⁴

Starvation and famine in the North came to prominent public attention through the work of photographer Richard Harrington and author Farley Mowat. Harrington, a freelance photographer and writer from Toronto, travelled to the Arctic between 1948 and 1953, getting out on the land with Inuit guides on five dogsled trips. On one trip in 1950, he met a band of Padleimiut who had missed the caribou migration that fall, and were starving. He shared what he could of his supplies with the families and documented their suffering in a photo essay that was published in April 1950 by the *Toronto Star*, where Harrington's photographs became internationally famous as the "Padlei Collection."⁴⁵ Shortly after, in 1952, Farley Mowat's first book, *People of the Deer*, was published. Tester and Kulchyski describe the impact of this publication: "Mowat claimed that the Ahiarimiut, a group of Inuit in the interior of the Keewatin, were approaching extinction as a result of government incompetence and neglect." These claims "set the Arctic administration on edge. As the book was serialized and published internationally, the minister and the department were swamped with letters from outraged readers, not only in Canada but in Britain, Europe, New Zealand, Australia, and the United States."⁴⁶ Both Harrington and Mowat wrote about the Inuit in a very particular region of the North—the Keewatin, off the western shore of Hudson Bay. Within a few short years, the health and, specifically, the hunger of northern indigenous peoples became matters of public concern in southern Canada. Public pressure significantly influenced greater government intervention across the North, and new policies towards the Inuit in particular.

By the late 1950s, federal government officials initiated assessments of nutritional requirements for living in the Arctic and Subarctic. These assessments dovetailed nicely with Cold War scientific research focused on the circumpolar North as a newly militarized environment.⁴⁷ The concerns of Canadian and US military officials in the North lay primarily with the bodies and diets of military personnel. The Department of Indian

44 See materials in "Epidemiology Diseases Poliomyelitis—Poliomyelitis Epidemic, Chesterfield Inlet, NWT," RG 29 Vol. 203 File 311-P11-22 pt. 2, LAC.

45 One of the photographs was included in a 1955 exhibition, *Family of Man*, at New York's Museum of Modern Art. See Harrington's obituary by John Goddard, "Richard Harrington, 94: A photographer to the end," *Toronto Star*, December 20, 2005.

46 Frank J. Tester and Peter Kulchyski, *Tammarniit (Mistakes)*, 56-7.

47 Matthew Farish, "Frontier Engineering: From the Globe to the Body in the Cold War Arctic," *The Canadian Geographer* 50, no. 2 (2006): 177-96.

and Northern Affairs, by contrast, was concerned for the resident population. The new research quickly came to inform debates over relief and rations for northern residents. In 1956, Inuvialuit chiefs and the Citizens' Committee in Aklavik sought an increase in the caloric content of rations from 2,800 calories to 8,400 calories a day. They drew upon the new scientific research to make their argument. The state also used military research that looked at soldiers, air crews, and lumberjacks—people working hard, outdoors, and in northern climates, but who did not require such a high calorie intake—to justify keeping the caloric content of rations lower. State officials opposed race-based differences in rations, on the grounds that this impeded their fundamental assimilationist project. The argument was resolved by keeping the caloric content of rations higher than it was in southern Canada, and approving additional rations for those with active cases of TB and their immediate family.⁴⁸ This demonstrated the emphasis upon environment over “race,” within the rationale for improved nutrition. It also exposed the new emphasis upon scientific authority. Northerners had long argued for improved rations; now they deployed the language of nutritional science to do so, although ultimately, they remained unsuccessful in having their needs fully met.

By the early 1960s, the new emphasis upon nutritional science, following the success of the TB surveys, led DNAND and DHNW officials to agree to survey nutrition at large. The nutritional surveys initiated in this decade used health information collected during the annual tuberculosis testing, such as blood and urine samples, combined with information supplied by questionnaires through the school system (which reached both children in residential schools and children and their families who attended day schools). The researchers also measured the nutritional content of a range of country and non-indigenous foods. More detailed dietary surveys were also conducted with school children, family groups, and communities. To survey a community, researchers would question local merchants, area administrators, and RCMP officers. Families were given money to purchase food (which acted as an incentive, as well), and their food consumption was then monitored by Health and Welfare workers for one week each month over a six-month period. Teachers distributed survey booklets to all children who could write. The children took these home to complete for one week out of every month over a one year period. Teachers then returned the original booklets to the Department of National Health and Welfare for analysis.⁴⁹

48 See letter Re: Relief Rations for Eskimos, Jan. 27, 1956, RG 85 Vol 463 File 1003-1-8 pt 1, LAC.

49 B. Thorsteinsson, Chief, Education Division to B.C. Gillie, District Superintendent of Schools, Mackenzie District, Jul. 23, 1965, RG 85 Vol 1416 File 252 1 2 part 4, LAC

In general, the children cooperated with the survey process. Some, teachers complained, lost their forms or forgot to fill them out. While it is not surprising that young children might lose their booklets or be less than assiduous record keepers, it is also likely that in some instances, this carelessness reflected opposition to the survey itself. Active opposition was also clearly articulated by some parents. Mrs. Cockney, an Inuvialuit mother in Inuvik, wrote the following note to Sister C.:

I just want to know if Margaret has to write what she eats all the time cause I don't think its not anybodys business to know what our children eats as far as I know I always give my children what's good for them.

So please let the Principal know.

Regards, Mrs. S. Cockney⁵⁰

Food and diet, much like health, were deemed personal information and northerners responded to the survey with “opposition and hostility.”⁵¹ By the latter half of the twentieth century, the state had become increasingly intrusive in the lives of northerners and northern aboriginals in particular, and Mrs. Cockney’s letter—as well as other evidence of opposition—reveal resistance to these intrusions. In their correspondence, survey administrators took such opposition seriously. They expressed concern that it would lead to inaccurate survey results as well as apathetic or antagonistic attitudes towards proper nutrition. Officials with the Department of National Health and Welfare tried to assuage community concerns by holding meetings, but ultimately, such consultative efforts did not lead to changes in the overall program.

The 1965-66 survey revealed a marked preference among northerners for store-bought foods (hard biscuits, lard, jams, tea, dried milk), even as country foods (moose meat, caribou, seal, fish, and berries) continued to make up a significant portion of their diet. Even though, to indigenous northerners, these results emphasized the importance of good childhood nutrition, the surveyors nevertheless focused in particular upon school children, whose dietary habits were seen as the most amenable to “improvement” due to their age and their access to nutrition experts through the school system. One Health and Welfare worker suggested that

50 Letter S. Cockney to Sister C. n.d. [1965], RG 85 Vol 1416 File 252 1 2 part 4, LAC.

51 J. Maher to Mrs. E. Ellis, Feb. 15, 1966, RG 85 Vol 1416 File 252-1-2 part 4, LAC.

we introduce whole wheat or dark breads at the Transit Centre. Mr. Anderson, the cook, makes the most delicious whole wheat bread, but the Eskimo residents were not interested. Mr. Anderson made several attempts to interest the residents in something new, but had no success. The Eskimo children, unlike the adults, will use dark breads. Also it has been noted that the children consume larger amounts of vegetables than the adults.⁵²

In most northern communities, a significant divergence was apparent in the diets of those who attended residential schools (at the time, typically called “hostels”) and those who continued to live with the families. The latter typically ate much more country food, but also more store-bought “junk food,” including “candy, pop, chocolate bars, bubble gum, suckers.”⁵³ The children at the hostels were characterized as “eat[ing] better” and having “more nutritionally adequate” diets—revealing the ways in which the nutrition researchers viewed country-food diets as problematic.⁵⁴ In general, the residential school system was praised for the ways in which school administrators drew upon nutritional science in preparing weekly menus and daily meals. All the children in the hostels were, moreover, given vitamin A and D supplements in fortified bannock, although it was duly noted that the children did not like these biscuits. researchers also found that, in addition to vitamin deficiencies, anemia was common in children outside and sometimes inside residential schools.⁵⁵

The solution to the problems identified by the survey, whether evidenced in deficiency diseases such as anemia, or in the perceived imbalance of country-food diets, was intensified intervention in the diets of both adults and children. The expanding social service network would enable such interventions by permitting regular, rather than just annual surveillance.⁵⁶ Relief was also seen as an important opportunity to intervene, by including in rations fortified products that would help to ensure balanced diets.

The authors of the results of the 1965-66 nutritional survey, including distinguished physician Dr. Otto Schaefer, wrote:

52 A.M. Millican, Regional Admin Memo for Administrator of the Arctic, Churchill MB, Dec. 14, 1962, RG 85 Vol 1416 File 252-1-2 part 4, LAC.

53 Report on Northwest Territories Nutrition Survey 1965-1966, p.6, RG 85 Vol 1956 File A 1003 20 pt. 3, LAC.

54 R. J. Orange, Regional Administrator, Memo for the A of the A, Frobisher Bay, NWT, Jan. 2, 1963, RG 85 Vol 1416 File 252-1-2 part 4, LAC.

55 H.A. Procter, Director General, Medical Services, Re: Nutrition Survey, Jul. 5, 1965, RG 85 Vol 1416 File 252-1-2 part 4, LAC.

56 Tester and Kulchyski, *Tammarniit (Mistakes)*, Chapter 2.

Experience in other parts of the world has indicated that cultural change is almost invariably accompanied by a nutritional inadequacy of diet and the consequent appearance of clinical disorders in the native people resulting from malnutrition and metabolic change.⁵⁷

In the context of the twentieth-century Canadian North, cultural change was synonymous with environmental change or, more precisely, changed relations with the environment. The centrality of animals, the land and waters, and other aspects of the natural world to indigenous economy and culture in the North has been well established in the historical literature. Northern society was by no means exclusively indigenous in the nineteenth and twentieth centuries, and the importance of environment to society, economy, and culture was likewise not confined to indigenous communities, but shared among all northerners. The survey authors had focused their attention upon food and nutrition in an indigenous population, but the changes their study identified revealed broader transformations in relation to a changing environment. In their language and conclusions, the survey authors also suggested that the poor nutrition they found was an inevitable product of cultural change, and one that stemmed from choices made by aboriginal northerners as they “select[ed] the more tempting but generally less nourishing components of the ‘civilized’ diet, and decrease[d] their consumption of more nutritive indigenous foods.”⁵⁸ The role of the churches and the state, through relief, rations, and residential schooling, was obscured by the purported choices of aboriginal northerners, and such choices, in turn, were seen as indicative of cultural weakness.

Federal government officials recognized the value of country foods and their importance to northern health. However, they also saw northerners as caught up in a unidirectional and inevitable process of modernization: a series of changes that led away from the land and into the communities and which was indeed reflected by the transformations apparent across the North since the late nineteenth century. This process of modernization evoked longer-standing beliefs rooted in culturally dominant ideas about race and culture: the forward progress of northern indigenous peoples from primitive, traditional lives to civilized and modern ones. Thus, where problems in diet were apparent and seen to be consequences of “cultural change,” the apparent solution was through nutritional interventions: namely dietary supplements, balanced diets using imported south-

57 Report on Northwest Territories Nutrition Survey 1965-1966, p.1, RG 85 Vol 1956 File A 1003 20 pt. 3, LAC.

58 Ibid.

ern goods, and by encouraging children to adopt southern dietary practices through residential schools in particular.

Yet the process that was underway was neither inevitable nor solely cultural; it was, instead, historical (and therefore could potentially have moved along any of a number of paths) and much more about environmental than cultural change. However, because southern, federal administrators saw close relations between people and the environment as indicative of primitivism (modern life, by contrast, was much more divorced from nature), when they engaged with northern aboriginal subsistence, rather than addressing themselves to the root of the issue (environmental change), they looked instead to its consequences and aimed to manage these instead.

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