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## Canada's Evergreen Playground: A History of Snow in Vancouver

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A thesis submitted in partial fulfillment of the requirements for the Doctor of Philosophy degree in History

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## Abstract

The City of Vancouver is not as snowy as the rest of Canada; rain, not snow, is its defining weather feature. But snow is a common seasonal occurrence, having fallen there nearly every winter since the 1850s. This dissertation places snow at the centre of the City of Vancouver's history. It demonstrates how cultural and natural factors influenced human experiences and relationships with snow on the coast between the 1850s and 2000s. Following Vancouver's incorporation, commercial and civic boosters constructed – and settlers adopted – what I call an evergreen mentality. Snow was reconceptualized as a rare and infrequent phenomenon. The evergreen mentality was not completely false, but it was not entirely true, either. This mindset has framed human relationships with snow in Vancouver ever since. While this idea was consistent, how coastal residents experienced snow evolved in response to societal developments (such as the rise of the automobile and the adoption of new snow-clearing technologies) and regional climate change.

I show that the history of snow in Vancouver cannot be fully understood without incorporating the southern Coast Mountains. Snow was a connecting force between the coastal metropolis and mountainous hinterland. Settlers drew snowmelt to the urban environment for its energy potential and life-sustaining properties; snow drew settlers to the mountains for recreation and economic opportunities. Mountain snow became a valuable resource for coastal residents throughout the twentieth century. Human relationships with snow in the mountains were shaped, as they were in the city, by seasonal expectations, societal circumstances, and shifting climate conditions.

In charting a history of snow in Vancouver and the southern Coast Mountains, this dissertation clears a new path in Canadian environmental historiography by bringing snow to the historiographical forefront. It does so in an urban space not known for snow, broadening the existing geography of snow historiography. In uncovering snow's impact on year-round activities, this work also expands the field's temporal boundaries. Through this work, one sees how snow helped to make Canada's Evergreen Playground.

## Keywords

Canadian history; environmental history; British Columbia history; Vancouver; Coast Mountains; snow; snow-removal; climate; climate change; seasonality; weather; skiing; snow survey.

## Summary for Lay Audience

The City of Vancouver is not as snowy as the rest of Canada; rain, not snow, is its defining weather feature. But snow is a common seasonal occurrence, having fallen there nearly every winter since the 1850s. This dissertation places snow at the centre of the City of Vancouver's history. It demonstrates how cultural and natural factors influenced human experiences and relationships with snow on the coast between the 1850s and 2000s. Following Vancouver's incorporation, commercial and civic boosters constructed – and settlers adopted – what I call an evergreen mentality. Snow was reconceptualized as a rare and infrequent phenomenon. The evergreen mentality was not completely false, but it was not entirely true, either. This mindset has framed human relationships with snow in Vancouver ever since. While this idea was consistent, how coastal residents experienced snow evolved in response to societal developments (such as the rise of the automobile and the adoption of new snow-clearing technologies) and regional climate change.

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## Acknowledgments

To finally be in a position to defend this dissertation is a testament to the incredible support I have received over the past six years. There were many moments, particularly at the height of the COVID-19 pandemic, when I thought about giving up; when the idea of completing this project seemed so absurdly out of reach that I felt there was no other option. I am so thankful to my family, friends, colleagues, and mentors for listening, guiding, and supporting me during those times. I am so glad that I was able to see this dissertation to its end and am proud of what I have accomplished.

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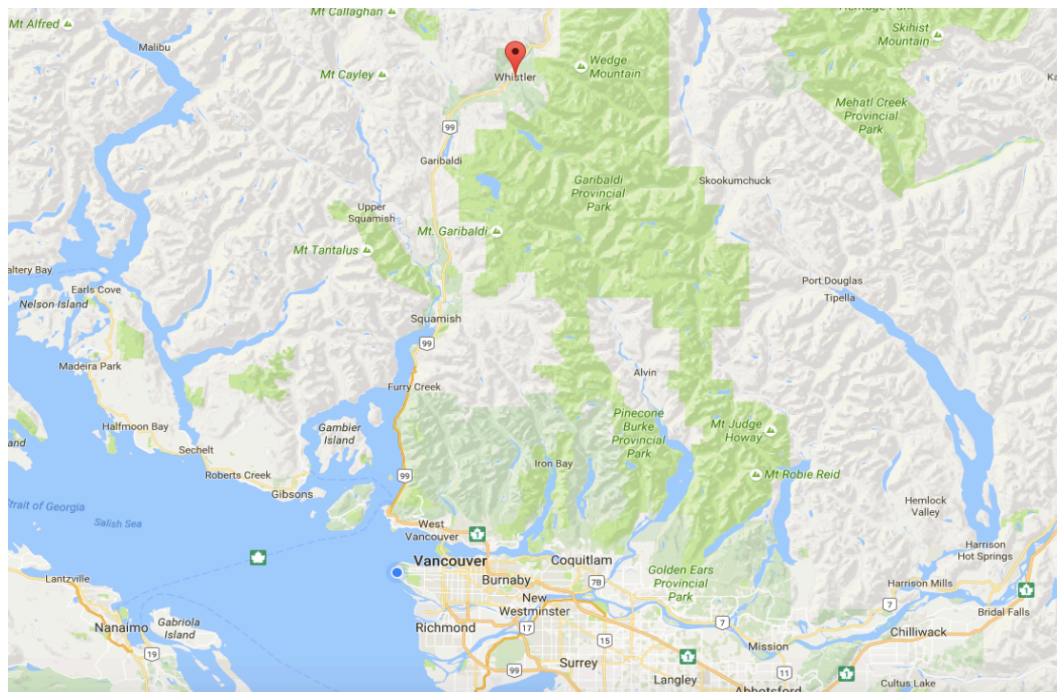
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## Maps of Metro Vancouver and the Southern Coast Mountains



**Figure 1: Map of Metro Vancouver. *Metro Vancouver 2040: Shaping Our Future***



**Figure 2: The southern Coast Mountains. Google Maps.**

## Introduction

### 0 Snow and the Evergreen Playground

It snowed the week I moved to Vancouver. It was December 2016, and I had just moved to an apartment in the Kitsilano neighbourhood with my partner, Giulia. We spent that first weekend unpacking and preparing for the upcoming week. On walks down to Kitsilano beach, we could see the tops of the North Shore Mountains, just across Burrard Inlet, coated in snow. The weather in the city, which had been pleasant, began to cool on Sunday 4 December. When we awoke on Monday, the ground was covered in a few centimetres of snow – a nice reminder of the winter weather that I grew up with in Ontario. I joined Giulia as she left for the bus stop two blocks away on West Broadway Avenue. We passed kids sliding in the snow and a few neighbours shoveling their sidewalks. At Broadway, we saw a traffic jam at the bottom of the small hill between Larch Street and Vine Street. Cars – most without snow tires – and buses crept slowly up the hill or slid back down unsuccessfully. Seeing that her bus was not going to make it to its hilltop stop, Giulia set off on her long walk to work while I got a coffee and walked back to snowy “Kits” beach, now framed by whitened mountains that stretched to the sea.



**Figure 3: Snow in Vancouver and the North Shore Mountains, 5 December 2016.**

**Author's photograph.**

The snow was picturesque, but it caused considerable difficulties throughout Metro Vancouver, the region encompassing Vancouver and its surrounding suburbs. Buses ran behind schedule for much of the day. Snow triggered the alarms on the SkyTrain rapid transit system and caused delays for its riders, too. Drivers commuting into Vancouver via the Port Mann and Alex Fraser bridges reported “ice bombs” – large chunks of accumulated ice and snow – falling from the suspension cables onto the bridge decks. Simon Fraser University closed as vehicles were unable to climb Burnaby Mountain. The snow and cold temperatures created dangerous conditions for the city’s homeless population. “It’s a critical time... we haven’t had snow like this in more than two years,” said the Union Gospel Mission Shelter’s Jeremy Hunka in the *Vancouver Sun* the next day. “So this is catching an already vulnerable population off guard.” The slight December snowfall eclipsed the cumulative snow total of the past two winters. The *Sun* reminded residents of the city bylaw that required them to shovel their sidewalks by 10 a.m. or face a \$250 fine.<sup>1</sup>

The wintry weather did not let up. Cold temperatures persisted and more snow fell between 9 and 12 December. While the snow created problems in the city, it was a boon for the region’s ski industry. Popular southern Coast Mountain ski areas such as Seymour, Grouse, Cypress, and Whistler-Blackcomb reported excellent snow conditions. Giulia and I were just two of the tens of thousands of skiers who drove to Whistler in search of powder. Municipal and provincial snow-clearing crews spread thousands of tons of salt on the region’s roads and highways to melt the accumulated snow and ice. Driving conditions on major highways such as the Sea-to-Sky Highway and the Trans-Canada Highway were still treacherous, however. Snow snarled drivers in the metropolitan region, too. The scene I witnessed on West Broadway on 5 December occurred on hills throughout Metro Vancouver that month. “What is it about a modest fall of snow that causes the collective driving IQ of the South Coast to drop with the temperature to around freezing?” asked a frustrated Stephen Hume in the 14 December edition of the *Sun*. “It’s not as though snow is completely alien here... on average, we get

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<sup>1</sup> “Monday’s snowfall a test run for storm expected Thursday,” *Vancouver Sun*, 6 December 2016; Jeff Lee and Cheryl Chan, “Snowfall impedes evergreen line’s first full workday,” *Vancouver Sun*, 6 December 2016

a dusting or more on about 9 days every winter. So, the expectation is for snow about 10 percent of the time in winter. Yet every year it's like snowmageddon with lamentations more suitable to the coming of the Four Horsemen of the Apocalypse rather than um, the same old, same old.”<sup>2</sup>

Snow is an overlooked and often forgotten aspect of Vancouver's winter climate. It is not the defining feature of the coast's winter weather as it is in the rest of Canada. Instead, the southwestern coast of mainland British Columbia is subjected to waves of heavy rain throughout the winter months. Snow seems to belong more naturally in the North Shore Mountains, the backdrop for countless photographs of Vancouver. The white peaks provide a sharp contrast to the city's winter greenery. But snow is a seasonal presence in Vancouver. It has coated the coastal metropolis in all but four winters since meteorological records began in 1899. Between 1899 and 1971, the average annual snowfall in downtown Vancouver was 64 cm. Snow covered the ground for an average of 12 days per year during this period. (Primary weather observations shifted in the mid-twentieth century from the downtown to the Vancouver International Airport, located 10 km south of downtown on Sea Island. At the airport, the average annual snowfall between 1939 and 1997 was 49 cm).<sup>3</sup> Generally, snow does not persist for weeks or months, as it does in the rest of Canada; rather it lasts just a few days or a few hours before it disappears. Weeks or months may pass between snowfalls. But when it does fall, as it did in December 2016, it really is more of “the same old, same old.”

This dissertation tracks snow in the City of Vancouver's history. It demonstrates the myriad ways that snow affected life in and around the coastal metropolis and explores how human experiences with snow evolved between the mid-nineteenth century and the end of the twentieth century. It shows how human perceptions about climate and seasonality, the evolution of Vancouver society, and natural climate cycles and

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<sup>2</sup> Stephen Hume, “Even the south coast gets snow; so why is it a problem?” *Vancouver Sun*, 14 December 2016.

<sup>3</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Vancouver PMO, BC monthly data report for December – March, 1899-1971, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; Vancouver International Airport, BC monthly data report for December – March, 1939-1997, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>.

anthropogenic climate change impacted human relationships with snow over a 140-year period. It highlights how the “Vancouver” experience with snow was in some ways unique – a product of specific societal circumstances and the region’s climate and physical geography – and yet in other ways mirrored trends across North America. It is a history that also encompasses and blends two seemingly separate spaces: the coastal metropolis and the mountainous hinterland of southwestern British Columbia. As this dissertation shows, one cannot fully understand snow’s impact on Vancouver’s history without incorporating the southern Coast Mountains. Snow was a connecting force between these two spaces. Mountain snow was also a valuable resource for coastal residents. Pushing this narrative into the southern Coast Mountains blurs the line between the urban and rural environments and offers greater insight into snow’s importance to Vancouver’s history.

Human perceptions about seasonal and climatic norms influenced how people experienced snow in Vancouver. Snow was an expected seasonal occurrence in the mid-nineteenth century. Coast Salish peoples and early European settlers were unsurprised when it fell. Ideas about snow and the coastal climate shifted following the City of Vancouver’s incorporation in 1886. Commercial and civic boosters downplayed snow’s prominence to attract investment, settlement, and tourism to the Terminal City. They promoted the coast’s mild winters and asserted that snow was a rare and short-lived phenomenon. This idea was widely adopted by the tens of thousands of settlers who moved to the coast during the low-snow winters of the early twentieth century without prior knowledge of the region’s winter climate. Settlers considered their city to be a snowless “Evergreen Playground,” an idea that did not necessarily align with natural conditions. The dominance of this mindset – what I call the “evergreen mentality” – has persisted throughout Vancouver’s history. As this dissertation shows, it influenced how coastal residents thought about, prepared for, and handled snow throughout the twentieth century. The evergreen mentality was not necessarily false – snow *was* rarer and less frequent on the coast compared to other parts of Canada – but it was not completely true either. It emphasized a degree of snowlessness that reframed a seasonal occurrence as an uncharacteristic and unnatural part of the coastal climate. While some questioned the evergreen mentality’s legitimacy in the wake of cold and snowy winters, these challenges

were spontaneous and infrequent and disappeared with the return of mild and rainy wintry weather.

The opposite was true in the southern Coast Mountains. Snow was *the* defining weather feature here. The snow season lengthens and the snowpack deepens as one leaves the coast and travels into these mountains, which stretch from Burrard Inlet north to Alaska. Southern Coast Mountain peaks reach between 1,000 and 3,000 m above sea level (asl). Snow here often arrives in October or November and remains until June or July. The annual snowpack measures between 4 to 10 m depending on elevation and proximity to the Pacific Ocean. At the highest elevations, snow and ice persist all year. The winter landscape of the southern Coast Mountains is a stark contrast to that on the coast. Settlers developed specific relationships with mountain snow based on its extended abundance. Settlers drew snowmelt to the urban environment for its energy potential and life-sustaining properties; snow drew settlers to the mountains for recreation and economic opportunities. While other historians have highlighted how water connected Vancouver to the southern Coast Mountains, snow's importance in this regard has not yet been explored. Despite its physical separation from the coast, mountain snow had a significant impact on the development of Vancouver in the twentieth century.<sup>4</sup>

Many of the challenges that people have had with snow have occurred when natural conditions have not aligned with these expectations. This happened frequently in Vancouver. There seemed to be a collective amnesia about snow on the coast; the fact that it fell in any discernable quantity for any length of time consistently surprised coastal residents. Descriptions of snow as “unexpected” or “uncommon” appeared in local newspapers constantly throughout the twentieth century. Believing snow to be rare, coastal residents were complacent about it. Throughout Vancouver's history, people were unprepared to deal with snow in ways that other, snowier North American cities have

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<sup>4</sup> In blurring the boundaries between urban and rural spaces, this work builds on the work of other environmental historians such as William Cronon who has sought to complicate these distinct borders. William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W.W. Norton & Co., 1991); Mark Kuhlberg, “‘An Eden that is practically uninhabited by humans:’ Manipulating wilderness in managing Vancouver's drinking water, 1880-1930,” *Urban History Review* 45 no. 1 (2016): 18-35; Matthew Evenden, “Debating water purity and expertise: the chlorination controversy in Vancouver during the Second World War,” *Journal of Historical Geography*, 65 (2019): 85-95; Louis P. Cain, “Water and Sanitation Service in Vancouver: An Historical Perspective,” *BC Studies* 30 no. 3 (1976) 27-43.



been. Snow thus had an outsized impact on many aspects of urban life such as travel and municipal snow-clearing efforts. Writing about snow in urban spaces, geographer John F. Rooney, Jr. argues that human perceptions, knowledge, and experiences with snow influence how societies respond to it. Building on Rooney's assessment, historian Bernard Mergen contends that "it is the cities that fail to confront the 'urban snow hazard' that suffer more than cities with greater snowfall, but are well prepared."<sup>5</sup> This history demonstrates that this was the case in Vancouver. Snow was a serious problem because of the evergreen mentality. For most of the city's history, the dominance of this mindset prevented residents from taking the necessary precautions to adequately prepare for snow. This dissertation thus offers insight into how perceptions and expectations about nature have tempered human experiences and relationships with it.

A contrasting narrative is again apparent in the southern Coast Mountains. While snow often falls to considerable depths each winter, there is also considerable variability from year to year. Shifting regional climate patterns create weather conditions that can lead to greater or lesser annual snowpack totals. In-season weather events such as temperature inversions (the reversal of a mountain's normal temperature dispersion, i.e., warmer temperatures at the peak than at the base) and rainstorms can melt and wash away the accumulated snowpack. Low snow winters contradicted human expectations about snow in these mountains. A lack of mountain snow jeopardized aspects of human society that depended on its abundance and reliability. It meant less meltwater was available for human consumption and energy use in urban settings during the spring and summer months, for example. Back in the mountains, alpine ski areas – which invested millions of dollars to attract locals and tourists to their large, capital-intensive resorts following the Second World War – were unable to operate without snow. In a landscape so often dominated by snow, its absence was intensely felt by coastal residents.

While expectations about snow in these spaces remained fairly consistent throughout the twentieth century, changing societal circumstances affected human experiences with

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<sup>5</sup> John F. Rooney, Jr., "The Urban Snow Hazard in the United States: An appraisal of disruption," *Geographical Review* 57, no. 4 (1967): 538-59; Bernard Mergen, "Slush funds: A history of D.C. Snow Management," *Washington History* 8 No. 1 (1996), 5.

snow. This dissertation builds on the work of historians such as William B. Meyer, Blake McKelvey, and Bernard Mergen who have argued that societal changes altered how humans perceived of and experienced weather events such as snow.<sup>6</sup> Between 1886 and 1997, Vancouver grew from a small outpost “crowded between forest and shore” into a burgeoning metropolis.<sup>7</sup> Human experiences with snow changed in response to its growth and modernization. At the start of the twentieth century, streetcars, horses, and one’s own feet were the primary modes of transportation on dirt or gravel roads. These options were slowly replaced by rubber-wheeled cars and buses, which dominated asphalt roads in the second half of the twentieth century. This shift altered snow’s impact on travel in the region and pushed municipal leaders to adopt new snow-clearing strategies and equipment. The emergence of Vancouver’s mechanized and motorized snow-fighting fleet was one such development. The city’s reliance on salt was another. In the southern Coast Mountains, skiing brought tens of thousands of coastal residents into spaces that had previously been scarcely visited by settlers during the winter months. This small-scale, popular winter outdoor recreation activity became a large-scale, capital-intensive industry in the second half of the twentieth century. By the late twentieth century, these resorts drew hundreds of thousands of locals and domestic and international tourists to the mountains each winter. The dominance of this sport helped to turn mountain snow into a valuable cultural and economic product. These are just two of the many societal changes that altered human relationships with snow in these spaces.

Social considerations further affected snow experiences. As historian Judith Fingard writes, although “snow fell alike on the rich and poor,” it had different impacts on distinct groups.<sup>8</sup> This was true in Vancouver and the southern Coast Mountains, too. Coastal residents had disparate snow experiences depending on their age, race, class, and gender. Snow was a source of enjoyment for the city’s youth, for example. For those

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<sup>6</sup> Blake McKelvey, *Snow in the Cities: A History of America’s Urban Response* (Rochester: University of Rochester Press, 1995); Blake McKelvey, “Snowstorms and Snow Fighting – the Rochester Experience,” *Rochester History* 27 No. 1 (1965); Mergen, “Slush Funds;” Mergen, *Snow in America* (Washington, D.C.: Smithsonian Institution Press, 1997); William B. Meyer, *Americans and their Weather* (Oxford: Oxford University Press, 2000).

<sup>7</sup> The phrase comes from an early photograph of Granville. On it, Major James Skitt Matthews, Vancouver’s first archivist, wrote that the community was “crowded between forest and shore.”

<sup>8</sup> Judith Fingard, “The Winter’s Tale: The Seasonal Contours of Pre-Industrial Poverty in British North America, 1815-1860,” *Historical Papers* 9 no.1 (1974), 65.

employed in outdoor occupations, snow led to temporary work stoppages and periods of unemployment. For Chinese Canadians, snow was a danger in the decades prior to the First World War. White settlers used snowballs to harass and injure their Chinese counterparts and to enforce racial hierarchies and segregation in Vancouver. For those with capital and leisure time who could leave the coast's grey, rainy winter days to ski in the mountains, snow was an escape. Some of these experiences transformed in response to societal changes. Coasting or tobogganing on city streets, for example, became much more dangerous as cars became more prominent in Vancouver. New transportation corridors improved travel between the coast and the mountains and made mountain snow more accessible to greater numbers of urban and suburban residents. And the frequency and severity of snowball attacks against Chinese Canadians – or at least the sensationalized reporting of these events – slowly faded from the city.

Changing natural climate patterns have also affected human perceptions of and experiences with snow. British Columbia's weather and climate are strongly influenced by changes in sea surface temperatures (SSTs) and atmospheric circulation patterns over the Pacific Ocean. For the purposes of this dissertation, the El Niño Southern Oscillation (ENSO) and the Pacific Decadal Oscillation (PDO) are the most important regional climate patterns. There are two distinct ENSO patterns: a warm phase (El Niño) and a cool phase (La Niña). The former is characterized by warm SSTs off the western coast of South America, the latter by cooler than normal SSTs in these waters. These events can affect weather patterns around the globe. In southwestern British Columbia, winters following ENSO warm phases are typically drier and warmer than average. ENSO cool phases, in contrast, tend to produce wetter and cooler winter weather conditions. ENSO events typically last between 6 to 18 months and tend to occur once every 2 to 7 years.<sup>9</sup>

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<sup>9</sup> R.D. (Dan) Moore et al., "Weather and Climate," in *Compendium of Forest Hydrology and Geomorphology in British Columbia*, ed. Robin G. Pike et al. (Victoria: B.C. Ministry of Forests and Range, Research Branch, 2010), 61-5; Paul H. Whitfield et al., "Pacific Decadal Oscillation and the Hydroclimatology of Western Canada – Review and Prospects," *Canadian Water Resources Journal* 35 no. 1 (2010), 4.

The second climate pattern of note is the PDO. Climate scientists have described it as a “long-lived El Niño-like pattern.”<sup>10</sup> Similar to ENSO, the PDO is characterized by shifting SST patterns in the central and eastern Pacific Ocean and has both a warm (positive) phase and a cool (negative) phase. Positive PDOs are associated with warmer winter temperatures, decreased precipitation totals, and lower snowpack totals/snow water equivalent (SWE) measurements in British Columbia’s southern Coast Mountains. Negative PDOs tend to produce the opposite effect. Unlike ENSO, these phases persist for much longer, typically between 20 and 30 years. Research shows that there have been two full cycles in the twentieth century: two cool phases from 1890-1924 and 1947-76, and two warm phases from 1925-46 and 1977 through the mid-1990s.<sup>11</sup> The effects of ENSO events are enhanced during the corresponding PDO cycle. So, strong El Niño conditions appear more frequently during positive PDO cycles. La Niña conditions can occur during positive PDO cycles, but the former’s effects are dampened by the latter. Moreover, while positive PDO characteristics tend to dominate during positive cycles, negative PDO conditions do occur during those cycles. Shifts in twentieth century PDO cycles have corresponded with strong ENSO events.<sup>12</sup>

Global climate changes have further affected snow conditions in southwestern British Columbia. The mid-nineteenth century marked the end of the Little Ice Age (LIA), a period of global cooling that lasted hundreds of years. Climate historians have shown how this cooling impacted various societies differently. How these groups responded to changes associated with the LIA also differed.<sup>13</sup> Research in the southern Coast Mountains has shown that glaciers there reached their greatest extent in the mid-nineteenth century and have receded since.<sup>14</sup> Meteorological observations and

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<sup>10</sup> Nathan J. Mantua and Steven R. Hare, “The Pacific Decadal Oscillation,” *Journal of Oceanography* 58 (2002), 35.

<sup>11</sup> Moore et al., “Weather and Climate,” 61-5.

<sup>12</sup> Ibid, 61-5; Whitfield et al., “Pacific Decadal Oscillation and the Hydroclimatology of Western Canada,” 5-13.

<sup>13</sup> See Dagomar Degroot, *The Frigid Golden Age: Climate Change, the Little Ice Age, and the Dutch Republic, 1560-1720* (Cambridge: Cambridge University Press, 2018); Sam White, *A Cold Welcome: The Little Ice Age and Europe’s Encounter with North America* (Cambridge: Harvard University Press, 2017); Brian M. Fagan, *The Little Ice Age: How Climate Made History* (New York: Basic Books, 2000).

<sup>14</sup> O. Slaymaker et al., “The Primordial Environment,” in *Vancouver and its Region*, ed. Graeme Wynn and Timothy Oke (Vancouver: UBC Press, 1992), 23; Michael Church and June M. Ryder, “Physiography of

documentary records show that winters in the Vancouver area were probably colder and snowier in the mid-nineteenth century than they were in the mid- to late twentieth century. Global and regional temperatures have risen considerably in the final few decades of the twentieth century, fueled by the burning of fossil fuels. Anthropogenic climate change became a pressing issue for scientists and politicians in the 1980s and 1990s. Concern about global warming, as anthropogenic climate change was first known, slowly crept into Vancouver's mainstream media and the society's public discourse in the final decade of the twentieth century.<sup>15</sup>

These climatic shifts had disparate effects on how people thought about and experienced snow in Vancouver and the southern Coast Mountains. The evergreen mentality, for example, was cemented during the low snow years of the 1900s. Tens of thousands of arriving settlers were told of the coast's snowlessness during a decade in which snow was less prevalent than normal. Residents were acutely aware of the changing conditions around them, too. During the snowy winters of the late 1940s and early 1950s, coastal residents believed rightly that these "unprecedented" winters signaled that their climate had changed; however, they attributed this to nuclear testing rather than still-to-be-discovered regional climate patterns. The effects of climate change were most clearly felt in the southern Coast Mountains. The drier, warmer weather conditions that typically occurred during El Niño winters or positive PDO cycles affected snow's abundance, which in turn impacted alpine ski activities and the availability of meltwater for freshwater and energy production. Ski operators invested millions of dollars into new and enlarged ski areas during the 1945-76 negative PDO cycle, a period that produced favourable snow conditions in these mountains. The shift back to a positive cycle in 1977 and the growing effects of global climate change produced warmer and drier winters that underscored the industry's vulnerability to uncooperative winter weather. As this dissertation shows, human perceptions of and experiences with snow were shaped by a combination of these natural conditions and societal developments. It is impossible to

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British Columbia," in *Compendium of Forest Hydrology and Geomorphology in British Columbia*, ed. Robin G. Pike et al., 37.

<sup>15</sup> See James Rodger Fleming, *Historical Perspectives on Climate Change* (Oxford: Oxford University Press, 1998); Paul N. Edwards, *A Vast Machine: Computer Models, Climate Data, and the Politics of Global Warming* (Cambridge, Mass.: MIT Press, 2010).

fully understand this history of snow in Vancouver and the southern Coast Mountains without taking into account both factors.

This work seeks to bring snow and winter to the historical forefront. These are two of this country's most defining natural features, and yet they have rarely been primary topics of analysis in Canadian history. While historians such as Douglas Owsram, Carl Berger, W.L. Morton, and Ryan Eyford have demonstrated how winter influenced early Canadian intellectual and immigration histories, the season is not the main focus of these studies.<sup>16</sup> Fingard's excellent 1974 article on winter and poverty in pre-industrial British North America is a rare exception in twentieth century Canadian historiography. Her work showed how class influenced experiences with winter in the colony's major cities during the early nineteenth century.<sup>17</sup> Twenty years later, popular historian Pierre Berton released *Winter*, a collection of short articles and photographs about the season in Canada. Berton's work celebrated the season and described Canadians as wintry people. "Winter has made us a buoyant people," wrote Berton. "A tough, resilient breed, able to adapt to the longest of our seasons. To come to terms with it, survive it – yes, and to celebrate it."<sup>18</sup> Other twentieth century scholarship on winter has focused on it in other areas of the world or has paid particular attention to a certain aspect of the season, such as ice or snow. Scholars such as Ruth Kirk, McKelvey, and Mergen demonstrated how snow has shaped human history in a multitude of ways. Mergen is probably best deserving of the title of America's twentieth century snow historian, having written on numerous snow-related topics.<sup>19</sup>

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<sup>16</sup> Carl Berger, "The True North Strong and Free," in *Nationalism in Canada*, ed. Peter Russell (Toronto: 1966); Ryan Eyford, *White Settler Reserve: New Iceland and the Colonization of the Canadian West*. (Vancouver: University of British Columbia Press, 2016); W.L. Morton, "The North in Canadian History," in *Contexts of Canada's Past*, ed. A.B. McKillop (Ottawa: Carleton University Press, 1980); Doug Owsram, *Promise of Eden: The Canadian Expansionist Movement and the Idea of the West, 1856-1900* (Toronto: University of Toronto Press, 1980).

<sup>17</sup> Fingard, "The Winter's Tale."

<sup>18</sup> Pierre Berton, *Winter* (Toronto: Stoddart Publishing, 1994), 1.

<sup>19</sup> Ruth Kirk, *Snow* (Morrow, 1978); McKelvey, *Snow in the Cities*; McKelvey, "Snowstorms and snow fighting;" Mergen, "Slush Funds;" Mergen, *Snow in America*; Bernard Mergen, "Seeking Snow: James E. Church and the beginnings of snow science," *Nevada Historical Society Quarterly* 35 no. 2 (1992): 75-104; B Mergen, 1993, "Snow Sciences in North America: the Eastern and Western Snow Conferences in the Context of Environmental History," in *Western Snow Conference, Quebec City, 1993*.

By the start of the twenty-first century, Canadian experiences with winter and its associated elements remained largely shrouded in a deep blanket of snow. In 2001, Ken S. Coates and William R. Morrison reflected on this lack of scholarship. “To speak of winter is to speak of the obvious,” they wrote. “No Canadian can be blind to the realities of the coldest season.”<sup>20</sup> But Canadian historians *had* overlooked it. Canadian historiography was filled with “summer stories,” to borrow a phrase from historian Emilie Cameron. As Cameron argued in her 2015 work on the Bloody Falls massacre, Canada’s North, “this prototypically wintry place,” had largely been written about, conceptualized, and experienced by white settlers within a summer context.<sup>21</sup> Historians had written about Canada in much the same way. Coates and Morrison offered an answer as to why they believed winter was absent from Canadian historical scholarship. “As is sometimes the case with historical analysis, the prominent and obvious features exist without systematic commentary or detailed consideration... perhaps because [winter] is so much a part of Canadian life that it seems unremarkable, and has been dealt with implicitly rather than explicitly.” No doubt the sheer vastness of the season – both in the literal sense and in Canadians’ collective imaginations – has made the idea of confronting this season a daunting task for many historians.<sup>22</sup> Arguing that “winter” and “northern” were synonymous, Coates and Morrison believed that scholars of Canada’s North were well-suited to uncover this history.<sup>23</sup>

The historiographical situation did not improve much over the following decade, as Cameron’s later comments make clear. This was not just the case in Canada, but in North American historiography generally. Writing in 2015, historian Thomas M. Wickman argued that there was a vernal bias in early American historiography, with scholars privileging summer stories over winter ones. He noted that this bias might be attributed to the types of sources that scholars had available to them. In any case, this had “prevented

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<sup>20</sup> Ken S. Coates and William R. Morrison, “Winter and the Shaping of Northern History: Reflections from the Canadian North,” in Margaret Conrad and Alvin Finkel (eds), *Foundations: Readings in Pre-Confederation Canadian History*, Vol. 1 (Toronto: Pearson-Longman, 2004), 4.

<sup>21</sup> Emilie Cameron, *Far off Metal River: Inuit lands, settler stories, and the making of the contemporary Arctic* (Vancouver: UBC Press, 2015), 11.

<sup>22</sup> It did for this historian.

<sup>23</sup> Coates and Morrison, “Winter and the Shaping of Northern History: Reflections from the Canadian North,” 4.

scholars from thinking critically about winter patterns or simply asking factual questions about the colder half of the year.”<sup>24</sup> Tina Adcock expressed similar concerns regarding Canadian environmental historiography in 2016. “Environmental historians have treated winter not only scantily, but also harshly in their narratives.... [W]e may live in a cold kingdom, but the Canada that emerges from our articles and books remains overwhelmingly clement.... Is winter simply too obvious, too – well – depressing a subject to merit the attention of Canadian historians?”<sup>25</sup>

Both scholars did, however, see the beginnings of what Wickman called a “light blue turn,” a historiographical shift toward winter narratives. Wickman attributed this turn – “potentially also a paradigm shift” – to a growing body of literature on historic climates and climatic change, with much published since the start of the twenty-first century.<sup>26</sup> Climate historians have shown how past climate changes impacted human societies and how these groups, in turn, responded to new climatic and weather conditions. In the Canadian context, scholars such as George Colpitts and Sam White have highlighted how these changes affected winter experiences in present-day Canada.<sup>27</sup> Recent work on historical seasonality has also helped bring winter – and snow, ice, and cold – to the historical forefront. Scholarship by historians such as Wickman, Liza Piper, Tony Perry, and Josh MacFadyen have drawn attention to winter-based narratives. Wickman in particular has contributed significantly to the light blue turn through his writings on historical snow and winter experiences in the American northeast during the colonial period.<sup>28</sup> This scholarship contends that seasons are socially and culturally constructed

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<sup>24</sup> Thomas Wickman, “Light Blue Books: Reading about winter ecology and climate history,” *Uncommon Sense – The Blog*, (blog), 4 February 2015, <https://blog.oieahc.wm.edu/light-blue-books-reading-about-winter-ecology-and-climate-history/>

<sup>25</sup> Tina Adcock, “A Cold Kingdom,” *Network in Canadian History & Environment* (blog), 17 March 2016, <https://niche-canada.org/2016/03/17/a-cold-kingdom/>

<sup>26</sup> Wickman, “Light Blue Books.”

<sup>27</sup> George Colpitts, “Peace, War, and Climate Change on the Northern Plains: Bison Hunting in the Neutral Hills during the Mild Winters of 1830-1834” *Canadian Journal of History* 50 no. 3 (2015): 420-41; White, *A Cold Welcome*.

<sup>28</sup> Thomas M. Wickman, *Snowshoe Country: An Environmental and Cultural History of Winter in the Early American Northeast* (Cambridge: Cambridge University Press, 2018); Thomas Wickman, “The Great Snow of 1717: Settler landscapes, deep snow cover, and winter’s environmental history,” *Northeastern Naturalist* 24 no. 7 (2017): 81-114; Liza Piper, “Freeze-up, Break-up, and Colonial Circulation,” *Journal of Northern Studies* 13 no. 2 (2019): 17-41; Tony Perry, “In Bondage When Cold Was King: The Frigid Terrain of Slavery in Antebellum Maryland,” *Slavery & Abolition* 38 no. 1 (2017): 23-36; Josh MacFadyen, “Cold Comfort: Firewood, Ice Storms, and Hypothermia in Canada,” *Network in Canadian History &*



concepts that change over time and from society to society. Recent sociological work has also contributed to greater understandings of historical seasonality.<sup>29</sup>

Contemporary issues have further influenced this rise in winter-based histories, at least according to historian Sverker Sörlin. As he wrote in 2018, “the loss of glaciers and the shrinking annual snow cover signify a major historical event in and of itself, and they herald even deeper changes in the future.”<sup>30</sup> Anthropogenic climate change is a dire concern for humanity. While climate historians have demonstrated that human societies can adapt to changing climatic conditions, not all will. The sheer rate and scale of ongoing change may be catastrophic, especially for those societies with deep connections to snowy and icy landscapes. Historian Mark Carey has highlighted the opportunities and precarities associated with climate change and glacial melting in the Peruvian Andes.<sup>31</sup> The idea that scholars are turning to snow- and ice-based topics because of ongoing climate concerns is probably correct: as the world warms, environmentally conscious scholars have become more interested in understanding how human societies lived in colder, snowier, and icier environments and untangling how they adapted to changing climate and weather conditions. This does not mean that all snow- and ice-based stories will necessarily be declensionist, however. As Sörlin contends, it will depend on the types of stories that historians choose to tell. Certain snow and ice histories might be “a wonderland of forgotten ideas – and of hopes and deceptions... ruins, not just of a bygone Ice Age but of failed policies... But we may perhaps also find stories of ethics, responsibility, and global and local connections, and we may uncover new ways to understand the world we live in – and ourselves.”<sup>32</sup>

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*Environment* (blog), 5 January 2014, <https://niche-canada.org/2014/01/05/cold-comfort-firewood-ice-storms-and-hypothermia/>; Josh MacFadyen, “Cold Cases: Hypothermia Before, and After, Stonechild,” *Network in Canadian History & Environment* (blog), 27 October 2014, <https://niche-canada.org/2014/10/27/cold-cases-hypothermia-before-and-after-stonechild/>

<sup>29</sup> Tonya K. Davidson and Ondine Park, eds., *Seasonal Sociology*, (Toronto: University of Toronto Press, 2020).

<sup>30</sup> Sörlin’s original version of this concept appeared in a 2015 article. Sverker Sörlin, “Cryo-history: Ice, snow, and the Great Acceleration,” in *Ice and snow in the Cold War: Histories of Extreme Climatic Environments*, ed. Julia Herzberg, Cristian Kerht, and Franziska Torma (New York: Berghahn Books, 2018), 24.

<sup>31</sup> Mark Carey, *In the Shadow of Melting Glaciers: Climate Change and Andean Society* (Oxford: Oxford University Press, 2010)

<sup>32</sup> Sörlin, “Cryo-history,” 34.

This dissertation seeks to uncover these obscure and overlooked snow stories and foreground them in the history of Vancouver and the southern Coast Mountains – Canada’s Evergreen Playground, as the region was popularly known in the mid-twentieth century. While snow had a significant impact on life in and around the coastal metropolis, human snow stories have been conspicuously absent from its history. This has been the case for other Canadian cities, too. Snow remains a relatively unexplored topic in Canadian environmental historiography. This dissertation redirects attention to snow experiences in one of this country’s largest urban centres and offers fresh perspective into a historiography of snow and winter long dominated by American narratives. Through snow, the boundaries between urban-rural spaces blur; the connections between the coast and the mountains comes into sharper view. Undertaking this project highlights the myriad ways that snow impacted coastal residents, how they formed certain relationships with snow, and how these evolved over time in response to societal and natural factors. At the same time, it demonstrates how ideas about climate and seasonality – how redefining a seasonal event as unseasonal, for example – complicated these relationships.

This dissertation broadens the existing field of snow historiography. These histories have tended to focus on *snowy* landscapes. While the southern Coast Mountains are truly snowy spaces, the same cannot be said for nearby Vancouver. In his pioneering work on urban snow experiences in America, McKelvey focuses predominantly on snowy cities (although Portland and Seattle do make the occasional appearance). Mergen was the first historian to push the spatial boundaries of the field in his history of snow clearing in Washington, D.C. – a city that receives even less snow than Vancouver – but this is an outlier in the field. The present work thus offers new insight into how people lived with snow in a not-so-snowy urban centre. It also shows how snow from the overly snowy mountains increasingly became integrated into the coastal society during the twentieth century. In doing so, this work highlights snow’s significance outside the confines of meteorological winter. Conceptually, histories of snow are not necessarily histories of winter, nor is the opposite necessarily true either. Winter histories tend to encompass multiple topics and weather events. Most snow histories fall under the umbrella of “winter histories” since they unfold during the winter months. But as this dissertation shows, snow’s significance extended into other parts of the year. In the southern Coast

Mountains, the arrival of snow in mid-autumn or its retention into late spring meant an extended ski season. The release of accumulated snow each spring affected urban and suburban water and energy use in the summer months. Extending this analysis outside of the winter months better captures snow's importance to Vancouver and its people.

Even with these considerations in mind, Vancouver no doubt seems an unlikely choice for a history of snow in Canada. Snow is not the most dominant winter weather event in Vancouver. Rain is a way of life on the coast, as any local will tell you.<sup>33</sup> Fog, too, is much more emblematic of the coast. For much of the winter, snow is conceptually and physically distant from Vancouver. One has to travel to the mountains to find it. There are other Canadian cities that are much better candidates for a history of snow. Snow is much more prominent in every other major Canadian city save Victoria, which receives even less snow than Vancouver.<sup>34</sup> The decision to write a history of snow in Vancouver and the southern Coast Mountains came from personal experience and reflection. Having lived in Vancouver off-and-on for 6 years, I have both fond and frustrating memories of snow on the coast and in the mountains – memories that resurfaced as I reworked this project during the COVID-19 pandemic and gradually crystalized into research questions. What began as a distraction from life at the height of the pandemic developed into a deeply personal project. Despite its snow-free reputation, Vancouver has a rich snow history, as I was pleasantly surprised to learn. Coastal and mountain snow had – and still has – a significant impact on urban life in ways that contemporary residents do not fully know. Foregrounding snow as the central theme of this dissertation brings to light new stories in the city's history and offers a unique perspective into the evolution of human relationships with snow in this corner of the country.

In many ways, these snow experiences were unique compared to other parts of Canada. The dominance of the evergreen mentality tempered human experiences with snow in ways that did not happen in other Canadian cities. Snow was expected in cities such as Edmonton, Ottawa, and Montreal; its absence was surprising. The opposite was true in

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<sup>33</sup> Donald Stainsby, "Rain as a way of life," in Chuck Davis, *The Vancouver Book* (North Vancouver: J.J. Douglas Ltd., 1976), 118.

<sup>34</sup> David Phillips, *The Day Niagara Falls Ran Dry: Canadian Weather Facts and Trivia* (Toronto: Key Porter Books, Ltd., 1993), 137.

Vancouver. Climate and geographical differences further differentiated coastal snow experiences. Coastal snow is often wet and heavy, falling as it does in humid conditions and at temperatures close to the freezing point. Warm rains often follow the snow, sometimes that same day. Post-snow rainstorms can be a blessing or a curse. Rains speed up the melting process clearing the city of snow quickly; however, heavy rain on a deep snowpack increases the risk of flooding. The physical separation between people and snow also influenced coastal snow experiences in various ways. Snow-based recreation activities were impromptu in the city. Those wanting to enjoy snow for longer periods had to travel to the mountains to do so. As a result, snow-based recreation activities such as skiing emerged later on the coast than in the rest of Canada. These specific climatic and geographical circumstances shaped human snow experiences in meaningful ways.

Coastal snow experiences were not completely removed from continental trends, however. The evolution of Vancouver's snow-fighting history – from manual labour to mechanized and motorized equipment to salt – roughly mirrored other North American municipalities.<sup>35</sup> These changes were driven by the city's growing automobility, a process that occurred throughout twentieth century North America. The development of the region's snow survey program also paralleled developments in the western United States. And while skiing emerged relatively late on the coast, the development of the region's alpine ski industry followed continental trends in the latter half of the twentieth century. In charting a history of snow that emphasizes the particular relationships that humans developed with it in Vancouver and the southern Coast Mountains, this research also highlights the similarities that existed between coastal snow experiences and those in other parts of the continent. The lack of existing scholarship on Canadian urban snow experiences makes it difficult to say for certain how closely Vancouver's snow history mirrored other large cities, however. Some additional research has helped to illuminate these commonalities and differences, but there is much still to be unpacked. Hopefully this dissertation will inspire historians to bring other Canadian snow stories to the forefront.

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<sup>35</sup> See McKelvey, *Snow in the Cities*; Mergen, *Snow in America*; Mergen, "Slush Funds."

This dissertation is divided into five sections. Section one explores the history of snow in the Vancouver region prior to the city's incorporation in 1886. It demonstrates how snow and ice shaped the geography of Metro Vancouver over thousands of years. It then uses oral histories, archaeological research, settler diaries, newspapers, and meteorological observations to re-construct the region's snow history between 1858 and 1886. These records show that snow was more common in the mid-nineteenth century than it is today. This snowiness was a lingering effect of the LIA. While colonial officials and new settlers boasted about the coast's mild winter climate – it was indeed milder than the rest of Canada – they did not hide the fact that snow and cold temperatures were common. Settlers mostly complained about periods of severe snow and cold, of weather that reminded them of more “Canadian” winters. Diaries from Fitzgerald McCleery and Henry Mole show how snow impacted early settlers in the southern part of present-day Vancouver. Oral histories and newspaper articles from New Westminster and Victoria also provide insight into settler experiences with snow in the Gastown/Granville area, the site of present-day Vancouver's downtown.

Sections two through five are divided into two chapters: one on urban snow experiences and one on mountain snow experiences. Each of these sections cover between two to three decades. Each section is bookended by a major coastal snow event. Some of these sections also coincide with major historical events such as the World Wars. Dividing the sections in this way demonstrates how human perceptions about and responses to snow evolved (or did not evolve) over time. Section two, for example, focuses on human experiences with snow between 1886 and 1918. The idea that snow was rare and infrequent – the pillars of the evergreen mentality – emerged during these decades. This mindset was promoted by local reporters and commercial and civic boosters in order to sell the Terminal City to outsiders. This advertising, which coincided with a stretch of low snow winters in the early 1900s, convinced settlers that Vancouver was indeed a snowless place. New residents were thus shocked by and unprepared for the exceptionally snowy winters of the 1910s. Indeed, it was not until the end of that decade that municipal officials began earmarking funds for snow-clearing work. Through this section, we see how snow affected people of different social backgrounds in distinct ways. We learn, for example, how white settlers used snow to further enforce racial and

spatial segregation in the city. Chinese Canadians were the victims of numerous snowball attacks throughout this period. Some of these attacks resulted in serious physical and psychological injuries. The brazen nature of these incidents reflects the deeply held anti-Asian racism that existed in Vancouver at the time.

The second part of section two moves to the southern Coast Mountains. This chapter – and all other “mountain” chapters – roughly follows the same timeline as its “city” counterpart. This was done for continuity, to show how changes in the city affected mountain snow experiences and vice versa. Settlers began to exploit snow as a valuable resource for power and freshwater during the late nineteenth and early twentieth centuries. The movement of snowmelt from the mountains to the city represented one of the first and most important connections between the two spaces. Very few settlers actually travelled into the mountains during this period, however. The southern Coast Mountains were largely inaccessible in the winter months. Only a small collection of mountaineering enthusiasts travelled into these spaces between late autumn and late spring. While most of these winter expeditions were undertaken for recreational purposes, in the 1910s some members of the British Columbia Mountaineering Club (BCMC) began travelling into the mountains to measure and collect snow data, an extension of the club’s growing interest in the region’s natural history.

Section three explores human experiences with snow during the interwar period. In Vancouver, the dominance of the evergreen mentality was cemented with the creation of “Canada’s Evergreen Playground,” a marketing campaign that sought to promote the city and its temperate climate to tourists. Promotional materials downplayed snow’s existence on the coast and reinforced earlier climate ideals to tourists and residents alike. The growing number of cars on city streets and the onset of the Great Depression altered some of the ways that coastal residents experienced snow. Streets became dangerous spaces for the city’s tobogganing youth. Municipal officials sought to protect children by closing prime coasting streets to cars. Shovelling became an attractive form of work for unemployed men during the coast’s annual snowfalls, too. Both municipal and British Columbia Electric Railway, Ltd. (BCER) officials relied heavily on this cheap labour during the 1930s. While the BCER used unemployed men to supplement their

mechanized snow-fighting fleet, municipal officials relied exclusively on manual labour to clear the snow. Vancouver officials reluctantly invested in mechanized equipment following a succession of extremely snowy and costly winters in the mid- to late 1930s.

To the north of Burrard Inlet, measuring mountain snow and monitoring snowmelt became a pressing concern. Municipal officials turned to the emerging snow sciences in order to forecast snowmelt run-off and manage summer water supplies. While this was an important step in the region's water management strategy, snow survey research was rather rudimentary during this period. The emergence of skiing as a popular winter recreation activity was the most significant snow-related event to occur during the interwar period. The sport drew thousands of settlers to the mountains. Skiing helped to further connect the southern Coast Mountains with the coastal metropolis. Throughout the 1930s, skiers established villages at Hollyburn Ridge, Grouse Mountain, and Seymour Mountain so that they could stay in their snowy fairyland for extended periods. While most of these skiers were white settlers, there was a small number of Japanese Canadians who took up the sport in these decades. Skiing certainly did not eliminate the racial biases that existed in Vancouver, but through sport, Japanese Canadians interacted with their white counterparts in ways that they could not on the coast. The movement of thousands of settlers into the mountains – and a spate of snow-related deaths – raised serious concerns about safety here and led mountain-goers to create volunteer organizations to treat and protect their fellow hikers and skiers.

Section four extends from the start of the Second World War until the start of the 1970s. While leading civic boosters such as Leo Sweeney continued to promote Vancouver's snowlessness, other residents began to question this claim, no one more than the *Vancouver Province's* Jean Howarth. Her critiques were bolstered by a number of extremely cold and snowy winters in the late 1940s and early 1950s. The evergreen mentality was re-affirmed, however, when low snow winters returned in the late 1950s and 1960s. Snow presented new challenges to air travel, an industry that grew considerably following the war. Snow grounded flights and delayed travel for days at a time. Snow was also a problem for drivers in the increasingly interconnected and car-centric metropolitan region. Snow-related traffic jams and driving accidents, which had

been an issue before the war, were even more pronounced in its aftermath. Large-scale municipal snow-clearing work became a greater concern for city officials. They invested more in the fight against snow in order to keep streets open to drivers. Salt became the primary snow-fighting tool as officials sought a cheap and effective means to ensure safe driving conditions. The lack of frigid winter temperatures meant that the product could be used reliably throughout the winter months. The city became so reliant, however, that a salt shortage during the 1964-65 winter panicked local officials and threatened to derail the city's snow-fighting efforts and car travel on the coast.

Part two of this section shows how snow became increasingly valued in the mountains. In response to growing stress on the metropolitan region's existing water supplies (and in preparation for a new reservoir on the Capilano River), the provincial Water Rights Branch (WRB) and Greater Vancouver Water District (GVWD) expanded their joint snow survey program. Forecasting the annual run-off was a key concern for the burgeoning Metro Vancouver region, which supported a population of over one million people by the 1970s. Skiing remained the primary snow-based outdoor recreation activity for urban residents in the postwar period. Its popularity grew immensely during these years. New roads and the installation of chairlifts and gondolas vastly improved access to these snowy spaces. By the 1960s, it was possible to travel to the mountains in less than an hour, to ski an entire day, and be back home on the coast in time for dinner. These investments highlighted alpine skiing's shift from a small-scale endeavour to a large-scale, capital-intensive industry. Ski operators invested millions of dollars to develop the Grouse and Seymour ski areas and to construct the Whistler ski area, located on the western fringes of Garibaldi Provincial Park, roughly 100 km north of Vancouver. Snow safety became even more important during these years, as more coastal dwellers and tourists travelled to the mountains. Concerned citizens formed formal search and rescue organizations such as the Mountain Rescue Squad (MRS) to help keep their fellow citizens safe.

Section five looks at snow experiences between the early 1970s and late 1990s. This was a relatively snowless period in Vancouver's history. The snow that did fall during these decades seriously disrupted urban life, however. Snow continued to snarl car and air



travel, for example. It was also a problem for the SkyTrain, the region's new light rapid transit system. Heavy snow triggered the system's on-track fail safe systems and paralyzed the expensive system for extended periods. While coastal residents had become concerned about snow during the snowy winters of the late 1960s and early 1970s, they became complacent about it during the low snow winters of the 1980s. As such, the major snowstorms of the 1990-91 and 1996-97 winters caught many by surprise. These heavy snow events led some residents to question what they had been told about global warming, a new term that was coming into the public discourse in the 1990s. If global temperatures were warming, why was there snow in the Evergreen Playground?

Regional climate change had the greatest impact on snow experiences in the mountains. Snow surveyors recorded lower-than-normal snowpack totals in the southern Coast Mountains between the mid-1970s and mid-1990s. Low mountain snowpack totals heightened the risk of summer water shortages during these years. A record-low winter snowpack and dry spring weather forced officials to implement outdoor water restrictions in the summer of 1992. Summer water restrictions remained in place for the remainder of the decade as regional water managers sought to balance growing consumption with increasingly unpredictable snowmelt. These low snow winters also created problems for the alpine ski industry. While Grouse Mountain Resorts, Ltd (GMR) invested in snow-making technology in 1973 to mitigate uncooperative weather on that mountain, the machines were useless during the exceptionally warm winters of the late 1970s and early 1980s. Snowmaking failed to turn Grouse into a leading alpine ski resort, but it was a useful tool for Whistler and Blackcomb ski operators, who used the machines to supplement snow at their lowest elevations. These resorts needed these machines to ensure great snow conditions for their visitors. By the 1990s, millions of people travelled into the southern Coast Mountains each winter. At Whistler, ski patrollers tried to educate visitors about the dangers that existed in these snowy spaces. Avalanche control and search and rescue were priorities for patrollers there. Outside of these ski resorts, North Shore Rescue (NSR) became the leading search and rescue organization for hikers and skiers lost in the North Shore Mountains.

In reviewing this snowy history, this dissertation concludes by considering how human experiences with snow will change in a warming future. How will coastal residents respond to less frequent, but potentially more severe, snowstorms on their coast? Will residents and municipal officials grow even more complacent about snow? The loss of annual snowpack in the southern Coast Mountains is an even greater concern. Can water managers prepare for and adapt as demands for freshwater continue to grow but snowmelt run-off declines? Can the regional ski industry survive these warming winters? These are the types of questions that residents and municipal officials face today. Snow in Vancouver and the southern Coast Mountains is declining. The loss of snow will affect this society in a number of ways. The extent of snow's loss will be tempered by the choices and adaptations that local officials and residents make moving forward. As surprised as coastal residents are by snow's appearance in Vancouver, they will be more surprised to learn what snow's absence – on both the coast and in the mountains – means for them and their city.

## Section 1

### 1 Snow, snow, snow: 1858-1886

The impending arrival of the Potter's Dramatic Troupe created considerable excitement in New Westminster in January 1862. The American theatre company was well known to settlers on the Pacific Coast. Since 1855, James Potter and his cast of actors had been performing for communities throughout California, Oregon, Washington, and the colonies of Vancouver Island and British Columbia. The company had made its first appearance in New Westminster in December 1860, performing for three weeks at Scott's Pioneer Theatre before returning to Victoria. The Troupe's short visit that winter had been well received according to Victoria's *British Colonist* newspaper. The actors had been "deservedly popular," playing to full houses night after night. Colonel Richard Clement Moody of the Royal Engineers was so struck by one of the troupe's actresses, Lulu Sweet, that he named the large island at the mouth of the Fraser River in her honour. With such fine actors enroute again to New Westminster, the city's newspaper *The British Columbian*, boasted that residents had "every reason to believe [they] will prove themselves worthy the liberal patronage of the community."<sup>36</sup>

Getting from Victoria to New Westminster was no easy feat that winter, however. Bitterly cold temperatures enveloped the colony in December. The mouth of the Fraser River froze solid on 1 January, severing the normal water route to the colonial capital. Extreme cold weather persisted throughout the month. On 24 January, the steamer *Emily Harris* dropped Potter's Dramatic Troupe near Port Moody, 9 km north of New Westminster on Burrard Inlet. The overland trek must have seemed daunting to the actors and their fellow passengers. Snow had accompanied that month's cold weather. The snow-cover in New Westminster measured over 20 cm, with deeper amounts on the higher land between the capital and the inlet. Built for military convenience rather than

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<sup>36</sup> "Arrival of the Caledonia," *The British Colonist*, 29 December 1860; "Theatrical," *British Columbian*, 23 January 1862; Christine Hagemoen, "How Lulu Island got its sweet name," *Scout Magazine*, 5 December 2017, <https://scoutmagazine.ca/2017/12/05/how-lulu-island-got-its-sweet-name/>; "What's in a name – Lulu Island," *Outside the Box – The Richmond Archives Blog*, 22 September 2016, <https://richmondarchives.ca/tag/theatre/>; Lynn Middleton, *Place names of the Pacific Northwest Coast: Origins, histories, and anecdotes in bibliographic form about the coast of British Columbia, Washington, and Oregon* (Victoria: Eldee Pub. Co., 1969), 125.

commercial use, the North Road was not an easy one to travel, particularly in the snow. The road rose sharply from Burrard Inlet. It flattened out within a kilometre, but it still rose and fell numerous times before its termination at the Fraser River. While some settlers used horse-drawn sleighs to get around that winter, there is no indication that Potter and his actors were offered that luxury for their overland travel.<sup>37</sup>



**Figure 4: An early view of New Westminster; Royal Engineers' camp on the river.**  
[ca. 1864] Item A-05920, Claudet album, Claudet Family fonds PR-1427, B.C. Archives.

Despite the difficult travel conditions, Potter's Dramatic Troupe reached New Westminster on time. The traveling theatre company put on 21 shows at the Pioneer Theatre over six weeks, a pleasant escape for settlers suffering from that winter's harsh weather. The cold and snowy weather that had hampered the Troupe's arrival lingered into March. As the *British Columbian* noted, the Pioneer Theatre welcomed "large and

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<sup>37</sup> "The weather," *British Columbian*, 16 January 1862; "Dramatic," *British Columbian*, 30 January 1862; "A road to Burrard Inlet," *British Columbian*, 6 February 1862; "R.E. Meteorological Observatory: Report for the month of January 1862, New Westminster," *British Columbian*, 13 February 1862.

appreciative audiences” to watch the actors perform “during the very dullest season of the year.” With the river still blocked with ice in early March, Potter and his Troupe were forced to once again undertake the overland crossing to Burrard Inlet, now blanketed in nearly half a metre of snow, to reach the *Emily Harris* bound for Victoria. As the *British Columbian*’s editor John Robson argued, the travel difficulties experienced by the Troupe and so many other settlers that winter clearly demonstrated why the colony needed better roadways to Burrard Inlet, that “excellent harbor, which is not liable to obstruction from ice at any season, or for any length of time.”<sup>38</sup>

The 1861-62 winter was the harshest in the colony’s short history, with temperatures plunging to never-before-seen figures on the coast and snow-cover lasting a record 10 weeks. While the winter was exceptional for its severity, cold, snowy weather was not uncommon in New Westminster. Snow was a seasonal occurrence there in the mid-nineteenth century. The region was milder than other parts of Canada – a fact that officials noted in promotional materials for prospective settlers – but it still snowed every winter. Settlers came to expect at least some snow each year. Quantitative and qualitative records suggest that the southwestern coast of British Columbia was a snowier place in the mid- to late-nineteenth century than it is today. European settlers arrived in the region at the end of the Little Ice Age (LIA), a centuries-long period of global cooling. Local temperatures began warming in the latter half of the century, but the effects of the LIA lingered. Indigenous and settler recollections, documentary records, and meteorological observations are key sources for uncovering this snowy past.

There are few documentary sources about snow experiences in the Gastown/Granville area during this colonial period, however. Oral histories provide some information on snow experiences there. Newspaper articles from New Westminster and Victoria offer further information and provide insight into the types of activities that settlers engaged in when it snowed. A paucity of documentary records makes reconstructing snow experiences at Burrard Inlet sawmills even more difficult, if not impossible. Later records reveal that deep snow and cold weather clearly affected coastal logging activities, so

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<sup>38</sup> “The weather,” *British Columbian*, 16 January 1862; “Theatrical,” *British Columbian*, 6 March 1862; “Our climate,” *British Columbian*, 31 January 1863.

snow probably affected the industry in similar ways during the colonial period. The best documented snow experiences were recorded by Henry Mole and Fitzgerald McCleery, neighbouring farmers who lived in the extreme southern portion of present-day Vancouver. Both men kept daily diaries outlining their work, farming activities, and weather observations. Their diaries provide insight into winter life and snow conditions at the mouth of the Fraser River. Mole and McCleery were keen weather observers, and their records reveal the impact that cold, snowy weather had on the lives of early settlers.

## 1.1 A Long History of Snow on the Coast

Present-day Vancouver is located on the Burrard Peninsula, or “Ulksen” in the Squamish language. To the south of the peninsula is the northern arm of the Fraser River, a river that snakes its way through British Columbia for more than 1,000 km from the Rocky Mountains to the Pacific Coast. To the west is the Georgia Strait, a stretch of ocean that separates the mainland from Vancouver Island. To the north is Burrard Inlet, and across its waters are the extreme southern edge of the Coast Mountains, a range that follows the coastline to Alaska. The peninsula’s topography varies from flat land to steep sided cliffs along the shoreline, although most of the land consists of gently rising slopes. The highest point is Little Mountain at 125 m above sea level (asl). An extended ridge between 60 to 100 m asl runs in a roughly northwest-southeast direction along the peninsula. False Creek divides the northern section of the peninsula – where today’s downtown is located – from the larger, southern section, where many of today’s suburban neighbourhoods are located.<sup>39</sup>

The Burrard Peninsula has one of the mildest climates in Canada. Temperatures there are moderated by the Pacific Ocean. Twentieth century meteorological records show that mean winter temperatures often remained above freezing while mean summer temperatures rarely exceeded 20°C.<sup>40</sup> Rain is a common weather feature on the peninsula – a way of life, as journalist Donald Stainsby writes.<sup>41</sup> The Burrard Peninsula and the

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<sup>39</sup> Bruce Macdonald, *Vancouver: A Visual History* (Vancouver: Talonbooks, 1992), 2-3.

<sup>40</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Tim Oke and John Hay, *The Climate of Vancouver* (Vancouver: UBC Press, 1994), 28-29.

<sup>41</sup> Stainsby, “Rain as a way of life,” 118.

surrounding region receives considerable annual precipitation. The totals increase as one moves in a north-easterly direction away from the Georgia Strait toward the southern Coast Mountains. The annual precipitation at the mouth of the Fraser River, for example, is 1000 millimetres (mm). Across the peninsula, where present-day downtown is located, the annual precipitation is between 1400-1500 mm. These amounts continue to increase as one moves up the mountain slopes.<sup>42</sup>

While warm winter temperatures mean that the vast majority of coastal precipitation falls as rain, weather conditions occasionally align in such a way that winter rains are replaced by snow. This typically happens when cold polar air from the continental interior spills over the mountains, funneling down the Fraser Valley and Howe Sound to the coast. These “Arctic outflows” produce strong winds in the region’s valleys and fjords. It is during these moments that the coast experiences winter conditions similar to the rest of Canada.<sup>43</sup> This cold, dense air remains on the coast until it is dislodged by warm westerly winds. The meeting of these two systems – of moisture-rich air from the Pacific and cold polar air – produce large coastal snowstorms. This snow tends to be wet and heavy, as it falls when temperatures are close to the freezing point. As the snow falls, it begins to melt as it nears the warmer ground. This produces moisture-rich, dense snowflakes. If temperatures remain warm – as is often the case – this snow will continue to melt, creating a slushy, wet mess. Rain will sometimes follow snow as the precipitation shifts with the warming temperatures. While rain can hasten the melting process, it can also saturate the snowpack and heighten the risk of flooding. But if temperatures cool, wet snow will freeze and create icy and slick conditions. Both outcomes created distinct problems for people living on the coast.<sup>44</sup>

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<sup>42</sup> Slaymaker et al., “The Primordial Environment,” 25; T.R. Oke and J.E. Hay, “Climate of Vancouver,” in Chuck Davis, *The Vancouver Book*, 119.

<sup>43</sup> Slaymaker et al., “The Primordial Environment,” 26; Oke and Hay, *The Climate of Vancouver*, 14.

<sup>44</sup> Oke and Hay, *The Climate of Vancouver*, 14; Eric DeRoche, “The important difference between wet snow and dry snow,” *CompuWeather: Forensic Weather Experts*, 26 January 2021, <https://compuweather.com/the-important-difference-between-wet-snow-and-dry-snow/>; “How does snow form?” *MET Office*, <https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/snow/how-does-snow-form>; G.A. McKay and D.M. Gray, “The Distribution of Snowcover,” in *Handbook of Snow: Principles, Processes, Management, & Use*, ed. D.M. Gray and D.H. Hale (Toronto: Pergamon Press, 1981), 154; Roland Stull, *An Algebra-Based Survey of Atmospheric Science* (Vancouver: University of British Columbia, 2017), 209.

Snow and ice helped to shape the Burrard Peninsula's natural history over millions of years. Glaciation during the Pleistocene (2.58 million years ago to 11,700 years ago) sculpted the landscape. While there were at least a dozen ice ages during the Pleistocene, there is clear evidence on the peninsula for the three final glacial events. Evidence of the most recent glacial event, the Fraser Glaciation, is best preserved. The Fraser Glaciation began roughly 30,000 years ago, when heavy snowfalls created large snowbanks and glaciers in the southern Coast Mountains. Meltwater from these advancing glaciers resulted in considerable sediment deposition in the coastal region. As O. Slaymaker et al. write, "by the time the glaciers began to emerge from the mountains, an outwash system probably extended across the entire width of what is now the Strait of Georgia. An observer standing on this plain in the vicinity of Point Grey would have looked across a vast, sparsely vegetated, sandy plain crossed by the innumerable shifting channels of a major braided stream."<sup>45</sup>

These advancing glaciers enveloped the Burrard Peninsula between 18,000 and 17,000 years ago. By 14,500 years ago, the Fraser Glaciation's glacial maximum, the Burrard Peninsula was covered in 1,500 m of ice. "Only the highest local peaks, such as Mt. Brunswick and The Lions, protruded as rocky islets in a vast, glacial sea."<sup>46</sup> The climate began to warm between 15,000 and 14,000 years ago, and the peninsula was uncovered by 13,000 years ago. A vast icy sea took its place. Having lost the immense weight of the ice, the land began to rebound. The retreating ice cut the physical characteristics of the southern Coast Mountains and the Howe Sound fjord, now notable natural features of the Vancouver region. Sedimentation left behind by these melting glaciers further shaped the Burrard Peninsula and surrounding coastal region.<sup>47</sup>

Other climatic and geographic changes have occurred in the millennia since the end of the Fraser Glaciation. Between 9,000 and 7,000 years ago, for example, the climate was drier with more extreme temperature variations. Peak summer temperatures were about 3°C warmer than today's summers, while winter temperatures were likely colder than

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<sup>45</sup> Slaymaker et al., "The Primordial Environment," 20.

<sup>46</sup> Ibid, 20.

<sup>47</sup> Ibid, 20.



today's winters. The climate became wetter and cooler about 6,000 to 5,000 years ago. Additional glaciation has occurred in these past millennia. The first coincided with the shift back to cooler temperatures 6,000 to 5,000 years ago. Several other glacial advances took place between roughly 3,500 and 1,900 years ago. The most recent advance began about 1,000 years ago and continued into the nineteenth century. This glacial advance unfolded during a period of global cooling now called the Little Ice Age (LIA). Scholars from various fields have been interested in the effects of the LIA for decades.<sup>48</sup> They have demonstrated how this period of cooling impacted human and natural history across the globe. Most researchers agree that the LIA ended by the mid-nineteenth century; however, cool temperatures may have lingered for a few decades longer in certain regions.<sup>49</sup>

Coastal Indigenous populations navigated climatic changes during these millennia. The region's general mildness, coupled with the availability of abundant fish, wildlife, and timber resources, made it an attractive location for human settlement. The area encompassing the Burrard Peninsula and Burrard Inlet was – and remains – home to three Coast Salish peoples: the Musqueam, Squamish, and Tsleil-Waututh. Over thousands of years, these groups established permanent villages and seasonal camps along the Burrard Peninsula and Burrard Inlet. For example, the Musqueam villages of *čəsnaʔəm*, located on the north arm of the Fraser River, and Xway'xway, located in present-day Stanley Park, were continually inhabited for thousands of years. The map *Indian Names for Familiar Places*, created by the city's first archivist, Major J.S. Matthews, through conversations with Indigenous leaders such as August Jack Khahtsahlano, notes many other important sites and landmarks and highlights the extensiveness of Musqueam, Squamish, and Tsleil-Waututh presence in the region. More recent ethnographic, archaeological, and oral history research has further highlighted this Indigenous presence.

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<sup>48</sup> Some recent historical work on the Little Ice Age includes Degroot, *The Frigid Golden Age* and White, *A Cold Welcome*.

<sup>49</sup> Slaymaker et al., "The Primordial Environment," 21-23; Church and Ryder, "Physiography of British Columbia," 35-37.

Tens of thousands of people lived in this area before a wave of smallpox epidemics in the eighteenth and nineteenth centuries reduced these populations to only a few hundred.<sup>50</sup>

Members of these Indigenous nations travelled in smaller groups throughout the region during the spring, summer, and autumn months. In late autumn, they came together to overwinter at large, central villages such as *ćəsnaʔəm* (for the Musqueam) and *Tumtumay-whueton* (for the Tsleil-Waututh) on Burrard Inlet. Before the arrival of Europeans in the mid-nineteenth century, most Squamish members returned to their winter villages at the head of Howe Sound. Some also overwintered at *Xwmélts'stn* (also known as Homulcheson or Capilano), near the mouth of the Capilano River.<sup>51</sup> Coast Salish peoples undertook some fishing and hunting near their villages during the winter months, but they mostly relied on the food they had collected during the autumn. Winter was a time for potlatches and ceremonies for Coast Salish peoples. In addition to these celebrations, people spent winter days producing or repairing gear such as canoes, baskets, nets, and weapons.<sup>52</sup>

Ice, snow, and cold temperatures no doubt affected winter living for Coast Salish peoples, although they were probably well-stocked with food and well-prepared to handle weather extremes in their winter villages. Indigenous oral traditions provide some insight into the region's winter weather and snow history prior to the nineteenth century. These histories generally highlight extreme winters or snow events. Many Coast Salish histories speak of a great sickness and depopulation that occurred prior to the Great Flood, a major event in Coast Salish culture that impacted communities throughout the region. This sickness occurred following an extremely long winter and a period of prolonged starvation that led

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<sup>50</sup> The Musqueam recently created the *Musqueam Place Names Map*, an interactive map showing important locations in their traditional territory. See <https://placenamemap.musqueam.bc.ca/>; Daniel Francis, *Becoming Vancouver: A History* (Vancouver: Harbour Publishing, 2020), 7-11; Jean Barman, "Erasing Indigenous Indigeneity in Vancouver," in *Cusp of Contact: Gender, Space, and Race in the Colonization of British Columbia*, ed. Margery Fee (Vancouver: Harbour Publishing, 2020), 27-31; Major James S. Matthews, *Conversations with Khahtsahlano, 1932-54* (City of Vancouver Archives: Vancouver, 1935); Macdonald, *Vancouver*, 10-13.

<sup>51</sup> Cole Harris, "The Lower Mainland, 1820-81," in *Vancouver and its Region*, ed. Graeme Wynn and Timothy Oke, 39-40; Jesse Morin, *Tsleil-Waututh Nation's History, Culture, and Aboriginal Interests in Eastern Burrard Inlet* (Toronto: Gowling Lafleur Henderson LLP, 2015), 246.

<sup>52</sup> Morin, *Tsleil-Waututh Nation's History, Culture, and Aboriginal Interests in Eastern Burrard Inlet*, 313-14.

to considerable deaths and the re-forging of Coast Salish communities. As anthropologist Jesse Morin contends in his work for the Tsleil-Waututh Nation, this may have taken place during “an especially severe winter during the Little Ice Age.”<sup>53</sup> Historian Keith Thor Carlson suggests that a winter of starvation – possibly the same event – occurred in the late eighteenth century, probably before 1785. This may have been associated with a smallpox epidemic during that period.<sup>54</sup> During one of his conversations with Major Matthews in 1932, Squamish leader Andrew Paull noted that the Squamish people recalled a three-month long snowstorm that occurred in the late eighteenth century. This may have been the same event that Carlson discusses in his work, as the storm described by Paull happened seven years prior to Captain George Vancouver’s appearance in English Bay in 1792. Ethnologist Charles Hill-Tout, who studied Coast Salish culture, added that this snowstorm “covered the whole land, and caused the death of the whole tribe [at Xway’xway] save one man and his daughter.”<sup>55</sup>

## 1.2 Snow After European Settlement

European settlement near the Fraser Delta began in earnest following the Cariboo gold rush in 1858-59, when tens of thousands of prospectors travelled from the United States and Vancouver Island up the Fraser River to the Interior. In 1858, the British Parliament created the colony of British Columbia to secure Britain’s position on the mainland. The Royal Engineers, led by Colonel Richard Clement Moody, arrived in the colony and founded the city of New Westminster on the northern banks of the Fraser that year.<sup>56</sup> Settlement along the Fraser grew in subsequent years. In 1863, Irish-born Fitzgerald McCleery and his brother Samuel became two of the first Europeans to settle in present-day Vancouver. They were soon joined by other immigrants such as Henry Mole, an English immigrant who spent time in Upper Canada before moving to the Pacific Coast. The McCleery and Mole farms were situated at the mouth of the Fraser’s north arm, just to the east of ɛəsnaʔəm. The colonial government’s pre-emption policy, which allowed

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<sup>53</sup> Ibid, 53.

<sup>54</sup> Keith Thor Carlson, *The Power of Place, the problem of time: Aboriginal identity and historical consciousness in the cauldron of colonialism* (Toronto: University of Toronto Press, 2010), 138-39.

<sup>55</sup> Major James Skitt Matthews, *Early Vancouver*, Vol. 2 (Vancouver: City of Vancouver, 2011), 22 and 56.

<sup>56</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 5-7.

settlers to claim 160 acres of land, and the allocation of large tracts of land for military reserves increasingly displaced Coast Salish peoples throughout the region. By the end of the decade, local Indigenous peoples had been forced onto reserve lands as part of the colony's expansion plans. The Musqueam Indian Reserve, encompassing *čəsna?əm*, was one such place. The Squamish village of Snauq, or Sen'akw, located at False Creek, became another reserve. Coast Salish peoples were allocated considerably less land than arriving settlers.<sup>57</sup>

Across the Burrard Peninsula, at Burrard Inlet, European settlement was driven by interest in the region's natural resources. The possibility of coal-rich deposits at the Inlet attracted John Morton, William Hailstone, and Samuel Brighthouse – “the three Greenhorns” – in the early 1860s. These deposits never materialized, however. Instead, it was the region's massive trees that brought hundreds of non-Indigenous peoples to the Inlet. In the 1860s, men such as Edward Stamp and Sewell Moody built sawmills to harvest this timber for export to foreign ports – something settlers would continue to do for decades. As historian Daniel Francis explains, with the emergence of the Moodyville and Stamp's Mill (later Hastings Mill), “Burrard Inlet's economic future as a centre of logging and international shipping was set.”<sup>58</sup> A small community called Gastown (named for its founder, “Gassy” Jack Deighton) emerged on Burrard Inlet's southern shore. It was situated just west of Hastings Mill, at a place the Squamish called Luk'luk'l (“grove of maple trees”), to serve the mills' employees. Many Musqueam, Squamish, and Tsleil-Waututh peoples moved closer to Gastown and re-purposed seasonal sites or established permanent settlements near the mills in order to take advantage of these new employment opportunities. On 1 March 1870, Gastown became the official townsite of Granville. The small town – “crowded between forest and shore,” as Major Matthews and later historians have described it – was a diverse place made up of Coast Salish peoples and settlers from around the world. An estimated 800 settlers and 800 Indigenous people lived near Burrard Inlet in the early 1880s. During these decades, Granville and New

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<sup>57</sup> Barman, “Erasing Indigenous Indigeneity in Vancouver,” 30-32; Cole Harris, *Making Native Space: Colonialism, Resistance, and Reserves in British Columbia* (Vancouver: UBC Press, 2003), 75; Macdonald, *Vancouver*, 15.

<sup>58</sup> Francis, *Becoming Vancouver*, 23.

Westminster were connected by sea and by three overland routes: the False Creek, Douglas, and North roads.<sup>59</sup>

Colonial officials boasted about the region's mild climate in promotional literature for prospective settlers. Officials wanted to dispel any notions that the climate of Vancouver Island or British Columbia resembled that of Upper or Lower Canada. "A large proportion of those who sail for these colonies will no doubt come directly or indirectly from the parent country, and will desire a climate at least as mild as that of England," noted one 1862 promotional pamphlet. "Not only in England, but even in Canada, the opinion prevails that the climate of these colonies is cold and inclement, and the country itself bleak and inhospitable... [T]he results of a continued spread of this delusion in retarding emigration are too obvious to require comment. Hence the importance... of correcting the erroneous impressions in circulation." In Esquimalt, on the southern tip of Vancouver Island, snow was considered uncommon and infrequent. "So mild is the usual winter weather of this colony, that most farmers leave their stock unhoused and at large, during the entire season." Severe and prolonged winters were "exceptional and do not happen more frequently here than in England and other countries with similar climates." The pamphlet explained that winters in New Westminster were colder than those on southern Vancouver Island, but still relatively mild.<sup>60</sup> Snow fell on the coastal mainland, but not as frequently or severely as it did in the Canadas. The 1877-78 *Guide to the Province of British Columbia* noted – not entirely accurately – that, in New Westminster, "snow begins in January and is gone by March; not continuous."<sup>61</sup>

*The British Columbian* sought to set the record straight about the coastal climate in the aftermath of the severely cold and snowy 1861-62 winter. "It is true the cold is greater in some parts of the Colony, especially when you get up amongst the mountains... but take the great centre of the Colony and we find the climate not only mild, but the temperature more even and pleasant," noted one January 1863 article. The 1861-62 winter had been anomalous, the author was quick to point out. Stoves were rarely used during the winter

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<sup>59</sup> Ibid, 23; Macdonald, *Vancouver*, 18.

<sup>60</sup> Alexander Rattray, *Vancouver Island and British Columbia: Where they are; what they are; and what they may become* (London: Smith, Elder, and Co, 1862), 22 and 29.

<sup>61</sup> *Guide to the Province of British Columbia, 1877-8* (Victoria: T.N. Hibben & Co., Publishers, 1877), 61.

months. The weather was often so mild that “we have enjoyed pleasure sails upon the river with ladies, and gathered wild flowers!” Flowers were the most visible sign of winter’s mildness. Their presence was a clear indicator that coastal winters were different from those on the Prairies or the eastern colonies. Hellebores (Christmas roses), heather, winter jasmine, witch hazel, and other flowering shrubs bloomed during these months. As the *British Columbian*’s writer explained, he had just picked flowers for a bouquet the previous day. “Whatever difficulties this Colony may have to contend with most assuredly a rigorous climate is not one of them.”<sup>62</sup>

While the southwestern coast of colonial British Columbia was milder than Upper and Lower Canada, early settlers were still recording a cooler climate than what British Columbians are accustomed to today. Europeans arrived at the end of the LIA. The colder temperatures associated with this period of global cooling lingered into the late nineteenth century. Weather records from New Westminster point to colder winter temperatures during these decades. The Royal Engineers recorded weather observations at Sapperton, just east of New Westminster, from 1859 to 1863; Dominion meteorologists resumed observations in New Westminster in 1875 and continued to track the weather until 1882. Average December-February temperatures between 1875 and 1882 were 1.6°C – roughly 1.6°C cooler than the average winter temperature in New Westminster from 1900-1945. Some winters stand out for their cold. The winter of 1861-62 was well remembered by early settlers for its severity. The average temperature that winter was -1.7°C. Temperatures were below freezing for the entire month of January, reaching an extreme of -26°C at Sapperton, the Royal Engineers base, on the 16th. The average temperature that month was -6°C. The cold caused considerable hardship in the colony. The Fraser River delta froze on 1 January and remained blocked until 11 March, severing New Westminster’s water connection to Victoria for more than two months. The winter of 1875-76 was another harsh one for early settlers. The average January temperature was a chilly -5.9°C. The mouth of the Fraser froze solid once again that January. As in the

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<sup>62</sup> “Our Climate,” *British Columbian*, 31 January 1863; Robert Nicholson, “Vancouver, a garden city,” in *The Vancouver Book*, ed. Davis, 157-58.

1861-62 winter, steamers had to offload mail and passengers at Burrard Inlet as the Fraser had become an ice bridge for local residents.<sup>63</sup>

These meteorological observations and other documentary sources provide insight into snow's prominence during these decades, too. The Royal Engineers recorded 20 and 10 days of snow-cover during the 1859-60 and 1860-61 winters respectively. Snow persisted on the coast for an astounding 70 days during the infamous 1861-62 winter, roughly six times longer than the twentieth-century average for downtown Vancouver. The snow-cover that winter ranged from just a few centimetres to 46 cm at its deepest point.<sup>64</sup> In a 1934 interview with Major Matthews, Squamish leader August Jack Khahtsahlano recalled that Chief Joe Capilano had told him about a particularly heavy snowfall near False Creek in the early 1860s. He was likely speaking of the 1861-62 winter.<sup>65</sup> Weather records from New Westminster further suggest the region's snowiness. The average annual snowfall between 1875 and 1882 was 110 cm – 36 cm more than the average annual snowfall in New Westminster between 1895 and 1966. The first dataset's small size may skew this comparison, but it is notable that two of New Westminster's snowiest winters took place during this stretch. Weather observers recorded 225 and 234.5 cm of snow during the 1875-76 and 1879-80 winters respectively. The Burrard Peninsula may have experienced similar annual snowfalls. New Westminster and present-day downtown Vancouver receive comparable mean annual precipitation totals. Twentieth-century records reveal that annual snowfalls in these two areas generally paralleled each other, although snow tended to be heavier in New Westminster. Strong negative PDO patterns, which dominated during the LIA, weakened but persisted into the twentieth century and may have contributed to these high annual snowfalls.<sup>66</sup>

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<sup>63</sup> New Westminster, BC monthly data report for December – March, 1874-1882, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; "The recent cold spell," *British Columbian*, 23 January 1862; "A road to Burrard Inlet," *British Columbian*, 6 February 1862; "Frozen over," *British Colonist*, "Frozen over," 14 January 1875; "Arrival of the up country mail and express," *British Colonist*, 19 January 1875.

<sup>64</sup> "Our climate," *British Columbian*, 31 January 1863.

<sup>65</sup> Matthews, *Conversations with Khahtsahlano*, 64.

<sup>66</sup> New Westminster, BC monthly data report for December – March, 1874-1882, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; Glenn M. MacDonald and Roslyn A. Case, "Variations in the Pacific Decadal Oscillation over the past millennium," *Geophysical Research Letters* 32, no. 8 (2005), 1-4; Franco Biondi et al., "North Pacific Decadal Oscillation since 1661," *Journal of Climate* 14 no. 1 (2001), 5-10.

Weather observations from Mole and McCleery also help us to further reconstruct the region's snow history. Climate historians have used diaries, ships' logs, and other such sources to re-construct past climates.<sup>67</sup> Mole and McCleery immigrated to the colony in the 1860s, pre-empting land and establishing farms on the Fraser River. They owned neighbouring concessions, and their homes were within just a few kilometres of each other. These men recorded the daily weather in their diaries. McCleery's diaries begin in 1863; Mole's diaries in 1872. I was able to collect weather information for 18 complete winter seasons from McCleery's diaries, and for 10 complete winter seasons from Mole's. In order to reconstruct historic snowfalls at the mouth of the Fraser River, I tallied the number of times that McCleery and Mole noted snow in their diaries. This included mentions of snowfalls, snowstorms, snow-rain mixes, and days when the men noted that the "ground was covered with snow," but they did not mention snow falling the previous day. McCleery recorded snow references an average of 10 times each winter over these 18 years, Mole an average of 17 during the 10-year period. Their diary entries show that snow fell every winter between 1862-63 and 1884-85.<sup>68</sup>

Reconstructing seasonal snow-cover from these diaries is much more difficult and the results are uncertain. Not all snowfalls coated the ground with snow; ensuing rains also erased any accumulated snow-cover. While McCleery often noted when snow was melting or thawing off his property, he did not always record this information. Mole never noted these changes. References to "cold" or "freezing" temperatures, "changeable" or rainy weather, and snow-related projects – such as constructing sleighs – provide some indication of how long snow may have lasted each winter, but exact timelines are not possible. Conservative estimates of seasonal snow-cover based on these diaries suggest that snow coated the ground longer than the twentieth century average for downtown Vancouver. McCleery's diaries offer a better insight into average annual snow-cover because they cover a longer period than does Mole's. During the 18 winters

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<sup>67</sup> See: Emmanuel le Roy Ladurie, *Times of Feast, Times of Famine: A History of Climate since the year 1000* (Garden City, N.Y.: Doubleday, 1971); Liza Piper, "Colloquial Meteorology," in *Method & Meaning in Canadian Environmental History*, ed. Alan MacEachern and William J. Turkel (Toronto: Nelson Education Ltd., 2009); Degroot, *The Frigid Golden Age*; Joëlle Gergis, *Sunburnt Country: The History and Future of Climate Change in Australia* (Melbourne: Melbourne University Press, 2018).

<sup>68</sup> The complete collection of the Mole and McCleery diaries can be accessed via the City of Vancouver Archives. The Henry Mole fonds is AM 1676. The McCleery family fonds is AM 114.



covered by McCleery's diaries, the average annual snow-cover was approximately 18 days. Even taking into account a wide margin of error, the average annual snow-cover was seemingly longer during these decades than in the twentieth century.

Diaries from the neighbouring Mole and McCleery provide an interesting case study into comparable weather observations and the subjectiveness of these records. While the two farmers often recorded similar weather conditions, their snow recollections varied considerably. Between 1875-76 to 1879-80 and 1883-84 to 1884-85 – the only overlapping winter records available for both farmers – Mole recorded an average of 16.7 snowfalls, while McCleery recorded just 9.6 snowfalls. During most winters, there are at least a few instances when one farmer recorded a snowfall when the other did not. How and when Mole and McCleery took their weather observations probably led to these discrepancies. Mole, for example, kept very meticulous weather records, often noting exactly when certain events took place. Some of his entries include weather observations for the entire day. His 3 March 1875 entry is a good example:

There was a light frost again last night but the morning was cloudy and began to rain a little by 6.30 it was dry from then until about 10.30am it then commenced to rain heavier until noon in the afternoon there was rain and snow together which lasted until 4pm the wind then veered round to the S. west and it is quite fine this evening.<sup>69</sup>

While McCleery did at times provide detailed weather records, and was probably just as observant as his neighbour, his weather notes were often brief. This difference in record-keeping may explain why Mole generally recorded more snow references than McCleery during the 1870s and 1880s. On 28 January 1872, for example, Mole recorded, “Drizzling rain until about 8.30am it then began to get heavier with a few flakes of snow about 10.30 it began to clear off...”<sup>70</sup> McCleery makes no reference to snow that day, perhaps because the snow was so brief or because he was busy with other farming activities at that time. There were also days when McCleery recorded snow, but Mole did

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<sup>69</sup> Henry Mole, *Diary 1875*, folder 2, 878-D-01, AM 1676, City of Vancouver Archives, Vancouver, Canada.

<sup>70</sup> Henry Mole, *Diary 1872*, folder 1, 878-D-01, AM 1676, City of Vancouver Archives, Vancouver, Canada.

not. Both farmers tended to make equal reference to large snow events at their farms; however, they recorded smaller snowfalls to differing extents.

More importantly, these diaries – and other documentary sources – reveal how snow and other wintry weather affected settler lives. Snow restricted certain movements throughout the region. In late January 1876, for example, Mole attempted to ride his horse along the North Arm Trail to New Westminster, but deep snow forced him to turn back. Turning north, he and his horse pushed through nearly 40 cm of snow along the North Arm Road toward Granville.<sup>71</sup> Four years later, on 12 January 1880, McCleery complained that deep snow prevented him and James Woodland from driving a flock of sheep to New Westminster for sale. The snow, which had continued to build overnight, was 30 cm deep when he, Woodland, and another man set out the following day. According to McCleery, it was “a hard day work and slow... had to help the sheep in town,” where the snow was nearly knee deep.<sup>72</sup>

But snow also enabled other forms of transportation. Horse-drawn sleighs were an efficient mode of transportation and enjoyable recreation activity for settlers when it snowed. “Taking advantage of the snow, several sleighs have been out, and the merry music bells reminds one of other lands,” noted one *British Columbian* article in January 1867.<sup>73</sup> In the 1870s and 1880s, settlers used sleighs to travel between New Westminster and Burrard Inlet. Light to moderate snow-cover improved overland travel in the region. More frequent rains turned roads into muddy and impassable quagmires during winter months. Cold temperatures hardened dirt roadways; snow filled in potholes and created smooth gliding surfaces. Historian John W. Norton points to the winter of 1867-68 as a good example of this, as snow allowed settlers to travel more easily along the Douglas Road.<sup>74</sup> These improved travel conditions were often temporary, however. “The winter is over,” wrote the *British Columbian* in March 1868. “Jack Frost has withdrawn his

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<sup>71</sup> Henry Mole, *Diary 1876*, folder 3, 878-D-01, AM 1676, City of Vancouver Archives, Vancouver, Canada.

<sup>72</sup> Fitzgerald McCleery, *Diary 1880*, file 2, 551-E-05, AM 114, City of Vancouver Archives, Vancouver, Canada.

<sup>73</sup> “Snow at last,” *British Columbian*, 16 January 1867.

<sup>74</sup> James W. Norton, *The Enterprising Mr. Moody, the Bumptious Captain Stamp: the lives and colourful times of Vancouver's lumber pioneers* (North Vancouver: J.J. Douglas, 1977), 63.

support, and the traffic between the city and the Inlet has returned like a sow, to wallowing in the mire.”<sup>75</sup> Both Mole and McCleery used horse- or oxen-drawn sleighs for work and travel when it snowed. The two farmers constructed multiple sleighs during the 1870s and 1880s. In the mid-1880s, McCleery increasingly used a horse-drawn sleigh to transport his wife, Mary, and children to and from church and neighbouring farms.<sup>76</sup>

Adverse winter conditions posed the greatest threat to livestock. Both Mole and McCleery kept cattle on their farms. These animals provided food and income for their families. During the winter months, McCleery kept most of his livestock on a nearby island – possibly Sea Island or one of the smaller islands that once existed at the mouth of the Fraser River. As noted earlier, promotional materials for the colony boasted that prospective settlers were able to leave livestock outside in the winter, something that could not be done in other parts of Canada.<sup>77</sup> But snow and frigid temperatures made life difficult for these animals. Deep snow-cover restricted the cattle’s movements and grazing abilities. Snow was particularly dangerous to young calves. Both Mole and McCleery brought their cattle hay to sustain them during snowy periods. This was more challenging for McCleery, as he, his brother, or one of his hired men had to load feed into their scow and row across the river to reach the cattle. Floating or thin ice on the Fraser made these trips more dangerous, although thick ice cover allowed McCleery or his labourers to walk to the island instead. In certain winters, McCleery brought some of his cattle back to his barn to wait out the weather. Such was the case in January 1871, when snowy, cold weather created “a hard time for the cattle outside,” as he noted in his diary. He brought at least 7 of his 60 animals back from the island to his barn. Winter conditions sometimes proved too difficult for these animals. During an exceptionally snowy stretch of weather in March 1874, McCleery lost 57 cattle. The farmer did not record exactly what caused the animals’ deaths, but references to cold and snowy weather and mentions of weak and sick animals seem to indicate that the weather had a role.<sup>78</sup>

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<sup>75</sup> “Brighton Road,” *British Columbian*, 14 March 1868.

<sup>76</sup> Fitzgerald McCleery, *Diary 1885*, folder 17, 526-A-04, AM 114, City of Vancouver Archives, Vancouver, Canada.

<sup>77</sup> Rattray, *Vancouver Island and British Columbia*, 28.

<sup>78</sup> Fitzgerald McCleery, *Diary 1871*, folder 4, 526-A-04, AM 114, City of Vancouver Archives, Vancouver, Canada; Fitzgerald McCleery, *Diary 1874*, folder 7, 526-A-04, AM 114, City of Vancouver Archives, Vancouver, Canada.

While we have some understanding of how snow affected settlers such as Mole and McCleery, it is less clear how snow affected their neighbours to the west, the Musqueam. There are very few oral or documentary records that discuss Coast Salish snow experiences during this period. Khatsahlano and other Coast Salish individuals provided some insight on nineteenth century snow experiences through their interviews with Major Matthews, but those interviews generally dealt with other aspects of Coast Salish life and culture. Colonial newspapers from Victoria and New Westminster do not mention how snow and adverse winter weather conditions impacted Coast Salish peoples. Nor do reports from the federal government's Department of Indian Affairs. When British Columbia joined Confederation in 1871, the control of reserve land and oversight of Indigenous peoples passed to the Canadian government. Through the *Indian Act of 1876*, the federal piece of legislation used to control Indigenous peoples, the Canadian government banned important cultural activities such as the potlatch and restricted access to traditional fishing resources so as to reduce competition for settler fish industries and to push coastal Indigenous peoples to adopt more agrarian lifestyles. The imposition of settler-colonial rule and authority over Indigenous peoples destroyed many aspects of their cultures and traditional ways of life. Recent scholarship has demonstrated how these policies – specifically the residential school system – amounted to a cultural genocide.<sup>79</sup>

Annual reports from Indian Affairs agents for the New Westminster district make no mention of Coast Salish peoples' snow experiences during this period – not even during the exceptionally snowy winters of 1874-75, 1875-76, and 1879-80. While it is possible that the Musqueam, Squamish, and Tsleil-Waututh peoples were not adversely affected by slight or short snowfalls, deep snow and cold temperatures probably had some impact on their well-being. We know that these conditions – combined with the restrictions imposed by settler-colonial policies – detrimentally impacted their livestock. In arguing for the re-expansion of the Musqueam reserve boundary in July 1874, Chief Semlanooch

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<sup>79</sup> Barman, "Erasing Indigenous Indigeneity in Vancouver"; Harris, *Making Native Space*; Douglas C. Harris, *Landing Native Fisheries: Indian Reserves & Fishing Rights in B.C., 1849-1925* (Vancouver: UBC Press, 2009); Truth and Reconciliation Commission of Canada, *A Knock on the Door: The Essential History of Residential Schools* (Winnipeg: University of Manitoba Press, 2016); John S. Milloy, *A National Crime: The Canadian Government and the Residential School System, 1879 to 1986* (Winnipeg: University of Manitoba Press, 1999).

testified that his people had lost 15 of their 50 cattle that winter. The chief blamed insufficient feed and space for the animals' deaths. The weather was likely a culprit too – this was the same winter that McCleery had lost many of his cattle.<sup>80</sup>

There are few oral or documentary records about settler snow experiences at Burrard Inlet or in Gastown/Granville during these decades, either. While snow probably had the greatest effect on coastal logging operations, primary sources documenting its impact at Hastings Mill or Moodyville are elusive. Secondary scholarship on mid-nineteenth century logging activities at Burrard Inlet pay scant attention to the impact that snow and cold weather had on these operations.<sup>81</sup> Some inferences can be drawn from later sources and historical scholarship on logging in other parts of British Columbia and North America, however. A light to moderate snowfall, for example, probably made the overland transportation of logs to the coast easier. As historian Richard Rajala explains, Burrard Inlet's mild winter temperatures and lack of prolonged snow coverage differed considerably from conditions east of the Rockies, and thus altered how loggers operated. On the Pacific Coast, loggers and their teams of oxen or horses hauled felled timber over skid roads – rows of flat logs dug into the ground. These logs were lubricated with fish oil or dogfish oil to decrease friction and improve transportation. As Rajala explains, skid roads were a necessary substitute for snow.<sup>82</sup> When it did snow, loggers and their animals could instead adopt “eastern” methods and transport logs over the snow. Moderate snowfalls, packed down, offered horses and oxen better footing than the muddy and soft conditions created by winter rains. Of course, melting snow and slush worsened these conditions, too.

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<sup>80</sup> Statement of Semlanooch, Musqueam chief, with regard to land dispute, 13 July 1874, RG 10, vol. 11028, file SRR-1 (reel 3937), Library and Archives Canada, Ottawa, Canada.

<sup>81</sup> Richard A. Rajala, *Logging British Columbia: A History of Technological Change in Forest Harvesting, 1860 to present* (Ottawa: National Museum of Science, 1999); R.A.J. McDonald, “Lumber Society on the Industrial Frontier: Burrard Inlet, 1863-1886,” *Labour/Le Travail* 33 (1994): 69-96; Ian Hutchison, “Some aspects of logging in the coast forest of British Columbia: Part I,” *Empire Forestry Review* 37 no. 1 (1958): 66-84.

<sup>82</sup> Rajala, *Logging British Columbia*, 12-16; Richard A. Rajala, *The Forest Industry of Eastern Canada: An Overview in Broadaxe to Flying Shear: The Mechanization of Forest Harvesting East of the Rockies*, C. Ross Silversides (Ottawa: National Museum of Science and Technology, 1997), 121-156.



**Figure 5: [Men removing logs from sleigh] [1912?] LGN 508, Series S4, Major Matthews Collection fonds AM54, City of Vancouver Archives.**

While logging probably continued on flat or gently sloping lands during light to moderate snowfalls, snow halted operations on steeper slopes. Snow and ice no doubt made navigating the Burrard Peninsula's bluffs and the steep slopes on Burrard Inlet's north shore challenging and dangerous for loggers and their animals. Logging and sawmill operations probably also stopped during exceptionally snowy weather or when temperatures fell well below freezing. Deep snowfalls restricted logging operations along the coastline and prevented loggers from travelling deeper into the woods. If late nineteenth century and early twentieth century records are any indication, frigid temperatures likely restricted logging and sawmill operations during the mid-nineteenth century, too. These types of weather events were less frequent at Burrard Inlet than they were in other parts of Canada, but they undoubtedly impacted coastal logging operations when they did occur.

### 1.3 Conclusion

In the early 1930s, Major Matthews sat down with a man named Otway Wilkie to discuss Vancouver's early history. Wilkie was an old timer, a settler who had arrived in the region before the City of Vancouver's incorporation. He immigrated from Ireland to British Columbia in 1878. The then 17-year-old Irish man spent his first few years in the province working on fruit farms in the Fraser Valley. Over his fifty-plus years in British Columbia, he had been a farmer, a surveyor, a police constable, and finally Superintendent of the Provincial Police. One of Wilkie's surveying jobs had been for the Canadian Pacific Railway (CPR), helping to lay the line from Yale to Granville in the mid-1880s. As Wilkie recounted to Matthews, he and his party were surveying the final section of rail line between Port Moody and Granville in December 1884. "We... reached Gastown on Christmas Day 1884 – in a snowstorm." As Wilkie explained, "it had been snowing hard all day, but we were anxious to finish up; we were told that haste was necessary." Having finally finished their work, Wilkie and his team retreated from the cold, snowy weather to George Black's Brighton Hotel, just east of Granville, to enjoy their Christmas dinner.<sup>83</sup>

The arrival of Wilkie and his survey party signalled a new era for the region. The imminent arrival of the trans-continental railway was an exciting prospect for settlers in British Columbia. The new overland route would provide the province with a direct connection to the rest of the Dominion, and many believed its completion would bring new fortunes and opportunities with it. Tens of thousands of settlers would travel along the line Wilkie helped survey to start new lives on the Pacific Coast. The arrival of the railway and the transformation of the Granville Townsite into the City of Vancouver also marked a shift in settler attitudes toward snow and their experiences with it on the coast. It is symbolic that Wilkie arrived in Granville during a snowstorm. In the following decades, the idea of a coastal winter would be reimagined. Snow, a seasonal occurrence, would be recast as an outlier of the coast's winter climate. Constructed by corporations such as the CPR and civic boosters in order to sell the new city to prospective settlers,

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<sup>83</sup> Matthews, *Early Vancouver*, Vol. 2, 200; Major James Skitt Matthews, *Early Vancouver*, Vol. 3 (Vancouver: City of Vancouver, 2011), 178-179.

these new ideas about snow and seasonality would have significant lasting effects on settler relationships with snow.



## Section 2

### 2 A Rare Luxury: 1886-1918

Thousands packed onto Hastings Street late on New Year's Eve 1900 to welcome the returned soldiers from the Boer War. The veterans had been treated to a hero's welcome, with celebratory events hosted in their honour throughout the day. That evening's parade was the culmination of the festivities. It was set to begin at City Hall on Main Street and end at the Granville Street Opera House for speeches, singing, and gift-giving. Men, women, and children began lining Hastings around 7 p.m. As the *Vancouver Province* recounted a few days later, they "made the chill night air resound with the din of innumerable whistles, trumpets, and other instruments calculated to consume the overflowing energy of their spirits." Cheers went up as the procession began, and the veterans were joined by the spectators. Soon, "everyone in the city seemed to be in the procession, and still everyone seemed to be looking on." A light snowfall that evening added to the event's majesty. "Rockets, Roman candles, fire crackers, red fire and green fire rose to heaven and cast a lurid glare on the snowy white carpet then enveloping the city," wrote the *Province's* reporter.<sup>84</sup>

Celebrations continued in the packed Opera House for the next few hours. When revelers departed later that night, the ground was coated in snow, with more continuing to fall. Over 26 cm covered the city by the morning. A reporter with the *Vancouver Daily World* called it a "typical down east winter New Years," as Vancouver looked more like snowy Toronto or Montreal than its normal rainy, wintry self. The *Daily World's* reporter reassured readers that this would be a short-lived phenomenon, however. Snow in Vancouver, he explained, "comes quickly and disappears more quickly" with the return of rain and mild temperatures. But this January snowfall was unrelenting. Another metre of snow blanketed the city over the next nine days. The snow was even deeper on the higher elevations to the south of False Creek, in the suburban neighbourhoods of Fairview and Mount Pleasant. The ten-day snowstorm was an unexpected and astonishing start to the new century. "A Vancouverite returning this week after a short absence would

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<sup>84</sup> "Welcomed the heroes home," *Vancouver Province*, 2 January 1901.

hardly know this city with its snow-covered streets, its ringing sleigh bells, and its general wintry appearance,” observed the *Daily World* amidst the storm. Relief finally came on 11 January, when temperatures warmed, and snow turned to rain. Over the next six days, heavy rains washed the melting snow from the city.<sup>85</sup>



**Figure 6: Georgia Street in the snow, 190-, Acc No. 2452, Vancouver Public Library  
Special Collections Historical Photographs**

January 1901 was one of the snowiest months in the City of Vancouver’s short history. At the time, local newspapers characterized it as a “once in a lifetime” snow event.<sup>86</sup> Almost as remarkable – at least from the perspective of local reporters – was the fact that it snowed at all that winter. From the articles written that month, newcomers could have been forgiven for thinking that snow rarely fell in Vancouver. Newspapers stressed that snow was “a rare luxury” on the coast, a transient visitor rather than a frequent guest. “Snow is as unwished for as frost in summer,” penned one *Daily World* reporter that January. “When it does come it is not expected to fall to a great depth. No provision has

<sup>85</sup> “A white new year day,” *Vancouver Daily World*, 2 January 1901; “A mantle of white,” *Vancouver Province*, 2 January 1901; “Snow covered Vancouver,” *Vancouver Daily World*, 4 January 1901.

<sup>86</sup> “Storm King’s breath blows,” *Vancouver Province*, 8 January 1901.

been made for it.”<sup>87</sup> While January 1901 was unique for its overall snowiness, the fact that it snowed was less surprising than newspapers made it out to be. Snow was part of the coast’s winter climate. It had, in fact, snowed nearly every winter since the City of Vancouver’s incorporation in 1886. Major snowstorms were not unknown either. Those living in Vancouver during its early years could still remember the storms of February 1893, which coated the city with more than a metre of snow for weeks. And yet, reporters characterized snow as an unnatural phenomenon on the coast. As one *Daily World* reporter declared during a snowfall in November 1900, snow “ha[d] no place in Vancouver.”<sup>88</sup>

This discrepancy between perception and reality emerged during the City of Vancouver’s first few decades. In the late nineteenth and early twentieth centuries, local media outlets, tourist associations, and corporations such as the Canadian Pacific Railway (CPR) constructed an idealized image of coastal winters that did not necessarily reflect natural conditions. According to these organizations, winters on the coast were always mild and snow-free; grass grew and flowers bloomed as the snow piled up in Central and Eastern Canada. While coastal winters were warmer and less snowy than the rest of Canada, the season was not always warm, and it was not snowless. The image of winter promoted by the CPR and local tourist associations was designed to draw prospective settlers and investors to the burgeoning city; it was a seasonal ideal that they wanted new residents to *believe* they had, rather than one that aligned with actual conditions. This seasonal reimagining had a significant impact on the tens of thousands of settlers who moved to Vancouver during this period and had no knowledge – outside of the promotional materials given to them – of the region’s climate, seasonal patterns, or winter weather. For many of these settlers, the coast’s apparent snowlessness was further reinforced by the fact that they came from snowier parts of the continent and were accustomed to winters where snow fell frequently and persisted for extended periods.

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<sup>87</sup> “A white new year day,” *Vancouver Daily World*, 2 January 1901; “No thoroughfare,” *Daily News Advertiser*, 4 January 1901; “Storm King’s breath blows,” *Vancouver Province*, 8 January 1901.

<sup>88</sup> “Almost like winter,” *Vancouver Daily World*, 17 November 1900.

In the late nineteenth and early twentieth centuries, coastal residents adopted an “evergreen mentality” as the dominant mindset that framed their responses to snow. The evergreen mentality encompassed two core beliefs. The first was that snow was rare in Vancouver. While residents expected winter rain and fog, they did not expect to see snow at all, despite the fact that it fell nearly every winter. The second belief was that snow would not last long. For the most part, this was true: snow often remained on the ground for only a few days before it melted under rain and warming temperatures. Sometimes, newly fallen snow turned to rain or melted the same day. By the twentieth century, coastal residents expected that snow would depart as quickly as it arrived. They were thus surprised and generally unprepared when snow persisted for extended periods, as was the case in January 1901. As this chapter shows, the evergreen mentality became firmly entrenched in the city’s collective consciousness during this period.

The dominance of this mindset influenced many of the ways that coastal residents enjoyed, prepared for, and handled snow. Its supposed rareness and infrequency meant that it was a unique event for most residents. Snow experiences were further shaped by one’s age and racial and socio-economic background. For the city’s youth, snow was an exciting sight that turned streets and normally muddy hills into temporary toboggan chutes. Snow elicited a similar excitement from those residents who owned horse-drawn sleighs. Snow and cold weather created much more challenging conditions for the city’s poor and working-class, though. It halted work in outdoor occupations that normally operated year-round and put thousands of men out of a job for extended periods. And during these decades, white settler males used snowballs to attack and injure Chinese males and enforce racial hierarchies and segregation, not just in Vancouver, but throughout coastal British Columbia.

The evergreen mentality was particularly impactful on local snow-clearing activities. Civic leaders and residents, who were already complacent about snow, were unwilling to devote considerable resources to these initiatives. Believing that snow was a rare and short-lived phenomenon, the City Engineer and Board of Works earmarked no funds for snow-clearing work until the end of the First World War. Residents, too, were ill-prepared for snow. Most seemed to believe that clearing snow was best left to nature. The

Board of Works' snow-clearing program was largely designed to assist nature too, sending crews to clear drains and catch-basins to allow thawing snow and slush to escape downtown streets and to prevent flooding. Only street railway companies took the necessary precautions to prepare for it. In the early twentieth century, the British Columbia Electric Railway Company (BCER) invested in mechanized equipment in order to improve its snow-fighting capabilities. These efforts earned the company praise following the snowier-than-normal winters in the 1910s – something that could not be said for civic leaders or most residents.

## 2.1 Creating the Evergreen Mentality

Granville took on greater regional and national significance following its selection as the western terminus of the CPR's trans-continental railway in 1885. The newly named City of Vancouver incorporated on 6 April 1886. As Vancouver historian Bruce Macdonald explains, "the frontier logging village of Granville gave way to the bustling City of Vancouver... with electricity, telephones, sidewalks, streetlights, piped water, parks, and an opera house."<sup>89</sup> The railroad-inspired boom transformed the region in a relatively short period of time. Over the next few decades, settlement pushed west, south, and east along the Burrard Peninsula, further squeezing the Musqueam, Squamish, and Tsleil-Waututh peoples from their traditional lands. The settler population expanded considerably as speculators, entrepreneurs, and families sought to carve out new lives for themselves on the Pacific Coast. Between 1886 and 1891, the population grew from less than 1,000 people to 13,000 people. Most of these new arrivals were of European descent. Twenty years later, the population exceeded 100,000.<sup>90</sup>

Many of these settlers were attracted to Vancouver by the flurry of promotional materials that appeared during these decades. Beginning in the 1880s, local organizations and major corporations promoted the coast's mild climate in order to draw settlers, businesses, and tourists to the Terminal City. The CPR, one of the city's largest landholders and the main transportation link between Vancouver and the rest of Canada,

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<sup>89</sup> Macdonald, *Vancouver*, 22.

<sup>90</sup> Ibid, 34.

was also one of its biggest boosters. “The climate is milder and less varying than that of Devonshire and more pleasant than that of Delaware,” read one passage in an 1890 booklet that would have resonated well with British and American audiences. In boasting about Vancouver’s favourable climate, the CPR downplayed snow’s prominence on the coast. A 1910 promotional booklet, for example, noted that “heavy snowfalls and severe frosts very seldom occur,” a bonus for those looking to escape Central and Eastern Canadian winters.<sup>91</sup>

Local media outlets echoed these sentiments. In the late nineteenth and early twentieth centuries, newspapers including the *World*, *Province*, *News-Advertiser*, and *Vancouver Sun* were founded and operated by prominent political and business leaders in the province.<sup>92</sup> Like the CPR, newspaper owners sought to attract business and tourism to the new city. In an 1887 pamphlet intended to provide prospective settlers with information on Vancouver, the *Daily News* explained how rain and snow only fell at “short intervals” during coastal winters. “People from the east are surprised to see our people going around in their ordinary summer costume during the winter months, our fields and forests clothed in a mantle of green...” “The wet season in winter, though disagreeable to strangers, is preferable to cold winds, snow and ice,” asserted both the *World* and *News-Advertiser* in their 1890 informational pamphlets.<sup>93</sup> Later publications explained that the city had very little snow each winter. Absent the blizzards and frigid winter temperatures common in

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<sup>91</sup> *The Province of British Columbia, Canada: Its resources, commercial position, and climate and description of the new field opened up by the Canadian Pacific Railway with maps and information for intending settlers* (Canadian Pacific Railway, c.1890), 11; *British Columbia, Canada’s Pacific Province: Its natural resources, advantages, and climate* (Canadian Pacific Railway, 1910), 4.

<sup>92</sup> Some of these figures include: F.L. Carter-Cotton (*News-Advertiser*), J.C. and Sara Anne McLagan, and later, Victor Odlum and L.D. Taylor (*World*), Hewitt Bostock and Walter Nichol (*Province*), and John P. McConnell and Richard Ford (*Sun*). Donald Stainsby, “Newspapers in Vancouver,” in *The Vancouver Book*, ed. Chuck Davis, 317-319.

<sup>93</sup> M. Picken, *City of Vancouver, terminus of the Canadian Pacific Railway: British Columbia Handbook* (Vancouver: Daily News Office, 1887), 5; R. Edward Gosnell, *British Columbia. A digest of reliable information regarding its natural resources and industrial possibilities* (Vancouver: News-Advertiser, 1890), 8; *The Vancouver Daily World: Illustrated souvenir publication. The financial, professional, manufacturing, commercial, railroad, and shipping interests of Vancouver* (Vancouver: McLagan & Co., c. 1891), 7.

much of Canada, “Vancouver and the lower mainland of British Columbia combine all that is climatically ideal.”<sup>94</sup>

Tourism organizations further promoted Vancouver’s mild winter climate. In June 1902, a collection of local businessmen created the Vancouver Tourist Association (VTA) “to advertise the city as a pleasure resort, and in every way possible to bring Vancouver to the attention of outsiders.”<sup>95</sup> In two 1903 pamphlets, the VTA likened coastal winters to those in England. The 1902-03 winter was compared to “the Eastern month of May, and all that could be called real winter was inside of ten days.” The snow never exceeded 15 cm, and the author had picked flowers every week that winter.<sup>96</sup> The VTA distributed its material widely. As historian Michael Dawson explains, in 1907 the VTA distributed more than 130,000 illustrated books, folders, guides, and bulletins and hundreds of maps throughout the world. According to Dawson, tourism was seen as a “strategy for luring settlers and agricultural and industrial development to the province.” The hope was that one visit “would convince [tourists] to return as permanent contributors to sustained economic development.” The VTA worked closely with the CPR, as the latter also recognized tourism’s benefit as a source of supplementary income.<sup>97</sup>

Efforts to downplay Vancouver’s snowiness were further bolstered by the seasonal differences that new settlers noticed when they arrived. In 1891, forty percent of all Vancouver residents had been born in other parts of Canada. That number remained relatively stable into the mid-1910s.<sup>98</sup> For most of these settlers, winter was marked by heavy snowfalls, prolonged snow-cover, and frigid temperatures. This was not the case on the Pacific Coast. In the Vancouver region, winter was characterized by long periods of mild rainy weather punctuated by snow and sub-zero temperatures. Dominion meteorological records, first collected in the City of Vancouver in 1898, provide a

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<sup>94</sup> “Life is worth living in Vancouver, climate delightful,” *Vancouver World Progress and Building Edition*, 6 January 1912; *Vancouver, British Columbia: the sunset doorway of the Dominion* (Vancouver: Vancouver Tourist Association, 1903), 68.

<sup>95</sup> Michael Dawson, *Selling British Columbia: tourism and consumer culture, 1890-1970* (Vancouver: UBC Press, 2004), 40.

<sup>96</sup> Roland D. Grant, *Vancouver, the mecca of the tourist: the commercial and scenic centre of British Columbia* (Vancouver: Vancouver Tourist Association, c. 1903), 22.

<sup>97</sup> Dawson, *Selling British Columbia*, 24.

<sup>98</sup> Macdonald, *Vancouver*, 72.

window into Vancouver's snowiness. Between 1899 and 1918, Vancouver registered an average of 10 days of snow-cover and 70 cm of snow each winter. Meteorological data from New Westminster and weather observations from early settlers such as Henry Mole show that the region also received snow each winter between 1886 and 1898. Generally, snow only lasted a few days before it melted or was washed away by the returning rains. In certain instances, snow transitioned to freezing rain or rain later that same day. In most winters, there might be a few weeks or months between snow. Mid-winter thaws occurred in Central and Eastern Canada, but snow was generally a constant winter presence in those areas. Snow's often brief appearance in Vancouver, coupled with the more dominant rainfalls, furthered the idea that snow was a rare sight on the coast.

An extended period of low-snow winters aided in the cultivation of the evergreen mentality. A stretch of positive Pacific Decadal Oscillation (PDO) phases in the first decade of the 1900s punctuated an otherwise negative cycle that lasted from 1890 to 1924. Warm, drier winter weather tends to correspond with positive PDO phases. Between the 1901-02 and 1910-11 winters, the average annual snowfall was just 35 cm and average snow-cover was only 7 days. Vancouver's population jumped from 26,000 people to 120,000 people during this period. Promotional materials boasting about Vancouver's snowlessness resonated more with settlers arriving during this decade. The 1906-07 winter – the only truly “snowy” winter that decade – boasted 71 cm of snow but lasted just 8 days. The 1909-10 and 1910-11 winters had longer snow-cover, but less total snowfall. For those individuals and families arriving from Central and Eastern Canada, Vancouver appeared rather snowless. Snowfall patterns during the early 1900s confirmed the seasonal ideas displayed in CPR and VTA promotional materials and contributed to the adoption and entrenchment of the evergreen mentality.<sup>99</sup>

Although infrequent, severe snowstorms and prolonged snow-cover blanketed the coast between 1886 and 1918, as they had before the City of Vancouver's incorporation. In 1893, for example, a wave of unrelenting storms coated Vancouver and much of coastal

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<sup>99</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Vancouver PMO, BC monthly data report for December – March, 1901-1911, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; MacDonald, *Vancouver*, 30 and 32.



British Columbia in deep snow between late January and late February. In early February, the *Daily World* reported that drifts were “several feet deep” in Vancouver’s Mount Pleasant neighbourhood.<sup>100</sup> This was followed eight years later by the nearly 130 cm of snow that ushered in the twentieth century. That record was eclipsed in January 1913, when 145 cm fell over the course of the month – the heaviest one-month-snowfall in the city’s young meteorological history. The 1910s were an exceptionally snowy decade. The 1915-16, 1916-17, and 1917-18 winters recorded snow totals of 182 cm, 209 cm, and 112 cm respectively, and snow remained on the ground for a total of 26, 29, and 18 days respectively.<sup>101</sup> Winters such as these were the exception rather than the rule, however. Snow was often short-lived, as the evergreen mentality’s adherents anticipated. But heavy snowfalls and prolonged snow-cover were not as unnatural as boosters of the mindset claimed.

By the early twentieth century, local reporters expected that snow would promptly leave their coastal home. “[The snow] does look pretty this morning,” wrote one *Province* reporter in January 1902, “but to-morrow perhaps or a few days at the latest, it will be horrid slush for a few hours, and will disappear so quickly that we will wonder if we ever had any at all.” This refrain was repeated nine years later by another *Province* reporter. “A day or two is expected to see the entire disappearance of snow,” he wrote after a slight snowfall. “When the warm Pacific winds and the constant winter rains get in their work the visitor from the prairies will soon make itself scarce.” Other residents had similar views. A 1914 poem written by Vancouverite Elizabeth Kirkman further illustrates this

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<sup>100</sup> Meteorological information on Ladner and New Westminster for this winter is unavailable online. Across Georgia Strait, the towns of Nanaimo and Duncan registered 132 and 178 cm of snow respectively, between 28 January and 8 February. “City and provincial topics,” *Vancouver Daily World*, 3 February 1893; “City and provincial topics,” *Vancouver Daily World*, 11 February 1893; “Thirty years ago,” *Vancouver Daily World*, 11 February 1893.

<sup>101</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Vancouver PMO, BC daily data report for January 1913, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; Vancouver PMO, BC monthly data report for December – March, 1915-16, 1916-17, and 1917-18, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>

point. “We built a snowman big and fat, and made him wear a funny hat. But when we went outdoors next day, we found he’d melted all away!”<sup>102</sup>

Local reporters and some residents struggled to square these snowy realities with the dominant perceptions they held about coastal winters. “It is but to be expected that when snow falls in Vancouver the phenomenon is merely an incident in a course of ‘high jinks’ which the weatherman is indulging all over the world,” penned a *World* reporter following a light snowfall in January 1909.<sup>103</sup> In November 1911, a 38 cm snowstorm inspired a *World* cartoonist to draw Old Man Winter arriving in Vancouver. He called the visitor “a stranger in our midst.”<sup>104</sup> Another February 1917 *Province* cartoon entitled “Not Guilty” reaffirmed the coast’s snowless reputation. As the accompanying caption read, “We refuse to take responsibility for this weather.”<sup>105</sup> Many residents truly believed they had escaped winter’s snowy grasp by moving to the Pacific Coast. For some reporters, snow was wholly unwelcome. “Vancouver is no place for snow,” wrote one *Province* reporter following a late season snowfall in March 1903. “The beautiful does not look its best when it falls in the city, and if it had any sense of self-respect at all it would keep away altogether.”<sup>106</sup> In 1909, a man named Roy sent a postcard showing a snowy Granville Street to Florence Adams in Richard’s Landing, Ontario, possibly to persuade her that snow was real in Vancouver. “You are not the only people who can have snow,” he wrote. “What do you think of this?”<sup>107</sup>

The city’s newspapers frequently likened snow-covered Vancouver to its snowy counterparts in Central and Eastern Canada. Many residents likely made the same connection, too. During the boom years of the 1890s and 1900s, thousands of settlers moved to the Terminal City from other Canadian provinces. “To those [to] whom the

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<sup>102</sup> “The rare snow visitant,” *Vancouver Province*, 23 January 1902; “City in grip of prairie snow,” *Vancouver Province*, 10 January 1911; Elizabeth Kirkman, “A snow man,” *Vancouver Province*, 26 January 1914.

<sup>103</sup> “Wintry in Britain,” *Vancouver Daily World*, 16 January 1909.

<sup>104</sup> “A stranger in our midst,” *Vancouver Daily World*, 9 November 1911.

<sup>105</sup> “Not guilty,” *Vancouver Province*, 23 February 1917.

<sup>106</sup> “Snow and mud make dirty walking, ice on wires stops central talking,” *Vancouver Province*, 11 March 1903.

<sup>107</sup> Roy to Florence Adams, 13 January 1909, in Uno Langmann Family Collection of B.C. Photographs, <https://open.library.ubc.ca/collections/langmann/items/1.0361050#p0z-6r0f>

snow came as an old friend, it was welcomed with pleasure,” noted the *Province* following a light snowfall in January 1902. “There are many in this city who are spending their first winter away from the maple sugar woods of the east, and they have felt lonely without the beautiful white.” Snow gave Vancouver a “typical down-east atmosphere” and reminded residents of their old homes east of the Rockies.<sup>108</sup> In the 1900s and 1910s, cartoons in the *World* and *Province* emphasized that snow was an eastern phenomenon that coastal residents were ill-equipped to handle, further re-enforcing the idea that snow was not natural on the coast. It was something that spilled over from east of the Rockies, as one January 1909 *Province* cartoon explained. As another *Province* reporter noted in January 1911, snow was no doubt “a great surprise to those ex-easterners who came here to escape [it].”<sup>109</sup>



**Figure 7: “Oh, east is east, and west is west,” *Vancouver Province*, 13 November 1911.**

<sup>108</sup> “A white new year day,” *Vancouver Daily World*, 2 January 1901; “Youngsters enjoy eastern weather,” *Vancouver Daily World*, 13 January 1903.

<sup>109</sup> “Some pleasing features of our jingle bell existence,” *Vancouver Province*, 14 January 1909; “City in grip of prairie snow,” *Vancouver Province*, 10 January 1911.

Between the 1880s and 1910s, commercial and civic boosters cultivated – and coastal residents embraced – an evergreen mentality regarding snow and winter weather on the Pacific Coast. Vancouver, much like the giant coniferous trees surrounding the city, was supposed to be green all year-round. What snow did fall was considered rare and was expected to leave within a day or two. The creation and adoption of the evergreen mentality demonstrates how human conceptions of seasonality are partially culturally constructed. Recent historical and sociological scholarship has emphasized how concepts of seasonality are products of both natural conditions and social considerations.<sup>110</sup> While the evergreen mentality was partly true – snow was rarer and less frequent there than in other parts of Canada – it emphasized a degree of snowlessness that did not match local climate conditions.

## 2.2 The few and far-between visits of King Frost

Many Vancouverites jumped at the opportunity to take part in “eastern” winter activities when it snowed. Sleighing was one such popular pastime. Gliding over the snow in a horse-drawn sleigh was exhilarating and was more efficient than being pulled in a horse-drawn wagon on muddy coastal roads. During the first few days of a snowy January 1899, for example, the *Province* reported that “everyone that could own, rent, or borrow a steed and something on runners” was out on the streets.<sup>111</sup> The short window of opportunity for sleighing added to its popularity. In 1908, one *World* reporter explained that sleighing was “one of the winter pastimes that is so rare in Vancouver that when people get a chance to indulge in it, they go the limit.”<sup>112</sup> Stanley Park, with its majestic trees and ocean views, was one favourite sleighing location for coastal residents. “Have you got anything to beat this down East?” asked George Alfred Barrowclough to Miss R.J. Sproule of Ebor, Manitoba in a 1910 postcard. Adorned with a snowy Stanley Park, the postcard’s accompanying caption read, “sleighing for C. [Christmas] day on Stanley

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<sup>110</sup> See: Wickman, *Snowshoe Country*; Zilberstein, *A Temperate Empire*; Davidson and Park, *Seasonal Sociology*.

<sup>111</sup> According to one *Province* article on 10 November 1911, pulling wagons in the snow was difficult for many horses, who were unable to gain traction on snowy streets. “Jolly winter sport,” *Vancouver Province*, 5 January 1899.

<sup>112</sup> “Sleigh bells jingle merrily,” *Vancouver Daily World*, 13 January 1909.

Park Drive.”<sup>113</sup> The sight of horse-drawn sleighs and the sound of ringing bells further fueled comparisons to Central and Eastern Canada. In January 1909, for example, the *Province* columnist Diogenes (the pseudonym for the British-born journalist Bernard McEvoy, who had worked for Toronto’s *Mail and Empire* newspaper for decades) recalled that there had been “so many sleighs and cutters” out that month that “it sounded... as if we had been transported to Ontario or Quebec.”<sup>114</sup>

For young children, tobogganing or coasting was the snowy pastime of choice, as it was for other Canadian children. And there were plenty of hills for Vancouver’s youth to choose from. The city’s West End, Kitsilano, Fairview, Mount Pleasant, and Grandview neighbourhoods were all situated near or on hills that offered prime coasting conditions. As former Kitsilano resident Ian Nicholson recalled from his childhood, young Vancouverites “confiscated” just about every hilly street for tobogganing when it snowed.<sup>115</sup> Newspaper articles from the period bear this out, too. In January 1899, the *Province* described downtown streets as being “lively with the coasters.” The West End’s Nelson Street – a popular hill for the neighbourhood’s youth – was “a mecca for hundreds” in January 1913. Not finding the speed of sliding downhill thrilling enough, some adventurous youths hooked their sleds to the back of a few willing automobiles on Georgia Street in January 1914.<sup>116</sup> Like most things snow-related in Vancouver, coasting was billed as a rare activity for coastal youth. It was considered one of the many “winter sports which the Vancouver boy reads about” but rarely had the opportunity to enjoy. Taking advantage of this sentiment, companies such as the Clarke and Stuart Company and the Thomson Stationary Co. Ltd. encouraged parents to purchase one of their sleds so that children could “enjoy the coasting while the snow lasts.”<sup>117</sup>

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<sup>113</sup> George Alfred Barrowclough to Miss R.J. Sproule, c. 1910, Uno Langmann Family Collection of B.C. Photographs, <https://open.library.ubc.ca/collections/langmann/items/1.0361220#p1z-5r-90f>

<sup>114</sup> Other reporters also made similar connections. Diogenes, “Street corners,” *Vancouver Province*, 23 January 1909.

<sup>115</sup> Pamphlet, “My Father’s Boyhood in Vancouver,” Ian C. Nicholson, 1970, folder 1, 608-D-07, Ian C. Nicholson fonds, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>116</sup> “Jolly winter sport,” *Vancouver Province*, 5 January 1899; “Youngsters enjoy eastern weather,” *Vancouver Daily World*, 13 January 1913; “Earth’s xmas mantle arrives rather late,” *Vancouver Sun*, 26 January 1914.

<sup>117</sup> “The Cold Spell,” *Vancouver Daily World*, 16 January 1911; “Sleighs,” *Province*, 28 January 1903.

But as fun as snow could be, it was also dangerous. Even tobogganing had its hazards. Coasting accidents sometimes resulted in serious injuries to coasters and unassuming bystanders. On one evening in February 1910, the threat of a serious crash was considered so dire on the hilly portions of Nelson Street that police put an end to all tobogganing there.<sup>118</sup> In January 1911, young Comie MacFarlane cut his head open after sliding into the back of a lumber wagon on Fairview's Willow Street. The deaths of Clarence M.W. Lobhan and Mildred Dolson that winter highlighted the dangers boys and girls faced coasting down streets that they shared with horse-drawn wagons and sleighs. On 11 January, the 13-year-old Lobhan died when he crashed into a horse-drawn sleigh in the neighbouring municipality of South Vancouver. Young Dolson died five days later in another coasting accident in Kitsilano, after she was hit by a wagon that turned into her path on Yew Street.<sup>119</sup> The editors at the *World* blamed snow's infrequency for "the lack of provision for winter sports being safely indulged in by the children." These deaths, the editors implied, would not have happened in places where snow was more common and where children and wagon-drivers were more accustomed to sharing snowy streets with one another. They called on authorities to adopt regulations (although they provided no specific suggestions) during "the few and far-between visits of the King Frost" in order to protect coasting youths.<sup>120</sup>

The increasing presence of automobiles created additional dangers on snowy Vancouver streets. The first car appeared in the city in 1899 and, although car ownership remained confined to the city's wealthiest individuals for years, numbers rose considerably over the next decade and a half. By July 1914, the Vancouver Automobile Club recorded almost 700 members.<sup>121</sup> Coastal residents realized the dangers that these new modes of transportation posed following two serious snow-related accidents in January 1913. In the early morning of 14 January, Harvey La Motte Virgil, the secretary and treasurer for the Central Motors Machine Company, hit two city employees shovelling snow on Granville

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<sup>118</sup> "Coasting cause of many mishaps," *Vancouver Daily World*, 23 February 1910.

<sup>119</sup> "Boy scouts show value of drill," *Vancouver Daily World*, 16 January 1911; "Death ends merry sleighing party," *Vancouver Province*, 12 January 1911; "Girl killed while coasting," *Vancouver Province*, 16 January 1911.

<sup>120</sup> "The cold spell," *Vancouver Daily World*, 16 January 1911.

<sup>121</sup> "Royal city autoists reorganise the club," *Vancouver Sun*, 17 July 1914.

Bridge. J. McPherson suffered a serious head wound and broken skull; his colleague, Martin Longman, was killed. The following night, J.B. Steele, a local florist, drove into another group of city shovellers as he tried to pass a BCER streetcar at 50 km/h. All four shovellers were injured in the crash. Steele was reported to be intoxicated at the time and was later fined \$100 for the incident. La Motte Virgil's case, on the other hand, proceeded through the provincial court system over the next 16 months. He was eventually charged with manslaughter and sentenced to 30 months in jail.<sup>122</sup> These two incidents brought underlying concerns about reckless driving, the rising number of automobiles in the city, and the need for greater enforcement to the public forefront in a dramatic fashion. "I shall do all in my power to put a stop to the furious driving which is apparently becoming prevalent among some of the auto owners and chauffeurs in the city," proclaimed Mayor Truman S. Baxter after Longman's death. Following the second incident, the editors at the *World* argued that "it would be very difficult indeed to find any occupation, short of actual warfare... more fraught with danger than snow-shovelling on the streets of Vancouver." The editors advocated for greater traffic regulations and stiffer fines to prevent future incidents.<sup>123</sup>

Snow created temporary but serious hardships for those employed in outdoor occupations. During the late nineteenth and early twentieth centuries, thousands of men worked in construction and trade jobs building the rapidly expanding metropolis. In 1911, over 17 percent of the city's workforce (8,910 individuals) were employed in construction jobs. This work was especially vulnerable to winter weather extremes. In his examination of Vancouver's working-class, historian Robert A.J. McDonald explains that heavy winter rains hampered large infrastructure projects and contributed to seasonal unemployment during this period.<sup>124</sup> Snow and cold temperatures further constrained

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<sup>122</sup> "Struck by auto; dies in hospital," *Vancouver Province*, 14 January 1913; "four men run down by auto last night," *Vancouver Province*, 15 January 1913. Information on La Motte Virgil's case can be found in these additional stories: "Mr. Cottingham loses his appeal," *Vancouver Province*, 17 October 1913; "Virgil is guilty of manslaughter," *Vancouver Province*, 24 June 1913; "Kong to spend life in the penitentiary for a hideous crime," *Vancouver Sun*, 1 July 1914.

<sup>123</sup> "The deadly automobile," *Vancouver Daily World*, 15 January 1913.

<sup>124</sup> Robert A.J. McDonald, *Making Vancouver: Class, Status, and Social Boundaries, 1863-1913* (Vancouver: University of British Columbia Press, 1996), 102; Robert A.J. McDonald, "Working Class Vancouver, 1886-1914: Urbanism and Class in British Columbia," in *Vancouver Past: Essays in Social History*, ed. Robert A.J. McDonald and Jean Barman (Vancouver: UBC Press, 1986), 39.

these activities. All construction work in the city stopped when nearly 70 cm of snow blanketed Vancouver in early November 1911. Two years later in January 1913, heavy snow in the municipality of South Vancouver led that community to lay off 600 of its construction workers.<sup>125</sup>

These conditions continued to affect logging operations along the coast, too. That profession, and associated industries such as shingle making, employed thousands in the early twentieth century.<sup>126</sup> Snow shuttered these operations for extended periods, particularly during the exceptionally snowy winters of the 1910s. Some work stoppages were particularly impactful. In January 1907, for example, deep snows restricted travel in the mountains, and cold temperatures froze the bays that loggers used to float felled trees along the coast. The work stoppage in the forests produced a wood shortage in Vancouver. At the start of the month, the *Province* reported that local shingle mills were closing because of dwindling resources. By 18 January, only one mill was operating in Vancouver. Conditions only improved when the snows began to melt later that month.<sup>127</sup> In November 1911, deep snow clogged mill platforms and tramways and slowed work for a number of days. This was nothing compared to the hardships that the industry faced during the 1915-16 winter, when deep, long-lasting snow halted logging and milling operations for six weeks. In Vancouver, only the Hastings Mill, situated as it was on ice-free Burrard Inlet, remained open for much of that winter. Ice on other waterways forced the closure of nearby operations.<sup>128</sup>

Unemployed men sought out part-time work or turned to temporary relief programs during these shutdowns. In Vancouver, like other Canadian cities, these programs were primarily organized by charitable organizations and private residents. In the late

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<sup>125</sup> “Snowstorm puts an end to street work,” *Vancouver Province*, 10 November 1911; “Construction work halted by snow,” *Vancouver Daily World*, 13 November 1911; “Snow stops work,” *Vancouver Province*, 13 January 1913.

<sup>126</sup> In 1911, 6,000 Vancouverites were employed in logging and associated industries. McDonald, *Making Vancouver*, 94.

<sup>127</sup> Conditions did not improve until 24 January. “Shingle mill short on bolts,” *Vancouver Province*, 4 January 1907; “The lumber fleet,” *Vancouver Daily World*, 18 January 1907.

<sup>128</sup> “Items of interest to the trade,” *Western Lumberman* 8 no. 12 (December 1911), 30; “Camp, mill, and market in B.C.,” *Western Lumberman* 10 no. 3 (March 1913), 53; “The coast and mountains: News of the British Columbian camps and mills,” *Western Lumberman* 13 no. 3 (March 1916), 28-29.



nineteenth and early twentieth centuries, unemployment relief and assistance were primarily private responsibilities. But as McDonald explains, Vancouver also extended relief to unemployed men during periods of high joblessness and economic downturn. In January 1894, for example, in the midst of a recession, the Board of Works hired unemployed men to shovel snow from city streets and sidewalks. A few weeks later, the Board of Works set aside \$5,000 for a six-week relief program for married men.<sup>129</sup> Mass unemployment contributed to the creation of two other government-funded relief programs during the winters of 1907-08 and 1911-12. As McDonald explains, relief was only extended to “worthy” men who met certain eligibility criteria. While one’s marital status was one factor, so too was one’s race and ethnicity. In January 1912, Mayor James Findlay urged the Board of Works to expedite all of its construction projects in order to give unemployed men – “especially British subjects” – “as much work as possible.”<sup>130</sup>

During the exceptionally snowy winters of the 1910s, some men found temporary employment shovelling the very snow that had led to their unemployment. Ethnic and marital considerations no doubt influenced who received these jobs. The city’s financial situation also influenced the number of shovelling opportunities available to unemployed men. In January 1913, on the cusp of an international recession, the Board of Works took on 124 men to help existing teams shovel snow. Captain Godson-Godson, president of Vancouver Associated Charities, and Mayor Findlay urged residents to hire unemployed men to help with shovelling work as well.<sup>131</sup> Relief work took on greater significance as the recession took hold. The economic downturn of the mid-1910s dampened Vancouver’s exceptional growth and led to the unemployment of thousands of residents. As historian Daniel Francis explains, by early 1915, Vancouver was paying out \$16,000 a month for unemployment relief.<sup>132</sup> During the heavy snows that fell between late January and early February 1916, the city took on more than 200 men to shovel snow from streets

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<sup>129</sup> McDonald, *Making Vancouver*, 222; “Local items,” *Vancouver Daily World*, 24 January 1894; “Relief work,” *Vancouver Weekly World*, 8 February 1894.

<sup>130</sup> McDonald, *Making Vancouver*, 223; First report of the Board of Works, 23 January 1912, Minute Book, 158-A-02, COV-S373, City of Vancouver fonds, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>131</sup> “Vancouver in drip of storm king,” *Vancouver Sun*, 7 January 1913; “Snow shovellers still operating,” *Vancouver Daily World*, 8 January 1913; “Fall of snow provides work for unemployed,” *Vancouver Daily World*, 7 January 1913.

<sup>132</sup> Francis, *Becoming Vancouver*, 96.

and sidewalks. According to the *Sun*, the city paid out \$225 per day to these extra shovellers. By 5 February, approximately \$1,600 had been paid to relief shovellers.<sup>133</sup> Other men took matters into their own hands to find employment when it snowed. “This is what you want” read William Nickey’s advertisement in February 1916. “I will shovel snow from your roofs, cleaning and saving them from damage and danger.” As Nickey’s advertisement made clear, he only hired “experienced white help” – a noteworthy inclusion in a city where many residents held a deeply entrenched anti-Asian bias.<sup>134</sup>

Property damage was a real concern when it snowed. As mentioned, coastal snow often falls at temperatures near the freezing point. As a result, this snow is often saturated with water, which means that it is heavier and denser than drier snow that falls at colder temperatures. The rains that normally follow coastal snowstorms make the existing snowpack even heavier. Due to the abundance and cheapness of timber on the coast, many buildings were primarily constructed from wood in the late nineteenth and early twentieth centuries.<sup>135</sup> While snow could slide from the sloped roofs of most residential homes, it weighed heavily on only slightly inclined or flat roofs. Barns and sheds were especially prone to collapse. Heavy snow brought down large buildings, too. In January 1901, for example, snow crushed the Vancouver Sash & Door Factory and the Wadd Bros. photography studio. Multiple buildings collapsed during the heavy snows in January 1913 and February 1916. The destruction of the Campbell Storage Company’s storage building, home to a collection of cars and vans with a collective value of nearly \$10,000, was a major event when it happened in February 1916. Thankfully, that building had been empty at the time. This was not the case in January 1909, when a Mr. Whittaker was nearly killed by snow that broke the roof of his Grandview store.<sup>136</sup>

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<sup>133</sup> “Barometer is sagging; now every indication of milder conditions,” *Vancouver Sun*, 3 February 1916; “Clearing snow cost city \$3000 to date,” *Vancouver Province*, 5 February 1916.

<sup>134</sup> Books by scholars such as Kay J. Anderson, *Vancouver’s Chinatown: Racial Discourses in Canada, 1875-1980* (Montreal: McGill-Queen’s University Press, 1991), W. Peter Ward, *White Canada Forever: Popular attitudes and public policy toward Orientals in British Columbia* (Kingston: McGill-Queen’s University Press, 1978), and Francis, *Becoming Vancouver* explain how anti-Asian policies and sentiments impacted Asian Canadians in the late nineteenth and early twentieth centuries. Wm. Nickey, “Notice – this is what you want,” *Vancouver Daily World*, 7 February 1916.

<sup>135</sup> Deryck W. Holdsworth, “Cottages and Castles for Vancouver Home-Seekers,” in *Vancouver Past: Essays in Social History*, eds. Robert A.J. MacDonald and Jean Barman, 11-32.

<sup>136</sup> “Damaged by snow,” *Vancouver Daily World*, 7 January 1901; “It’s a fair day,” *Vancouver Province*, 10 January 1901; “Avalanche awakened him,” *Vancouver Province*, 14 January 1909; “Wet snow makes roof

Although he did not characterize it in these exact words, local architect C.S. Millard attributed the destruction of many buildings in February 1916 – particularly those with flat or moderately inclined roofs – to the evergreen mentality. Unlike buildings in Central and Eastern Canada, those in Vancouver, he explained, had not been constructed to bear snow’s added weight. Ensuing rains worsened the situation. According to one *World* article published in February 1916, while 30 cm of snow added roughly 120 kilograms (kg) per one square metre, rain-soaked snow could add upwards of 180 to 240 kg per square metre. The *World* recommended that residents dig trenches on their roofs to allow rain and snowmelt to run off into gutters and drains.<sup>137</sup> Some residents tried to prevent these disasters by proactively shovelling snow from their roofs. In the downtown core, residents and shopkeepers pushed the snow into the laneways between buildings that winter – a move condemned by City Engineer Frederick L. Fellowes, who worried about possible flooding when rains and warm temperatures returned.<sup>138</sup> Shovelling snow from rooftops was a risky task. In February 1916, John McDavitt fractured his left arm when the roof he was shovelling collapsed under him. A few days later, twelve-year-old Sidney Mills, busy shovelling snow off his father’s house, died tragically after slipping and falling more than 12 m through the roof’s skylight.<sup>139</sup>

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collapse,” *Vancouver Daily World*, 23 January 1913; “More damage by snow on roofs,” *Vancouver Daily World*, 24 January 1913; “weight sodden snow on flat roofs is now a cause of disaster,” *Vancouver Sun*, 7 February 1916.

<sup>137</sup> “Shovel roofs clear of snow,” *Vancouver Daily World*, 5 February 1916.

<sup>138</sup> In the 7 February edition of the *Sun*, City Clerk McQueen pointed to city bylaw 963, which said that it was “unlawful for any person owning or occupying any property abutting on or contiguous to any public place, to allow or permit snow to accumulate or to be deposited from any such premises upon any public place.” “Clearing snow cost city \$3,000 to date,” *Vancouver Province*, 5 February 1916

<sup>139</sup> “Local brevities,” *Vancouver Province*, 4 February 1916; “Boy is killed by a fall from high roof,” *Vancouver Province*, 7 February 1916.



**Figure 8: Vancouver water works: lane between the 100 block West Hastings and West Cordova, n.d., Acc No. 35506, Vancouver Public Library Special Collections Historical Photographs**

One's racial identity further affected one's snow experiences. As other Vancouver historians have shown, race and ethnicity were two defining features of lived experience in the Terminal City during the late nineteenth and early twentieth centuries.<sup>140</sup> By the 1880s, the Musqueam, Squamish, and Tsleil-Waututh peoples had been pushed from their traditional territories onto small reserves on the city's fringes. Indigenous presence in Vancouver fell considerably as their numbers declined and thousands of settlers arrived on the coast. By the 1910s, only a few hundred Coast Salish peoples lived in the vicinity of Vancouver. Those who lived close to the burgeoning downtown continued to be pushed to the margins. In 1913, the residents of the Kitsilano Indian Reserve (the Squamish village of Sen'akw) were illegally forced from their lands through government efforts to remove Coast Salish presence from the city and to open more land for settlers.<sup>141</sup>

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<sup>140</sup> Anderson, *Vancouver's Chinatown*; Ward, *White Canada Forever*; Francis, *Becoming Vancouver*; MacDonald, *Making Vancouver*; Andrew Parnaby, *Citizen Docker: Making a New Deal on the Vancouver waterfront, 1919-1939* (Toronto: University of Toronto Press, 2008).

<sup>141</sup> Barman, "Erasing Indigenous Indigeneity in Vancouver," 38-42.

Indian Affairs reports provide some indication of how Coast Salish peoples fared when it snowed between 1886 and 1918. These annual reports provide only partial insight into Indigenous peoples' experiences with snow, however, since the voices of Coast Salish peoples are themselves absent. Moreover, Indian Agent reports only highlighted Indigenous peoples' suffering during snowy coastal winters. Other responses are overlooked, as are their experiences during other snow events. In his 1893 report, for example, Frank Devlin explained how that year's "unusually severe" winter had "destroyed nearly all the potatoes which the Indians had stored away." Devlin may have needed to distribute extra relief rations to mainland coastal First Nations that winter. Such was the case in Vancouver Island's Cowichan Valley, where deep, prolonged snow-cover prevented the Cowichan peoples from obtaining fish or game. Twenty years later, T.J. Cummiskey, Inspector of Indian Agencies for B.C.'s Southwestern region, reported that authorities had dispensed more relief than normal that winter, as "the Indians had experienced considerable hardships." Conditions were again difficult during the 1915-16 winter, as Cummiskey's successor, W.E. Ditchburn, reported that many horses and cattle had perished on Indigenous lands because of the snow conditions.<sup>142</sup>

For Vancouver's Chinese population, snow was a weapon used by white settler men and boys to enforce racial hierarchies and segregation. While a small Chinese population existed in Granville before 1886, thousands of Chinese men moved to Vancouver once they finished their work on the transcontinental railway. By the 1910s, more than 3,500 Chinese individuals lived in "Chinatown," a section of the city's East End located on Dupont Street between Carrall and Columbia streets. As historians such as Kay Anderson have shown, Vancouver's Chinese population (and Chinese throughout British Columbia) faced constant and rampant racism from government officials and white settlers. According to Francis, "antipathy toward the Chinese was motivated by a combination of racial prejudice and economic rivalry." Settler fears about a growing Chinese population

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<sup>142</sup> Canada, Department of Indian Affairs, *Annual Report of the Department of Indian Affairs for the year ended 30<sup>th</sup> June 1893* [Ottawa], <https://central.bac-lac.gc.ca/.item/?id=1893-IAAR-RAAI&op=pdf&app=indianaffairs>; Canada, Department of Indian Affairs, *Annual Report of the Department of Indian Affairs for the year ended March 31 1913* [Ottawa], <https://central.bac-lac.gc.ca/.item/?id=1913-IAAR-RAAI&op=pdf&app=indianaffairs>; Canada, Department of Indian Affairs, *Annual Report of the Department of Indian Affairs for the year ended March 31 1916* [Ottawa], <https://central.bac-lac.gc.ca/.item/?id=1916-IAAR-RAAI&op=pdf&app=indianaffairs>

and competition over jobs contributed to the February 1887 and September 1907 anti-Asian riots, the latter of which involved thousands of white and Asian men.<sup>143</sup>

Snowballing attacks against Chinese individuals appear to have been motivated by these deeply entrenched anti-Asian biases. Vancouver newspapers reported 17 snowballing attacks involving dozens of Chinese victims between the 1890s and early 1910s. This was undoubtedly an underrepresentation of actual incidents. Similar incidents occurred in other cities including New Westminster, Nanaimo, and Victoria – another indicator of the pervasiveness of these racist attitudes in coastal British Columbia. Snowballs were a readily available and easy-to-make projectile for white men and boys when it snowed. Snowballing Chinese men was described as “a much indulged in pastime” during the snowy winter of 1892-93.<sup>144</sup> This was not a harmless pursuit. These attacks had serious physical and psychological ramifications for the victims. Snowballing re-enforced racial spaces in Vancouver. Although newspapers did not always indicate where these attacks took place, many snowballing incidents seem to have occurred outside of Chinatown, in areas where Chinese men and boys were “not supposed to be” and where interactions between Chinese and white men were more common.<sup>145</sup> The *World* reported that Chinese men “were snowballed unmercifully” while out shopping on New Year’s Eve 1898. Other attacks occurred as Chinese men and boys were moving throughout the downtown or returning to Chinatown from work. These snowballs caused serious injuries. A hard-packed snowball – or one built around a rock or piece of coal<sup>146</sup> – was a dangerous weapon. In November 1911, a group of King Edward high school students cut a Chinese man’s face with a hard-packed snowball and, after surrounding another, “nearly pelted the life out of him.” The most malicious incident occurred in February 1899. That month, a fire destroyed Jim Lee’s laundromat at 529 Seymour Street, a few blocks west of

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<sup>143</sup> Anderson, *Vancouver’s Chinatown*; Francis, *Becoming Vancouver*, 71.

<sup>144</sup> “Paid for his sport,” *Vancouver Daily World*, 7 February 1893.

<sup>145</sup> See Anderson’s, *Vancouver’s Chinatown*, 73-105, for a detailed discussion and analysis of the creation and social/political enforcement of these racial boundaries.

<sup>146</sup> In New Westminster in February 1893, Methodist Reverend Ebenezer Robson alleged that white men were loading snowballs with coal and stones. It is quite possible that men in other cities, including Vancouver, did the same during other winters. “City Council,” *Daily News Advertiser*, 15 February 1893.

Chinatown. After escaping the fire, the despondent Lee was snowballed by a large group of boys.<sup>147</sup>

Some Chinese men and boys fought back against this harassment. The intensity of their responses speaks to the severity and frequency with which Chinese individuals experienced racist incidents like snowballing, and the anger it provoked. In January 1901, for example, a group of 100 Chinese men – “armed with clubs and other implements” – left Chinatown in search of a group of young white men who had been assaulting Chinese men with snowballs. Police intervention prevented the ensuing fight. Other incidents were more intense. In February 1893, Ah Fung stabbed James McDonald after the latter snowballed him. While Fung was arrested, the charges were dismissed as “the evidence showed that the Chinaman had been severely pelted with snowballs, and was justified in showing his wrath.” The judge warned McDonald “against making any further assaults on Chinamen with snowballs or anything else.” Another Chinese man, Ah Sing, was charged that same month for stabbing a white man named Murchison after being “unmercifully persecuted by a party of about a dozen young men who pelted him with snow balls.” Sing was given a \$50 fine or three months imprisonment. Unlike the Fung case, this judge did not believe the stabbing was justified. And in February 1910, 15-year-old Chow Sing stabbed 15-year-old Walter Scott, who he mistakenly took to be one of the men who had been snowballing him that evening. A *Province* article reported that Sing had worked for a white man “for nearly two years and during that time has been abused by the white boys on several occasions.”<sup>148</sup>

Few white residents publicly condemned these snowballing assaults against Chinese men and boys. Some reporters and magistrates did criticize the attacks, but such remarks were

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<sup>147</sup> “Snowballing Chinamen,” *Vancouver Daily World*, 3 January 1899; “Chinese laundry afire,” *Vancouver Daily World*, 9 February 1899; “snow and mud make dirty walking, ice on wires stops central talking,” *Vancouver Province*, 11 March 1903; “High carnival held by young hoodlums,” *Vancouver Daily World*, 22 January 1906; Diogenes, “Street corners,” *Vancouver Province*, 17 November 1911.

<sup>148</sup> The *Province* does not disclose what happened to either Sing or Scott following the February 1910 incident. “Paid for his sport,” *Vancouver Daily World*, 7 February 1893; “Police Court,” *Daily News-Advertiser*, 9 February 1893; “Chinese laundry afire,” *Vancouver Daily World*, 9 February 1899; “White youth stabbed by Chinese; Oriental, annoyed by boys snowballing him, drew a knife with serious results,” *Vancouver Province*, 21 February 1910; “Baiting Chinese dangerous game,” *Vancouver News-Advertiser*, 13 April 1910.

few and far between. In most instances, these men were more concerned with upholding British law and upstanding citizenship than preventing or alleviating racial discrimination. In the case of Sing and Murchison, for example, the *News-Advertiser* explained that it was “the duty and pleasure of the Police Court Magistrate to teach British subjects that British law protects the poor Mongolian from the persecution while it instructs him in good citizenship.” “Now, the *World* has no intention at the present time of preaching a sermon on Chinese immigration,” wrote one *World* reporter following the attack on Lee in 1899, “but when these people come here, pay their poll tax, and live with a certain amount of becoming quietness they should and must be treated as human beings and are entitled to protection.” The *World* repeated a similar refrain seven years later when it condemned gangs of young white men who had targeted and cornered Chinese men with snowballs. “If white people got treated on the streets of a Chinese city as the Chinese are treated here, there would be a howl for warships and troops.”<sup>149</sup>

Newspaper coverage of Chinese snowballing incidents stopped following the 1912-13 winter. It seems unlikely that attacks against Chinese men and boys stopped entirely after that winter, so the lack of press coverage may have been an editorial decision rather than an actual reality. Local editors may have felt that these attacks no longer needed to be reported in their newspapers. Or perhaps the number of brazen attacks actually decreased in these years. As historian Kay Anderson explains, Chinatown became an increasingly segregated place in the early twentieth century.<sup>150</sup> Increasing segregation from the dominant white society may have reduced white-Chinese interactions during snow events. The onset of the economic recession in 1913 and additional coverage on the First World War may have also pushed snowballing stories from newspaper pages. Knowing that anti-Asian racism continued to pervade Vancouver society throughout the twentieth century, it seems likely that snowballing attacks against Chinese residents continued whenever snow fell in the city; however, these attacks no longer made it to the pages of the local newspapers.

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<sup>149</sup> Police Court, *Vancouver Daily News-Advertiser*, 12 February 1893; “Chinese laundry afire,” *Vancouver Daily World*, 9 February 1899; “High carnival held by young hoodlums,” *Vancouver Daily World*, 22 January 1906.

<sup>150</sup> Anderson, *Vancouver’s Chinatown*, 73-105.



## 2.3 Hardly a pleasing pastime

By far the most well-covered and contentious snow-related issue was its removal from city streets and sidewalks. A combination of local climate conditions and human expectations about the coast's winter climate influenced snow-clearing decisions in Vancouver, not just during these decades, but throughout the city's history. While snow was often light, infrequent, and short-lived, this was not always the case. There were many instances when it was heavy, frequent, and prolonged – conditions that stood in opposition to the tenets of the evergreen mentality. The dominance of this mindset influenced how snow was dealt with in Vancouver. As geographer John S. Rooney Jr. argues, human experiences with and perceptions about snow are powerful intervening variables that directly influence government and private snow-clearing activities.<sup>151</sup> The belief that snow was rare and infrequent, and that nature would melt or wash away snow in just a few days, had considerable effects on Vancouver's snow-clearing initiatives.

Clearing snow was of little concern for local officials during the city's first decade and a half. The City of Vancouver, as represented by the City Engineer and Board of Works, was responsible for clearing snow from streets, intersections, and city-owned property. While other North American municipalities directed greater resources to snow-clearing activities in the 1890s and 1900s, Vancouver's Board of Works did not do so until the 1910s.<sup>152</sup> As a "new" city in a mild climate, Vancouver city officials were more concerned with developing much needed water, road, and sewer infrastructure rather than preparing for and dealing with snow. They did not completely ignore the threat of snow, however. In 1892, City Council passed a by-law directing residents to remove snow and ice from the sidewalks adjoining their properties by 11:00 a.m. the day following the snowfall. Those who did not comply would be fined the amount needed for city crews to remove the snow instead.<sup>153</sup> This policy was in line with snowier North American cities.

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<sup>151</sup> John F. Rooney, Jr., "The Urban Snow Hazard in the United States: An Appraisal of Disruption," *Geographical Review*, 57 no. 4 (1967): 539.

<sup>152</sup> Timothy W. Kneeland, *Declaring Disaster: Buffalo's Blizzard of '77 and the Creation of FEMA* (Syracuse: Syracuse University Press, 2021), 16-18; Blake McKelvey, "Snowstorms and snow fighting," 10-11; Mergen, "Slush funds," 6-7.

<sup>153</sup> "No thoroughfare," *Vancouver News-Advertiser*, 4 January 1901.

Even the older coastal cities of Victoria and New Westminster had similar sidewalk snow-clearing by-laws.<sup>154</sup>



**Figure 9: Vancouver From Westminster Avenue South [ca. 1889], Str P125, Series S4, Major Matthews Collection fonds AM54, City of Vancouver Archives.**

Coastal settlers were generally ill-prepared and ill-equipped to deal with snow in the late nineteenth century. The Board of Works in particular was wholly unprepared for extremely snowy weather. The Board did very little during the infamous snows of February 1893. To be fair, officials may not have believed that metre-deep snowfalls were possible on the coast, but the Board's inaction is still surprising. On 6 February, a motion by Alderman William Towler to hire shovellers or to re-distribute city employees from other departments to clean the streets and sidewalks gained no traction among his colleagues, other than the tacit understanding that "some such action should be taken."<sup>155</sup> Apparently, this action was to compel residents to clean their sidewalks. Compliance with the by-law was a problem that February. After pleading with residents to heed the by-law, the Board instructed the police to enforce it against negligent homeowners. Newspapers were silent about whether police actually did hand out any fines that winter (or any other

<sup>154</sup> Other cities that had sidewalk snow clearing by-laws by the late nineteenth and early twentieth centuries included Rochester, Washington, D.C., Toronto, Montreal, and Ottawa. The City of Victoria implemented its sidewalk snow clearing by-law in 1880.

<sup>155</sup> "Proposed charter amendments," *Vancouver Daily World*, 7 February 1893.

winter that decade), but the police campaign probably inspired some reluctant residents to shovel their sidewalks.<sup>156</sup> Poor resident compliance with the sidewalk by-law, and the city's inaction to clear snow, remained consistent trends throughout the decade.

The city's street railway companies were somewhat more prepared for snow. Beginning in the 1890s, they became prominent contributors to municipal snow-clearing efforts. Three separate companies operated lines in and around Vancouver between 1890 and 1897: the Westminster and Vancouver Tramway Company (WVT), the Vancouver Electric Railway & Light Company (VERL), and the Consolidated Railway & Light Company (CRL), which included the two former companies after they entered receivership in the mid-1890s. These companies used snowplows and the strength of their employees to keep streetcars and interurban trains moving. In February 1893, the WVT, which operated a 19 km track between the two cities, used a single snowplow to maintain its service, albeit at a reduced schedule.<sup>157</sup> The CRL continued to use the plow on the interurban track when it took over. In the city, the VERL and later the CRL relied on manual labour to maintain its few kilometres of track. Employees were not always able to keep pace with the snow, however. Large snowfalls created serious service delays in January 1894 and December 1895. Shared street use with horse-drawn sleighs and carts at times added to the companies' difficulties. In January 1896, for example, the CRL was forced to temporarily close its city lines, as heavy sleigh traffic continually pushed snow back onto the tracks after they had already been shovelled.<sup>158</sup> A new company, the BCER, acquired the CRL's holdings when that company failed in 1897. The BCER continued to use manual power and the CRL's old snowplow to fight snow in the late 1890s.

Settlers took snow fighting much more seriously during the winter of 1900-01. That winter's heavy snows may explain why the Board of Works took greater action. More than 30 cm fell in early November. While it melted before December, another 128 cm fell

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<sup>156</sup> "Board of Works," *Vancouver Daily World*, 10 February 1893.

<sup>157</sup> For information on the BCER's predecessors, see Patricia Roy, "British Columbia Electric Railway Company, 1897-1928: A British Company in British Columbia," PhD Diss. (University of British Columbia, 1970), chapter one; "Got the better of boreas," *Vancouver Daily World*, 8 February 1893.

<sup>158</sup> "Local items," *Vancouver Daily World*, 24 January 1894; "City and Province," *Vancouver Daily World*, 30 December 1895; "Local gossip," *Vancouver Daily World*, 3 January 1896.

in January. Increasing urbanization and modernization was another factor. By 1901, Vancouver was an economically prosperous city of more than 26,000 people. Reliable travel within the downtown core was necessary for modern life and business to continue when it snowed.<sup>159</sup> In November and January, City Engineer Thomas H. Tracy redistributed men from other departments to tackle the snow – something he had not done in February 1893. Municipal employees focused on clearing street crossings and drains, gutters, and catch basins. These latter areas were a priority for the Board. Knowing that rain and warm temperatures often followed snow, Tracy understood that it was vital to keep drains free of snow, slush, and ice. By keeping drains open, nature became an ally in the fight against snow, lessening the need for snow-clearing work. Preparing for this return of more “seasonal” weather – and redistributing employees from other departments – became defining features of civic snow-clearing efforts moving forward.

The Board of Works and BCER experimented with other strategies that winter. In November, the city forced prisoners on the chain gang to shovel snow from the downtown. Officials again used prisoners that January.<sup>160</sup> The practice ended there, though, as citizens complained that the men – “working in the most summery of clothes” – should not be used for such work.<sup>161</sup> The BCER also tried new snow-fighting initiatives, as the heavy snows caused serious service disruptions. In November, employees swept the tracks ahead of the moving streetcars while others threw salt on the rails to melt the snow. Other North American street railway companies had been using salt for decades, but this was its first recorded use in the Terminal City.<sup>162</sup> The BCER also ran its streetcars throughout the night in order to prevent snow and ice from building up by the morning. While these strategies worked in November, they failed to keep service running smoothly in January. That month, the BCER and Board of Works sought to remove snow rather than simply clear it. On 8 January 1901, city officials directed

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<sup>159</sup> Other North American municipalities also became increasingly involved in snow-clearing activities during this period. It is unclear if efforts in other cities partly inspired the Board to also take greater action that winter too. See Kneeland, *Declaring Disaster*; Mergen, “Slush Funds;” McKelvey, “Snowstorms and snow fighting.”

<sup>160</sup> New Westminster city council had also used prisoners to remove snow at least once, in January 1885. *The British Columbian*, 7 January 1885.

<sup>161</sup> “A plea of prisoners,” *Vancouver Province*, 8 January 1901

<sup>162</sup> McKelvey, “Snowstorms and snow fighting,” 34-35 and 49.

their teams to load snow onto BCER flatcars and to dump it into False Creek. Removing snow to nearby waterways had been a snow-clearing strategy in American cities such as New York for decades, but it had not been used in Vancouver before. By removing the snow from city streets – rather than just clearing it into large heaps – officials hoped that this would prevent possible flooding once rain and warmer temperatures returned.<sup>163</sup>

Snowfalls were considerably smaller for the remainder of the decade. This return to “normal” coastal winter weather no doubt contributed to a sense of complacency among residents. The 1900-01 winter was considered an anomalous one. Snow would return to the coast, they believed, but in lesser quantities and for fewer days. When it did snow that decade, the Board of Works sent employees to clear street crossings and drains – leaving nature to do the difficult work of actually melting and removing the snow – while the BCER worked to keep its lines operational. The only real difficulty occurred in January 1907, when more than 30 cm of snow blanketed Vancouver over a three-day period. While the BCER was able to prevent serious service delays, thanks in part to its recently purchased snowplow, city employees struggled to clear the snow. A heavy rainstorm followed the snow, turning it to slush that clogged drains. The ensuing floods turned streets into canals and inundated basements throughout the city. City Engineer William A. Clement reported dozens of calls from residents about flooding. The mix of snow and water wreaked havoc on BCER streetcars, too, which derailed in flooded and slushy streets.<sup>164</sup> While much of the water soon subsided, the 1907 storm highlighted the dangers Vancouver faced from quick-changing winter weather.

Vancouver’s fight against snow took on new seriousness during the 1910s. Two factors contributed to this change. The first was the continued growth of the city. By the 1910s, more than 100,000 people lived in Vancouver. The city, which had been concentrated primarily between Burrard Inlet and False Creek, pushed outwards. The expansion of the BCER system spearheaded much of this growth. New lines into the surrounding forests

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<sup>163</sup> In “Snowstorms and snow-fighting,” McKelvey explains that Rochester also dumped snow into nearby rivers in the early 1900s. McKelvey, *Snow in the Cities*, 49, 56, 62; “Storm King’s breath blows,” *Vancouver Province*, 8 January 1901.

<sup>164</sup> “Temperatures 24 degrees F 7:30AM,” *Vancouver Daily World*, 18 January 1907; “Some rain fell in Vancouver yesterday,” *Vancouver Daily World*, 21 January 1907.

facilitated the creation of new neighbourhoods such as Kitsilano and Fairview, and spurred development in the nearby municipalities of Point Grey and South Vancouver. By the early 1910s, the BCER operated more than 100 streetcars on more than 200 km of track. The city, too, had an expanded network of streets and sidewalks to service these new communities. According to Macdonald, about two-thirds of Vancouver's streets were dirt or gravel roads by the 1910s. Others were "macadamized," or paved with asphalt, and in the downtown core, about 19 km were of wooden blocks treated with creosote, as had been the case since the 1880s. The abundance of timber on the coast made wood the go-to product for sidewalks. In the late nineteenth and early twentieth centuries, Vancouver sidewalks consisted of three wooden planks placed side-by-side. Small sections of concrete sidewalks had been laid in the 1890s and 1900s, but this remained a small component of the city's sidewalk system.<sup>165</sup> This expanded sidewalk, street, and railway infrastructure made clearing snow a greater concern for all residents. Second, coastal residents faced five exceptionally snowy winters that decade. The sheer amount of snow that fell during the 1911-12, 1912-13, 1915-16, 1916-17, and 1917-18 winters make them noteworthy from both a meteorological and historical standpoint. More than 110 cm of snow fell each winter. Over 200 cm fell during the 1916-17 winter. The rapid succession of these snowy winters reveals how snow-clearing efforts did (and did not) change in the 1910s.

The heavy snows inconvenienced BCER operations and led officials to further mechanize their snow-fighting fleet. The thigh deep snow that shrouded Vancouver for four days in November 1911 led to significant service delays, as the company's snowplows were unable to keep pace with it.<sup>166</sup> Seeking to avoid future issues, the company purchased two snow sweepers from the Ottawa Car Company in 1912. These two streetcars were equipped with large, rotating brushes that cleared snow ahead of them as they travelled

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<sup>165</sup> Roy, "British Columbia Electric Railway Company," 92; Macdonald, *Vancouver*, 30-31, 35; Daniel Brendle-Moczuk, "Set in concrete: The historic and spatial distribution of concrete sidewalks in Vancouver, B.C.," *Journal of Maps* 9, no 4. (2013), 477; Christina Hagemoen, "Our city streets were once paved with these little wooden blocks," *Scout Magazine*, 16 January 2017, <https://scoutmagazine.ca/2017/01/16/you-should-know-our-city-streets-were-once-paved-with-these-little-wooden-blocks/>

<sup>166</sup> "You simply have to talk about the snow," *Vancouver Province*, 9 November 1911; "Warmer weather visits Vancouver," *Vancouver Daily World*, 13 November 1911; "Vancouver record breaking habit unfortunate," *Vancouver Province*, 13 November 1911.

along the tracks. These new sweepers were put to work almost continuously in January 1913 when close to 150 cm of snow fell.<sup>167</sup> The new machines helped prevent major service delays that month, but company officials still believed they could improve their snow-clearing capabilities. The company purchased another three snow sweepers that November – one for Vancouver, one for New Westminster, and one for Victoria. The BCER relied heavily on its expanded mechanized snow-fighting force when over 160 cm of snow fell in successive storms in January and February 1916.<sup>168</sup>



**Figure 10: Streetcar snowplow at 900 block Pender Street, 191-, Acc No. 18494, Vancouver Public Library Special Collections Historical Photographs**

The company also experimented that winter with its first flanger, a streetcar equipped with a metal plow situated between the tracks. Other train and streetcar companies had used flangers since at least the 1870s, but this was the first in Vancouver.<sup>169</sup> Removing snow in this way decreased the likelihood that streetcars would be derailed by ice or accumulated snow. Travelling between 10 and 13 km/h, a flanger-equipped streetcar

<sup>167</sup> “Company congratulated,” *Vancouver Province*, 27 December 1912; “City only bright spot on entire continent,” *Vancouver Daily World*, 27 December 1912; “Packed snow and ice cover car tracks,” *Vancouver Province*, 21 January 1913; “Snowstorm ties up car service,” *Vancouver Daily World*, 21 January 1913

<sup>168</sup> “BCER snow sweepers,” *Vancouver Province*, 24 November 1913.

<sup>169</sup> “Improved snow flanger,” *Scientific American*, 50 no. 24 (14 June 1879), 372.

could push snow almost two metres from the track, creating more snow-free space for horse-drawn wagons/sleighs and cars. The new machine greatly improved the company's clearing efficiency on its 273 km of track. As the *Daily World* explained that January, "fifty miles of street were treated in this way doing for the city work which it would have taken one thousand men to accomplish it in the same time working with shovels."<sup>170</sup> Locals praised the BCER for its preparedness and success that winter. "The railway company has done a fine piece of work in Vancouver," congratulated the *Province's* editors. As the *Western Call* saw it, "the public of Vancouver and the surrounding municipalities owe their unstinted praise and support to the B.C. Electric who have lightened all our burdens through this trying time by efficiency of their service."<sup>171</sup>

Not everyone liked the BCER's new snow-fighting force. On 23 February 1917, the President of Vancouver's Jitney League, J.A. Keer, delivered a letter to the BCER and Mayor Malcolm B. McBeath protesting the company's snow-clearing practices, which pushed snow from the tracks onto spaces that were increasingly used by jitneys. These were cars that operated like buses and streetcars, picking up multiple passengers at a time and transporting them for a nickel along flexible routes. The rise of jitneys during the First World War provoked the ire of the BCER, which, to that point, had a monopoly on public transportation in Vancouver. By 1917, there were roughly 500 jitneys competing with the BCER's 132 streetcars. While the BCER and jitney drivers had clashed in the past, their animosity for each other was elevated during that February's snows. In addition to criticizing the BCER's work, Keer's letter also protested the actions of city employees, which added to driving difficulties by shovelling snow from gutters and crossings onto the road. Keer alleged that these snow-clearing practices had resulted in several accidents and that both the BCER and city "might be found liable for damages." Keer's letter highlighted the growing conflict over the use of road space in Vancouver –

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<sup>170</sup> "City is mantled with heavy snow," *Vancouver Province*, 26 January 1916; BCER advertisement, *Vancouver Daily World*, 31 January 1917; "Car tracks kept clear," *Vancouver Province*, 31 January 1917; "Sweepers are kept covering the lines to fight snowfall," *Vancouver Sun*, 1 February 1917; "Snow flanger does big work," *Vancouver Daily World*, 3 February 1916.

<sup>171</sup> "Congratulations," *Vancouver Province*, 4 February 1916; "Should be appreciated," *Western Call*, 4 February 1916.



an issue that played out in other North American cities – and how established snow-clearing practices were becoming unsuitable on roads used by greater numbers of cars.<sup>172</sup>

The BCER's snow-clearing successes sharply contrasted with the situation throughout the rest of the city. The Board of Works continued its policy of dispatching teams to clear snow from street crossings and drains during this decade's snowy winters. These efforts prioritized downtown areas first before gradually expanding into the suburban neighbourhoods. In January 1913, for example, it took crews two days before they were able to tackle major crossings in outlying areas. According to the *Province*, walking in these neighbourhoods was "hardly a pleasing pastime."<sup>173</sup> Residents were particularly critical of municipal snow-clearing efforts during the storms of January and February 1916. The snows disrupted daily life for extended periods. Knee-deep snow and uncleared streets and sidewalks impeded travel throughout the city. As the *Sun* explained, "only those who are forced by their occupations or by pressing business to plod through the masses of snow are seen in the white streets." The *Province's* editors felt that municipal officials were ill-prepared for heavy snow, particularly when compared to the BCER. "The city has left the whole onus of clearing a way through the snow on the street cars... it is understood that the city learnt nothing from the snowfall of some three years ago when it was caught without a single proper appliance for dealing with snow."<sup>174</sup> While the *Province's* Diogenes admitted that the snows were phenomenal, it was clear that officials did not "know how to deal with the snow when it comes to quantity." Even Board of Works members had conflicting views on the success of that winter's snow-clearing work. As Alderman Robert Harry Gale complained, "the way the snow is handled is a joke."<sup>175</sup>

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<sup>172</sup> Christopher W. Wells, *Car Country: An Environmental History* (Seattle: University of Washington Press, 2013); Donald F. Davis, "Competition's Moment: The jitney-bus and corporate capitalism in the Canadian City, 1914-1929," *Urban History Review* 18 no. 2 (1989): 102-122; "Simply horrid to jitneymen," *Vancouver Daily World*, 23 February 1917.

<sup>173</sup> "Rain turns snow into sea of slush," *Vancouver Province*, 7 January 1913.

<sup>174</sup> "Snowfall breaks all marks of the city of Vancouver for continued performance," *Vancouver Sun*, 2 February 1916; "Congratulations," *Vancouver Province*, 4 February 1916

<sup>175</sup> Diogenes, "At street corners," *Vancouver Province*, 5 February 1916; "Snowfall breaks all marks of the city of Vancouver for continued performance," *Vancouver Sun*, 2 February 1916; "Snow not all down yet, but coal begins to go up," *Vancouver World*, 26 January 1916; "Method of clearing the streets of snow taken exception to," *Vancouver Sun*, 9 February 1916.

No doubt municipal officials knew they could rely heavily on the BCER to clear snow from track-lined streets, but their unpreparedness could also be attributed to the fact that they considered these exceptionally snowy winters to be anomalous. The Board had developed strategies predicated upon certain natural conditions. During the winters of the previous decade, municipal officials had been able to deal with snow cheaply by relying on manual labour to keep street crossings and drains open and leaving the actual snow-removal work to nature. As City Engineer Fellowes explained in an interview with the *World*, “it would be a waste of expense to spend money on having roads cleared of the slight amount of snow which is causing no inconvenience to traffic.”<sup>176</sup> This strategy had worked well during normal winter conditions but was insufficient during heavy snowfalls and prolonged snow-cover. Civic employees were simply unable to quickly clear deep, wet, heavy snows from crossings and drains.

New strategies were developed to deal with these conditions. In February 1916, for example, officials directed employees to load snow onto wagons and motor trucks bound for trunk sewers and the city dump. Interestingly, calls to dump snow directly in False Creek – a strategy that had worked in 1901 – were considered too expensive by Fellowes. Crews carried out similar work the following winter. The Board also experimented with its first horse-drawn wooden plows. While the neighbouring municipality of Point Grey had used horse-drawn plows on its sidewalks since 1913, Vancouver did not adopt them until January 1916 in response to mounting criticism and deepening snow. Fourteen plows were used that winter to clear snow from downtown crossings and certain sidewalks. The municipality of South Vancouver followed suit the following winter, using a single horse-drawn plow to clear sidewalks there.<sup>177</sup>

Snow-clearing costs were high this decade. The city spent \$14,000 fighting the 165 cm of snow that coated Vancouver for 22 days in January 1913 – a record expenditure for the

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<sup>176</sup> “Another heavy fall in coast district,” *Vancouver Daily World*, 25 January 1916.

<sup>177</sup> “Mild weather reducing snow,” *Vancouver Daily World*, 2 February 1917; “Royal city and suburban,” *Vancouver Sun*, 2 February 1916; “Barometer is sagging; now every indication of milder conditions,” *Vancouver Sun*, 3 February 1916; “City clears hundred miles of sidewalks,” *Vancouver Province*, 22 February 1917.

city.<sup>178</sup> Municipal officials spent another \$13,000 during the 1915-16 winter. This was the single largest expenditure for the Street Cleaning Department that year (excluding employee wages), beating the second largest expenditure (feed and care for the department's horses) by over \$7,000.<sup>179</sup> Yet another winter of high costs forced the Board to finally include snow-clearing estimates in its annual budgets. The 1917 snow-clearing budget was \$3,600. While the city had just spent four times this amount, the 1917 estimate was probably tempered by the Board's continued belief that large coastal snowstorms and prolonged snow-cover were the exception rather than the rule. And as Rooney Jr. aptly explains, "memories tend to be short when the time for increased appropriation is at hand."<sup>180</sup> While these were large figures for Vancouver, these expenditures paled in comparison to snowier, but better prepared, North American cities. Rochester and Montreal spent hundreds of thousands of dollars fighting much more common and heavier snowfalls. In New York, where battling snow was a full out war, snow-fighting expenses exceeded \$2 million in 1914.<sup>181</sup>

The fight to clear the city's sidewalks proved to be the biggest snow-related frustration for coastal residents that decade. While the Board at least tried to remove snow, many residents were content to leave it on their sidewalks, in ignorance or defiance of the city's by-law. Vancouverites no doubt believed that snow would be gone quickly, and that there was no need picking up a shovel when they could instead leave the work to nature. Others may not have known that such a by-law existed, as there had been little reason to enforce it in the preceding decade. Sidewalks were a disaster during these snowy winters. "In the matter of shovelling snow off the walks, the average citizen is a firm believer in

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<sup>178</sup> Part of these soaring costs included the hiring of additional men to assist city employees. Revenue estimates for the year 1915, Board of Works, 157-D-02, COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>179</sup> This was nearly double what had been spent by nearby Victoria on its record-breaking snowfall, but \$10,000 less than Seattle, which also dealt with record-setting snow that February. Board of Works Department, Estimates – 1918, 157-F-01, COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada. "Compel householders to clear sidewalks; bylaw to be enforced," *Vancouver Sun*, 5 February 1916; Board of Works Estimates, 1917, 157-E-02, COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada. "Condition of wood block pavements," *Victoria Daily Times*, 19 February 1916; "Snow was costly," *Seattle Star*, 14 February 1916.

<sup>180</sup> The Board of Works included a snow removal budget item in its 1913 estimates document at \$14,000, however, it is not listed under the "estimates" section. Instead, I believe that number reflects the actual amount spent that year. Rooney, Jr., "The Urban Snow Hazard in the United States," 557.

<sup>181</sup> McKelvey, *Snow in the Cities*, 84; McKelvey, "Snowstorms and Snow-fighting," 11-12.

letting nature take its course,” wrote the *Province*’s editors in November 1911. When snow returned in January, that paper reported that it had received “a score of letters... demanding that the authorities clean up the sidewalks.” “To say that the sidewalks of this city are in a disgraceful condition is to put it very mildly,” penned one irritated reader that month.<sup>182</sup> Municipal leaders such as Mayor Baxter pleaded with residents to clear their sidewalks during the heavy snows of January 1913. Many failed to take up his call. On 21 January, the Board met to discuss how to handle the situation. Some members, such as Aldermen Edward B. MacMaster and S.J. Crowe, called for further police enforcement. Others pointed to Point Grey, where that municipality cleared sidewalks with its horse-drawn plow and recouped the costs through taxation. Concerned about rising costs, opponents argued that constructing such plows at that time would be prohibitively expensive.<sup>183</sup>

Sidewalks again added to the Board’s frustrations during the snows of January and February 1916. Despite reminding residents about the by-law in newspapers, many sidewalks remained heavily snow-covered in early February. Fellowes estimated that only 30 percent of all householders had cleared their sidewalks at that point.<sup>184</sup> While Board members again called on the police to enforce the by-law, others appealed to residents’ sense of civic duty. Some also called on the city to clear the sidewalks for those wives whose husbands were off fighting in the First World War. “Surely the taxes we are paying should furnish ample funds for such work,” asked L.T. Rogers that February.<sup>185</sup> But, according to Fellowes, it would cost the city \$20,000 to clear all of Vancouver’s sidewalks, a figure that represented nearly one-sixth of the total Street Cleaning Department’s budget for that year. Fellowes considered this too expensive. Doing this work would more than double that winter’s snow-fighting expenditures.<sup>186</sup>

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<sup>182</sup> *Vancouver Province*, 14 November 1911; “Vancouver ought to clean up,” *Vancouver Province*, 5 January 1912; “Pleads for clean streets,” *Vancouver Province*, 9 January 1912.

<sup>183</sup> “Condition of city is disgrace owing to accumulation of snow,” *Vancouver Sun*, 22 January 1913.

<sup>184</sup> “Compel householders to clear sidewalks; bylaw to be enforced,” *Vancouver Sun*, 5 February 1916.

<sup>185</sup> L.T. Rogers, “Plows for sidewalks,” *Vancouver Province*, 8 February 1916.

<sup>186</sup> “Compel householders to clear sidewalks; bylaw to be enforced,” *Vancouver Sun*, 5 February 1916.



**Figure 11: [Two views of Melville Street covered in snow] [1917] SGN 1573, Series S4, Major Matthews Collection fonds AM54, City of Vancouver Archives**

The sidewalk situation was no better the following winter. In late February, the *Sun*'s editors urged Board officials to use its new horse-drawn plows on residential sidewalks, and not just downtown. By not doing so, civic officials were "showing a remarkable indifference to the convenience of citizens and to public health."<sup>187</sup> For the second year in a row, Vancouver sidewalks were a point of shame. Earlier that month, the *Sun* had called the sidewalk snow-clearing by-law "the most generally ignored and oftenest broke in the winter time."<sup>188</sup> Diogenes believed that he understood why the by-law, which he considered "a dead letter," had failed during the city's short history:

<sup>187</sup> "Clean off the sidewalk," *Vancouver Sun*, 22 February 1917.

<sup>188</sup> "Snow shovel brigade starts big offensive against gen. winter," *Vancouver Sun*, 2 February 1917.

One reason for the reluctance of the alderman to enforce the snow bylaw is that most of them have made a solemn determination to regard Vancouver as a winter resort where a mild and sunny climate always prevails from November to April. Even when they are up to their knees in it on their way to their suburban residences, they say, ‘Oh, just a sprinkling to remind us that it really is winter.’<sup>189</sup>

As Diogenes saw it, enforcing the by-law meant admitting that snow was actually part of Vancouver’s winter climate. Doing so, he believed, jeopardized popular ideas that civic officials had about the coastal city’s attractive and mild climate.

## 2.4 Conclusion

The Stanford Cardinals rugby team had high hopes when they arrived in Vancouver for the Pacific Coast Championship Series in late December 1906. It was just their first season as a rugby team, but under the direction of coach James F. Lanagan, the California champions had not lost a game yet that season. In fact, they had already beat the Vancouver Blacks rugby club twice earlier that autumn. The drama would unfold over three days at Recreation Park, at the corner of Homer and Smithe streets: Christmas Day, 29 December, and New Year’s Day 1907. The first team to win two of the three games would be crowned champion. In the days leading up to the first game, local reporters noted that the Cardinals had a number of “big fellows” on their roster, men weighing more than 80 kg and standing over 1.8 m tall. But the Blacks were not so outmatched. Unlike their earlier meetings, the Vancouver club boasted a full squad, including the imposing Charlie Worsnop at starting lock.<sup>190</sup> And the stakes were higher now. This was the first international rugby tournament in the Terminal City, after all, and locals were excited to see if Vancouver could claim the Cooper-Keith Trophy.<sup>191</sup>

The tournament started off well, with clear, cold weather and an impressive Vancouver Blacks win in front of hundreds of fans on Christmas Day. Conditions worsened for the second game, however. Winter rains soaked the field, leaving it a “slimy sea of mud and

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<sup>189</sup> Diogenes, “Street corners,” *Vancouver Province*, 2 February 1917.

<sup>190</sup> Worsnop weighed 96 kg and stood 1.88 m tall.

<sup>191</sup> “The Stanford Football Team,” *Vancouver Province*, 22 December 1906; “Rival champion teams of north and south to meet in first local international match,” *Vancouver Province*, 24 December 1906; Stephen Cooper and Jason Leonard, *After the Final Whistle: The first rugby world cup and the First World War* (Cheltenham: The History Press, 2015).

puddles” according to one *Province* reporter. The poor playing conditions ensured the game stayed close, with the Blacks winning the game – and the Cooper-Keith Trophy – by a single score. The final game, slated for New Year’s Day, was a formality – one that was nearly derailed by the weather. The typical mild, coastal rains were replaced by cold, snowy weather. Fourteen centimetres coated the city at the start of the New Year. It was quite a change for the men from Stanford, as local reporters liked to point out. The Cardinals’ players were greeted by a “blinding snowstorm” as they took a steamer ride up the Indian Arm before the final game. The local entertainment committee also took the players on a sleigh-ride through a snow-covered Stanley Park – a winter delight that most Stanford players had never experienced before. The inclement conditions forced officials to move the game to Stanley Park’s Brockton Point field, as the muddy holes at Recreation Park had hardened into dangerous jagged chunks. Upwards of 2,000 fans “braved the cold snap of Vancouver’s unusual weather, and went out amidst the snow-sprinkled trees of Stanley Park” to witness “one of the greatest exhibitions of the grand old English winter game that has ever been played on those grounds.” The Blacks and Cardinals played to a three-three tie on the whitened field, framed with the sea and the snowy North Shore Mountains in the background.<sup>192</sup>

Reflecting on the tournament upon his return to California, Cardinals Manager D.D. Sales remarked that the snow had been one of the many “sensational features” of the New Year’s Day game. The weather conditions had been “against the visitors from the sunny south,” as one *San Francisco Call* reporter wrote. Even locals considered the snow to be sensational and “unusual.”<sup>193</sup> Snow had been scarce in the Terminal City since the heavy snows of January 1901. Those who had recently settled on the coast considered it to be an unnatural part of the winter climate. But snow was a seasonal presence in Vancouver. While annual snowfalls were generally light, and snow lasted just a few days, snow still

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<sup>192</sup> “Vancouver lowers Stanford’s colors,” *Vancouver Province*, 26 December 1906; “Football match at Brockton Point Tuesday,” *Vancouver Province*, 31 December 1906; “Rugby football,” *Vancouver Province*, 31 December 1906; “Canadians defeat Americans and win coast championship,” *Vancouver Province*, 31 December 1906; “Best game of series results in a draw,” *Vancouver Province*, 2 January 1907.

<sup>193</sup> It continued to build throughout the month. An additional 57 cm of snow coated Vancouver for 6 more days that winter – snow totals that caused concern among locals but were still less than the historic average. “Stanford’s rugby men outplay Vancouver,” *San Francisco Call*, 2 January 1907; “Northern trip greatly enjoyed by rugby team,” *San Jose Mercury-News*, 11 January 1907.

fell each winter. Even very snowy winters were not as rare as coastal residents believed nor as unnatural as civic boosters advertised – the snows of the 1910s would make that all too clear. In fact, the Blacks and Cardinals would play each other in the snow for the Cooper-Keith Trophy yet again on New Year's Day 1911. As this chapter has shown, coastal residents adopted an evergreen mentality about snow during these years. It was a product of both natural and cultural factors. Yes, Vancouver was less snowy than other parts of Canada, but it was not snowless. The coast's reputation was cultivated by local media outlets, tourist associations, and corporations which sought to encourage settlement and investment in the Terminal City. Their promotional materials had a profound impact on the tens of thousands of settlers who arrived on the coast during Vancouver's boom years. The collective acceptance of the evergreen mentality affected how coastal residents thought about, handled, and experienced snow, not just during these decades, but for the remainder of the twentieth century.



## Section 2

### 3 White Coal: 1886-1918

On 25 September 1909, the BCER published a full-page advertisement in the *Financial Post*. In it, an electrical engineer stands with another settler and an Indigenous man in Carrall Square in downtown Vancouver. Here, BCER streetcars pass back and forth along streets lined with electric light fixtures. As the advertisement makes clear, the Indigenous man represented Vancouver's pre-modern past, while the streetcars, lights, and electric engineer represented the young city's future: one characterized by settler dominance, electricity, and modernity. While the engineer conceded to his friend that their Indigenous counterpart perhaps understood something about the "mighty power of electricity... there his simple knowledge and imagination ends. He does not realize that there are two forms of coal, black and white." "White coal!" exclaimed the other settler man. "What is that?" "White coal," the engineer explained, "is the greatest of all British Columbia's great assets, the most plentiful of its resources, and I will venture the chief element of its vast potential wealth... it is hydroelectricity or, plainly, snow."<sup>194</sup>

Beginning in the late nineteenth century, coastal settlers began to conceptualize snow from the southern Coast Mountains as a vital resource that could be harnessed for the development and modernization of the burgeoning metropolis. As the BCER advertisement explained, white coal was "the cheapest and most satisfactory power of to-day... obtained from the accumulated snow on the mountains, and by the sun's rays converted into streams." Although they did not know it at the time, coastal settlers began forming these important relationships in the midst of a negative PDO cycle, a regional climate pattern that is generally characterized by snowier winters in the southern Coast Mountains.<sup>195</sup> During these years, mountain snows produced large spring and summer run-off events, or freshets, that were harnessed by companies such as the BCER. By 1909, the BCER supported thousands of Vancouver-area businesses with hydroelectricity

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<sup>194</sup> "British Columbia Electric Railway Company, Ltd., with which is associated the Vancouver Power Company, Ltd.," *Financial Post*, 25 September 1909.

<sup>195</sup> Bryan J. Mood, Bethany Coulthard, and Dan J. Smith, "Three hundred years of snowpack variability in southwestern British Columbia reconstructed from tree-rings," *Hydrological Processes* 34 (2020), 5129; Mantua and Hare, *The Pacific Decadal Oscillation*, 35.

produced from its Buntzen Lake – Coquitlam Lake power generation facility. During the spring and summer months, much of this water came from the melting snows on the mountains surrounding both lakes. According to the company, the settler communities on the coast “are indebted for the very necessities and comforts of life to the snow-capped peaks about us... to be without this inexhaustible current from the North Arm’s snow and ice would mean that we would have neither light, heat, or power, save by methods now almost universally abandoned.”<sup>196</sup>

This melting snow was an important source of Vancouver’s freshwater supply, too. Lacking an abundant supply at sea level, the City of Vancouver began drawing its freshwater from the streams and rivers that snaked their way through the North Shore Mountains to Burrard Inlet in the 1880s. The melting snows from the surrounding mountain peaks supplied the Capilano and Seymour rivers during the late spring and early summer months. Throughout this period, Vancouverites boasted that they had the purest freshwater in all North America – a statement bolstered, they argued, by the water supply’s snowy origins. For municipal officials, mountain snow was a key resource needed to sustain the ever-growing settler population. The storage and transportation of rainwater and snowmelt from the mountains to the coast represented one of the earliest and most important connections between the settler communities at sea level and the mountainous hinterland to the north.

The vast majority of coastal settlers experienced mountain snow indirectly during the late nineteenth and early twentieth centuries. By turning on an electric light, riding a BCER streetcar, or drawing freshwater from the kitchen sink at the height of summer, settlers benefitted considerably from mountain snow. Few residents actually experienced this snow firsthand, however. The mountain plateaus and peaks that loomed over Vancouver were largely inaccessible to settlers, especially between late autumn and late spring, when snow and ice made mountain travel exceedingly difficult. In the early twentieth century, small groups of mountaineering enthusiasts began to traverse these snowy landscapes and to track the build-up and melting of snow during the winter months. These excursions

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<sup>196</sup> “British Columbia Electric Railway Company, Ltd., with which is associated the Vancouver Power Company, Ltd.,” *Financial Post*, 25 September 1909.

were small components of overall mountaineering activities, though. While most settlers enjoyed the pleasant backdrop that the snow-covered mountains created to the north of their city, few walked in them each winter.

### 3.1 The Mountains

The North Shore Mountains are one of the most striking natural features of the Vancouver area. These mountains represent the extreme southern boundary of British Columbia's Coast Mountain Range, which extends northward from Burrard Inlet and the Fraser Valley to Alaska. Millions of years of volcanic activity and glaciation have shaped the region's topography. The advance and subsequent retreat of glacial icesheets scraped and carved out the deep fjords, sharp valleys, and ridges and peaks that coastal residents are familiar with today. Remnants of this glacial past can be found at high elevations in the mountains farther away from the Pacific Ocean, in areas such as Garibaldi Provincial Park and Golden Ears Provincial Park.<sup>197</sup> While some of those peaks reach more than 2,500 m asl, those near Burrard Inlet rise no more than 1,800 m asl. There are four distinct ranges in the North Shore Mountains, each stretching north and away from Burrard Inlet. At the extreme western end are Mount Strachan, Black, and Hollyburn mountains. This range stretches north along Howe Sound and includes peaks such as the imposing Lions (the Two Sisters, or "Ch'ich'iyúy Elxwíkn" in Squamish). To the east across the Capilano River are Grouse, Dam, Crown, and Camel mountains. Across the Lynn Valley lie the Lynn peaks and Coliseum Mountain. Finally, between the Seymour River and Burrard Inlet's Indian Arm lies the Fannin Range, with peaks such as Mount Seymour and Mount Elsay.

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<sup>197</sup> Slaymaker et al., "The Primordial Environment," 20.



**Figure 12: [View of downtown Vancouver, part of Stanley Park, and North Shore mountains, from the roof of the Hotel Vancouver] [1901?] SGN 440, Series 4, Major Matthews Collection fonds AM54, City of Vancouver Archives.**

Located near the Pacific Ocean, these mountains are susceptible to heavy precipitation. Westerly winds carry moist air across the Pacific to the coast between early autumn and late spring. While the greatest amount of rain and snow falls on Vancouver Island's western mountains, the mainland's Coast Mountains also receive heavy orographic precipitation. Annual precipitation totals in the North Shore Mountains are more than double those in the City of Vancouver.<sup>198</sup> Long winters and heavy snowfalls characterize these mountain landscapes. High on the mountains, temperatures fall below the freezing point in October or November and remain cold into April or May, creating the necessary conditions for long periods of snow accumulation. Annual snowfalls range from 4 to 10 m in the North Shore Mountains. Snow builds unevenly during these extended winter months. November snowfalls, for example, can range from 0 to 2 m. The deepest snowpack often occurs in late March or early April. Depending on the elevation and spring and summer temperatures, it can take three to five months for snow to completely

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<sup>198</sup> Ibid, 25; Moore et al., "Weather and Climate," 50.

melt. In the shaded areas at the highest peaks, snow can persist well into August.<sup>199</sup> Snow is a much more common and prominent feature of the natural landscape the higher one climbs from sea level. In the early twentieth century, the average snow-depth on Grouse's northern slopes at 600 m asl was just 1.5 m. At the 1,200 m asl peak, average snow-depths reached 4.5 m. These totals were lower on the more sun-exposed south-facing slopes.<sup>200</sup> From Vancouver, a clear snowline is visible on the North Shore Mountains. It constantly moves throughout the winter months.

Regional climate cycles affect annual snowpack accumulation in the southern Coast Mountains. The snowpack tends to be deeper during negative ENSO (La Niña) years and negative PDO cycles, both of which produce wetter and cooler winters in southwestern British Columbia. Positive ENSO (El Niño) years and positive PDO cycles produce the opposite effect. Recent scientific research highlights the impact that these climate patterns had on historic snowpack accumulation in these mountains. Through an analysis of tree-ring records in the southern Coast Mountains, environmental scientist Bryan J. Mood and his colleagues found that there were four extreme and extended low-snow winters in the southern Coast Mountains between 1700 and 1900. They attribute these low-snow winters to positive ENSO events.<sup>201</sup> As this dissertation will show, these climate cycles continued to affect annual snowpack accumulation throughout the twentieth century.

## 3.2 It Looks Pretty – Over There

Both the Squamish and Tsleil-Waututh people travelled into these snowy mountain spaces to collect food and other resources prior to Euro-Canadian settlement in the Vancouver area. The Squamish people, for example, collected alpine berries for food and other plants such as white pine and yellow cedar for materials or medicinal purposes. Hunting was another factor that attracted the Squamish and Tsleil-Waututh to the

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<sup>199</sup> Slaymaker et al., "The Primordial Environment," 25; W. Taylor, "Snow coverages," November 1934, *B.C. Mountaineer*, volume 13, Series 026 – B.C. Mountaineer 1913-2010, North Vancouver Archives, North Vancouver, British Columbia.

<sup>200</sup> Taylor, "Snow coverages."

<sup>201</sup> Mood, Coulthard, and Smith, "Three hundred years of snowpack variability in southwestern British Columbia reconstructed from tree-rings," 5129-31.

mountains. While hunters targeted many different animals, mountain goats were the most sought-after mountain species. In addition to being a significant meat source, the goats' horns could be shaped and split into spoons. Mountain goat skin blankets – “made by combining the wool with dog fur and the fluffy seeds of the fireweed plant” – were also highly valued by the Squamish people and were given as gifts at potlatches. With goat hunts sometimes occurring in early winter or spring, it is clear that Squamish and Tsleil-Waututh hunters confronted snowy landscapes during their travels into the mountains.<sup>202</sup>

For early settlers, mountain snow was something to be enjoyed from afar. Although coastal settlers generally detested snow's presence in their city, they heralded the beautiful backdrop of the snow-capped mountains as an example of the region's natural splendour. As one 1903 VTA pamphlet explained to potential tourists, “Along the northern shore, as far as the eye can see, are snow-capped mountains, whose shaggy sides, varying in hue with every hour, slope towards the blue waters of the inlet, broad and placid... with mountains rising from the northern shore, and the city on the south, [Vancouver] is decidedly picturesque in its surroundings.”<sup>203</sup> Some VTA promotional materials included photographs of these snow-covered mountains for prospective visitors. Indeed, coastal settlers expected, and even appreciated, seeing snow on these mountains. Writing after a heavy snowfall in November 1900, one *World* reporter explained that, although he disliked snow in the city, on the mountains “it looks very pretty – over there.” A similar refrain was repeated by the *Province* in February 1918. “On this coast snow is not a welcome guest. We like to look at it on the surrounding mountains, where all the beauty is disclosed, while we escape the inconvenience.”<sup>204</sup>

Growing numbers of settlers began to explore the North Shore Mountains in the late nineteenth and early twentieth centuries. This was partly driven by the increasing

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<sup>202</sup> Morin, “Tsleil-Waututh Nation's History, Culture and Aboriginal Interests in Eastern Burrard Inlet,” 376; Rudy Reimer, “Alpine Archaeology and oral traditions of the Squamish,” in *Archaeology of Coastal British Columbia: Essays in honour of Professor Philip M. Hobler*, ed. Roy L. Carlson (Burnaby: SFU Archaeology Press, 2017), 49-51.

<sup>203</sup> *Vancouver, British Columbia: the sunset doorway of the Dominion*, 4.

<sup>204</sup> “Almost like winter,” *Vancouver Daily World*, 17 November 1900; “The fleeting snow,” *Vancouver Province*, 4 February 1918.

popularity of mountaineering among settlers in western Canada.<sup>205</sup> Some of the region's "first ascents" were led by Squamish men who were familiar with the mountain terrain. During a hunting trip in 1889, for example, Squamish Chief Joe Capilano led Henry Bell-Irving and a group of hunters up the West Lion. Settler mountaineering parties reached other North Shore Mountain peaks such as Grouse, Goat, Crown, White (now Burwell), and Seymour during the 1890s and 1900s.<sup>206</sup> Grouse, located close to the community of North Vancouver, became a favourite destination for day-hikers and mountaineers in this period. Its peak offered unobstructed views of Vancouver Island and much of the Lower Mainland. The creation of a trail up the mountain, the erection of a shack offering food and refreshments, and the VTA's endorsement of climbing as an exciting tourist activity added to the mountain's popularity.<sup>207</sup> In the early twentieth century, it was not uncommon to see close to 100 people ascending the Grouse Mountain trail each weekend.<sup>208</sup> Some of these mountaineering enthusiasts organized clubs. In 1907, for example, a group formed the British Columbia Mountaineering Club (BCMC), which welcomed both male and female members. Other clubs soon followed, including the Vancouver Mountaineer Club (VMC), the Vancouver Athletic Club's Mountaineering Club (VACMC), and the University of British Columbia's Varsity Outdoor Club (VOC). While these clubs had small memberships – the BCMC had 90 members at the start of the First World War – day-hiking and climbing on Grouse and other North Shore mountains continued to grow in popularity during the 1910s.<sup>209</sup>

Snow was an unavoidable feature of North Shore mountaineering excursions for much of the year. One April 1906 *Province* article explained to coastal readers that snow on Grouse was still between one to six metres deep. Accompanying photographs showed the whitened mountain "in her winter garb." Snow was expected for at least another month at which point "travelling will be excellent for the summer tourist... a splendid pastime

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<sup>205</sup> PearlAnn Reichwein, *Climber's Paradise: Making Canada's Mountain Parks, 1906-1974* (Edmonton: University of Alberta Press, 2014).

<sup>206</sup> "Bring on new peaks; mountaineers' challenge," *Vancouver Province*, 16 April 1910.

<sup>207</sup> *Vancouver, British Columbia: the sunset doorway of the Dominion*, 5; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 68.

<sup>208</sup> "Second shelter for Grouse Mountain Trail," *Vancouver Daily World*, 4 September 1907.

<sup>209</sup> *The Northern Cordilleran*, Volume 1, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.

right at the door of Vancouver.” Should Grouse ever be connected to the city by a road or tram, the article stressed that it would undoubtedly become a popular destination. “Think of curling games and snowballing on a hot August afternoon!”<sup>210</sup> Farther north in the Garibaldi Lake region of the Coast Mountains, where the BCMC established a summer camp in the 1910s, ice and snow persisted year-round on massive glacial fields and mountain peaks surpassing 2,000 m asl. As one BCMC member wrote following the annual summer trip in 1917, while “the broad meadows were carpeted with beds of flowers of gorgeous hue... at the south end of the lake, in contrast to the opposite shore, two glaciers flow down to the water’s edge, whilst above are the everlasting snows and bold rock peaks, and here is a mountain climber’s paradise.” Members fought through snowy terrain on their many climbs that summer and were even battered by an August snowstorm as they attempted to climb Copper Peak.<sup>211</sup>



**Figure 13: [Wildflowers in Garibaldi Region] [ca. 1914] CVA 660-186, Series S1, John Davidson fonds AM505, City of Vancouver Archives.**

<sup>210</sup> “Grouse Mountain in her winter garb,” *Vancouver Province*, 28 April 1906.

<sup>211</sup> “BCMC Summer Programme and report, 1918,” Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.



While most day-hikes and mountaineering expeditions took place in the summer, when snow had melted from lower-elevation slopes, some settlers also undertook winter and early spring expeditions, when the snowpack was its deepest. Four VCMC members made local headlines when they ascended the snow- and ice-capped Lions on Boxing Day 1909. Dangerous conditions and waning daylight prevented them from reaching the summit of the West Lion, but they did attain the ridge connecting the two peaks. The accompanying photographs showcased snowy vistas that few coastal settlers had ever seen before.<sup>212</sup> Other clubs also turned their attention to winter outings. The VMC and VACMC increasingly organized snowshoeing expeditions on Grouse during these years. The BCMC took up winter excursions as well. In February 1911, fifty-one BCMC members hiked through knee-deep snow to celebrate the opening of their new cabin on Grouse. The following day, ten members snowshoed to the peak through what was described as a “blinding snowstorm.” As one club report explained, the cabin served as a base for impromptu snowshoeing trips to Grouse, Dam, and Goat mountains. These excursions became so popular that the cabin was not always able to accommodate the growing number of members that visited during the winter months.<sup>213</sup>

For the BCMC, interest in mountain snow extended into the sciences. In November 1911, club members began measuring snow depth on Grouse at 2,000, 3,000, and 4,000 feet asl (roughly 610, 915, and 1,219 m asl).<sup>214</sup> These measurements were most likely spearheaded by the club’s recently formed meteorological section.<sup>215</sup> In subsequent winters, members recorded snowpack totals multiple times each month, from the first snowfall in October or November until at least May. Some observations also included

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<sup>212</sup> “Mountaineers scale Lions in mid-winter,” *Vancouver Province*, 17 January 1910; “Bring on new peaks; mountaineers’ challenge,” *Vancouver Province*, 16 April 1910; B.S Darling, “Winter Mountaineering at the Coast,” in *Canadian Alpine Journal* (Calgary: Alpine Club of Canada, 1909), 198

<sup>213</sup> “Stage burlesque in mountain snow,” *Vancouver Province*, 5 January 1914; “Club cabin,” *Summer Programme and Report 1918*, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.

<sup>214</sup> *The Northern Cordilleran*, the BCMC’s first publication and precursor to *The Mountaineer*, notes that measurements were taken at 2,200 feet (the club house), 3,800 feet (the plateau), and 4,200 feet (the peak), but later records indicate that those first measurements were taken at the 2,000, 3,000, and 4,000 foot marks. All measurements after 1914 were taken at those thousand-foot intervals.

<sup>215</sup> Taylor points to the formation of the Meteorological section in his November 1934 “Snow Coverages” article in the *B.C. Mountaineer*.

comments about snow type and general weather conditions on the mountain. BCMC records do not disclose exactly why the club began recording Grouse (and later Dam Mountain) snowpack totals, but it is clear that BCMC members were increasingly interested in natural history at this time. In 1911, members also formed botanical and geological sections. An entomological section was founded the following year. In subsequent years, members in these sections undertook research expeditions in the North Shore Mountains and in the Garibaldi region and shared their findings at public lectures. BCMC members did not give talks on meteorological research, but local newspapers did publish yearly snowpack measurements in the 1910s. These findings were no doubt of interest to coastal residents such as Dominion meteorologist T.S.H Shearman, who had been recording snow totals in the city since 1898 and the first snowfalls of the year on the North Shore Mountains since 1905.<sup>216</sup>

Winter trips to record snow-depth and to go snowshoeing were small components of overall mountaineering activities in the North Shore Mountains, however. The rather late adoption of snow-based outdoor recreation activities such as snowshoeing – compared to the rest of Canada, where snowshoe clubs had existed since the mid-nineteenth century – can be attributed to the inaccessibility of the North Shore Mountains.<sup>217</sup> Unlike their counterparts in Central or Eastern Canada, coastal settlers needed to seek out snow to enjoy it for extended periods of time. What snow fell on the coast was not continually or consistently present; snow-based recreation activities such as horse-drawn sleighing or tobogganing were “spur of the moment” events rather than all-season activities. While one 1917 *Sun* editorial remarked that it was “surprising that more Vancouver people do not take advantage of the opportunities for winter sport afforded by the mountains,” getting to those mountains was not easy.<sup>218</sup> Travel from the City of Vancouver to the BCMC’s cabin on Grouse, for example, involved a ferry ride across Burrard Inlet, a walk or streetcar ride to the mountain’s base, and finally a two- or three-hour hike up 700 m of

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<sup>216</sup> *The Mountaineer 50<sup>th</sup> Anniversary Edition*, Series 030 – News Cuttings, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada.

<sup>217</sup> See: Gillian Poulter, *Becoming Native in a Foreign Land: Sport, Visual Culture, and Identity in Montreal, 1840-85* (Vancouver: University of British Columbia Press, 2009).

<sup>218</sup> “Beautiful snow,” *Vancouver Sun*, 27 January 1917.

elevation. Depending on the time of year, heavy rain made the trail muddy and slick while deep snow slowed travel considerably. The proposed creation of an aerial tramway up Grouse in 1911 would have undoubtedly improved access to winter outdoor recreation activities in the mountains; however, the onset of the recession in 1913 and the outbreak of the First World War the following year prevented these plans from becoming a reality.<sup>219</sup>

### 3.3 A Bountiful Supply of White Coal

For coastal settlers, snow's value rested principally in its stored energy potential. Each spring, as temperatures warm, the accumulated snow on the North Shore Mountains begins to melt. While some of this water is soaked up by the ground and surrounding vegetation, most travels down the mountain slopes and is funneled through countless streams and creeks into larger waterways such as the Capilano and Seymour rivers. Both rivers stretch deep into the North Shore Mountains. The Capilano River watershed encompasses over 195 km<sup>2</sup> of this mountainous landscape; the Seymour River watershed covers more than 127 km<sup>2</sup>. The accumulated snowmelt run-off produces high streamflow rates between April and June, one of two peak flows that occur annually on these rivers.<sup>220</sup> This spring discharge of meltwater is commonly referred to as a freshet. Streamflow decreases dramatically following the spring freshet. Both the Capilano and Seymour rivers experience their lowest flows in August and September, as the snow has mostly melted from the mountains and the autumn rains have not yet returned. As

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<sup>219</sup> During a railway committee meeting in Victoria, North Vancouver Mayor William McNeish was asked if the plan would “pay in the winter;” if it would be popular with residents. McNeish responded that “it will do a good business in winter, because there will be excellent curling and other winter sports. There are as many Scotchmen there as in the Kootenays.” Locals had high hopes that the scenic railway would lead to greater tourism and the growth of recreational pursuits on the mountain. “Scenic railway to top of Grouse Mountain,” *Vancouver Province*, 2 February 1911; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 77.

<sup>220</sup> The second occurs between October and January, when heavy rains prevail throughout the region. Rain-on-snow events further contribute to high stream flows during these months. Both the Capilano and Seymour rivers are referred to as mixed regime or hybrid regime basins, since peak flows are impacted by rain and snowmelt. Brett Eaton and R.D. (Dan) Moore, “Regional Hydrology,” in *Compendium of Forest Hydrology and Geomorphology in British Columbia*, ed. Robin G. Pike et al., 86.

researchers have shown, shifting ENSO and PDO patterns influence snowpack accumulation, snowmelt, and summer streamflow on these rivers.<sup>221</sup>

Indigenous peoples and early settlers understood the awesome and destructive power of floods and freshets. As Andrew Paull explained to Major Matthews in the 1930s, Squamish oral traditions recount that, before the arrival of Europeans, a Great Flood washed over the region. Other Coast Salish communities have tales that also speak of a Great Flood overwhelming the land and leading to considerable losses.<sup>222</sup> Large freshets in 1876 and 1882 caused significant flooding and extensive damage to Indigenous and settler communities along the Fraser Valley. The infamous Fraser Valley flood of May 1894 remains one of the worst floods in the province's history. Rapid snowmelt caused the Fraser River to swell dramatically, and the ensuing freshet resulted in extensive damage and the forced evacuation of thousands of residents.<sup>223</sup>

Floods caused by melting snow are possible in the winter, too. Heavy snowstorms turn to deluges in the Coast Mountains when temperatures temporarily warm during the winter months. This is most common at low and mid-mountain elevations but can occur at high elevations as well. These rain events are particularly dangerous if there is already snowpack built up on the mountains. Snow becomes highly saturated from the rain and begins to melt, producing large freshets. These "rain-on-snow" events tend to be severe because they incorporate rainwater and snowmelt from the higher elevation snowpack.<sup>224</sup> Early settlers were aware of these powerful events. In December 1863, a rain-on-snow event flooded the community of Port Douglas, located at the north end of Harrison Lake. *The British Columbian* explained how the meltwater "formed a regular torrent down the main street, undermining buildings, two or three of which had fallen." Coastal settlers recorded three other rain-on-snow flooding events in the region between 1865 and 1883.

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<sup>221</sup> Eaton and Moore, "Regional Hydrology," 88-89; Bryan J. Mood and Dan J. Smith, "A multi-century streamflow reconstruction of Metro Vancouver's water supply contribution from the Capilano and Seymour watersheds in southwestern British Columbia, Canada," *Canadian Water Resources Journal* 46 no. 3 (2021), 121-138.

<sup>222</sup> See Carlson, *The Power of Place, The Problem of Time*, chapter four.

<sup>223</sup> "Flood and the Fraser," *Fraser Basin Council*, [https://www.fraserbasin.bc.ca/water\\_flood\\_fraser.html#](https://www.fraserbasin.bc.ca/water_flood_fraser.html#); Davis, *The Chuck Davis History of Metropolitan Vancouver*, 34.

<sup>224</sup> Eaton and Moore, "Regional Hydrology," 106-07, 109.

In December 1865, for example, heavy rain and snowmelt produced strong freshets in Lower Mainland rivers.<sup>225</sup>

While melting snow was at times a destructive force, Vancouver-based industries recognized that it could be an important power-generating resource, too. Hydroelectricity was becoming an increasingly important power source in Europe and North America in the late nineteenth century.<sup>226</sup> In the late 1890s, the BCER generated electricity for its streetcars and light fixtures from a steam plant located on Union Street. As historian Patricia Roy explains, the plant was under increasing strain at the start of the twentieth century. While the WVT and CRL had previously considered developing hydroelectric generating facilities, neither company had the financial capabilities to do so. The BCER, however, did have the finances for such a plan. In 1898, the BCER hired Hermon & Burwell, a local engineering firm, to survey possible water sources. The firm recommended diverting water from Coquitlam Lake – situated to the east of Burrard Inlet’s Indian Arm – via a 3.8 km tunnel into the smaller Lake Beautiful (renamed Trout Lake and then Buntzen Lake) located to its west. This water would drive a new hydroelectric generating facility that would direct power to Vancouver via transmission lines. The BCER formed a subsidiary company, the Vancouver Power Company (VPC), to undertake this work.<sup>227</sup>

Coquitlam Lake is situated within the southern edges of the Coast Mountain Range. Its watershed encompasses over 204 km<sup>2</sup> of this mountainous terrain and includes peaks stretching more than 2,000 m asl. The Buntzen Lake watershed is significantly smaller, at around 21 km<sup>2</sup>. Like the nearby Capilano and Seymour rivers, Coquitlam and Buntzen

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<sup>225</sup> Slaymaker et al., “The Primordial Environment,” 32; “Port Douglas flooded,” *British Columbian*, 23 December 1863; “Heavy rains and destructive freshets,” *British Columbian*, 9 December 1865; D. Septer, *Flooding and landslide events southern British Columbia 1808-2006* (Victoria: Government of British Columbia, 2007), 12 and 18.

<sup>226</sup> See Marc Landry, “Water as white coal,” in “On Water: Perceptions, Politics, Perils,” ed. Agnes Kneitz and Marc Landry, *RCC Perspectives*, 2, (2012), 7-11; Daniel Macfarlane, *Fixing Niagara Falls: Environment, Energy, and Engineers at the World’s Most Famous Waterfall* (Vancouver: UBC Press, 2020).

<sup>227</sup> Roy, “British Columbia Electric Railway Company, 1897-1928,” 158; Will Koop, “A presentation on the history of the Coquitlam watershed and river from 1898-1914, for the Port Moody ecological society, on the evening of April 6 1994,” [https://www.coqlibrary.ca/docs/default-source/coquitlam-history/coquitlam\\_watershed\\_history.pdf?sfvrsn=a84fae1\\_0](https://www.coqlibrary.ca/docs/default-source/coquitlam-history/coquitlam_watershed_history.pdf?sfvrsn=a84fae1_0)

Lakes are sustained by rain and snowmelt. In 1900, BCER/VPC engineers constructed an observation station at the mouth of Coquitlam Lake to collect hydrological and meteorological information. These investigations helped engineers understand how they could best manage water levels on the two lakes. They recorded annual precipitation totals of ~3.8 m at the lake's mouth. Moreover, engineers also recorded snow-depths in different areas of the watershed in order to determine total run-off into the lake. As one *News-Advertiser* article explained, company engineers believed Coquitlam's "main source of supply [came] from the glacier fields of the snow-covered mountain peaks."<sup>228</sup>

Hydroelectric power from the Buntzen Lake – Coquitlam Lake generating facility first arrived in Vancouver in December 1903. According to Roy, "the new waterpower was greeted as the presage of industrial growth." "The illumination of the electrical arches on the streets to-night by the new current should be hailed by the citizens as another promise if any promise is needed, of the future greatness of Vancouver," boasted one *Province* reporter that December. This hydroelectricity not only powered BCER operations, but local industries such as sawmills, printers, foundries, and others. As the *Province's* reporter explained, new industries would be drawn to the city because of this new power source, "a power which no other city on the coast can obtain so readily and abundantly." The new hydroelectric generating station provided more reliable power than the old steam plant. Between 1906 and 1912, the number of BCER/VPC commercial power customers grew from 246 to 2,555. The VPC increased its power-generating capabilities in order to match growing demand. By the start of the First World War, the plant could produce 64,000 horsepower.<sup>229</sup> This output was bolstered by the creation of the Western Power Company's (WPC) Stave Lake generating facility, which began producing hydroelectricity in 1911. Like Coquitlam Lake, Stave Lake, located further to the east, was surrounded by towering mountain peaks which supplied that lake with melting snow

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<sup>228</sup> Koop, "A presentation on the history of the Coquitlam watershed and river from 1898-1914, for the Port Moody ecological society, on the evening of 6 April 1994; Water Rights Branch, *Report of the Water Rights Branch of the Department of Lands for the year ending December 31<sup>st</sup> 1915* (Victoria: Legislative Assembly, 1916), 21; *Weekly News-Advertiser*, 11 August 1903.

<sup>229</sup> W.F. Findlay, "Harnessed Waters of Mountain Lake," *Vancouver Province*, 19 December 1903; "A promise of what will be," *Vancouver Province*, 22 December 1903; Roy, "British Columbia Electric Railway Company, 1897-1928," 176.

during the spring and summer months. That lake's watershed encompassed 1,013 km<sup>2</sup>. By 1913, the WPC was supplying power to 1,157 customers in the Lower Mainland.<sup>230</sup>

Snowmelt from the Coast Mountains thus became a significant contributor to Vancouver's growth and prosperity during the early twentieth century. Companies such as the BCER increasingly linked snowmelt and hydroelectricity with the city's modernization. As the company's 1909 *Financial Post* advertisement explained, snowmelt was the all-important "white coal." Historian Marc Landry notes that white coal was a popular descriptor for snow- and ice-melt (and hydroelectricity more broadly) in the late nineteenth and early twentieth centuries. According to Landry, the term's close association with the fossil fuel was a positive connotation for those observers who believed "black coal" signified economic growth and prosperity.<sup>231</sup> Local media outlets also used the term to tout the benefits of hydroelectricity. In a full-page article on the development of the Stave Lake generating facility, the *World's* William F. Findlay described how the lake was home to "a bountiful supply of white coal... that will provide light, heat, and power for Vancouver and a large adjacent area." He made it clear to readers that a considerable portion of Stave Lake's water supply came from the melting glaciers and winter snows from the mountains.<sup>232</sup>

While both the WPC and BCER/VPC relied on snow as an important reservoir of white coal, neither company undertook any research to better understand and manage this resource or to forecast spring run-off during this period. The BCER/VPC did undertake precipitation studies at Coquitlam Lake, but this information told engineers nothing about the snowfall at much higher elevations. These companies felt confident in white coal's abundance. The BCER considered white coal to be a stable and renewable energy source that could power Vancouver for generations to come. "Some day," concluded the electrical engineer in the BCER's 1909 *Financial Post* advertisement, "the other, the

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<sup>230</sup> Ibid, 165; "Stave Dam," *Maple Ridge Museum*, <https://mapleridgemuseum.org/stave-dam/>; "Stave Falls Power House," *Canada's Historic Places*, <https://www.historicplaces.ca/en/rep-reg/place-lieu.aspx?id=19425>; "Work resumed on electric system," *Vancouver Daily World*, 8 March 1912; *Stave River Watershed Action Plan* (British Columbia: Fish and Wildlife Compensation Program, 2007), 7, <https://fwcp.ca/app/uploads/2017/12/Action-Plan-Coastal-Region-Stave-River-Watershed-Jul-2020.pdf>

<sup>231</sup> Landry, "Water as white coal," 9.

<sup>232</sup> William F. Findlay, "Stave river falls will soon be harnessed," *Vancouver Daily World*, 30 June 1911.

black coal, may give out. But the white coal, the snow and glacial ice, will always be with us.”<sup>233</sup>

### 3.4 The Purest in the West

Snowmelt became an important source of freshwater for coastal settlers during this period. Up until 1889, settlers in the Vancouver area drew their freshwater from wells or one of the fifty-plus small streams that ran across the Burrard Peninsula.<sup>234</sup> As historian Louis P. Cain explains, well water was often pumped from shallow underground wells. Sewage (also disposed in the ground) could seep through the region’s sandy soils, bringing the decomposing material “into contact with the ground water, contaminating the supply. The inevitable results were out-breaks of cholera, typhoid fever, and other diarrheal diseases.” One 1887 *Vancouver News-Advertiser* article compared drinking well water to drinking poison.<sup>235</sup>

City officials sought out new freshwater sources to supply the rapidly growing metropolis. In 1886 George Keefer and H.O. Smith founded the Vancouver Water Works Company and sent Henry Badeley-Smith to survey possible water sources on the North Shore. As Cain explains, Badeley-Smith recommended the Capilano River because of the “greater water discharge of that supply, its close proximity to the city, and the fact that the average fall of the river was so large that the intake point for gravity-based water supply could be established a short distance upstream.”<sup>236</sup> The Vancouver Water Works Company secured the rights to supply this water to the City of Vancouver and began work on the project in 1888. This included the construction of a stone-filled timber dam to create a reservoir 116 m wide by 213 m long with the capacity to hold over 63 million litres of water. Badeley-Smith chose to place this dam and the intake at the mouth of a large canyon, as he believed that the upstream area had once been a lake and that it could be dammed in the future.<sup>237</sup> Construction began that January and was completed in three

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<sup>233</sup> “British Columbia Electric Railway Company, Ltd., with which is associated the Vancouver Power Company, Ltd.,” *Financial Post*, 25 September 1909.

<sup>234</sup> Slaymaker et al., “The Primordial Environment,” 29.

<sup>235</sup> Cain, “Water and Sanitation Service in Vancouver,” 27; Kuhlberg, ““An Eden that is practically uninhabited by humans,” 20.

<sup>236</sup> Cain, “Water and Sanitation Service in Vancouver,” 28.

<sup>237</sup> Ibid, 28-29; H. B. Smith, *Vancouver Water Works* (Montreal: John Lovell & Son, 1889), 6.



months, “a remarkable fact considering that everything needed to be carried on mule-back 6.5 miles [10.4 km] into the wilderness during what has been reported as an unusually inclement winter.” That summer, the Company connected the mountain intake to the city via a 16 km watermain that ran down the Capilano River valley, across the floor of Burrard Inlet’s First Narrows, and through Stanley Park and Coal Harbour to the downtown. On 14 April 1889, the system was officially opened. As Cain and fellow Vancouver historian Alan Morley explain, the system was lauded by locals, and incidence of water-borne illnesses such as typhoid were immediately reduced.<sup>238</sup>



**Figure 14: City Waterworks [Capilano Creek Dam] [ca. 1900] Ci Dept P29.1, Series 4, Major Matthews Collection fonds AM54, City of Vancouver Archives**

Officials recognized that snowmelt was a significant source of their new water supply. As one *Weekly News-Advertiser* article explained in 1889, while the Capilano’s main source was unknown at that point “all accounts of Indians and prospectors agree... that the

<sup>238</sup> Alan Morley *From Milltown to Metropolis* (Vancouver: Mitchell Press, 1961), as quoted in Cain, “Water and Sanitation Service in Vancouver,” 31.

source is not a mountain lake, but the accumulated waters derived from melted snow and ice, falling from the mountain summit.”<sup>239</sup> In June 1892, the Vancouver Water Works Company – recently purchased for \$400,000 by the City of Vancouver – sent Phillip Oben to seek out the Capilano’s headwaters. Led by Joe Capilano and another unnamed Squamish man, Oben and his team travelled into the North Shore Mountains in search of the river’s headwaters. Oben later recalled to Major Matthews that, during his expedition, the snow was more than 3 m deep in places and that, at around 550 m asl, the team crossed a frozen lake, which he described as roughly the same size as the popular Trout Lake to the southeast of downtown Vancouver. According to Oben, “Joe told me that there was another little lake higher up still, but we did not go up there...our little lake was a beautiful spot, perpetually fed by the snow from the surrounding mountains.”<sup>240</sup> In searching out the Capilano’s main source, Oben confirmed that snow and ice were significant components of the Capilano water supply.

Mountain snowmelt and rainwater increasingly sustained other settler communities on the coast. In the 1890s and 1900s, the Capilano water system was expanded to serve the adjoining communities of Burnaby, Point Grey, and South Vancouver. The region’s rapidly growing population put greater strain on the water supply, particularly during the summer months. According to Cain, “two alternatives were possible: construct a higher dam or seek a second supply source. The city chose the latter alternative.” Officials selected the nearby Seymour River as its secondary source in 1905. Like the Capilano scheme, the Seymour system needed to transport water from that river across the Second Narrows seabed to Vancouver and its surrounding communities. The Clenneding and Co. began work on the project in spring 1907, and the new system was officially opened in 1908. Its intake was situated deep in the Seymour River valley, roughly 11 km from its mouth. As the *Province* explained to its readers in October 1908, the new water source could provide residents with 13 million litres of water every 24 hours.<sup>241</sup>

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<sup>239</sup> This article may have been written by Badeley-Smith, as he made a similar remark in his October 1889 report to the Canadian Society of Civil Engineers. “The Vancouver Water Works,” *The Weekly News-Advertiser*, 2 January 1889.

<sup>240</sup> Matthews, *Early Vancouver*, Vol. 2 (Vancouver: City of Vancouver, 2011), 274-75.

<sup>241</sup> Cain, “Water and Sanitation Service in Vancouver,” 32-33; “New Seymour Creek water system was formally opened Wednesday,” *Vancouver Province*, 15 October 1908; Gabrielle Kahrer, *From Speculative*

City officials and local media outlets boasted about Vancouver's snow-fed water system. Snow's slow dissolution from the mountain tops supplied residents with freshwater during the normally dry summer months. "City's water supply is pure ice melted," proclaimed one *Province* headline in June 1907. "Ten months in the year we enjoy the melted snow and spring water of the crystal Capilano and for the other two months the ice water of the glaciers beyond." The fact that the Seymour had "twice the number of snow and glacier-fed streams" than the Capilano added to the former's attractiveness as a secondary water supply.<sup>242</sup> Robert J. McDougall's 1911 *British Columbia Magazine* article, "How Vancouver Gets Snow-water from Mountain Streams," further extolled the city's water system. The glacial torrents of the Capilano and Seymour, he explained, "sustain the very life of the city they hasten to meet... sucking in the water from a deep, quiet, rock-lined pool, the pipes from the Capilano get the very purest that the snow-caverned cooling plants of the mountains afford." Largely free of the pollutants and diseases that made other North American water supplies unsafe to drink, Vancouver's meltwater was "the purest in the west." As historian Mark Kuhlberg explains, "considering that most urban dwellers in North America did not drink water prior to the 1930s, largely because of health concerns, Vancouverites had good reason to crow."<sup>243</sup>

But snow and ice at times hampered this highly praised freshwater system and limited its ability to move water from the mountains to the coastal city. Both snow and ice were common at the Capilano and Seymour intakes – located in the higher elevation river valleys away from the coast – during the winter months. The City of Vancouver relied on the intake's caretakers (and sometimes other employees) to keep the watermains open and supplying water to the metropolitan region. This winter work was long and challenging. In January 1909, for example, crews battled through exceedingly cold

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to Spectacular... the Seymour River Valley 1870's to 1980's: A History of Resource Use (Burnaby: Greater Vancouver Regional District Parks Department, 1989), 23.

<sup>242</sup> Early settlers believed that glaciers were an important part of their water supply. As more mountaineers travelled throughout the mountains, this was later found to not be the case. "City's water supply is pure ice melted," *Vancouver Province*, 22 June 1907; "Vancouver water supply purest in west," *Vancouver Province*, 20 September 1910.

<sup>243</sup> "Vancouver water supply purest in west," *Vancouver Province*, 20 September 1910; Robert J. McDougall, "How Vancouver gets snow-water from mountain streams," *British Columbia Magazine*, June 1911, 583, PAM 1911-36, 625-D-07, AM1519, City of Vancouver Archives, Vancouver, British Columbia, Canada; Kuhlberg, "An Eden that is practically uninhabited by humans," 22.

temperatures to prevent ice from building up on the Capilano reservoir and intake. In January 1913, the city had to rely solely on water from the Little Mountain reservoir for a 12-hour period, as over a metre of snow temporarily blocked the intake. In a letter to City Engineer Fellowes in June 1916, Mr. Morrison, then caretaker for the Capilano intake, wrote of “the extraordinary long hours of service he had put in during the very heavy conditions prevailing at the Intake during the past winter, such as fighting snow and ice.” He was awarded extra pay for this work.<sup>244</sup> The battle against snow and ice was no easier at the Seymour intake. “What causes the most trouble, however, is the snow and ice of winter,” wrote one *Province* reporter in October 1916. “The gates must be kept free of ice blockades, the settling basins must not be allowed to freeze, and the screens must be kept free from ice-coating in order that Vancouver may have the protection and the use of water. It is practically twenty-four hour shifts for Foreman Lewis during the winter season.”<sup>245</sup>

Local officials had different water-related concerns during the summer months. In the 1910s, as the population eclipsed 100,000, elected officials and engineers began investigating ways to bolster the city’s freshwater storage capabilities. At the time, these capabilities were limited to the Capilano and Seymour reservoirs and the few reservoirs situated in the city limits. A growing population put greater strain on existing resources. Moreover, the reservoirs were only capable of holding a finite amount of meltwater released during the spring freshets. Vast quantities of meltwater spilled over the dams on their way to the ocean. These factors left residents vulnerable to water shortages during the dry summer and early autumn months. This was a concern for officials during the 1915 summer, when a scarcity of spring rain and snowmelt led to below-average water levels at both the Capilano and Seymour intakes in July. BCMC snow records are lost for this winter, but recent research by Mood and his colleagues demonstrates that there was an extreme snow drought in the North Shore Mountains during the 1914-15 winter. The water supply situation remained dire throughout the summer and into the autumn. On 1

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<sup>244</sup> Re Caretaker, Capilano Intake, Twelfth report of the water committee, year 1916, 29 June 1916, 139-G-03, COV-S375, City of Vancouver Archives, Vancouver, British Columbia, Canada; “Zero weather at Capilano Intake,” *Vancouver Province*, 7 January 1909; “Slide swept men into intake basin,” *Vancouver Province*, 15 January 1913.

<sup>245</sup> “Vigilance is what keeps Vancouver water pure,” *Vancouver Province*, 21 October 1916.

October, the *Province* reported that city employees had constructed temporary dams with sandbags to direct what little water there was in the Capilano into the intake. In his November report to Vancouver's Water Committee, Fellowes confessed that the "exceptional dryness" had been a serious concern for him and his department.<sup>246</sup>

One plan to improve the water supply, as described by McDougall in his 1911 *British Columbia Magazine* article, was to dam three high-mountain lakes on the Capilano and Seymour watersheds. These included Palisade Lake on the Capilano watershed, and Burwell Lake and Loch Lomond on the Seymour watershed. All three lakes are situated more than 800 m asl and are over 400,000 m<sup>2</sup> in size, with Palisade being the largest at over 540,000 m<sup>2</sup>. The catchment-basins for the three lakes range from 2.4 to 3.7 km<sup>2</sup>. B.C.'s Water Rights Branch (WRB), the government department responsible for managing the province's water resources, began conducting surveys on these lakes in 1913 to determine their suitability as freshwater reservoirs for the City of Vancouver and other settler communities. While initially skeptical of this plan, WRB engineers changed their opinions after further investigations. In its annual report for 1915, the WRB advised that these lakes could be tapped by tunneling into the rocky cliffs surrounding them. This was viewed as more "advantageous and economic" than damming the lakes and raising their existing water levels.<sup>247</sup>

In the mid-1910s, WRB engineers came to believe that these lakes could be a reliable supplemental source of freshwater for the region. The presence of large snowfields during summer expeditions strengthened this assessment. "All summer the lake-basin is filled with the sound of small streams fed by melting snow rushing down the mountain-sides," wrote one WRB engineer about Burwell Lake. "The situation appears to be an

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<sup>246</sup> Mood and Smith, "A multi-century streamflow reconstruction of Metro Vancouver's water supply contribution from the Capilano and Seymour watersheds in southwestern British Columbia, Canada," 121-138; Re Seymour Creek water supply, Twenty-first report of the water committee, year 1915, 4 November 1915, 139-G-02, COV-S375, City of Vancouver Archives, Vancouver, British Columbia, Canada; "Capilano protection work completed," *Vancouver Province*, 1 October 1915; *Vancouver Daily World*, 9 August 1915; "Water in North Shore Creeks low," *Vancouver Province*, 10 July 1915; "Should conserve water," *Vancouver Province*, 10 September 1915.

<sup>247</sup> Water Rights Branch, *Report of the Water Rights Branch of the Department of Lands for the year ending December 31<sup>st</sup> 1913* (Victoria: Legislative Assembly, 1914), 42; Water Rights Branch, *Report of the Water Rights Branch of the Department of Lands for the year ending December 31<sup>st</sup> 1915*, 21, 24-25.

ideal site for a reservoir where water may be stored in considerable quantity and for long periods before being delivered to the city.” The same author also remarked that the mountains surrounding Palisade and Loch Lomond retained large quantities of snow throughout the summer months, too. The melting snowpack, coupled with spring and autumn rains, generated considerable run-off into these lakes.<sup>248</sup> By drawing from these lakes, advocates believed that the city could “draw crystal, health-giving fluid from these big snow-line reservoirs far from civilization and the possibility of pollution.” No further action was taken on this plan for the remainder of this decade, however, presumably because of the re-deployment of men and resources for the First World War.<sup>249</sup>

### 3.5 Conclusion

The task must have seemed incredible to members of Vancouver’s artillery reserve. It was late December 1915, and commanding officers Captain H.E. Boorman and Lieutenant H. McPherson had ordered the men to transport a multi-ton 13-pounder field gun to the summit of Grouse Mountain, an ascent of more than 1,200 m. Reports are unclear about the motivation, but the mission seems to have been a training exercise to demonstrate the reserve’s capabilities and fortitude. The “War Party,” as the *Province*’s Ronald Kenvyn called it, set out from the mountain’s base on 29 December. The large weapon had been disassembled and split onto seven sleighs, almost all weighing more than 300 kg. As if the gruelling ascent was not daunting enough, conditions on Grouse were worse than expected. The BCMC trail, which the reserve followed, was overgrown and littered with fallen trees. It was December, after all, and fewer BCMC members visited the cabin during the winter months, especially with so many male members off fighting in Europe. Snow “far deeper than counted upon” slowed the reserve’s progress, too. While Kenvyn emphasized the energy, vigour, and determination of the men, the reality was less cheerful. Some men became quite sick and “put out” that day. One man

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<sup>248</sup> Burwell Lake’s estimated run-off was 6,938 acre feet, Palisade 5,775, and Loch Lomond 4,500. An acre foot is enough water to cover one acre of land (roughly the size of a football field) with one foot of water.

<sup>249</sup> “Glacial fields will supply Vancouver with pure water,” *Vancouver Province*, 8 September 1916.

had to be carried to the final camp. The War Party spent a cold night at the BCMC cabin, roughly two-thirds of the way up the mountain.<sup>250</sup>



**Figure 15: “‘Taking’ Grouse Mountain with a field gun,” *Vancouver Province*, 30 December 1915.**

Hopes of reaching the summit the next day were quickly dashed. Diminishing rations, a lack of proper hauling equipment, an increasingly icy trail, and the onset of a sudden snowstorm were too much for the reserve to overcome. Spirits had no doubt been low that morning when the men “turned out to find socks frozen stiff, putties like boards and boots with ice inside.” Having attained less than 100 m at sunset, Captain Boorman called off the mission, at least for that day. The men were given the holiday off but were called back to the task on 6 January. The hauling of the abandoned sleighs began early that morning and the summit was reached by 12:30 p.m. Fifteen minutes later, the reserve fired off one round from the reassembled gun, an eerie sound amidst the raging blizzard that enveloped the mountaintop. The gun had been rebuilt quickly as no one wanted to linger in the cold and snow. Local reporters applauded the reserve for its achievement.

<sup>250</sup> Ronald Kenvyn, “Grouse Mountain is attacked by ‘war party,’” *Vancouver Province*, 29 December 1915; “Mountain climbers struggling onward,” *Vancouver Province*, 30 December 1915; “Leaders of Grouse Mountain Expedition,” *Vancouver Province*, 30 December 1915.

The *Province* boasted that “it is doubtful if a 13-pounder has been taken to such an elevation.”<sup>251</sup>

The 1915-16 military exercise up Grouse Mountain is a peculiar episode in the city’s history for a few reasons, but mostly for its timing. Very few settlers travelled into the North Shore Mountains in the winter during this period. Travel conditions were just too difficult, as the artillery reserve quickly learned. Getting up and down the mountains on foot was timely and arduous, and there were only a few cabins where one could overnight. For most settlers, the snow-clad mountains were something to enjoy from afar. The recreation value of mountain snow had yet to be fully realized. During the City of Vancouver’s first three decades, snow’s primary value rested in its stored energy potential. Snow was a transformative resource for the young settler city. The collection and transportation of snowmelt - of white coal and the purest water in the west - sustained Vancouver’s rapidly growing population and provided the necessary power for it to become a large industrial and modern city. Through power and fresh drinking water, snow from the North Shore Mountains found its way into the daily lives of thousands of settlers living in Vancouver and the surrounding region. The connections made between the mountains and the city during this period ensured that snowmelt would remain an important resource for the remainder of the century.

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<sup>251</sup> “Hauled gun up for three thousand feet,” *Vancouver Province*, 31 December 1915; “Gunners are up in the air today,” *Vancouver Province*, 6 January 1916; “Gunners return from mountain trip,” *Vancouver Province*, 7 January 1916.



## Section 3

### 4 It's Most Unusual for Vancouver: 1918-1939

The loud crash startled Arthur and Doris Hemburrow from their bed. It was the middle of the night on 21 January 1935. Arthur, an employee with the Pro-Made Golf supplier, peered out his window at 305 Renfrew Street. The ground was covered in deep snow, with more heavy, wet snowflakes continuing to fall from the night sky. A mix of broken tar paper and snow covered the Hemburrow's verandah. Looking out across the street, Arthur must have been shocked by what he saw. The Hastings Park Forum, one of the world's largest indoor ice rinks and the home to Vancouver's amateur hockey and curling leagues, had collapsed. The weight of the snow had become too much for the Forum's roof. The sheer force created by the collapse had launched the tar paper 60 m from the Forum to the Hemburrow's house. The full extent of the damage became apparent later that morning. The entire building had caved in on itself, leaving only the side walls partially standing. As the *Province* explained to its readers that day, the once impressive building was now just "a mass of twisted girders and scarred walls." Thankfully, the Forum was empty at the time of the collapse, and no one was injured.<sup>252</sup>

The Hastings Park Forum was just one of many buildings that collapsed that morning. By 4:30 a.m., a record-breaking 44 cm of wet, heavy snow had fallen on the City of Vancouver – the most ever in a 24-hour period. At least a dozen other buildings were destroyed by the snow. Fearing that school roofs might also collapse, the School Board gave Vancouver's 40,000 students a rare snow day. With streets impassable to streetcars and motorists alike, thousands of Vancouverites, some donning their ski outfits instead of typical office-wear, trudged through knee-deep snow to reach their jobs in the downtown core. Female night-time operators with the B.C. Telephone Company worked long past their shift's end as they waited for their day-time counterparts to relieve them. Local newspapers heralded them as the "heroines of the storm" for maintaining inter- and intra-city communications amidst the chaos and confusion. But the snow retreated almost as

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<sup>252</sup> "Forum in ruins; wall and roof both collapse," *Vancouver Province*, 21 January 1935; "Forum roof caves in," *Vancouver Sun*, 21 January 1935; *The British Columbia and Yukon Directory* (Vancouver: Sun Directories Limited, 1935), 1090.

quickly as it arrived. As the morning progressed, temperatures rose and snow turned to sleet and torrential rain, further adding to residents' miseries and the Board of Works' fears about flooding. *Province* cartoonist Jack Boothe captured residents' collective shock in that day's cartoon. Entitled "Our Day of Humiliation," Boothe's cartoon was a not-so-subtle dig at Mayor Gerry McGeer and his earlier implementation of a Civic Day of observance for "service, humiliation, and prayer" on 6 January, the first Sunday after his inauguration.<sup>253</sup>



**Figure 16: "Our Day of Humiliation," *Vancouver Province*, 21 January 1935.**

Boothe's cartoon also emphasized the collective humiliation that coastal residents felt about such a snow event occurring in their city. As the *Province* cartoonist made clear, and as most residents agreed, Vancouver was part of "Canada's Evergreen Playground," a temperate coastal paradise where magnificent coniferous forests and mild, rainy winters produced year-round greenery. Crafted by corporations and tourist bureaus to sell Vancouver and coastal British Columbia to tourists, the term both reflected and

<sup>253</sup> "Phone girls heroines of storm," *Vancouver Province*, 21 January 1935; "Forums in ruins; walls and roof both collapse," *Vancouver Province*, 21 January 1935; "All schools to be closed tomorrow; all B.C. transportation in chaos; Hastings forum roof collapses," *Vancouver Sun*, 21 January 1935; "Our day of humiliation," *Vancouver Province*, 21 January 1935; "Next Sunday is proclaimed day of humiliation," *Vancouver Province*, 2 January 1935.

entrenched the evergreen mentality in the city's collective consciousness. Locals were shocked by the severity of the 21 January 1935 snowstorm, but they were surprised, too, by the smaller snowfalls that descended on their city nearly every winter during the interwar period. As the term Canada's Evergreen Playground implied – and associated promotional materials further enforced – Vancouver was a city devoid of snow. Local reporters continued to emphasize its rarity and supposed unnaturalness, too. “Snow may be all right where it belongs, but it does not belong in Vancouver,” wrote one disgruntled *Sun* reporter on 22 January 1935. As another Boothe cartoon later explained, in Canada's Evergreen Playground, snow and cold temperatures were not “real Vancouver weather.”<sup>254</sup>

While the evergreen mentality remained prominent in Vancouver, many of the ways that residents experienced snow evolved in response to changing local, provincial, national, and global circumstances. The city's steadily increasing automobility was one factor that significantly altered human-snow relationships. Cars, which struggled to climb snow-coated hills and became uncontrollable on icy roadways, were a danger to pedestrians and other motorists alike. Some drivers used tire-chains and winter tires to improve traction, but these accessories could not prevent all accidents. Concerns over serious and fatal incidents led the Board of Works to adopt new policies to protect coasting youths who shared these increasingly busy roadways with motorists. The economic downturn of the Great Depression further altered how many residents experienced inclement winter weather. Poor families and unemployed men had much greater difficulties with snow and cold weather than wealthier residents did. The City of Vancouver and local charities struggled to provide adequate relief opportunities for these men and the thousands of other unemployed men who arrived on the coast during the Depression years. Snow shovelling became one highly sought-after relief opportunity. An arduous form of work, shovelling was an attractive job option for able-bodied men. The hiring of relief shovellers became a common practice for both the City of Vancouver and the BCER.

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<sup>254</sup> “Prairie folk annoyed by snow,” *Vancouver Sun*, 22 January 1935; “You can’t faze us!” *Vancouver Province*, 26 January 1943.

These unemployed men – and they were always men at this time – contributed significantly to snow-clearing operations in the city during these years.

Other aspects of Vancouver's snow-fighting history remained relatively unchanged. The BCER, armed with its fleet of mechanized equipment, remained the city's snow-fighting leader. Average residents, on the other hand, continued to neglect their responsibilities to clear the sidewalks adjoining their properties. Compliance and enforcement of the sidewalk snow-clearing by-law was a source of frustration for conscientious residents and the Board of Works throughout the period. The evergreen mentality continued to influence the Board's decisions. While municipal officials purchased sanding trucks in the late 1920s to improve winter driving conditions on city streets – a pressing issue considering the growing number of cars and the extension of its road network following its amalgamation with Point Grey and South Vancouver in 1929 – they invested few resources in overall snow-clearing initiatives. Outside of these few sanding trucks, municipal officials continued to rely on the strength of their employees and relief shovellers. Officials finally invested in mechanized equipment following the paralyzing and costly Christmas 1937 snowstorm. That storm, and the ensuing debates about the city's snow-clearing strategies, marked the first cracks in the evergreen mentality on the Board and the modernization and mechanization of Vancouver's snow-fighting history.

## 4.1 Canada's Evergreen Playground

Tourism emerged as a significant aspect of British Columbia's economy following the First World War. In 1916, tourism promoters in British Columbia, Washington, and Oregon formed the Pacific Northwest Tourist Association (PNTA). According to historian Michael Dawson, "tourism promoters in Victoria and Vancouver increasingly opted to pool their resource with other communities throughout the Pacific Northwest" to compete with California for tourists. Their advertising campaigns increased annual visitation in the region from 70,000 to 700,000 tourists.<sup>255</sup> The Greater Vancouver Publicity Bureau (GVPB) was another influential promotional organization in the Terminal City during the interwar period. Headed by Charles H. Webster, a former

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<sup>255</sup> Dawson, *Selling British Columbia*, 52.

member of the *World's* advertising department, and supported by civic leaders and other prominent businessmen, the GVPB sought to turn Vancouver into an attractive destination for domestic and American tourists. The GVPB benefitted from close relationships with corporations such as the CPR and CNR and with local businesses which wanted to spur travel to the coast. The GVPB's early advertising campaigns worked well. According to the Bureau's figures, over one million tourists visited Vancouver and southern B.C. in 1927, an increase of more than 700 percent over six years. In 1926, the burgeoning tourism industry generated \$48 million for the British Columbia economy, making it the fourth most important industry in the province.<sup>256</sup>

Vancouver's temperate climate was a key selling point in PNTA and GVPB advertising. One PNTA advertisement encouraged travelers to come "enjoy the temperate climate where the evergreens grow, where Nature has been most lavish in her fits, not only of wonderful scenery, but of great latent wealth."<sup>257</sup> In 1926, the GVPB and its island counterpart, the Victoria and Island Publicity Bureau (VIPB), began promoting the Lower Mainland and southern Vancouver Island as "Canada's Evergreen Playground." The term was a nod to the region's towering coniferous forests and mild climate, both of which produced year-round greenery. The new slogan coincided with the beginning of the GVPB and VIPB's "Prairie Winter Campaign," a promotional blitz intended to draw winter tourist traffic to the Pacific Coast. According to Dawson, the organization distributed material to "practically every English-speaking home" on the Prairies in 1926. The idea of a temperate Evergreen Playground was undoubtedly attractive for those living in Regina or Winnipeg through the frigid and snowy winter months of January and February.<sup>258</sup>

Canada's Evergreen Playground became a common refrain on GVPB, VIPB, CPR, and CNR promotional materials in the years that followed. In the mid-1930s, the Puget Sounders, another regional tourist association, was renamed the Evergreen Playground

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<sup>256</sup> Greater Vancouver Publicity Bureau, "They came – by rail, sail, and paved highway," *Vancouver Province*, 20 September 1927.

<sup>257</sup> Pacific Northwest Tourist Association advertisement, as quoted in Dawson, *Selling British Columbia*, 47.

<sup>258</sup> *Ibid*, 56.

Association, reflecting the increasing adoption of the slogan for the Pacific Northwest, and not just southwestern B.C.<sup>259</sup> The Canadian government got involved in this advertising campaign in 1934 when its Motion Picture Bureau produced *Canada's Evergreen Playground*, a 10-minute silent film intended for international tourists. The film emphasized Vancouver's rapid modernization and industrialization while simultaneously extolling its natural beauty. Shots of beautiful private gardens, Stanley Park, and the North Shore Mountains were prominent in it. In Stanley Park, one found evergreens that were "spreading their boughs to Pacific breezes when the cedars of Lebanon were being hewn for King Solomon's Temple!"<sup>260</sup>

As had been the case before the First World War, these organizations promoted Vancouver's mild winter climate while simultaneously downplaying or ignoring cold, snowy coastal weather. As one 1936 CPR advertisement explained, "tempered by mild ocean breezes and the warm Japanese Current rolling onward from Asia, the climate of Vancouver and Victoria is subject neither to extremes of heat or cold... sometimes roses bloom at Christmas!" According to another pamphlet by the same company, "Vancouver enjoys a mild, temperate climate when many other cities are blanketed with snow."<sup>261</sup> One advertisement in the *Sun* called Vancouver "a mecca for the winter tourist." Why would tourists go to California, it asked, "when they can come here and play golf and ride, and swim, if they are that warm-blooded type that don't mind the cold water." "Come to the coast this winter, where blizzards and zero weather are unknown" encouraged one October advertisement in the *Edmonton Journal*. Newspaper advertisements in other snowy Canadian cities boasted similar claims.<sup>262</sup>

Such claims were true: winters in Vancouver and on the Pacific Coast were warmer and less snowy than other parts of the country. But the term "Canada's Evergreen Playground" evoked a sense of snowlessness that did not match actual winter conditions.

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<sup>259</sup> Ibid, 68.

<sup>260</sup> *Canada's Evergreen Playground*, directed by Raymond S. Peck, (Ottawa: Canadian Government Motion Picture Bureau, 1934); Sheilagh S. Jameson, *W.J. Oliver: Life Through a Master's Lens* (Calgary: Glenbow Museum, 1984), 69.

<sup>261</sup> *Hotel Vancouver* (Canada: Canadian Pacific Railway Company, 1936), 3; *Hotel Vancouver: One of Canada's finest hotels* (Canada: Canadian Pacific Railway Company, c. 1940), 5.

<sup>262</sup> Victoria and Vancouver Publicity Bureaux, "Come to the coast this winter," *Edmonton Journal*, 28 October 1930; "Vancouver a mecca for the winter tourist," *Vancouver Sun*, 5 November 1932.

Between 1919 and 1939, Vancouver received an average of 70 cm of snow and had an average of about 12 snow-covered days each winter. There was considerable variation in these figures of course. No snow fell during the 1925-26 winter, for example. In contrast, more than 146 cm fell during the 1934-35 winter. Generally, snow only remained on the ground for a few days (or less) before it melted or was washed away. The coast's typical snowfall pattern – intermittent waves of snow punctuated by rain, mild temperatures, green grass, and the occasional flower – no doubt contributed to the idea that Vancouver and the surrounding region were truly an evergreen playground. But snow persisted for weeks during certain winters. The 1930s, like the 1910s, were an exceptionally snowy decade in Vancouver. Seven winters had snow-cover for more than 13 days. During the 1936-37 winter, snow coated Vancouver for a record 31 days.<sup>263</sup>

The slogan Canada's Evergreen Playground both reflected and contributed to the entrenchment of the evergreen mentality. Some residents latched onto the phrase, using it to underscore the snowlessness promoted by civic leaders and regional boosters in their advertising materials. The cartoonist Boothe was one notable example. Other residents probably made these connections earlier, too, but they only began to appear in newspapers in the mid-1930s. Many coastal residents still considered snow uncommon, despite their decades of experience with it. As the *Province's* editors explained during a light snowfall in February 1933, snow reminded residents that they "belong[ed] to the family of Our Lady of Snows." Their counterparts at the *Sun* echoed these sentiments following a four-day snowstorm in December 1934: "The people of Vancouver, unlike their prairie brethren, are not snow and ice conscious." Coastal residents also considered snow to be a temporary inconvenience that would leave as promptly as it arrived. "The man who wrote the ode to the 'beautiful snow' never had experience with Vancouver's usual brand, which... changes over night from a mantle of white to a slushy mess," wrote one *Province* reporter in 1921. As that paper's editors neatly summed up in February 1936: "the snow, the snow, the beautiful – O, slush!" These ideas about Vancouver's apparent snowlessness extended to tourists, too – an indication of the effectiveness of

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<sup>263</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, Vancouver, British Columbia, Canada.

regional tourism promotion. “What are you doing with all the snow?” asked an astonished Pat Burns after disembarking from his train from Calgary in snowy Vancouver in January 1932. Expecting nothing worse than “a little warm rain” in the Evergreen Playground, Montrealers Lucien Roy and Arnold Hague were equally stunned when they arrived in Vancouver – without overshoes or overcoats, as they considered neither necessary on the coast – during the 21 January 1935 snowstorm.<sup>264</sup>



**Figure 17: [Hastings Street in a snow storm] 1937 CVA 260-788, Series S1, James Crookall fonds AM640, City of Vancouver Archives.**

Snow continued to elicit mixed feelings from coastal residents. For some, the re-creation of “an eastern winter... and the ringing of sleigh bells” was a pleasant reminder of a past life in Central or Eastern Canada. It was also a beautiful respite from the grey, rainy days of a coastal winter. “What is there in the snow that has such magic as to transform the woods into a fairy country?” asked the *Province*’s Pollough Pogue after walking through a snowy Stanley Park in December 1922. “The snow had given my idyllic bower strange new beauty and character, but its opposite loveliness stimulated the poetic vein in me no less. The place had lost its shady woody quality and was vested and embellished as if

<sup>264</sup> “Editorial,” *Vancouver Province*, 15 February 1933; “Watch your step,” *Vancouver Sun*, 28 December 1934; “First effort at snowfall ends in usual slush,” *Vancouver Province*, 12 January 1921; “Editorial,” *Vancouver Province*, 4 February 1936; “Weather astounds senator P. Burns,” *Vancouver Sun*, 18 January 1932; “Visitors from east were surprised by evergreen playground,” *Vancouver Province*, 21 January 1935.



for a white northern fairy drama or dramatization of saga myth in which elves and giants might appear.” Not all locals shared Pogue’s enthusiasm, though. “The Vancouver Sun is unalterably opposed to any more snow,” wrote that paper’s editors in February 1933. “It urges the businessmen and the public bodies to rise up against it. It must stop. Snow must go.” Or as one UBC student wrote in January 1935, “[Snow] may be simply beautiful, and it may look nice on the trees... but I don’t like it.”<sup>265</sup>

## 4.2 Coastal people do not like the snow

Sentiments may have remained consistent with earlier decades, but many of the ways that coastal residents experienced snow evolved during the interwar period. The rising number of cars in Vancouver was one significant change. By the 1930s, there were more than 40,000 cars in the city.<sup>266</sup> These vehicles slowly edged out and replaced horse-drawn wagons and sleighs. Cars were serious hazards when it snowed. While many motorists kept their vehicles parked during snowstorms, others tried in vain to navigate snowy streets. This was a difficult task in the interwar period, as the city’s limited snow-fighting resources and its prioritization for clearing street crossings and drains and gutters meant that most streets remained impassable following heavy snowfalls. The situation improved on major streets after the Board of Works purchased sanding trucks in 1929 and snowplows in 1938, but driving still remained treacherous, especially on hilly side streets. Even with these improvements, coastal residents still had limited experience driving on snow and ice. Often drivers used the well-cleared BCER tracks to get around – a move that the company strongly discouraged, as cars packed snow into the streetcar tracks and slowed service. “We have done and are doing our utmost to keep in operation the service on which the public is depending and ask automobile drivers to refrain, in its interests, from the use of car tracks and, if possible, car line streets,” pleaded one BCER advertisement in February 1923. Local newspapers urged drivers to be cautious. As the *Sun*’s editors explained in December 1933, it was better to be safe than sorry. “Modern

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<sup>265</sup> “The snow as a playground,” *Vancouver Sun*, 24 January 1917; Pollough Pogue, “A study in white,” *Vancouver Province*, 20 December 1922; “Snow, snow, go away,” *Vancouver Sun*, 18 February 1933; “Treatise on snow,” *Ubysey*, 18 January 1935.

<sup>266</sup> “Motor license plates now pass 100,000 mark,” *Vancouver Province*, 8 June 1930.

automobiles, with patent brakes of many kinds, are wonderful contrivances. But they cannot restore life. They cannot mend broken limbs.”<sup>267</sup>



**Figure 18: [Georgia Street and Granville Street during snow storm] [ca. 1926] CVA 260-1578, Series S1, James Crookall fonds AM640, City of Vancouver Archives.**

The Vancouver Automobile Club (VAC) and local media outlets implored drivers to use tire chains on snowy and icy roads. First patented by New York’s Harry D. Weed and his Weed Chain Tire Grip Company in 1904, tire chains were a practical way for drivers to improve their grip on slippery streets. By the 1920s, local garages were selling tire chains to Vancouver drivers. This product improved driving safety. Local newspapers reported numerous accidents caused by non-chain equipped cars sliding from slippery roadways or from one of Vancouver’s many hilly streets. Chains gave drivers greater traction during these conditions. In December 1927, the *Sun* reported that driving conditions in the city were “impossible without chains.” Five years later, in January 1932, the *Province* reported that chain-equipped drivers had made money by pulling their counterparts up the hilly Dunbar diversion.<sup>268</sup>

<sup>267</sup> The BCER made a similar plea in December 1919. B.C. Electric, “An Appeal to Automobile Drivers,” *Vancouver Sun*, 15 February 1923; “Better safe than sorry,” *Vancouver Sun*, 18 December 1933.

<sup>268</sup> The first newspaper advertisement for tire chains appeared in 1918, by Hill Limited. “First heavy snow since 1929 falls,” *Vancouver Province*, 16 January 1932; “Auto club issues warning on roads; cars should be equipped with chains, report indicates,” *Vancouver Province*, 27 December 1926; Boulton Limited,

Winter tires were another option for motorists. These tires had additional traction that gave drivers greater grip and control on snow and ice. Companies such as Michelin, Goodyear, Dunlop, and Firestone were some of the first brands to advertise their tires in Vancouver. As one Dunlop advertisement explained in January 1929, its winter tires were a better alternative to chains, which required installation and removal between snowfalls and could be noisy on cleared or low-snow streets. Dunlop's tires "grip like a cleated shoe" and guaranteed safe driving conditions on wet, snowy, slushy, or muddy roads. Local garages and automobile accessory stores also marketed these tires to drivers. In the autumn of 1918, for example, Hill Limited, an automobile accessory store near Granville Street bridge, encouraged drivers to come speak with "Tire Bill" for their winter driving needs, including winter tires, chains, and "all winter auto accessories."<sup>269</sup> It is unclear how many drivers owned or used winter tires or chains during the interwar period, but it is clear that some car owners considered winter tires to be an important driving accessory, even on the "snowless" coast.

Even the best prepared or most experienced drivers could not prevent all accidents. Local newspapers reported numerous incidents, some between cars and pedestrians, on snowy streets between 1919 and 1939.<sup>270</sup> Cars were a serious threat to Vancouver's coasting youth. In the 1920s, newspapers and local police warned young people to avoid coasting on Vancouver's increasingly busy streets. During the snows of December 1922, police spent much of their day chasing children from hilly roadways to prevent collisions with cars. "It is a pity to deprive Vancouver children of the unaccustomed pleasure of coasting and sledding," wrote the *Sun*'s editors in December 1927, "but when the pleasure is secured only at a grave danger to children's lives, it is the duty of the authorities to stop it

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"Chains and anti-freeze," *Vancouver Province*, 21 November 1921; "Barrage of snow hits city Sunday," *Sun* 12 December 1927; "1904: Thanks to this inventor, driving in snow and ice became safer," *Transportation History*, 23 August 2019, <https://transportationhistory.org/2019/08/23/1904-thanks-to-this-inventor-driving-in-snow-and-ice-became-safer/>

<sup>269</sup> Hill Limited, "Have your winter tire problems solved," *Vancouver Sun*, 22 September 1918; Hill Limited, "skid-weather is here," *Vancouver Sun*, 20 October 1918; Big Chief Super Service Station, "Keep Jack Frost out," *Vancouver Province*, 26 November 1928; Dunlop Tire & Rubber Goods Company, "Announcing! Dunlop 'winterized' tire," *Vancouver Province*, 29 January 1929; Firestone, "Firestone cord tires," *Vancouver Province*, 29 September 1923.

<sup>270</sup> The *World*, *Sun*, and *Province* all reported numerous accidents during snow events between the 1920s and 1940s.

without delay.” Looking to ensure children could still safely coast on some hilly roadways, in January 1935 City Engineer Charles Brackenridge set aside 3 streets spanning a total of 12 blocks specifically for tobogganing and instructed police officers to re-direct vehicles around these streets – a move that was widely praised by local adults. Brackenridge set aside even more streets for coasting during snowfalls in February 1936 and January 1937. In that latter month, police barricaded 8 streets encompassing 34 blocks. Seeking to avoid streets altogether, some coasters turned the city’s golf courses into sliding locations. The Quilchena golf course in Kerrisdale, with its many rolling hills, became one such popular alternative, attracting hundreds of young people in the mid-1930s.<sup>271</sup>

Snow was a thrill for the city’s young adult population, too. Beginning in the mid-1920s, snowballing became a unique feature of UBC student culture that had an outsized impact on campus life. In the 1920s and 1930s, large snowball fights broke out seemingly whenever snow fell on the campus. Battles between Arts and Science students were particularly intense. Recounting one heated exchange in January 1935, the student newspaper, the *Ubyyssey*, explained how “onlookers watched the battle cautiously from around corners and doorways and the odd pedestrian risked his health and happiness in an attempt to cross the quad.” Snow’s brief presence on campus also facilitated unruly and disruptive behaviours. Some students used the readily available projectiles to shatter windows across campus. One snowball fight in January 1932 resulted in at least 28 broken windows. “We do not want to appear spoil sports,” wrote the *Ubyyssey* editors following another window-breaking snowball spree in January 1933, “but nevertheless we would like to suggest that there is plenty of room for throwing snowballs and having snow fights, without the usual tinkle of broken glass.”<sup>272</sup>

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<sup>271</sup> “For the sleigh riders,” *Vancouver Sun*, 19 January 1935; “Storm slows down traffic,” *Vancouver Sun*, 9 December 1922; “Clear off the snow,” *Vancouver Sun*, 14 December 1927; “No sign of cold wave break yet,” *Vancouver Province*, 18 January 1935; “Seven hurt in sleighing accidents,” *Vancouver Sun*, 10 February 1936; “Where to slide on streets safely,” *Vancouver Sun*, 23 January 1937; Hal Straight, “Sport rays,” *Vancouver Sun*, 14 January 1935.

<sup>272</sup> “Fierce, furious faculty fights,” *Ubyyssey*, 18 January 1935; “‘Gimme a shovel!’ is greeting,” *Ubyyssey*, 29 January 1932; “Snow and sense,” *Ubyyssey*, 24 January 1933.

Snowball-inflicted property damage was costly. Later that February, the newspaper reported that the university's administration had charged students \$76.46 to repair the broken windows. "Whistling snowballs" cost students another \$25 two years later. Other offenders used snowballs to disrupt lectures and speaking events. One of the worst incidents occurred in February 1937, when a group of students snowballed a guest lecture headed by Frank Hall, then president of the Vancouver Stock Exchange. The *Ubysey* described the incident as "a direct attempt at insulting a leading citizen" and condemned the actions of those "warp-minded individuals who would take a delight in any such disgraceful matter." It is unknown what motivated students in each incident, but snowballing was common at other snowier universities, too. At McGill, Queen's, and the University of Toronto, students from opposing faculties engaged in large-scale snowball fights. At McGill, snowballs were used to disrupt outdoor speaking events. Newspapers from these universities reported fewer property-related incidents than UBC, however. Snow's infrequency may have led unruly students to go too far. As one *Ubysey* writer explained in 1935, "snow is unusual in our fair city. When it obligingly covers the campus, we make the most of it in our exuberant and somewhat childish ways."<sup>273</sup>

One of the most unique snow-related developments in interwar Vancouver was the public's heightened concern for local bird populations. While some locals had placed food scraps on their patios or created feeders before the First World War, wider public appeals to "feed the birds" did not begin until 1916. Starting that winter, and gaining greater traction in the following decades, local newspapers, animal welfare organizations, and concerned residents urged their fellow residents to consider the well-being of their feathered friends when it snowed. The Society for the Prevention of Cruelty to Animals (SPCA) implored residents to spread breadcrumbs on top of the snow. The group also offered advice on how to construct feeding stations (suggesting that these be placed out of the reach of marauding cats) and noted what should be included in the feed, with breadcrumbs, seeds, meat and vegetable scraps, and suet being popular choices. These calls to "feed the birds!" were linked to the evergreen mentality, and the idea that coastal

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<sup>273</sup> "It's snow joke! Here are cold figures," *Ubysey*, 14 February 1933; "Chaos result of snowfall," *Ubysey*, 15 January 1935; "Snow-throwing morons," *Ubysey*, 5 February 1937; "Snow," *Ubysey*, 15 January 1935.

birds were ill-equipped to survive snow events on the coast. As naturalist Hamilton M. Laing explained in January 1923, “coastal birds like coastal people do not love snow.” While some birds no doubt suffered and perhaps died during prolonged snow events, local bird populations had survived countless snowstorms on the coast. Birds benefitted from human intervention when it snowed, but they were not as helpless as many residents believed they were.<sup>274</sup>



**Figure 19: [Job. 580: photograph of Vancouver City Hall construction site] [Feb. 1936] CVA 1399-18, Series 3, Townley, Matheson, and Partners fonds AM1399, City of Vancouver Archives.**

Snow continued to create serious hardships for unemployed men and those working in outdoor occupations, too. At the start of the 1920s, the city’s unemployment rate exceeded 20 percent. This figure was likely even higher during the winter months, as men employed in seasonal occupations throughout the province travelled to the coast. All levels of government provided relief opportunities for some of these men through large public works projects such as the Hastings Park golf course, the Stanley Park seawall, and UBC’s Point Grey campus. Cold and snowy weather temporarily halted these relief

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<sup>274</sup> The earliest call to “feed the birds” appeared in January 1916. Between then and 1945, I came across fifty different articles discussing this issue in some form. “Nearly foot of snow fell,” *Vancouver Province*, 9 December 1922; Hamilton M. Liang, “Bird pensioners of the stress time,” *Vancouver Province*, 17 January 1923

projects and other outdoor occupations that employed thousands of working-class men. In February 1923, for example, inclement winter weather put 15,000 men out of work in the province. Six years later, in December 1929, about 1,000 construction workers in the city were put on leave by a 25 cm snowfall.<sup>275</sup>

During these shutdowns, these now-unemployed men turned to local charities and the provincial and municipal governments for part-time work. Often, these men were immediately re-directed to civic or BCER snow-clearing work. Indeed, both the Board of Works and BCER took on increasing numbers of relief or “extra” shovellers in the 1920s. While hundreds of men received temporary employment because of these policies, there were simply not enough jobs for everyone. As the provincial employment bureau’s superintendent, J.H. McVety, explained in December 1927, “for every man the snow is giving employment in Vancouver, ten men are being thrown out of work.” This was a common refrain voiced by civic leaders and charitable organizations throughout the 1920s. Snow hurt more men than it helped. Local charitable organizations encouraged residents to assist those struggling during the winter months. During the snowy December of 1927, Kate Wiltshire, manager of the *Sun*’s Fifty Neediest Fund, implored readers to donate to the families struggling to get by in the weeks leading up to Christmas. “Snow. Ice. Cold, biting winds. Bitter chill coming through the window frames, up through the floor. Children, women, hungry, cold, hopeless – men out hunting work of any description, men ill clad for weather such as this, wading through snow in a despairing hope of finding a job that will pay them a pittance so that they may take home to their families something to stave off perpetual, gnawing hunger.”<sup>276</sup>

Snow and cold weather compounded the difficulties that poor families and unemployed men experienced following the onset of the Depression. The economic downturn that began in late 1929 left thousands without jobs. By October 1930, there were at least

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<sup>275</sup> Francis, *Becoming Vancouver*, 124-126; MacDonald, *Vancouver*, 38-39; “Gale leaves disaster in its icy trail,” *Vancouver Sun*, 15 February 1923; “Heavy snow creates work for Vancouver’s jobless,” *Vancouver Sun*, 11 December 1929.

<sup>276</sup> Re Employment of Single Men, Board of Works, 23 January 1923, 157-B-02, S373, City of Vancouver Archives, Vancouver, British Columbia, Canada; “Reviews Kiwanis club’s relief work,” *Vancouver Province*, 16 December 1927; Kate Wiltshire, “Snow and cold add to sufferings of men, women, and children in need,” *Vancouver Sun*, 12 December 1927; “Winter siege is continued,” *Vancouver Province*, 13 December 1927.

10,000 unemployed men and women in Vancouver. This figure continued to grow throughout the decade, as Vancouver's temperate climate made it "the Mecca for the unemployed."<sup>277</sup> In the early years of the Depression, poor families and unemployed men formed "shantytown" communities along the waterfront. Those living in shantytowns were better prepared for cold, snowy winters than were homeless individuals living on the streets. Shanty houses, boats, and cars converted into houses provided some relief from winter weather; the availability of driftwood from the beaches provided fuel for fires or logs to sell to nearby sawmills for money or food. Cold, snowy winters were still difficult for these individuals and many other poor or unemployed residents that decade.<sup>278</sup>

Although unemployment relief was a provincial responsibility, much of the financial burden fell to municipalities in the early 1930s. The City of Vancouver primarily dispersed relief to its burgeoning unemployed population through large construction and public works projects, as it had in the 1920s. Local charities also contributed aid and relief to struggling men and women. These efforts took on greater seriousness during the winter months. As the city's relief officer, George D. Ireland, explained in December 1929, snowy weather and cold temperatures "intensif[ied] the misery of the unemployed and add[ed] to the difficulties of the situation." Ireland implored residents to hire unemployed men to assist them with their shovelling work or to do other odd jobs around the house. Vancouver's Local Council of Women made similar appeals. "The needs are very urgent," explained the Council's president, Mrs. T.H. Kirk, following a moderate snowfall in November 1930. "Colder weather and snow have increased the need of citizens for help of this kind and it is felt that a great many can find even a few hours shovelling snow, cleaning walks, chopping wood, and removing ashes – all sorts of odd jobs that would mean at least a little ready cash for those most in need." The plight of the

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<sup>277</sup> Francis, *Becoming Vancouver*, 126; Patricia Roy, "Vancouver: 'The Mecca for the unemployed,' 1907-1929," in *Town and City: Aspects of Western Canadian Urban Development*, ed. Alan Artibise (Regina: University of Regina Press, 1981).

<sup>278</sup> Norman Hacking, "Vancouver's Shanty Town," *Vancouver Province*, 10 November 1934; Norman Hacking, "Kitsilano squatters 'sit tight' they've had quit notices before," *Vancouver Province*, 29 October 1936.



poor and unemployed remained a concern for local women's groups and charitable organizations throughout the 1930s.<sup>279</sup>



**Figure 20: “Storm’s devastation at Hastings Park Forum,” *Vancouver Sun*, 21 January 1935.**

The dangers of coastal rain-on-snow events were clearly evident during these decades, even if the issue was not a new one. The meltwater flooding that followed the 21 January 1935 snowstorm had a devastating and lasting effect on the coastal city. The flooding began when heavy rains saturated the deep snowpack. The combination of melting snow, slush, and rainwater clogged drains and gutters throughout the city. Hundreds of stores and basements were flooded. On some streets, pools measured more than 30 cm deep. At UBC, the student newspaper reported flooding in nearly every building on campus. Water threatened the library and “hundreds of books... were saved from destruction by a sweating group of students.” Just off-campus, the melting torrent cut a 76 m wide by 90 m deep chasm in the soft, sandy bluff above Spanish Banks, washing out two bridges on Marine Drive and leaving Lily Lefevre’s house perched precariously on the cliff’s edge.

<sup>279</sup> “Heavy snow creates work for Vancouver’s jobless,” *Vancouver Sun*, 11 December 1929; “No street begging will be necessary, mayor’s assurance,” *Vancouver Sun*, 15 November 1930; “Council of women issues appeal for work of any kind,” *Vancouver Province*, 15 November 1930; “Debate relief coupon system,” *Vancouver Province*, 15 December 1931; “Local council asks voice in unemployed women’s relief,” *Vancouver Sun*, 12 September 1933.

Repairs to the bluff and the damaged road infrastructure took over a year to complete. When finished, the rebuilt bluff included a new drainage system and a 60-plus m spiral, vertical drainage shaft – the second in the world and the first of its kind in Canada. The new shaft used centrifugal force to slow the water before releasing it into the rest of the system. Officials assured residents that it would prevent future flooding incidents.<sup>280</sup>

### 4.3 Largely a piece of extravagance

City Engineer Fellowes and the Board of Works continued to oppose high spending on snow-related expenses following the First World War. In response to a letter from the Milk Drivers & Dairy Employees Union requesting the salting of slippery roads in January 1920, Fellowes explained to his Board colleagues that “it is useless, in my opinion, in our endeavour to keep the tax rate within certain limits, to provide sums of money to take care of these extraordinary conditions and later on to have the same deleted.” To pay for men to wait on standby to salt streets “would be largely a piece of extravagance.” This reluctance to devote greater resources to “extraordinary conditions” was both a product of the evergreen mentality and the desire of civic officials to rein in the city’s budget that year. Choosing not to invest more in ice- and snow-fighting initiatives had serious repercussions, though. In December 1922, heavy rains soaked a city already coated in deep snow. Municipal employees were unable to clear all drains and gutters of slush and snow; those that were cleared were quickly clogged again. The rain-snow mix caused considerable flooding in the downtown and restricted car and foot travel throughout the city. At an emergency town hall meeting, citizens levelled heavy criticism at the City Engineer, arguing that he had not done enough to prevent the damage. Fellowes meekly explained to the audience, “we did not have the funds.”<sup>281</sup>

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<sup>280</sup> Vancouver PMO, BC daily data report for January 1935, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; Dorwin Baird, “Storm sweeps university, campus life paralyzed,” *Ubysey*, 23 January 1935; Sean Kheraj, *Inventing Stanley Park: An Environmental History* (Vancouver: UBC Press, 2013), 178; “Huge tunnel prevents new ravines at UBC,” *Vancouver Province*, 25 April 1936.

<sup>281</sup> Re Sanding streets, First report of the City Engineer, year 1920, 20 January 1920, 157-F-01, COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada; “Are repairing thaw damage,” *Vancouver Province*, 19 December 1922.

A similar event nearly played out later that winter, when a then-record 37 cm snowfall on Valentine's Day 1923 was followed by heavy rain. Only by turning "every man available on to the streets with shovels and brooms" were officials able to prevent a repeat of December. Those efforts cost the city more than \$7,500 and ate into funding slated for sewer and road construction. As Fellowes explained to his Board colleagues in his 20 February report, he had prioritized the major crossings in the area between False Creek and Burrard Inlet, and Howe Street (to the west) and Campbell Avenue (to the east). This encompassed the downtown's business area as well as Chinatown and Japantown. He also had crews inspect and clear catch basins in the downtown. Noting that BCER snowplows pushed snow from the company's tracks onto the roadways used by cars and horse-drawn wagons, Fellowes then instructed his teams to "move this surplus snow off these main thoroughfares... so as to permit of proper traffic movement." Finally, city employees turned their attention to the crossings near schools, hospitals, and other public institutions. The Engineer's plan prioritized the downtown and travel within that space before turning to the outlying districts and public institutions. As he explained to the Board, his plan had "worked fairly satisfactory" that month.<sup>282</sup>

Almost all of that work had been accomplished through manual labour. The City Engineer explained that Vancouver's snow-fighting arsenal consisted of snow shovels and one road grader which could be used to move snow. Vancouver's continued reliance on manual labour paralleled snow-clearing practices in other North American municipalities. While some cities had begun purchasing snowplows and other mechanized snow-fighting equipment in the early to mid-1920s, these machines were supplemental to existing work crews.<sup>283</sup> Vancouver's continued reliance on manual labour was shaped by local circumstances, however. As Fellowes explained to the Board in his February report, "I do not consider for one instant that we are justified in

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<sup>282</sup> "Coast steamers go on rocks in blizzard that whips gulf and demoralizes northwest," *Vancouver Province*, 14 February 1923; "Storm costs city \$8,000," *Vancouver Sun*, 16 February 1923; Re Removal of snow, Fourth report of the City Engineer, year 1923, 20 February 1923, 158-B-01 COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>283</sup> Re Removal of snow, Fourth report of the City Engineer, year 1923, 20 February 1923, 158-B-01 COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada; McKelvey, "Snowstorms and snow-fighting," 14-15; McKelvey, *Snow in America*, 93; Mergen, "Slush Funds," 10; James Powell, "The end of winter driving woes," *Today in Ottawa's History*, 23 July 2016, <https://todayinottawashistory.wordpress.com/tag/snow-plow/>

purchasing any extensive equipment for snow removal as they have in the Middle West and East, as conditions such as we had last week may not occur again for some years.”

The Valentine’s Day snowstorm was remarkable for its snowiness: not since meteorological records began in 1898 had so much snow fallen in such a short amount of time. Fellowes felt that his crews could adequately handle smaller snow events with just shovels until favourable natural conditions returned – they had done so with varying degrees of success since he had become City Engineer in 1911. It was the heavy snow events that he and his employees struggled with. The December 1922 snows and the Valentine’s Day 1923 snowstorm were two instances where crews could not keep up; nature was not a reliable snow-fighting ally. While major snowfalls and meltwater floods disrupted life in Vancouver, Fellowes did not believe that these infrequent and temporary inconveniences justified further investments in new snow-fighting equipment.<sup>284</sup>

Fellowes’ reluctance to invest in further resources also stemmed from his over-reliance on the BCER. That company remained Vancouver’s snow-fighting leader. Equipped with its fleet of snowplows, sweepers, and flangers, the BCER was able to keep lines open during most snowfalls. Always seeking to improve its operations, in 1921 the company installed wire brushes on 35 of its streetcars. Positioned ahead of the front wheels, these brushes helped to clear light snowfalls from the tracks. Adding these brushes expanded the BCER’s snow-clearing capabilities, allowing it to clear more tracks faster. Ironically, this was the same year that the company suffered one of its worst snow-related setbacks. An ankle-deep snowfall in late November caused service disruptions on nearly every streetcar line – a problem that the company attributed to its ongoing work to transition its snow sweepers to right-side driving in preparation for the provincial shift on 1 January 1922. The *Province* described the company as “practically helpless” during the storm. Normal service only resumed later that evening, when the sweepers were put back into operation.<sup>285</sup> The November 1921 issue was an outlier, however. The BCER was able to keep lines running during all other snow events that decade.

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<sup>284</sup> Re Removal of snow, Fourth report of the City Engineer, year 1923, 20 February 1923, 158-B-01 COV-S372, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>285</sup> “Many streetcars were delayed,” *Vancouver Province*, 22 November 1921

If the BCER was the most reliable partner in Vancouver's snow-fighting triumvirate, then the average home- and businessowners were clearly the most unreliable.<sup>286</sup> It is impossible to know how many residents acted on the sidewalk snow-clearing by-law each winter, but it is clear that compliance was low. "If justice is done, 24,382 citizens of Vancouver will be arraigned in the Police Court tomorrow morning for breach of the... by-law," wrote the *Province's* P.W. Luce, in slight exaggeration, following a snowstorm in December 1929. "And I hope the magistrate will have had something for breakfast that disagreed violently with him." This lack of compliance could have been attributed to residents' beliefs that nature would do their work for them. Knowing that rains and warm temperatures often followed snow, many residents likely felt the extra workout was unnecessary. As one *Province* reporter explained in January 1927, rain was "Vancouver's 100 percent street cleaner."<sup>287</sup>

This apathy was further fueled by the city's indifference to its own sidewalk clearing responsibilities. In December 1922, the *Sun* complained that while police had been "kept busy seeing that storekeepers and residents removed the snow from the sidewalk in front of their shops and homes... snow continued to lie in front of the City Hall and Carnegie Library." Five years later, in a letter to the *Sun*, a resident named HB criticized a recent police warning stating that those who did not comply with the by-law would be prosecuted. "From the appearance of the sidewalks, this appears to be nothing but 'bluff,' and is delicious when one looks at the snow and ice all round the City Hall, Carnegie Library, and Courthouse."<sup>288</sup> Calls from civic leaders and police threatening to enforce the by-law were just rhetoric. By the late 1920s, newspapers had yet to report a single prosecution under the existing by-law. "Year after year the same deplorable state of things is permitted to exist after a snowfall," wrote one *Province* reader under the pseudonym CITIZEN in December 1927. "No attempt is made to enforce to the letter the bylaws of our city. We hear of no prosecutions, and during the past 18 years I have not

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<sup>286</sup> By the start of the 1920s, the sidewalk snow-clearing by-law had been amended slightly. Residents in the downtown core had until 10 a.m. to clear snow from their premises while those living in outlying residential districts had 24 hours to do so. "Snow bylaw applies," *Vancouver Sun*, 29 November 1919.

<sup>287</sup> P.W. Luce, "The odd angle – shovelling off the snow," *Vancouver Province*, 13 December 1929; "Rain is rapidly obliterating snow," *Vancouver Province*, 24 January 1927.

<sup>288</sup> "Snowfall is increasing," *Vancouver Sun*, 10 December 1922; HB, "That snow bylaw," *Vancouver Sun*, 12 December 1927.

seen one.” Leaving sidewalks uncleared was a safety concern, though. Slippery sidewalks led to serious injuries during the interwar period.<sup>289</sup>

From the city’s perspective, attempting (and failing) to enforce the sidewalk by-law was the cheapest and easiest option. Both the Board and the BCER faced rising snow-fighting costs in the late 1920s, as they needed to direct greater resources to clearing expansive road and streetcar networks. The BCER, for example, spent \$45,000 clearing the 77 cm of snow that coated Vancouver between December 1927 and January 1928. These costs included shovellers’ wages, salt (more than 100 tons was used that December), and replacement brushes for the snow sweepers. The city, too, incurred heavy expenses that winter. Led by City Engineer Charles Brackenridge, who replaced Fellowes in 1924, the Board of Works had 850 men shovelling snow onto trucks for removal from the downtown. The Board also attempted to create makeshift snow-fighting equipment by placing scrapers on the back of two tractors. As Alderman H.E. Almond explained in mid-December 1927, the Board still hoped that they could “handle the situation as economically as possible in the hope that nature would remove the snow in a few days.” Almond’s remarks underscored the confidence that he and other officials had in nature’s ability to clear snow for them. Unfortunately, his remarks were overly optimistic. By the time rain returned in early January, the Board had spent over \$20,000 on snow-fighting costs – the largest such expenditure in the city’s history.<sup>290</sup>

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<sup>289</sup> CITIZEN, “Police should see that sidewalks are cleared,” *Vancouver Province*, 18 December 1927; “Snowfall is increasing,” *Vancouver Sun*, 10 December 1922; “Five hurt on icy streets,” *Vancouver Sun*, 24 January 1929; “Man slips, injures back,” *Vancouver Province*, 27 December 1933.

<sup>290</sup> “Snow-fighting costs \$45,000,” *Vancouver Sun*, 3 January 1928; “A real down easter,” *Vancouver Sun*, 12 December 1927; “Oust snow in business area,” *Vancouver Sun*, 16 December 1927; “To move snow costs \$36,000,” *Vancouver Sun*, 17 December 1927.



**Figure 21: Dump truck clearing snow, 1928, Acc No. 7951, Vancouver Public Library Special Collections Historical Photographs.**

It seemed that the Board's costs would continue to grow in subsequent years. In October 1928, the residents of Vancouver, South Vancouver, and Point Grey voted to amalgamate the three communities. The new City of Vancouver came into existence on 1 January 1929 and, with a total population of 240,000 people, became the third largest city in Canada. Overnight, Vancouver's road network grew from 563 to 1,022 km.<sup>291</sup> The Board purchased its first sanding trucks in anticipation of this amalgamation. The Board had used sand at times to improve traction on slippery streets and steep hills in the mid-1910s, but it was not a common snow-fighting tool in Vancouver. During those earlier winters, municipal employees had distributed it by hand or shovel from the back of wagons or trucks. Sanding trucks sped up this process and allowed crews to cover more streets in a shorter period of time. These vehicles were the first pieces of modern machinery bought by the Board to specifically deal with inclement winter weather. These purchases came later than other North American municipalities, including less snowy, but larger American cities such as Washington, D.C., which received average snowfalls of 43

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<sup>291</sup> J.S. Williamson, "From bush to metropolis in forty-two years," *Province* 14 October 1928.

cm.<sup>292</sup> While officials remained opposed to large investments in other snow-fighting equipment such as snowplows, the new realities of an enlarged urban road network forced municipal officials to alter their policies and adopt new equipment.

These purchases were further motivated by the city's heightened automobility. There were 36,500 cars in Vancouver in 1929.<sup>293</sup> Cars were becoming the primary mode of private transportation for more and more residents in the interwar period. While some drivers used chains and winter tires to maintain traction, most did not. Even with chains and winter tires, drivers still had difficulty navigating icy and snowy streets. In a January 1929 editorial, the *Sun* implored the Board to "give the motorist a chance." Icy streets had resulted in traffic accidents throughout the city the previous day. Weather forecasts had informed municipal officials that sleet and frost was imminent, and yet major roadways and bridges were not sanded until later that morning. The editors felt that many of that day's traffic accidents could have been avoided with better preparedness. "The motorist always gets the blame for street accidents. It is time for the city to realize that a direct and imperative duty devolves upon the streets department to give the motorist travelling conditions under all circumstances and in all weather." Vancouver's increasing automobility was altering how many residents moved about the city. Snow and ice hampered their abilities to do so. While the Board had not prioritized city streets when horse-drawn wagons and sleighs dominated, the *Sun* believed that municipal snow-clearing policies needed to evolve to reflect the change in local transportation. Sanding trucks were one way that the Board sought to improve travel conditions on streets not serviced or maintained by BCER snow-clearing equipment. The *Sun*'s editors were undoubtedly pleased to see those trucks sanding major roadways when snow began falling the next day.<sup>294</sup>

Sanding trucks were supplemental to existing municipal programs, however. The Board relied primarily on the strength of its employees to clear snow. Both the Board and the BCER increasingly relied on relief shovellers to bolster their snow-fighting efforts during

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<sup>292</sup> Mergen, "Slush Funds," 5.

<sup>293</sup> Macdonald, *Vancouver*, 40.

<sup>294</sup> "Give the motorist a chance," *Vancouver Sun*, 22 January 1929.



the Depression. Relief shovellers came from the city's large poor or unemployed male populations or were men who had been temporarily laid off by inclement winter weather conditions. The municipality and street railway company took on thousands of relief shovellers during these years. To clear the streets in December 1929, for example, the Board dispatched 1,500 men, two-thirds of whom had lost their city-contracted job because of snow. In February 1936, the Board brought on 450 relief men for a one-day shovelling job. Hoping to make extra money during the holidays, hundreds of unemployed men lined up outside the Employment Service of Canada's offices seeking shovelling work in the aftermath of the Christmas 1937 snowstorm. The Board and BCER hired a combined 1,300 individuals between 25 and 27 December. Pay rates varied during the Depression, but relief shovellers were paid between 20 and 53¼ cents per hour between 1933 and 1937.<sup>295</sup>

Shovelling was a difficult way to earn relief. During the cleanup of the 21 January 1935 snowstorm, one *Sun* reporter followed a crew of relief shovellers working for the BCER. He explained that many of these men were ill-clad for the winter work. Few shovellers had gloves, he wrote, and the snow and cold rain "numbed hands until they became mere hunks of meat... Palms covered with water blisters which burned with acid bite." Only by shovelling were the men able to warm themselves enough to stop shivering from the cold. Working for hours at a time, these men burned thousands of calories – possibly more than they would be able to replenish later that day.<sup>296</sup> While shovelling was difficult work, it was an attractive opportunity for physically-fit and able-bodied men. But there were still only so many shovelling jobs available at one time. In many cases, unemployed men waited hours in long lines only to be turned away and told that there was no more work to be found.

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<sup>295</sup> "Heavy snow creates work for Vancouver's jobless," *Vancouver Sun*, 11 December 1929; "8 inches of snow in city," *Vancouver Sun*, 22 February 1936; "Snow means job for hundreds," *Vancouver Sun*, 27 December 1937; "Sleet Sunday," *Vancouver Sun*, 21 January 1933; "Weather jumble for New Year's," *Vancouver Sun*, 31 December 1934; "It's very unusual weather," *Vancouver Province*, 4 February 1937; "Storm costs \$40,000 as 1,400 men, machines battle worst yule tie up," *Vancouver Province*, 27 December 1937.

<sup>296</sup> "How a shovel gang felt in the storm," *Vancouver Sun*, 23 January 1935.

Two episodes from January 1937 highlight the desperation of these men and the struggles they had to obtain this work. On 14 January, a fight broke out at the city's unemployment office when one group of men tried to cut in front of another. As the *Sun* described, "the first comers resented the intrusion with fists... and a general melee followed." Five men were sent to Vancouver's General Hospital with injuries. A similar event played out twelve days later, when 400 men created a "miniature riot" at the city's work yards. Again, the outbreak was sparked by one group of job seekers who, after waking from a short sleep in nearby railway cars, were shocked to see that a long line had formed during the night. Fortunately, no one was seriously injured in that fight. Those two incidents sparked calls to do away with daily employment quotas and to instead hire as many men as possible when it snowed. "Does anyone suppose that there should be any hesitation about providing men with work who are so eager for any kind of employment that they would wait all night in our present filthy weather or even drag themselves from their bed before daybreak on the off chance of getting the opportunity to shovel snow?" asked the *Sun* after the second incident.<sup>297</sup>

Such a thought must have sent a shudder through most readers. Shovelling snow from one's own walkway or sidewalk was an alien concept for most coastal residents during the Depression years. P.W. Luce captured this sentiment in a January 1933 *Province* article as he recounted (with tongue firmly planted in cheek) his own shovelling experience that month. Poorly clad for the cold weather and armed only with his coal shovel (his snow shovel had "long since disappeared") he began work on his sidewalk, getting "high praise for my energy from neighbours who had not cleaned their own sidewalks, and had no intention of doing so." It was strenuous work, made worse by the fact that someone stole his shovel when he stepped inside for a break. "Then came the thaw," he concluded, "and the snow started to move without human agency. Had I been a bit more patient, I could have saved myself much work, plenty of trouble, and a mighty good chance of a cold in the head."<sup>298</sup> Although written satirically, Luce's piece was

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<sup>297</sup> "Five hurt in rush for jobs; snow shovelers fight at city yards," *Vancouver Sun*, 15 January 1937; "400 fight for city snow jobs," *Vancouver Sun*, 27 January 1937; "Fighting for jobs," *Vancouver Sun*, 28 January 1937.

<sup>298</sup> PW Luce, "The odd angle – shovelling the snow," *Vancouver Province*, 23 January 1933.

indicative of other local shovelling experiences. Few residents were equipped to deal with snow, and even fewer actually took the time to clear it. Besides, as Luce pointed out – and as other coastal residents knew – snow would likely be gone soon anyway.

The prolonged snows of January and February 1937 laid bare the folly of relying entirely on nature. More than 120 cm of snow fell during those months. Unlike other winters, snow remained on the ground for a record-breaking 31 days as mean daily temperatures hovered around the freezing point. Letters to local newspapers and the Board of Works show that many residents had ignored the sidewalk by-law that winter. “There are a dozen or more downtown stores where in the past I have spent a fair amount of money which are not going to get even a nickel out of me this year – if ever again,” ranted *Sun* reader JM. “They are the stores whose proprietors have not bothered to keep the sidewalks clear of snow and ice in the past three weeks. Raus mit em [out with them]!” In February, the Board received a letter from Robert Mungall noting, “the carelessness of many householders in not clearing the snow off the sidewalk and urging drastic action.” No drastic action was taken aside from notifying residents about the by-law in local newspapers. While the *Sun* questioned the legality of the by-law, it urged non-compliant residents to act. “Would this not be a good time for our recalcitrant householders who are standing on their dignity and their rights in this matter to come down off their high horse and get out with a shovel and clean off those walks, not as a duty, but as a matter of civic patriotism and common decency?” The *Province* urged those same residents to hire one of the city’s many unemployed men to do the work instead. A fifty-cent or one-dollar payment would lead to a clean sidewalk and “furnish a temporary payroll to many young out of works.” These appeals had little effect on residents. In most areas of the city, sidewalks remained snow-covered until March, when rains and warm temperatures returned.<sup>299</sup>

The Board gave no indication that it would take over municipal sidewalk responsibilities anytime soon. Officials had their own challenges this decade. The prolonged snowfalls

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<sup>299</sup> JM, “Store sidewalks,” *Vancouver Sun*, 21 January 1937; Re snow on the sidewalks, 9 February 1937, 108-B-02, S373, City of Vancouver Archives, Vancouver, British Columbia, Canada; “Clean your sidewalks,” *Vancouver Sun*, 8 February 1937; “Snow remains on sidewalks despite bylaw,” *Vancouver Province*, 8 February 1937.

and heavy snowstorms of the mid-1930s paralyzed the city for days at a time. Even with a bolstered labour force, shovelling alone was insufficient to handle these snows. Sanding trucks helped with lighter snowfalls but did little to improve conditions during heavier ones. “We just haven’t the equipment to keep all the streets in the city clear,” admitted Brackenridge as the snow continued to build in early February 1937. “Prairie and Eastern Canadian cities are used to this sort of thing, and have the equipment to handle it. Vancouver hasn’t even got a snowplow.” In light of this, and hoping to maintain some of the city’s automobility, the City Engineer ordered four road graders to scrape snow from the False Creek bridges. As the *Province* summed up, “Vancouver is finding its snow removal machinery totally inadequate.”<sup>300</sup>

Lacking the equipment to clear heavy snowfalls, local officials instead ordered crews to remove the snow in order to open up more snow-free road space and to lessen flood risks. Following the 21 January 1935 snowstorm, for example, the Board re-directed municipal garbage trucks to dump snow into False Creek – the first time that the city had deposited snow in that waterway since 1916.<sup>301</sup> Municipal officials again directed crews to remove snow to False Creek following the Christmas 1937 snowstorm, which dumped 28 cm on Vancouver. On 27 December, Brackenridge reported that more than 3,000 tons of snow had been dumped into that waterway – so much, in fact, that it was blocked by slushy icebergs. The City Engineer was so concerned that this blockage would result in backed-up sewers and flooding that he hired the Gulf of Georgia Company’s Jack Lowry to clear False Creek with his tugboat, the *Gnome*. “I’ve been called to tow and shunt practically everything that will float,” remarked Lowry, “but never before have I been asked to tow icebergs.” As the *Province* explained to its readers, “for four hours, the *Gnome* bunted and cliced [sic] into the mess, cutting off huge chunks and shunting them out to drift away on the tide.”<sup>302</sup> The sight of icebergs in Burrard Inlet was a first for locals. After all, this was Canada’s ice-free port.

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<sup>300</sup> “Melting snow ties up roads,” *Vancouver Province*, 6 February 1937.

<sup>301</sup> “Vancouver walks to work as snow blocks streets; 17½ inches in 24 hours,” *Vancouver Province*, 21 January 1935; J.A. Coleman, “BCER put up game all night battle,” *Vancouver Province*, 21 January 1935; “Snow is dumped in False Creek,” *Vancouver Province*, 21 January 1935.

<sup>302</sup> “Dumped snow blocks up False Creek,” *Vancouver Province*, 28 December 1937; “Icebergs in Vancouver harbor create rare job,” *Vancouver Province*, 28 December 1937.

The battle against snow was expensive this decade. The Board spent \$21,000, or three times that year's budget allocation, to clean up the 21 January 1935 snowstorm.<sup>303</sup> The Board spent another \$36,000 (seven times what had been budgeted) fighting the long lasting snows of the 1936-37 winter. The City of Vancouver spent another \$61,000 in the days following the Christmas 1937 snowstorm.<sup>304</sup> Major snow-clearing initiatives incurred higher costs than prolonged battles against smaller storms. The Board was able to manage cheaply smaller snow events with sand and shovels. Larger efforts required greater resources: "temps," trucks, and tugboats. These record costs were contrasted by the higher expenditures incurred by Vancouver's snowier counterparts. In the late 1930s, cities such as Rochester and Ottawa spent hundreds of thousands of dollars on large-scale snow-clearing efforts. In larger cities such as Montreal and New York, these expenditures consistently eclipsed \$1 million.<sup>305</sup>

Critics did not believe that Vancouver's growing snow costs was money well-spent, though. "In Vancouver we do not remove snow," penned the *Province's* editors as the snow lingered in January 1937. "We shovel it from one place on the street to another... we let it run through the storm sewers. Ours is probably the more economical way of handling the problem... but a small storm inconveniences us as it would not inconvenience Montreal or Ottawa."<sup>306</sup> Opinions did not improve as more snow fell that winter and driving conditions in the city worsened. Outside of the downtown, where clearing was not a priority, snow exceeded 30 cm on many streets in early February. The *Sun's* editors were particularly critical of the city's snow-fighting efforts in the mid-1930s. "If one person is directly responsible for the lack of enterprise displayed in making Vancouver streets safe for foot and vehicular traffic during this icy weather, that person should be fired from the city service."<sup>307</sup> Similar critiques reappeared in the

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<sup>303</sup> "Sudden storm surprises," *Vancouver Sun*, 3 February 1936.

<sup>304</sup> "Roads withstood weather damage," *Vancouver Province*, 2 March 1937; "Removal of heavy snowfall to cost Vancouver \$15,000; machinery purchased this year by engineering department shows its worth," *Vancouver Province*, 28 December 1938.

<sup>305</sup> McKelvey, "Snowstorms and snow-fighting," 15; McKelvey, *Snow in the Cities*, 110-12; Mergen, "Slush Funds," 11; "Snow removal by contract under study," *Montreal Star*, 19 April 1939; "Discuss policy snow removal," *Ottawa Journal*, 18 January 1939.

<sup>306</sup> "Snow and work," *Vancouver Province*, 13 January 1937.

<sup>307</sup> "5 inch snowfall blankets city; all night job clearing streets," *Vancouver Sun*, 13 January 1937; "No sign of break in cold," *Vancouver Sun*, 18 January 1937; "Abominable streets," *Vancouver Sun*, 21 January

aftermath of the Christmas 1937 snowstorm. For Alderman Fred Crone, that storm highlighted the need for modern equipment. “In my opinion, it would be money well spent if the equipment was idle in the city yards for 51 weeks of the year,” he argued while putting forward a motion to include those costs in the Board of Works’ 1938 budget. “It is admitted that we don’t need it often, nor do we need it for very long, but when we do need it, we need it badly.”<sup>308</sup> While the *Sun*’s editors shared Crone’s sentiments, they believed that city officials needed to confront a more serious issue:

Year after year we persist in greeting snowfall in a bland surprise that such a thing could happen in Vancouver. We persist in perpetuating the stupid delusion that snow is a rarity in this district and forms no part of our regular traffic problem. Thus, when snow comes, we are never ready for it. We refuse to admit that snow is a natural and annual phenomenon in this area.<sup>309</sup>

These remarks pointed to the real issue facing city officials in the mid-1930s: that the evergreen mentality prevented the Board from accepting Vancouver’s snowy reality and proactively addressing the issue. Yes, Vancouver was Canada’s Evergreen Playground, but it was not always green in the winter. Heavy snowfalls and prolonged snow-cover were infrequent, but not unheard of. To be fair to municipal officials, the 21 January 1935 and Christmas 1937 snowstorms were uniquely severe compared to most coastal snow events. But even lighter snow events were disrupting urban life and local travel more and more that decade. The Christmas 1937 snowstorm was the final straw for people like Crone and the *Sun*’s editors, who felt that more could be done to better handle future snowstorms, both big and small. They believed that in order to do so, city officials needed to re-evaluate their own personal views. The city’s over-reliance on the BCER had further compounded the issue. By accepting that snow was an annual challenge to its operations, the BCER had been able to develop a robust and efficient snow-fighting fleet. The Board needed to make similar changes in order to obtain similar results. As the *Sun*’s editors explained in a follow up to their first critique, “the very fact that we refuse to

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1937; “Rain believed ‘not far away’”, *Vancouver Sun*, 4 February 1937; “Melting snow ties up roads,” *Vancouver Province*, 6 February 1937.

<sup>308</sup> “Crone to ask for modern snow control,” *Vancouver Sun*, 27 December 1937.

<sup>309</sup> “The snow problem,” *Vancouver Sun*, 28 December 1937.

admit we have any serious winter problems makes us hesitate to purchase winter equipment.”<sup>310</sup>

Unlike previous storms, the fallout from the Christmas 1937 snowstorm did lead to significant changes. In the lead up to the 1938-39 winter, the Board of Works set aside more money in its snow-clearing budget. The budget for the 1938-39 winter was \$43,000, the most that had ever been set aside for snow-clearing work, but a number that more clearly reflected recent expenditures. In addition to increasing its budget, the Board purchased 12 snowplows and 4 more sanding trucks at a cost of \$13,400.<sup>311</sup> The latter’s purchase brought the total number of sanding trucks to twelve. Compared to other North American municipalities, Vancouver’s acquisition of mechanized snow-fighting equipment was quite late. Many cities had used snowplows since at least the late 1920s; even Washington, D.C. had used snowplows since 1922. Writing about snow-clearing efforts in Washington, Mergen explains that officials there had “responded to winter weather one crisis at a time.”<sup>312</sup> This had been Vancouver’s approach to snow since 1886. The purchasing of mechanized snow-fighting equipment reflected an evolution in the Board’s thinking. Snow may not have fallen as frequently or as heavily as it did in Central or Eastern Canada, but, by the late 1930s, the Board finally accepted that snow was an annual and often disruptive event. The purchasing of sanding trucks in the late 1920s had been the first sign of this changing position. Vancouver’s growing automobility was another factor that contributed to these investments. Cars were a prominent source of transportation for thousands of residents by the late 1930s. The Board needed to be better prepared to deal with snow or risk paralyzing and embarrassing shutdowns that detrimentally impacted people’s abilities to move about the city. New snowplows and an expanded sanding fleet facilitated quicker work over a wider area.

This new equipment was put to the test when snow returned to Vancouver in December 1938. Brackenridge ordered crews to clear snow from major intersections onto trucks for removal from the downtown. He also dispatched his new snowplows and increased

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<sup>310</sup> “Fighting the snow,” *Vancouver Sun*, 30 December 1937.

<sup>311</sup> “Removal of heavy snowfall to cost Vancouver \$15,000; machinery purchased this year by city engineering department shows its worth,” *Vancouver Province*, 28 December 1938.

<sup>312</sup> Mergen, “Slush Funds,” 11.

sanding fleet into the residential areas to improve conditions there. These new machines clearly made an impact on residents who remembered the challenges of the previous December. “Several motorists today congratulated the city staff on the quickest and best job of snow fighting that Vancouver has ever seen,” reported one *Sun* reporter in late December. The editors, who had been so critical the year before, also praised the Board. “The compliments of every thoughtful citizen will go to the engineering and streets department of Vancouver for the efficiency with which the snow problem has been handled during the past few days,” they remarked. “This year the annual flurry has... been taken care of with commendable neatness and despatch... the department has functioned with vigilance, promptitude, and intelligence. Credit is due to the engineering and streets department for their work.”<sup>313</sup>

## 4.4 Conclusion

“Christmas Greetings and every good wish to the Empire from British Columbia,” boomed Dick Claringbull from atop Grouse Mountain. It was just after 6 a.m. on Christmas morning 1934, and the CRCV’s chief announcer stood at the microphone outside the Grouse Mountain Chalet, a popular destination for skiers, hikers, and tourists in the 1930s. He was one of two dozen speakers from throughout the British Commonwealth that were part of the British Broadcasting Corporation’s Christmas Day programme, that was to be capped by King George V’s Christmas Day address. Claringbull was given just one minute and fifteen seconds for his address, one that many locals had woken up early to hear. “I am speaking from the famous Grouse Mountain Chalet, nestled in the mountain snows nearly four thousand feet above Vancouver, Canada’s evergreen playground. It is early morning here... and looking south across the harbor, the twinkling lights of the city stretch as far as the eye can see...” He remarked how a big ocean liner had just sailed into the harbour, “probably the Australian boat, *Aorangi*,” he guessed, a nod to his soon-to-be-speaking counterparts. “Here I am in the midst of winter... surrounded by six feet of snow... while below only a few miles away Vancouver is gay with beautiful roses and green foliage... within a few hours, many

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<sup>313</sup> “Rain and snow,” *Vancouver Sun*, 28 December 1938; “Efficiently handled,” *Vancouver Sun*, 29 December 1938.



down there will be golfing, motoring, playing tennis and... believe it or not... some will even be swimming in the blue waters of the Pacific Ocean.” “Vancouver is happy on this Christmas Day,” he concluded.<sup>314</sup>



**Figure 22: “The Empire hears Vancouver,” *Vancouver Sun*, 26 December 1934.**

And Vancouver was happy that morning. It was Christmas in Canada’s Evergreen Playground, and many locals were looking forward to the very things Claringbull had just boasted about: golf and tennis, walks in winter rose gardens and Stanley Park, and, yes, for the members of the Polar Bear Club, even diving into the cold waters of English Bay. The day took a drastic turn soon after Claringbull left the microphone, however. Clouds rolled in over Vancouver and, ironically, “by 9 a.m. great flakes of snow swirled before a brisk breeze... as far as the eye could see everything was dazzling white.” It was the first white Christmas since 1927, and the second snowiest in the past quarter century, as 10 cm coated the city by nightfall. Canada’s Evergreen Playground had become a winter wonderland. While rain washed away some of the snow that night, more returned on Boxing Day. Another metre fell over the next month, much of that during the destructive 21 January 1935 snowstorm. Golf, tennis, and roses – many of Vancouver’s most boasted about winter features – were hard to come by during that stretch.<sup>315</sup>

<sup>314</sup> A.C. Cummings, “Grouse Chalet joins Christmas Day broadcast,” *Vancouver Province*, 21 December 1934; “Empire broadcast on Christmas to include Grouse Mountain call,” *Vancouver Province*, 24 December 1934; “Vancouver’s message that sped round the world,” *Vancouver Sun*, 26 December 1934.

<sup>315</sup> “Second snowiest winter in 25 years; 1 killed, 18 hurt,” *Vancouver Sun*, 26 December 1934.

By the 1930s, Vancouver had been recast by civic boosters and regional tourist agencies as Canada's Evergreen Playground. Claringbull was telling the world something that coastal residents and many other Canadians already knew: that Vancouver and southwestern British Columbia had the best winter climate in the country. Roses, green grass, and "summer" activities in winter were clear signs of this climatic superiority. But Vancouver was not snowless, as tourism officials wanted other Canadians and international tourists to believe. Snow fell nearly every winter in the Evergreen Playground. It affected all aspects of coastal life in the interwar period. Some of the ways that coastal residents experienced snow evolved in response to societal changes. The city's growing automobility and the onset of the Depression, for example, affected certain snow experiences during the 1920s and 1930s. Snow's impact on coastal life was further enhanced by the dominance of the evergreen mentality. Many residents continued to view snow as unseasonal. These ideas were hard to dislodge. It took municipal officials until the late 1930s to accept that snow was a seasonal occurrence that required significant resources to manage. While coastal residents remained hesitant to deal with snow on their sidewalks, municipal investments in mechanized and motorized snow-clearing equipment revealed the first cracks in the evergreen mentality on the Board.

Vancouver's normal winter greenery was contrasted by the snowy mountains across Burrard Inlet, where Claringbull had given his address. These two spaces became increasingly interconnected during the interwar years, as the next chapter will show. Claringbull's presence atop Grouse in December was not strange – thousands travelled into the mountains every winter weekend by the mid-1930s. These wintry mountains were much more accessible and better travelled in the 1930s than they had been in the 1910s, when the Vancouver artillery reserve had struggled up slick mountain trails to place a field gun on Grouse's summit. Instead of slipping and sliding up the mountain, Claringbull had enjoyed a relaxing (albeit bumpy) car ride to the Chalet. The growing connectedness of these two spaces brought coastal residents into even greater contact with snow during the winter months.

## Section 3

### 5 Where Winter Lingers in the Lap of Spring: 1918-1945

Rudolph Jules Verne loved to ski. Born in Stockholm, Sweden in 1884, “Rudy” grew up where skiing was an efficient mode of winter transportation and an important cultural and recreational activity.<sup>316</sup> This was not the case in Western Canada when Verne arrived in 1909. While other Scandinavian immigrants had introduced the sport to small mountain communities such as Revelstoke, skiing was a relatively unknown activity in the larger cities. Verne sought to change this. Living in Calgary during the 1910s, he helped form the Calgary Ski Club, that city’s first ski organization, and introduced ski jumping events to the Banff and Calgary Winter Carnivals. When Verne moved to Vancouver in 1919, he was struck by the snow-capped mountains to the city’s north, where, as he later wrote, “an extended winter season...lingered in the lap of a late spring.”<sup>317</sup> Skiing was nonexistent on the Pacific Coast at that time. Verne set out in May 1921 to “explore the mountains adjacent to Vancouver in the hopes of discovering any suitable Ski Country.” Travelling to the mountains above North Vancouver, his initial trip was a disappointment, as the terrain was too rugged and steep. Optimistic that he could find better conditions elsewhere, he returned the following day with his friend, a Norwegian skier. Heading to the ferry dock, Verne remembered how their “‘snow skates’ aroused great interest and curiosity... people thought we had just come from Alaska and asked us all kinds of amusing questions.” The two accidentally took the wrong boat and ended up in the small hamlet of West Vancouver, instead of North Vancouver. “It was too late to go back so we decided to proceed,” continued Verne, “and as the mountains looked so much lower than the ones I had previously explored, we left our skis at the wharf, not expecting to find any snow on our trip.”<sup>318</sup>

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<sup>316</sup> For more information on the history of skiing in Scandinavia, see E. John B. Allen, *The Culture and History of Skiing: From Antiquity to World War II* (Boston: University of Massachusetts Press, 2007), chapters 1-3.

<sup>317</sup> Rudy Jules Verne, “Western skiing becomes of age,” *Vancouver Sun*, 8 February 1947; “Who we are,” *Calgary Ski Club*,

[https://www.calgaryskiclub.org/content.aspx?page\\_id=22&club\\_id=93324&module\\_id=347034](https://www.calgaryskiclub.org/content.aspx?page_id=22&club_id=93324&module_id=347034)

<sup>318</sup> This excerpt – re-published in 1928 – can also be found on the Hollyburn Heritage Society’s website: <https://www.hollyburnheritage.ca/history/hollyburn-pacific-ski-club-vancouver-b-c-rudolph-j-verne-1927/>; Rudolph J. Verne, “The Hollyburn Pacific Ski Club of Vancouver, B.C.,” in *Canadian Ski Annual 1926-27* (Montreal: John Lovell & Son, 1927).



**Figure 23: Winter on Hollyburn Mtn. – B.C., [ca. 1945], CVA 298-039, 192-A-05, George Thomson fonds AM1590, City of Vancouver Archives.**

Verne was wrong. Upon reaching 975 m asl, he and his friend found a world shrouded in white. “We had discovered a veritable skier’s paradise, eclipsing anything I’d ever seen or mentioned,” he recalled. “We were on an extensive high level plateau, a heavy blanket of snow covering all underbrush to a depth of eight feet [2.4 m], offering the most perfect skiing imaginable.”<sup>319</sup> The plateau, later named Hollyburn Ridge, offered excellent terrain for cross-country skiing and ski jumping, the dominant ski activities at the time. Surrounded by Strachan, Black, and Hollyburn mountains, the region also offered more difficult terrain for more adventurous and advanced skiers. By 1925, Verne and other Scandinavian skiers had established a ski camp near their newfound paradise. A new ski club, the Hollyburn Pacific Ski Club (HPSC) was formed shortly thereafter.<sup>320</sup> Similar developments occurred on Grouse, and later on Mount Seymour. Skiing – including ski jumping, cross-country skiing, and alpine or downhill skiing – quickly became one of Vancouver’s most popular winter recreation activities. By the Second World War, what had started as a little-known recreation activity confined to a few dozen enthusiasts had

<sup>319</sup> Verne, “The Hollyburn Pacific Ski Club of Vancouver, B.C.”

<sup>320</sup> Ibid.

evolved into a sport that boasted thousands of practitioners spread out across the North Shore Mountains.

Snow facilitated even stronger connections between Vancouver and the North Shore Mountains in the interwar period. The deep snowpack and extended snow coverage in the mountains created the ideal conditions for skiing and ski culture to take root and thrive there. Skiing became the primary attraction for coastal residents to travel to the mountains during the winter months. Skiing, and the creation of ski villages on Hollyburn, Grouse, and Seymour increasingly connected the southern Coast Mountains with the coastal metropolis. Thousands of coastal dwellers began staying in the mountains for extended periods during the interwar period. While skiing was primarily practiced by white, middle-class individuals, the sport was also popular with members of the city's Japanese community. Through skiing, Japanese Canadians interacted with their white counterparts in ways they could not on the coast. Discriminatory and racist attitudes were not completely erased on the mountains, though, as this chapter will show.

While skiers often enjoyed exceptional snow conditions on the North Shore Mountains, these spaces were not always as snowy and the ski seasons not as long as they hoped. Some of these snow challenges can be attributed to the PDO's shift to a positive cycle in 1925 and strong positive ENSO events during the interwar years. Some of these winters were characterized by warmer temperatures and lower-than-average precipitation totals. Seasonal variability was a frustrating, albeit accepted part of the sport. Skiers could not control the weather, but they did make modifications to the mountain landscape that better reflected the types of terrain that they preferred. But skiers were also critical of other, more dramatic alterations to the mountain landscapes, especially when they felt that those changes would negatively impact their sport. While skiers removed certain natural features to enhance the ski terrain, they steadfastly opposed large-scale clear-cutting operations, as they argued that those actions would destroy the beautiful mountain scenery and affect snow retention on the slopes.

While more and more coastal residents sought out snow in the North Shore Mountains, the movement of snowmelt to the coast remained a key priority for civic leaders and

private industries. Beginning in the 1920s, the BCER and the City of Vancouver undertook research to learn more about mountain snowpack and to better forecast and manage snowmelt run-off for hydroelectric production and freshwater storage. These studies, called snow surveys, were some of the first undertaken in Canada. City of Vancouver and BCER engineers hoped that applying this modern, scientific practice would allow them to better manage and control this valuable resource. The research conducted by William B. Taylor, the City of Vancouver and BCER's first snow surveyor, had significant impacts on water preservation and ongoing timber debates in the Capilano watershed during the 1920s. While snow surveys were initially conducted by individual organizations, this work was consolidated into a single program by the WRB in 1935. The creation of this program, and its partnership with the City of Vancouver and BCER, reflected the growing importance of snow science research in western North America and the heightened value that engineers attributed to snow as a reservoir of freshwater and "white coal."

The dangers associated with mountainous winter landscapes became increasingly apparent as large numbers of people travelled to the North Shore Mountains for research or recreational purposes. The snowy, wintry landscapes that residents found in the mountains were dramatically different from the temperate coastal environment to which they were accustomed. Avalanches and rugged mountain terrain were deadly for some hikers. Between the two World Wars, local mountaineering clubs, which had intimate knowledge of these areas, became the go-to search and rescue personnel when hikers became lost or injured. These safety concerns extended to skiers, too. Even the most experienced skiers risked serious injuries sliding down slopes littered with stumps, roots, and rocks. The relative inaccessibility of the North Shore ski areas made treatment and transport from the mountains difficult. Volunteer organizations such as the First Aid Ski Patrol (FASP) were formed to provide medical aid and transportation off the mountains. The formation of groups such as FASP speaks to the ways that experienced mountain-goers sought to help and protect the thousands of hikers and skiers who traveled to the North Shore Mountains during this period.

## 5.1 The Resourceful Snow

The reliability of Vancouver's freshwater supply came into question during the First World War. The water shortages of 1915 had been the first cause for concern. The second came during the summer of 1918. A low mountain snowpack and extremely dry weather that summer created drought-like conditions and put a strain on Vancouver's water supplies. Neither the Capilano nor Seymour intakes were able to provide enough water to residents during periods of maximum consumption. This led to considerable depletion at the Little Mountain Reservoir. Worried about a possible water shortage, City Engineer Fellowes implemented water-use restrictions that lasted into mid-autumn. In the wake of the 1918 water crisis, officials called for greater research into the city's water resources. In his February 1919 report to Vancouver's Water Committee, Fellowes explained that the city "should obtain all the data essential for the purpose of creating a reserve." This included gathering snowfall and rainfall data in the North Shore Mountains. As the City's Engineer stressed to his colleagues, "this information should be obtained so that, in determining our runoff, we may have complete information bearing on these very important features."<sup>321</sup>

The City of Vancouver's decision to conduct snow and run-off research, although inspired by local circumstances, reflected a growing interest in the snow sciences in western North America. The origin for much of this work is credited to James E. Church, a classics professor at the University of Nevada. An avid hiker and meteorological enthusiast, Church and his colleagues constructed an observatory on Mount Rose, located at the northern boundary of Lake Tahoe's watershed in the Sierra Nevada Mountains in 1905 to study local weather conditions. Conflict over water rights on Lake Tahoe inspired Church to explore the relationship between snow and run-off. In the following years, he developed the foundations for modern snow survey work. This included the Mount Rose

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<sup>321</sup> "WT" (most likely William Taylor) recorded a total snowpack of 2½ feet (76 cm) on 3 March 1918. BCMC records of snow and temperature, Grouse Cabin Miscellaneous, folder 6, Series 008 – General Cabin Records 1911-2003, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; "Steps being taken to provide water supply for 250,000 population," *Vancouver Sun*, 10 March 1919; Re water supply on Seymour creek, Second report of the water committee, year 1919, 4 February 1919, 133-D-03, COV-S375, City of Vancouver Archives, Vancouver, British Columbia, Canada.

snow sampler, a stainless-steel tube used to extract snow cores; the creation of snow courses, fixed surveying locations that included multiple and evenly spaced sampling points; and the weighing of snow cores to determine snow density and snow-water equivalent, or the amount of water stored in the snow. Church's work on this latter point challenged conventional knowledge, as many scientists believed that ten inches (25.4 cm) of snow equaled 1 inch (2.54 cm) of rain. But his research showed that snow density and water-equivalency varied widely, especially between new and old snow.<sup>322</sup>

Church published his findings in scientific and meteorological journals across North America. It is difficult, however, to know how influential his work was on other snow survey programs in the 1910s. What we do know is that other private and public organizations in both the United States and Canada were directing more resources toward snow and snowmelt run-off research this decade. In 1915, for example, the U.S. Bureau of Reclamation began a snow survey program at Bumping Lake in Washington State. In June of that same year, flooding along Alberta's Bow River ruined hundreds of homes in low-lying Calgary communities and destroyed the city's bridges. The 1915 flood was a catalyst for run-off and flood forecasting on the Bow River. The Meteorological Service of Canada began a snow survey program near Lake Louise, at the Bow headwaters, the following year to bolster its flood warning system. While it is unclear whether Fellowes was in contact with any of these organizations prior to 1919, he had communicated with C.E. Webb, the Dominion Water & Power Bureau's district chief engineer, who may have had knowledge of these programs and snow survey work more generally.<sup>323</sup>

Fellowes hired William B. Taylor to collect the City of Vancouver's snow data in March 1919. "Bill" Taylor was possibly the most qualified person in British Columbia for this job. A member of the BCMC since 1910, Taylor had extensive climbing and hiking

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<sup>322</sup> Mergen, "Seeking Snow," 78-80; Evelyn Stitt Pickett, "James Edward Church, Jr., and the development of snow surveying for runoff forecasting," *Yearbook of the Association of Pacific Coast Geographers* 57 (1995), 62-67.

<sup>323</sup> Christopher Armstrong et al., *The River Returns: An Environmental History of the Bow* (Kingston: McGill-Queen's University Press, 2009), 252; Frederick L. Fellowes, *Diary*, Engineering Correspondence, 1919, File 19A, Reel 026, S547, City of Vancouver Archives, Vancouver, British Columbia, Canada; "Centre Street Bridge Collapses," *Calgary Flood Story*, 2014, <https://floodstory.com/floods/1915-flood>; Canada, *Annual Report of the Dominion Water Power Branch for the Fiscal Year Ending March 31 1921* (Ottawa: F.A. Acland, 1922), 26.



experience in the North Shore Mountains. He knew the mountain terrain better than all but a few of his more experienced colleagues. A natural history enthusiast, Taylor had helped form the BCMC's Botanical Section and was a founding member of the Vancouver Natural History Society. He was also familiar with snow research, having been part of the BCMC's Meteorological Section, a small sub-group that began recording snow-depth measurements on Grouse Mountain in November 1911. While the earliest snow records have been torn from the BCMC logbook, it is clear that Taylor was part of this group by at least 1917.<sup>324</sup>

As the assistant supervisor of watersheds, Taylor frequently travelled to the Capilano and Seymour intakes and throughout the North Shore Mountains to collect rain and snow data and to monitor logging activities near the watersheds. Snow sampling sites included Grouse Mountain, Dam Mountain, Hollyburn Ridge, Burwell Lake, Orchid Creek, and Salter's Creek. Taylor took samples at least once per month, although some sites – such as Grouse – were sampled more frequently. The more remote Orchid and Salter's Creeks appear to have been infrequently sampled. Crucially, Taylor appears to have had some knowledge of Church's snow survey work. When taking snow measurements, for example, Taylor melted snow from the snow gauge in order to determine the snow water equivalent. Having only recorded snow-depths for the BCMC, Taylor – or possibly Fellowes – must have known that snow water equivalent was a better indicator of possible run-off conditions than snow-depth. Taylor may have learned this information during his time as BCMC Librarian, as the club gathered a wide variety of literature related to mountaineering and natural history. That said, there is no indication that Taylor used a Mount Rose snow sampler or conducted his samples along snow courses, as Church recommended.<sup>325</sup>

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<sup>324</sup> BCMC records of snow and temperature, Grouse Cabin Miscellaneous, folder 6, Series 008 – General Cabin Records 1911-2003, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; “Obituary – William Taylor,” August 1959, *B.C. Mountaineer*, volume 37, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.

<sup>325</sup> W. Taylor, *Diary of 1922*, Series MS-2625, William B. Taylor fonds, B.C. Archives, Victoria, British Columbia, Canada.

Taylor faced long days and challenging conditions to collect this snow data. When heading to the Seymour intake, for example, Taylor departed Vancouver via the North Vancouver ferry, then walked or rode the BCER streetcar to the Lynn Valley before hiking the final kilometres to the intake. If heading to Burwell Lake, Taylor pressed on along the Seymour River Valley before ascending 1,000 m to the lake. His 1922 diary points to some of the challenges that he faced during his work. During the winter of 1922, he recorded multiple instances in which he was unable to reach the Grouse peak or Burwell Lake due to snow and ice conditions. During a March trip to Orchid and Salter's Creeks, Taylor had to shovel through 3 m of snow just to access the cabins.<sup>326</sup>

Vancouver area residents learned more about Taylor and the city's snow research following a February 1922 profile on him in the *Province*. "There is one civic employee above all others who deserves a kindly thought each time a water tap is turned on in Vancouver households," wrote reporter Will A. Barnes. "Without his records City Hall waterworks officials would never be able to assure a sufficient water supply through dry spells." Barnes was clearly struck by his subject, a man who preferred hot lemonade to alcohol, coffee, or tea and who scaled snowy peaks wearing little more than a spring-time hiking outfit. "In his way Taylor is a genius," continued Barnes. "A veritable encyclopaedia of woods lore and trail education, a botanist of the first water, a lay-engineer whose practical vision had played an important part in the greater waterworks scheme under consideration, and a perfect physical specimen, iron-hewed and muscled from the physical benefits of his occupation."<sup>327</sup> "Was recognized twice by strangers due to province article," wrote Taylor in his diary on 19 February, the day after the piece (with an accompanying photograph of him) was published.<sup>328</sup> Local newspapers clearly thought Taylor's work was of interest to residents, as they frequently published his snow findings in the ensuing years.

Taylor's snow research factored into ongoing debates regarding logging in the North Shore Mountains. The relationship between forests, snow, and run-off had been of

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<sup>326</sup> Ibid.

<sup>327</sup> Will A. Barnes, "City's snow observer is a wonder on the trail," *Vancouver Province*, 18 February 1922.

<sup>328</sup> Ibid.

interest to provincial and municipal engineers since before the First World War. “The importance of retaining the timber of this [Capilano] watershed for all time cannot be too forcibly emphasized,” wrote WRB engineer E.A. Jamieson in 1913. “It is absolutely necessary in order to regulate the run-off of the waters.” In the spring of 1922, Taylor conducted experiments comparing the rate of snowmelt in cleared versus forested regions. Between 26 March and 20 June, Taylor recorded snow-depth, density, and snowmelt progression at five points in both watersheds including Seymour Falls, Crown Creek, and Loch Lomond. His research found that melting and run-off occurred much slower in forested areas than in cleared or burned ones and noted that trees played a vital role in snow conservation in the mountainous watersheds. This study bolstered the City of Vancouver’s position against logging activities in the Capilano and Seymour watersheds.<sup>329</sup>

Taylor’s monthly snow reports provided local officials with important insight into possible run-off and water conditions in the watersheds, especially during Vancouver’s normally dry summer months. In his April and May 1926 reports, for example, Taylor predicted a grim summer, as he recorded below average readings at all sampling locations. “The forecast for the snow run-off for the rest of the summer is a lot more serious than it was on the first of April,” he wrote in his May report. “The snow cover on May 1 is fully 54 [percent] if not more below average. If the month of May creates any records in temperatures and snow shrinkage, there will be no snow left on the watersheds below 4000 feet on June 1.” Taylor did not know it at the time, but he was measuring the local effects of regional climate change. In 1925, the PDO shifted from a negative cycle to a positive one. This was accompanied by a very strong positive ENSO event. In fact, the 1925-26 El Niño was one of the most extreme ENSO events of the twentieth century. The new climate conditions led to below-average snow conditions in the southern Coast Mountains. Unfortunately for Taylor’s superiors, his forecast was right. In mid-July, the *Sun* reported that “the North Shore creeks have never before been known to reach such low stages so early in the summer.” Vancouver, Point Grey, South Vancouver, and

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<sup>329</sup> *Report of the Water Rights Branch of the Department of Lands for the year ending 31 December 1913* (Victoria: B.C. Legislative Assembly, 1914), 43; “Watershed logging is danger to water supply,” *Vancouver Province*, 3 January 1923.

Burnaby all implemented sprinkling regulations that month, restricting outdoor water use to just two hours per day.<sup>330</sup>

Taylor's 1926 reports hastened construction on the Palisade Lake, Burwell Lake, and Loch Lomond reservoirs – three high-mountain lakes that would be used to bolster Vancouver's existing water supply. This was one of the first major projects undertaken by the recently formed Greater Vancouver Water District (GVWD), an organization created by the municipalities of Vancouver, Point Grey, and South Vancouver to regulate and supply freshwater to the region's inhabitants. Led by former WRB comptroller Ernest A. Cleveland, the GVWD sought to, as Kuhlberg explains, "permanently terminate the natural ebb and flow of the local water courses" and develop a more consistent and reliable freshwater system. Cleveland was instrumental in setting out the GVWD's goals. "What he was proposing, then, was their transformation from 'natural' seasonal waterways into massive reservoirs that could be drained when it suited the ever-growing number of Vancouverites," continued Kuhlberg.<sup>331</sup>

These plans – designed to better store rainfall and snowmelt for the urban population – required massive modifications to the mountain landscapes. The Seymour Falls dam, another of the GVWD's first projects, destroyed the famous falls in order to create a 131 m wide by 9 m high dam. The damming and tapping of Burwell, Palisade, and Loch Lomond was another important part of this plan. In his 1922 report to then Minister of Lands Thomas Dufferin "Duff" Pattullo, Cleveland stressed that utilizing the North Shore Mountains' "natural storage-basins" was vital for regulating streamflow and storing rain and snowmelt.<sup>332</sup> Following the recommendations set out by WRB engineers a decade

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<sup>330</sup> Monthly report of snow depths and precipitation for month of March, 1926, for Seymour Valley watershed, W. Taylor, Snow and Rain Reports 1927-35, folder 8, box 64-C-6, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada; Monthly report of snow depths and precipitation for the month of April, 1926, for Seymour Valley watershed, W. Taylor, Snow and Rain Reports 1927-35, folder 8, box 64-C-6, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada; "Watershed logging is danger to water supply," *Vancouver Province*, 3 January 1923; Ken Takahashi and Alejandra G. Martínez, "The very strong coastal El Niño in the far-eastern Pacific," *Climate Dynamics* 52 (2019): 7389-7415; "Sprinkling is curtailed as supply drops," *Vancouver Sun*, 14 July 1926.

<sup>331</sup> Kuhlberg, "An Eden that is practically uninhabited by humans," 24.

<sup>332</sup> E.A. Cleveland, *Report to the Honourable T.D. Pattullo, Minister of Lands, on the Question of Joint Control of Water Supply to the Cities and Municipalities on Burrard Inlet* (Victoria: B.C. Legislative Assembly, 1922), 29.

earlier, in 1926 Cleveland instructed teams to build small dams on Burwell, Palisade, and Loch Lomond and to tap them with tunnels in order to discharge this water into the larger Capilano and Seymour systems. Tapping Burwell Lake, for example, involved digging a tunnel 198 m through mountainous slopes to a point 39.6 m below the lake's surface.<sup>333</sup> Loch Lomond was tapped at the beginning of that August, making more than 2 million litres of water available to coastal communities. GVWD engineers breached Burwell Lake later that month, releasing its water into the depleted Seymour River system. The break-through of these two lakes led to the end of water use regulations in Point Grey, South Vancouver, and Vancouver. By September, GVWD officials had drawn Burwell Lake's water level from its historic maximum depth of 40.5 m to just 7.6 m in order to offset that summer's low water levels.<sup>334</sup>

Snow survey research slowed in subsequent years. Taylor was released during an employee shuffle between the City of Vancouver and the GVWD in 1927. Snowpack measurements, which had been taken consistently during Taylor's tenure, became sporadic. Sampling dates changed from year to year, as did the number of samples taken. In 1929, for example, the GVWD took snow samples at the three high-mountain reservoirs in March, April, May, June, and July. In 1931, this only happened in January and May. The onset of the Depression may have impacted the GVWD's ability to pay for consistent sampling work. This would seem to be a worthwhile expenditure, however, given snowmelt's importance to the region's water supply. There was also a shift in snow sampling procedures during this period. Between 1928 and 1933, GVWD records only indicate snow-depth, and not snow water equivalent.<sup>335</sup>

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<sup>333</sup> Kuhlberg, "'An Eden that is practically uninhabited by humans,'" 25; "Tunnel to lake will be built," *Vancouver Province*, 6 April 1926.

<sup>334</sup> Kuhlberg, "'An Eden that is practically uninhabited by humans,'" 25; "Water at low record," *Vancouver Sun*, 20 July 1926; "Big blast blows out lake water," *Vancouver Province*, 18 August 1926; Monthly report of snow depths and precipitation for the month of April, 1926, for Seymour Valley watershed, W. Taylor, Snow and Rain Reports 1927-35, folder 8, box 64-C-6, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada; "Loch Lomond water," *Vancouver Province*, 2 August 1926.

<sup>335</sup> Greater Vancouver Water District snow records at storage lakes, 1927-1933, Snow & rain reports, 1927-35, file 8, box 64-C-6, AM 1257, City of Vancouver Archives, Vancouver, British Columbia, Canada.

Taylor's services remained useful for the BCER and Dominion Water & Power Bureau, however. In the late 1920s, both of those organizations had begun their own limited snow survey projects in the North Shore Mountains. In a 1932 letter to Church, BCER engineer E.E. Carpenter wrote that Taylor – who was “something of a scientist” – helped that company secure snow-depth measurements on the Capilano River.<sup>336</sup> Indeed, the BCER was one of a handful of private industries in the province that increasingly used this research to forecast run-off conditions at their hydroelectric generating facilities. Other companies included energy-intensive pulp and paper industries, such as the Powell River Company and Pacific Mills Limited, and power generating companies such as the West Kootenay Power & Light Company and the East Kootenay Power Company.<sup>337</sup> In the late 1920s, and especially following the onset of the Depression, these companies realized that white coal was too valuable of a resource to be left unstudied. Engineers with companies such as the BCER, as well as the GVWD, believed that snow and snowmelt run-off could be best understood through scientific methods. As historian Stephen Bocking has argued, in the twentieth century, scientists and engineers sought to transform nature into natural resources: “units of production that could be evaluated and standardized for maximum efficiency. ... By defining nature in these terms, science promised the predictability that resource industries demanded, aiding the expansion of capitalism into local environments across the country.”<sup>338</sup> Knowing what to expect from the annual run-off gave engineers the necessary information to efficiently use and preserve their water resources.

In the mid-1930s, snow survey research, which had been conducted independently by specific organizations, was consolidated into a single program run by the WRB. The government's interest in snow survey research was prompted by three factors. The first was the election of Pattullo's Liberal party in 1933. Elected in the midst of the

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<sup>336</sup> According to BCER engineer E.E. Carpenter, the company had one survey site on the Capilano River in 1932. Letter from E.E. Carpenter to James E. Church, 17 March 1932, Questionnaire Responses: Canada, 1932, Folder 15, Box 48, NC96\_14\_47, James Edward Church Papers, Special Collections, University of Nevada, Reno, Nevada, The United States of America.

<sup>337</sup> James E. Church, “On the Hydrology of Snow,” in *Annual Reports of the Permanent Research Committees, Transactions, American Geophysical Union*, 14 no. 1 (1933), 338-345.

<sup>338</sup> Stephen Bocking, “Landscapes of Science in Canada: Modernity and Disruption,” in *Made Modern: Science and Technology in Canada*, ed. Edward Jones-Imhotep and Tina Adcock (Vancouver: UBC Press, 2018), 262.

Depression, Pattullo believed that the state needed to be more involved in the province's economic and social spheres in order to alleviate the problems caused by the Depression.<sup>339</sup> The second was British Columbia's inclusion on the American Geophysical Union's Permanent Research Committee on Snow (PRCS). Founded in 1931 by a reinvigorated Church, the PRCS sought to standardize methods and promote cooperative snow science research across North America. Major J.C. MacDonald, WRB comptroller, joined in 1933.<sup>340</sup> Finally, and closely linked with the previous point, was a renewed interest in snow science in the American West, particularly around the Columbia River. Part of this renewed interest was driven by years of drought in the western United States. It was also sparked by President Franklin D. Roosevelt's New Deal initiative, which called for the construction of two mega-dams on the Columbia. Construction of the Grand Coulee and Bonneville dams necessitated greater knowledge about snowmelt run-off along the Columbia and its tributaries. British Columbia's involvement with the PRCS was essential, as it contained sections of the Upper Columbia River and major tributaries such as the Kootenay and Okanagan rivers. As MacDonald indicated at his first PRCS meeting, he hoped to develop a system that would contribute to these American projects and to the province's own power and irrigation interests.<sup>341</sup>

The WRB's Richard Charles Farrow, the man tasked with implementing the snow survey program, established the province's first ten snow courses during the summer and autumn of 1934. While eight of these were placed in the Columbia, Kootenay, and Okanagan watersheds, two were located in the mountains surrounding the BCER's Stave Falls hydroelectric generating facility. These two sites reflected the WRB's desires to advance snowmelt run-off research for domestic power generation. This information was of great interest to the BCER, which had completed the Ruskin Dam and power plant below the Stave Falls plant in 1930. The expanded hydroelectric facility generated 75,000 horsepower. As the *Province* explained in November 1930, the Ruskin facility "might

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<sup>339</sup> Robin Fisher, *Duff Pattullo of British Columbia* (Toronto: University of Toronto Press, 1991), 248.

<sup>340</sup> "Report of the Committee on Snow 1933-34," in *Annual Reports of Permanent Research Committees Transactions, American Geophysical Union*, 15 no. 2 (1934), 263-78; B Mergen, 1993, "Snow Sciences in North America: the Eastern and Western Snow Conferences in the Context of Environmental History," in *Western Snow Conference*, Quebec City, <https://westernsnowconference.org/sites/westernsnowconference.org/PDFs/1993Mergen.pdf>

<sup>341</sup> "Report of the Committee on Snow 1933-34."

well take care of the light and power needs of a city of 60,000 people.”<sup>342</sup> Farrow expanded his snow course network in subsequent years. In 1936, he placed a snow course on Grouse Mountain to assist the GVWD with its snow survey work, which had been neglected in previous years. By the mid-1930s, Vancouver’s population had eclipsed 250,000 people, while the population of the entire Metro Vancouver area, encompassing Vancouver and its neighbouring municipalities, neared 400,000 people. The snow course’s placement in the Capilano watershed, rather than the Seymour watershed, was likely due to the fact that the latter had greater storage capabilities, thanks to the Loch Lomond and Burwell Lake reservoirs and Seymour Falls Dam. At this time, the Capilano had only its small reservoir and additional storage at Palisade Lake.<sup>343</sup>

The WRB and partnering organizations such as the GVWD and BCER struggled to develop a reliable system during the program’s early years. In the late 1930s, snow scientists considered forecasts within 10 percent of actual conditions to be fairly accurate (although more established snow survey programs could achieve results closer to 5 percent). Many WRB forecasts were well above that desired range. In 1936, run-off forecasts at Stave Falls were off by 36 percent.<sup>344</sup> This inaccuracy hampered the BCER’s ability to effectively manage its water resources. There were a number of factors that impacted these forecasts. Winter accessibility, for example, limited snow course placement. Writing about the coastal region, Farrow explained that “the extreme ruggedness and heavy growth... make it very difficult to locate snow courses where wanted.”<sup>345</sup> Secondly, the Capilano and Stave watersheds had limited snow course coverage. In the late 1930s, Farrow and the BCER relied on three snow course locations to forecast run-off conditions in a watershed encompassing over 1,000 km<sup>2</sup>. On the Capilano, the WRB and GVWD had one snow course for a 195 km<sup>2</sup> region.<sup>346</sup>

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<sup>342</sup> *Water Powers of British Columbia* (Vancouver: Water Rights Branch, Department of Lands, 1954), 38-39.

<sup>343</sup> *Summary of Snow Course Measurements in B.C., 1935-45* (Victoria: Water Rights Branch, 1945), 4.

<sup>344</sup> R.C. Farrow, “Snow Surveys: A new method for forecasting run-off,” *The Engineering Journal* 21 no. 10 (October 1938), 455.

<sup>345</sup> R.C. Farrow, “British Columbia Snow-Surveys: Report on snow surveys and actual runoff in the Upper Columbia, Fraser, and Powell River basins for 1939,” in *Reports and papers, snow-survey conference – Stanford university, 1940, Transactions, American Geophysical Union*, 21 no. 1 (1940) 105-08.

<sup>346</sup> *Stave River Watershed Action Plan*, 7.



Thirdly, Farrow and his fellow WRB engineers had difficulties developing watershed specific run-off forecasts. Natural factors such as topography, climate, ground saturation, sun exposure, and temperature affect snowmelt differently in distinct watersheds. In the Coast Mountains, the variation in precipitation between elevations – snow at higher altitudes, rain at lower ones – complicated run-off forecasts there. “It has been well said that every watershed is a law unto itself,” Farrow later wrote, “and this is true for snow surveys on watersheds.”<sup>347</sup> Finally, the WRB’s snow surveys only provided snapshots of actual snow and snowmelt conditions in the mountains. Following Church’s recommendations, the WRB and its partnering organizations conducted their snow surveys in late March, before the melt period and when snow was its wettest. But snow and weather conditions changed constantly during the spring and early summer. Samples taken in March did not always reflect conditions a week or two later.

Even with these issues, both the GVWD and BCER considered the snow survey to be an important tool for forecasting snowmelt run-off and conserving it for later use. On 29 February 1940, for example, the snow-depth on Grouse was just 45 cm – far below the normal 4.5 m. A strong El Niño event contributed to that winter’s low snowpack. In his annual report to the PRCS, Farrow explained that, although winter precipitation was well above average, the overwhelming majority of this had fallen as rain due to record temperatures on the North Shore Mountains. While the snowpack eventually eclipsed 2 m, it began to melt in early March and was completely gone by the end of May, the earliest melt on record. Advance warning from these snow survey reports, alongside the GVWD’s increased water storage capabilities, eliminated much of Vancouver’s water concerns that summer. Even a record dry spell in June and July, and record-breaking water consumption in early July, did little to worsen the situation. Instead, GVWD officials released stored snowmelt and rainwater from the Loch Lomond reservoir to supplement water supplies at the Seymour Dam. Unlike the summers of 1918 or 1926, local officials did not need to implement water restrictions. While run-off forecasts derived by snow surveys still had considerable inaccuracies – the 1940 forecast for the

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<sup>347</sup> Farrow, “British Columbia Snow-Surveys,” 105-08.

southern Coastal Mountains was off by 13.5 percent – this research provided officials with helpful data that could be used to take precautionary measures.<sup>348</sup>

## 5.2 A Veritable Skier's Paradise

Snow in the North Shore Mountains took on greater recreational value with the introduction of skiing to Canada's Pacific Coast. The earliest ventures in the southern Coast Mountains were led by Scandinavian immigrants, who sought to continue practicing this culturally important winter activity in their new homeland. Others were undertaken by mountaineering enthusiasts who had prior experience with ski jumping and cross-country skiing. Famed mountaineers Don and Phyllis Munday, who travelled extensively throughout the Coast and Rocky Mountains, were skiing there in the early 1920s.<sup>349</sup> At that same time, notable ski pioneers such as Rudolph Verne and Lindsay Loutet – who learned by borrowing skis from the Mundays – led exploratory excursions to Hollyburn Ridge and Grouse Mountain. These men were stunned by the favourable ski conditions they found. "The snow [is] perfect for skiing, the ski slide always easy," wrote Verne about his first outing to Hollyburn Ridge. Nearby Grouse Mountain was, in Jack Melville's opinion, "a veritable fairyland," that offered unobstructed views of the Lower Mainland and southern Vancouver Island.<sup>350</sup>

What Verne considered to be a "tremendous" quantity of snow only added to this initial enthusiasm. In the early twentieth century, the average annual snow-depth at Grouse's peak measured 4.5 m. Snow also persisted on the North Shore Mountains for many months. "When the word 'ski-ing' is heard, one usually associates it with... December,

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<sup>348</sup> "Committee on Snow 1939-40," in *Annual Reports of Permanent Research Committees for 1939-40, Transactions, American Geophysical Union*, 21 no. 2 (1940): 374-96; W. Taylor, "Snow statistics: a few snow facts to cheer local skiers," *B.C. Mountaineer*, July 1941, volume 19, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; "Dry spell to reach record at midnight," *Vancouver Sun*, 8 July 1940; W.H. Powell to Wm. Jamieson, 4 March 1940, Dominion of Water Power & Hydrometric Bureau, 1936-55, folder 3, 65-A-1, AM1257, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>349</sup> Allen, *The Culture and Sport of Skiing*; Louis W. Dawson, *Wild Snow: 54 classic ski and snowboard descents of North America* (Golden, Colo.: American Alpine Club, 1998), 86-87; "Grouse Mountain snow," *Vancouver Province*, 11 February 1924.

<sup>350</sup> Verne, "The Hollyburn Pacific Ski Club of Vancouver, B.C.;" J. Melville, "Grouse Mountain Ski Club," *Canadian Ski Annual, 1927-28*, (Montreal: John Lovell & Son, 1928); "Lindsay Loutet: A worker for skiing," *Hollyburn Heritage*, <https://www.hollyburnheritage.ca/competitive-sports/heroes-harnessed-hickory-parts-3-4/lindsay-loutet-worker-for-skiing/>

January, and February,” remarked Loutet in 1933. “In Vancouver, however, where the snows lie in the mountains late in the spring, on the ski-ing grounds of Grouse Mountain it may mean March and April and perhaps even as late as the beginning of May.”<sup>351</sup> It was actually not uncommon for the ski season to extend into June and, in one rare case, early July. “It may truly be said that winter lingers in the lap of summer on Hollyburn Ridge, and is the only place where winter and summer are but ninety minutes apart,” proclaimed Verne. “In May or June you may enjoy a swim at English Bay in the forenoon and go skiing in the afternoon.”<sup>352</sup>

These favourable conditions only existed high on the mountains, though. Skiers quickly realized that there was a significant “snow gap” or snow differential in the North Shore Mountains: the higher they went up the mountain, the deeper the snow became and the longer the ski season lasted. BCMC snow records from Grouse show that the average snow depth at 900 m asl was only 2.9 m, or 1.6 m less than the depth at the 1,200 m asl peak. The depths decreased as one travelled down the mountain. Heavy rains were more common near the mountain’s sea-level base, where temperatures hovered above freezing for much of the winter. Bridging this snow-gap and getting to these high elevation areas was not easy. To reach the Hollyburn or Grouse ski grounds involved a multi-hour hike with skis and heavy backpacks through rain and mud that slowly turned to snow and ice as one ascended. “No matter how heavy the rain is pouring down in the city, the skier knows that it is only a matter of a thousand or fifteen hundred feet before he will reach the snowline,” offered an encouraging Melville in 1928.<sup>353</sup>

Ski pioneers such as Verne and Loutet created camps and clubs to better organize ski activities in their newfound paradise. On Hollyburn Ridge, Swedish skiers created a ski camp at the abandoned Naysmith Mill. In subsequent years, pioneers founded clubs such as the Hollyburn Pacific Ski Club (HPSC) and Grouse Mountain Ski Club (GMSC) to teach cross-country skiing and ski jumping and to organize intra- and inter-club events. Other clubs joined in the following years as more and more skiers flocked to the North

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<sup>351</sup> Lindsay Loutet, “Spring and Summer Skiing on Grouse Mountain,” *Canadian Ski Annual*, 1933, (Montreal: John Lovell & Son, 1934).

<sup>352</sup> Verne, “The Hollyburn Pacific Ski Club of Vancouver, B.C.”

<sup>353</sup> W. Taylor, “Snow coverages;” J. Melville, “Grouse Mountain Ski Club.”

Shore Mountains. While the sport was practiced by both men and women, most members were male and men held all of the executive positions in these clubs, aside from the secretary position. Skiing was slower to develop on Seymour. Located at the eastern end of the North Shore Mountains, Mount Seymour and its connected peaks were farther away from Vancouver and less accessible than Hollyburn or Grouse. That mountain's first ski club – the Mount Seymour Ski Club (MSSC) – only formed in 1936. The creation in 1937 of Seymour Lodge and another ski camp by Harold Enquist, who had previously managed the Hollyburn Ski Camp, made Seymour a more appealing destination for weekend skiers.<sup>354</sup>



**Figure 24: Skiing on Grouse Mountain, 1929, CVA 99-1989, 192-B-10, Stuart Thomson fonds AM1535, City of Vancouver Archives.**

On Grouse, the sport's popularity was aided by the efforts of the Grouse Mountain Highway & Scenic Resort Company, Ltd. (GMHSC). Formed by a collection of local businessmen in 1926, the GMHSC purchased 1,800 acres (7.2 km<sup>2</sup>) of land on the

<sup>354</sup> "Seymour Mountain offers great ski sport," *Vancouver Province*, 11 December 1937; "Developments on Mount Seymour," *The Hiker and Skier*, 5 no. 8 (1937), 11.

mountain. The company sought to capitalize on Grouse's recreation and tourism potential by building an all-season chalet on the plateau and connecting it to North Vancouver via a mountain highway. The Grouse Mountain Chalet was completed later that year. The impressive cypress-log chalet was billed as a modern facility, "with plumbing, heating, electric lighting and water supply, telegraph and telephone."<sup>355</sup> The highway officially opened in the spring of 1927. The Mountain Highway significantly shortened the trip up the mountain for car owners. The earlier completion of the Second Narrows Bridge made it possible for those living on Burrard Inlet's southern shore to drive to Grouse's plateau. While the highway was busiest in the summer months, it remained open during the winter, too. The GMHSC used a steam shovel and rotary plow to keep the roadway clear following heavy snowfalls. Throughout the 1920s, more and more tourists chose to stay at the Chalet and took the opportunity to learn to ski or to watch "Grouzers" compete in jumping and racing events. "One of society's keenest delights lies in the winter-time sports on the snow-clad peaks of Grouse Mountain – a second Switzerland," wrote one *Sun* reporter in April 1927. "No matter that a few miles below flowers are blooming in the balmy Pacific springtime, the snow fields surrounding the Grouse Mountain Chalet are deep and even with a late Easter drawing near, week-end parties visiting the Chalet find snowballing, tobogganing, and skiing in full play."<sup>356</sup>

Coastal residents took up skiing for a variety of reasons. For some, the sport was an exciting way to escape the industrial metropolis and to be active in nature.<sup>357</sup> As Verne saw it, the North Shore Mountains were "a sportsman's paradise," which offered "wonderful opportunities for out door recreation and sports of the most varied nature." While Hollyburn Ridge had yet to become the tourist destination that Verne believed it could be, by 1929 the mountain plateau had "attracted thousands of our own sport loving young people to enjoy the facilities for healthy out-door sports, which is of far greater

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<sup>355</sup> Bronwyn Smith, "The Peak of Enchantment!: Grouse Mountain Highway and Scenic Resort," *Authenticity: The City of Vancouver Archives Blog*, 12 February 2020, <https://www.vancouverarchives.ca/2020/02/12/grouse-mountain-the-peak-of-enchantment-grouse-mountain-highway-and-scenic-resort/>

<sup>356</sup> "Wilderness on the doorstep: Vancouver's Mountain Playground," *Museum and Archives of North Vancouver*, <https://monova.ca/wilderness-doorstep-vancouvers-mountain-playground-interior-grouse-mountain-chalet/>; "Society enjoys ice sports on mountain," *Vancouver Sun*, 2 April 1927.

<sup>357</sup> See: Sharon Wall, *The Nurture of Nature: Childhood, Antimodernism, and Ontario Summer Camps, 1920-55* (Vancouver: UBC Press, 2009).

value.”<sup>358</sup> High above the ocean, skiers could temporarily escape Vancouver’s damp, overcast winter weather. While tourist promoters lauded the city for its climate, some settlers disliked the grey rainy days of a Pacific Coast winter. “The worst this time of year is the fog and rain,” wrote Swedish immigrant and ski pioneer Eilif Haxthow in his journal in December 1924. “One can hardly see the sun the week through but then one is also spared the bitter cold that one meets in the rest of Canada... here [at the ski camp] the snow has come, in Vancouver only rain and mist. Here is the way life should be.”<sup>359</sup> During the winter months, the North Shore Mountain peaks at times rested above the low, precipitation-heavy clouds. “The average Vancouverite does not know that when it is full and foggy in the city, the sun is often shining on the mountain tops,” wrote one HPSC member in 1929. “Once they have been up top and taken a few deep breaths of the invigorating mountain air and have seen the bright sun shining on the clean white snow, they are soon converted to winter sports.”<sup>360</sup>

For those residents who had practiced snow-based recreation activities before moving to the coast, the North Shore Mountains were the only place that they could find the prolonged snow-cover needed to continue these activities. Events such as the “Sermon on the Mount” showcased the appeal of outdoor winter recreation in these mountains. On 30 March 1930, the GMSC hosted the outdoor prayer service near the Grouse Mountain Chalet. Approximately 2,000 people travelled to the snowy mountain plateau to hear Reverend Canon A.H. Sovereign deliver a sermon (from a pulpit made of snow) entitled “The Voice of the Hills,” which highlighted the beauties and dangers of the mountains. Following the service, the GMSC led several hundred people through their club headquarters and ran a ski jumping exhibition – all designed to promote skiing’s benefits and Grouse’s winter recreation potential. Local tourist associations further extolled the benefits of winter recreation in these mountains. “Proud of its boast that it is an ‘evergreen playground,’ Vancouver can, at the same time, lay claim to providing winter sports that even Switzerland cannot surpass” read one 1932 *Sun* advertisement.

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<sup>358</sup> Rudolph Jules Verne, “A sportsman’s paradise,” *The West Van News*, 10 July 1929.

<sup>359</sup> Eilif Haxthow, *Eilif Haxthow’s Hollyburn Journal*, 9 December 1924, <https://www.hollyburnheritage.ca/history/ski-camp-at-old-mill-site-eilif-haxthow-s-hollyburn-journal-october-1924-january-1928/>

<sup>360</sup> “Hollyburn Pacific Ski Club,” *Canadian Ski Annual*, 1928 & 29, (Montreal: John Lovell & Son, 1929).

According to the advertisement, Grouse Mountain was the spot where locals skied, sled, and snowshoed.<sup>361</sup>

In the 1930s, downhill, or alpine, skiing became the sport of choice for Vancouver-area skiers. Popularized in the European Alps, downhill skiing had spread throughout North America in the late 1920s, as skiers there found the thrill of sliding downhill at high speeds highly appealing.<sup>362</sup> The steep terrain and sparse tree cover near the North Shore Mountain peaks offered superb conditions for the new sport. The long slope from Hollyburn peak to West Lake became a popular run for skiers at Hollyburn Ridge. On Grouse, alpine skiing quickly supplanted ski jumping and cross-country skiing. In 1936, the Tyee Ski Runners club created the Noseeums Kandahar race, a leg-burning 1.6 km event that ran from the Grouse Mountain Chalet to the club's cabin. This was later extended to a daunting 2.4 km downhill race that ran from the peak of Dam Mountain to the Tyee cabin, located roughly 750 m lower on adjoining Grouse Mountain.<sup>363</sup> Local newspapers reported that large crowds made their way up the mountain to watch male and female competitors race down the long, arduous ski run.<sup>364</sup>

The prominence of that race – and of alpine skiing more generally – speaks to the sport's popularity in the mid-1930s. Indeed, skiing's rise on Grouse is notable considering the difficulties that the GMSHC and local skiers faced that decade. In 1930, the barge *Pacific Gatherer* hit the Second Narrows Bridge, leading to its closure. Cars could no longer cross from Burrard Inlet's southern shore to its northern shore. The cessation of car traffic to the North Shore and the economic hardships of the Depression created a bleak outlook for the company, which was already dealing with pre-existing financial difficulties. It declared bankruptcy in 1933. Two years later, the District of North Vancouver, which managed the Mountain Highway following the GMSHC's collapse,

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<sup>361</sup> Leonard W. Bradbury, "Old hymns echo among hills," *Vancouver Sun*, 31 March 1930; "Grouse mountain scene of inspiring Sunday service," *Vancouver Province*, 31 March 1930; "Winter draws thousands to B.C. mountain resorts," *Vancouver Sun*, 31 October 1932.

<sup>362</sup> Allen, *The Culture and Sport of Skiing*, 224-25.

<sup>363</sup> Art Langley, "Tyee Ski Runners," *The Hiker & Skier*, 5 no 1 (1936), 12-13; "Boys laboured hard to build Kandahar," *Vancouver Province*, 23 January 1937; "Sports first with Bill," *Vancouver Province*, 4 November 1936.

<sup>364</sup> "Tyee Ski Club," *Canadian Ski Annual*, 1936 & 37, (Montreal: John Lovell & Son, 1937); "Tyee Ski Runners," *The Hiker & Skier*, 4 no. 8 (1936), 11.

closed the road. After that, hiking was the only way to reach the ski grounds – a difficult climb, but one that more and more coastal residents felt was worth the time and effort.<sup>365</sup>

By the late 1930s, skiing was the most popular winter recreation activity for Vancouver-area residents. According to the *Province's* Buster Nixon, each winter weekend upwards of 8,000 skiers trekked to one of three ski villages that had been built on Hollyburn, Grouse, and Seymour. These villages – referred to by Nixon as the “highest town[s] on British Columbia Coast” – consisted of club- and privately-owned cabins constructed by skiers during the previous decade. By 1937, there were approximately 200 cabins on Hollyburn Ridge, 125 on Grouse Mountain, and 100 on Seymour Mountain. These cabins ranged from simple, single-storey structures to large and expensive two-storey buildings that housed up to twenty people. They offered a warm, quiet place to rest and relax with friends and family after a long ski day and allowed skiers to remain on the mountain for multiple days at a time. Connecting the cabins in each village was a network of trails and paths set up and maintained by cabin-owners. The ski villages operated like miniature self-contained communities. The Grouse ski village even had its own civic elections for mayor, chief of police, fire chief, and sanitary engineer.<sup>366</sup>

The advent of skiing and the creation of these high-mountain communities highlighted the growing connections that snow facilitated between the coast and the mountains during the interwar period. Snowy, alpine spaces – that had been remote and inaccessible to most coastal residents before the mid-1920s – were becoming increasingly linked to the coastal metropolis as more and more residents travelled to the mountains to ski and established weekend dwellings there. “It’s a Canadian St. Moritz in the making, my boy,” remarked Pollough Pogue, Vancouver journalist and ski enthusiast, in the early 1930s. Indeed, skiers believed that their North Shore Mountains would soon be home to ski villages comparable to any in Switzerland. “Given a few years, this village will be a spot of beauty, truly a little Alpine ski village, where young and old will be able to enjoy the

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<sup>365</sup> Smith, “The Peak of Enchantment!: Grouse Mountain Highway and Scenic Resort.”

<sup>366</sup> Buster Nixon, “Highest town on British Columbia Coast,” *Vancouver Province*, 6 November 1937; “Vancouver clubs show big membership boost,” 11 December 1937, Ski-ing, Folder 2, 995-E-1, AM54-S17, City of Vancouver Archives, Vancouver, British Columbia, Canada; Art Langley, “Tyee Ski Runners,” *The Hiker and Skier*, 5 no. 6 (1937), 10-11.



healthful recreation of skiing and mountaineering,” wrote skier Joe Wepsala about the Grouse Mountain village in 1938.<sup>367</sup> While these 8,000-plus skiers still represented a fraction of Vancouver’s overall population, their presence in the North Shore Mountains during the winter months was a substantial increase from just a decade earlier.

Situated high above Vancouver in the wild, mountainous hinterland, these snowy mountain villages were outposts of the modern, coastal metropolis. Many of the coastal society’s dominant ideals followed skiers to these mountain villages. A ski culture was constructed that in some ways reinforced dominant societal ideals while simultaneously challenging or blurring others. Adults, for example, used skiing to reinforce ideas of gender and civic responsibility in young skiers. During the interwar period, hundreds of elementary and high-school aged children took up the sport. Many of these youngsters were introduced to skiing through the efforts of James Henderson. A teacher at the Edith Cavell Elementary School in Vancouver, Henderson began taking his students on hikes in the mountains in 1925. In subsequent years, hiking transitioned to skiing and, as Henderson later explained, “in 1929 the group definitely became a Ski Club, and under the expert tuition of Nels Nelson, former world’s champion, we learned to ski with dignity and confidence.” Support from the parent-teacher association helped the Cavell Ski Club (CSC) secure its own cabin near West Lake on Hollyburn Ridge. Supportive parents and teachers probably saw these ski trips in the mountains as a healthy form of physical activity (students needed to hike for two hours just to reach Hollyburn Ridge) and a great way for young people to escape the perceived dangers associated with large, modern cities such as Vancouver.<sup>368</sup>

Students and educators from other institutions such as the Kerrisdale, King Edward, and Technical Schools soon joined. While boys and girls participated equally in skiing activities, they had distinct and gendered responsibilities at the CSC cabin. Girls were expected to sweep and wash dishes while boys were responsible for shovelling snow and

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<sup>367</sup> Nixon, “Highest town on British Columbia Coast;” J. Wepsala, “Grouse Mountain Ski Village,” *Vancouver Sun*, 19 July 1938.

<sup>368</sup> Sharon Wall examines this push to get children out of the city and into nature in *The Nurture of Nature*. “Cavell Ski Club Bulletin – 1925-1940,” James Henderson fonds, Fonds 203, North Vancouver Archives, North Vancouver, British Columbia, Canada.

collecting wood and water. Not surprisingly, boys and girls also slept in two different sections of the cabin. Henderson expected excellent behaviour from all CSC members. Cabin rules forbade noisy behaviour, smoking, and bad language, the latter being “the surest way to be expelled.”<sup>369</sup> Through rules such as these, Henderson and his colleagues re-affirmed dominant gender divisions that existed in Vancouver society. They also sought to mould CSC members into responsible citizens. Hundreds of children adhered to these rules in order to frolic in the mountain snow. By 1945, Henderson and the CSC had brought 1,200 school-aged boys and girls into Vancouver’s skiing community.<sup>370</sup>

For Vancouver-area women, skiing was an attractive and enjoyable recreation activity. Women across Canada became increasingly involved in athletics as dominant societal attitudes regarding their participation in sports began to relax following the First World War.<sup>371</sup> Like their male counterparts, Vancouver women increasingly took part in ski jumping, cross-country, and downhill competitions. In the late 1920s and early 1930s, skiers such as Peggy Harlin and Daisy Bourdon – she was a CSC instructor, too – became well-known figures in Vancouver’s skiing community, winning regional, provincial, and Dominion skiing championships.<sup>372</sup> In the late 1930s, Gertie Wepsala was Vancouver’s “ski queen.” Born in 1916 to Finnish immigrants, Wepsala learned to ski as a member of the Tyee Ski Runners. She burst onto the national ski scene in 1938, setting speed records at the Noseeums Kandahar and winning both the Western Canadian and Dominion championships. Wepsala repeated as the women’s combined (downhill and slalom) champion at the 1939 Dominion Championships in Seignory, Quebec. Hundreds waited at the CPR station to welcome back her and the men’s national champion, Lew Davis, in March 1939. The Tyee Ski Runners and city officials organized bands and a banquet to celebrate their championships. Wepsala’s national and international accomplishments – she also competed and won at ski events in the United States – made her a local celebrity.

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<sup>369</sup> “Cavell Ski Club Bulletin – 1925-1940”

<sup>370</sup> Summer camp administrators in Ontario sought to achieve similar goals during this same period. Wall, *The Nurture of Nature*, 78; Brownie Cleary, “Young groups learn to ski in school sorties,” *Vancouver Sun*, 4 May 1945.

<sup>371</sup> Robert A. Wardhaugh and Alan MacEachern, *Destinies: Canadian History Since Confederation*, 8<sup>th</sup> ed. (Toronto: Nelson Education, Ltd., 2017), 229 and 309.

<sup>372</sup> Rolf Tønning Lund, “A History of Skiing in Canada Prior to 1940,” MA Thesis (The University of Alberta, 1971), 156-58.

Hollywood directors even offered her movie contracts to star in films similar to those made for Norwegian figure skating champion Sonja Henie.<sup>373</sup> Like Henie, Wepsala's combination of good looks and athletic prowess heightened her celebrity status. Canadian photojournalist Harry Rowed photographed her in September 1939 as she trained for the 1940 Olympics on Mount Athabasca with coach Peter Vajda; Rowed's images portray the smiling, well-dressed athlete as every bit the movie star.<sup>374</sup>



**Figure 25: CR2101, Gertie Wepsala summer training on Mt Athabasca, 1939, Harry Rowed Photography.**

In praising Wepsala's athletic achievements, male ski reporters emphasized her ability to retain her femininity while participating in what they considered to be a tough, masculine

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<sup>373</sup> Pat Slattery, "Tyees cleanup Kandahar race; Gertie Wepsala, Louie Davis set new ski records," *Vancouver Sun*, 24 January 1938; Gertie Wepsala surprise winner on downhill run," *Vancouver Sun*, 5 February 1938; "Rousing welcome for Queen Gertie by ski friends," *Vancouver Sun*, 12 March 1938; Pat Slattery, "Great welcome planned for return of ski stars tonight," *Vancouver Sun*, 7 March 1939; Don Tyrell and Gertie Wepsala, "Ski Heil!" *Vancouver Province*, 15 March 1939.

<sup>374</sup> See these links for photographs of Wepsala and Vajda on Mt. Athabasca: <https://harryrowed.ca/columbia-icefield-1939-1947/> and <http://www.alpinestyle56.com/gertrude-wepsala-canadian-ski-champion/>

sport. “When any girl steps out and accomplishes something extraordinary in sport, the writer has a feeling that she’s either supernatural, lacking in femininity, or a shade balmy,” wrote the *Sun*’s Pat Slattery bluntly in February 1939. Slattery – who did not “favour women taking part in the rougher sports” – lauded Wepsala for remaining “totally feminine.” “By this we mean that she has not let herself become a slave to sport. She enjoys dancing, swimming, afternoon teas and above all hasn’t lost the art of being able to laugh – she has a fine sense of humour.” Writing about Henie, film studies scholar Diane Negra argues that male commentators judged female athletes by their femininity to downplay the link that sports had to “‘masculine’ modes of competition and aggression.” Male commentators did this with Wepsala, too. In praising Wepsala as one of Vancouver’s “Women of 1938,” the *Sun* explained that she achieved her championship titles “with the graceful ease as Canada’s no. 1 feminine skier.” While skiing offered Vancouver-area women a great opportunity to achieve athletic success, this success was constantly weighed against dominant ideals about gender and femininity.<sup>375</sup>

While the overwhelming majority of skiers were white settlers, there was a small group of Japanese Canadians who embraced the sport during this period, too. Many of these skiers were the children of Issei, first-generation Japanese immigrants who moved to British Columbia during the late nineteenth and early twentieth centuries. In the interwar period, one-third of the Japanese population consisted of second-generation Canadian-born children, or Nisei. The majority of Vancouver’s Japanese population lived along Powell Street, in an area known as Japantown or “Little Tokyo.”<sup>376</sup> Japanese Canadians began travelling from Powell Street to ski on Grouse as early as 1926. Japanese ski enthusiasts founded the Fuji Ski Club (FSC) in 1933. Club membership was a mix of Issei and Nisei men and women, although only men served as the club’s executives. In the mid-1930s, club members built a cabin on Grouse to serve as a base for weekend ski

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<sup>375</sup> Pat Slattery, “Mere man ‘psychs’ local woman ski marvel and likes what he finds,” *Vancouver Sun*, 4 February 1939; “Woman of 1938,” *Vancouver Sun*, 7 January 1939; Diane Negra, *Off-White Hollywood: American Culture and Ethnic Female Stardom* (London: Routledge, 2001), 94.

<sup>376</sup> For more information on Japanese history in Vancouver, see: Francis, *Becoming Vancouver*, chapter three; Ward, *White Canada Forever*, section three; Shannon Jette, “Little/Big Ball: The Vancouver Asahi Baseball Story,” *Sport History Review* (2007): 1-16; Patricia Roy, *A White Man’s Province: British Columbia Politicians and the Chinese and Japanese, 1858-1914* (Vancouver: UBC Press, 1989); Patricia Roy, *The Oriental Question: Consolidating a White Man’s Province, 1914-41* (Vancouver: UBC Press, 2003).

activities. Articles from the *Tairiku Nippō*, the Japanese community's newspaper, show that FSC members were out skiing most winter weekends in the late 1930s.<sup>377</sup> The club was small; total membership hovered around only 30 or more persons. Skiing facilitated stronger bonds within Vancouver's Japanese community and among Japanese communities on both sides of the border. In the late 1930s, the FSC competed against the Rokka Ski Club, an all-Japanese ski club based in Seattle. FSC members hosted their Rokka counterparts for races on Grouse's Kandahar run or travelled to Washington for competitions.<sup>378</sup>

Through skiing, Japanese Canadians interacted with and competed against white settlers in ways that they could not outside of sport. In the twentieth century, Japanese residents, much like their Chinese counterparts, were subjected to discriminatory policies and racist actions in Vancouver. The Japanese community had been one of the targets of the Asiatic Exclusion League's infamous 1907 attack, for example. The white community developed harmful stereotypes about and prejudices against the Japanese community that detrimentally affected their lives during the early twentieth century.<sup>379</sup> But as sports scholar Shannon Jette argues in her work on the all-Japanese Asahi baseball team, sport partially mediated relationships between the Japanese and white community. Through playing baseball against their white counterparts, "the Asahi were able to gain 'social capital' within the white community of Vancouver."<sup>380</sup>

This appears to have been the case for the FSC, too. Japanese and white skiers attended joint events in Vancouver and at Grouse's ski village during the 1930s. In January 1935, prominent members of the white ski community attended a dance hosted by the Japanese Consul in honour of the FSC. The all-Japanese club also competed against their white

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<sup>377</sup> *Tairiku Nippō* (Continental Daily News) was a Japanese language newspaper published in Vancouver between 1907 and 1941. The final page had a small English-language section. Archived newspapers can be found via UBC Library's Open Collection database: <https://open.library.ubc.ca/collections/tairikunipp>

<sup>378</sup> Kishizo Kimura's photo album shows Japanese Canadians skiing in 1926. A group of people at Grouse Mountain; Vancouver, BC, 1926, 2010.4.7.1.22, Photo Album 1, Digital Family Photographs, Kishizo Kimura fonds, Nikkei National Museum & Cultural Centre, Burnaby, British Columbia, Canada, [https://landscapesofinjustice.uvic.ca/archive/media/TINA/facsimile/nnm\\_2010-4-7-1.pdf](https://landscapesofinjustice.uvic.ca/archive/media/TINA/facsimile/nnm_2010-4-7-1.pdf); "Skiers open new house on Grouse," *Vancouver News Herald*, 5 February 1935; "Fuji Ski Club reporter," *Tairiku Nippō*, 19 January 1939; "Fuji ski teams named," *Tairiku Nippō*, 2 March 1939.

<sup>379</sup> Ward, *White Canada Forever*; Roy, *A White Man's Province*; Roy, *The Oriental Question*.

<sup>380</sup> Jette, "Little/Big Ball," 1.

counterparts in local competitions. In 1937, Ty Fugimoto and Otto Matsui won Grouse's novice jumping events. Japanese and white skiers also supported one another at various times. Shozo Miyanishi remembers staying at a "nearby white man's cabin" as he and other FSC members built their cabin. In the summer of 1937, FSC members helped other Grouse-based ski clubs complete the Kandahar ski run. During the 1938-39 winter, as Wepsala pushed for her second Dominion Championship, the FSC was the second largest contributor to her travel fund, behind only her own Tyee Ski Runners. The FSC even partnered with other Grouse clubs to build a Fédération de Internationale de Ski (FIS)-approved jump on that mountain in 1940. As Don Tyrell, the *Sun*'s ski reporter summed up, "the Japanese lads are very popular on Grouse."<sup>381</sup>

But racial divides were not erased through sport.<sup>382</sup> It would be naïve and inappropriate to assume that racial tensions or discriminatory views held by white skiers disappeared on the mountains. Some of the language used by local reporters to describe the FSC in the mid-1930s highlighted Japanese "otherness." Racial tensions were most evident following the bombing of Pearl Harbor on 7 December 1941. The next day, West Vancouver officials issued a statement barring all "enemy aliens from the slopes of Hollyburn Ridge" in order to protect the GVWD watersheds. This policy was later extended to Grouse Mountain. These acts, which prevented FSC members from skiing or accessing their cabin, were part of larger wartime policies that restricted Japanese Canadians' freedoms and activities in the immediate aftermath of Pearl Harbor.<sup>383</sup> When Japanese Canadians were forcibly expelled from the coast and interned in the B.C. Interior in 1942, the federal government sold the FSC cabin and everything in it to white

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<sup>381</sup> "Fuji Ski Club to hold initial dance today," *Vancouver Sun*, 8 January 1935; "Fuji Ski Club in novice race," *Tairiku Nippō*, 13 February 1937; "Fugimoto tops novice skiers," *Vancouver Province*, 1 March 1937; Yusuke Tanaka, "Sporting Niseis of 1930s: Posing on Camera – Part 1," *Discover Nikkei*, 5 March 2020, <http://www.discovernikkei.org/en/journal/2020/3/5/shozo-miyanishi-1/>; Don Tyrell, "Ski Heil!" *Vancouver Province*, 12 December 1939; Pat Slattery, "Slatograms," *Vancouver Sun*, 12 October 1940; "Boys laboured hard to build Kandahar," *Vancouver Province*, 23 January 1937.

<sup>382</sup> Jette, "Little/Big Ball," 10.

<sup>383</sup> "Japs barred from Hollyburn ski roads; sports in spin?" *Vancouver Province*, 8 January 1941; Ward, *White Canada Forever*, 149; Francis, *Becoming Vancouver*, 144-145.

settlers at below-market prices, as the government did with all Japanese-owned property at that time.<sup>384</sup>

The sale of the cabin and ski gear was a small loss in the overall dispossession and destruction of homes and community that occurred during this period. But for some FSC members, the loss of a once-favoured pastime in their beloved mountains further added to their traumatic experiences. In late January 1949, a handful of FSC members who had relocated to Ontario after internment met to discuss unresolved matters regarding the sale of FSC property. As secretary Tom Hatanaka recorded, some members had started skiing again, but there was little interest in re-forming the old club, “the chief reason being that skiing conditions were entirely different from those that visited in Vancouver.” Skiing in the low-lying hills around Toronto was less appealing than skiing in the towering mountains that overlooked their former Vancouver homes.<sup>385</sup>

While Hatanaka and his fellow FSC members had adored the North Shore Mountains for their long, snowy winters, they and their white colleagues realized that these mountains were not always “a veritable skiers’ paradise.” Ski conditions changed from year to year and within the season. Club records reveal that skiing often began in late November or early December and continued until mid- to late-May (~160-80 days). Some seasons were significantly longer. During the 1932-33 ski season, for example, skiable snow conditions arrived in late October and lasted until 4 July (a ~250-day ski season, although it is likely that skiing was sporadic in late October and November). But during the following season, skiing could not begin until the beginning of January 1934, and ended just over three months later at the end of April (~120-day ski season). And during the 1939-40 season, skiing on Grouse lasted only from mid-January to early April (~90 days), the shortest season on record. Total annual snowfalls also varied considerably each season. BCMC snow records on Grouse reveal that annual snowpack measurements ranged anywhere from 2 to 6 m. These disparate snowpack totals and ski season lengths

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<sup>384</sup> See: Jordan Stanger-Ross, *Landscapes of Injustice: A New Perspective on the Internment and Dispossession of Japanese Canadians* (Kingston: McGill-Queen’s University Press, 2021).

<sup>385</sup> Minutes of the meeting of Fuji Ski Club, 29 January 1949, Custodian Case Files: 13964: Fuji Ski Club, Reel C-9426, found via *Landscapes of Injustice*, Custodian Case Files, [https://loi.uvic.ca/archive/C-9426\\_13964.html](https://loi.uvic.ca/archive/C-9426_13964.html)

can be partly attributed to shifts between positive and negative ENSO patterns. Positive ENSO events contributed to warmer winter temperatures, lower snowpack totals, and shorter ski seasons during the first few winters of the 1940s, for example.<sup>386</sup>

In-season weather events and mountain topography further affected snow conditions. High winds re-distributed snow unevenly in open areas (places where alpine skiing normally took place), creating bare patches or deep snowdrifts. Sun exposure further modified snow by increasing its surface temperature and creating wet and slushy conditions. This became ice when temperatures dropped overnight and only softened when the sun returned the following day. As one GMSC member explained in *The Hiker and Skier*, a publication produced for Vancouver's hiking and skiing communities, the club's slalom course, "though icy in the early mornings, softens up enough under the warm sun to provide good skiing for beginner and expert alike."<sup>387</sup> The snow-cover on treeless and sun-exposed southern slopes also melted much quicker than snow on the shadier northern slopes or in densely forested areas. Temperature inversions were another challenging weather phenomenon for North Shore skiers. During an inversion, a mountain's normal vertical temperature dispersion is reversed, producing warmer temperatures at the peak than at the base. Normally snow-heavy storms became destructive deluges during these inversions.<sup>388</sup>

Skiers considered these variable snowfalls and uncooperative weather events normal, albeit frustrating parts of the ski season. In its report in the *Canadian Ski Annual*, the Canadian Amateur Ski Association's (CASA) annual yearbook, the GMSC complained that "the early part of the 1933-34 season was very disheartening to the skiers... by the first of November, the club was in full swing, the only thing missing being the snow."

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<sup>386</sup> Taylor, "Snow coverages;" "Grouse Mountain Ski Club," *Canadian Ski Annual*, 1933, (Montreal: John Lovell & Son, 1933); Lindsay Loutet, "Spring and summer skiing at Grouse Mountain;" "Grouse Mountain Ski Club," *Canadian Ski Annual*, 1934, (Montreal: John Lovell & Son, 1934); Jim Fairley, "Local skiers still on short side of snow," *Vancouver Sun*, 16 January 1940; "Club championship to wind up season," *Vancouver Sun*, 4 April 1940.

<sup>387</sup> "Grouse Mountain Ski Club," *The Hiker and Skier*, 3 no. 8 (1935), 11; McKay and Gray, "The Distribution of Snowcover," 154-56; E.J. Langham, "Physics and Properties of Snowcover," in *Handbook of Snow: Principles, Processes, Management, & Use*, ed. D.M Gray and D.H. Hale, 284 and 326.

<sup>388</sup> "What is a temperature inversion?" *Met Office*, <https://www.metoffice.gov.uk/weather/learn-about/weather/types-of-weather/temperature/temperature-inversion>



The club reported “lots of hiking” during the rainy and foggy months of November and December.<sup>389</sup> Skiers tried to make do with the conditions available to them. In January 1936, for example, the GMSC’s race committee converted a planned alpine race into an obstacle course to take into account the stumps and rocks that poked through the thin snow cover. Grouse skiers again dodged rocks and stumps in December 1939. “Sounds like good clean fun,” commented the *Sun*’s Jim Fairley, “if you’re wearing chin pads.” Some weather conditions were too prohibitive to overcome. In January 1940, organizers cancelled that year’s Kandahar race because of insufficient snow on the mountain. Low snow and rain led to the race’s cancellation during the following two winters.<sup>390</sup>

Skiers could not control the weather, but they could make modifications to the mountain landscape that improved safety and enhanced its suitability for alpine skiing. Much of this work involved widening alpine runs by clearing trees and removing obstacles such as stumps and rocks. Between 1926 and 1928, skiers on Hollyburn Ridge cleared a run from Hollyburn Peak to First Lake.<sup>391</sup> On Grouse, some of this work was carried out by the GMHSC, which sought to create the wide-open ski terrain favoured by alpine skiers. Ski clubs continued this work after the GMHSC’s declaration of bankruptcy in 1933. It took the Tyee Ski Runners and other Grouse-based clubs over three years to clear the Kandahar run.<sup>392</sup> The clearing of trees, stumps, and rocks from alpine runs was constant summer work during the mid- to late-1930s. Skiers found guilty of committing “criminal offences” in the Grouse ski village could also be “sentenced” by the village’s mayor to remove stumps from the surrounding area.<sup>393</sup>

Other modifications involved adding new objects to the mountain landscape. One significant change was the installation of a rope tow on Grouse in 1938. While rope tows

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<sup>389</sup> “Grouse Mountain Ski Club,” *Canadian Ski Annual*, 1934.

<sup>390</sup> Jim Fairley, “Grouse Mountain Ski Club,” *The Hiker and Skier*, 4 no. 5 (1936); Jim Fairley, “Stump-jumpers enjoyed first week-end on Grouse,” *Vancouver Sun*, 19 December 1939; “Kandahar test is called off,” *Vancouver Province*, 26 January 1940; Don Tyrell, “Ski Heil!” *Vancouver Province*, 13 February 1942.

<sup>391</sup> “The historic ski run from First Lake to Hollyburn Peak,” *Hollyburn Heritage Society*, <https://www.hollyburnheritage.ca/recreational-skiing/recreational-skiing-in-cypress-provincial-park/historic-ski-runs-on-hollyburn-mountain/>

<sup>392</sup> “Boys laboured hard to build Kandahar,” *Vancouver Province*, 23 January 1937.

<sup>393</sup> It is not entirely clear whether Nixon’s assertion is satirical or not, but there was some form of policing in the villages, given that they had a chief of police. Nixon, “Highest town on British Columbia coast.”

had been used by ski clubs in eastern North America since the start of the decade, the Grouse tow was the first in western Canada, or at least that was the claim by Tyrell in October 1938. The new tow dragged skiers (sometimes on their stomachs) from the ski village for 600 m to a point 180 m up the mountain. It significantly improved uphill transportation and allowed skiers to enjoy more downhill runs in a day. During the autumn of 1939, skiers at Mount Seymour installed floodlights at their ski area, allowing them to continue skiing at night.<sup>394</sup> Skiers also pushed politicians to facilitate large-scale developments to better the region's ski terrain. In July 1939, 1,500 skiers packed into the Hotel Vancouver's ballroom to discuss the creation of "a great natural public park among the North Shore Mountains, extending from Hollyburn Ridge to Indian River." Indeed, the designation of 2.7 km<sup>2</sup> of Mount Seymour as a provincial park in 1937 had excited the skiing community. The completion of the Lions Gate Bridge in 1938, which reconnected Burrard Inlet's north and south shores via a fixed transportation corridor, added to this enthusiasm. Politicians from all three levels of government spoke at the event. While newspapers reported that all speakers stressed the need to develop the region's tourism and winter recreation potential, there was little agreement on how to do so. GVWD Commissioner Cleveland worried about the impact that increased skier traffic in the Capilano and Seymour watersheds might have on water quality. The proposed park was put on hold as the war intensified in the following years.<sup>395</sup>

While skiers advocated for certain changes to the mountain landscapes, they also pushed back against those that they deemed irresponsible or unwanted. In June 1938, C.J. Hutchison, Chairman of the Ski Promotion Committee of Hollyburn Ridge, urged government officials to prevent logging operations near the ski area. Clear cut logging, he argued, would restrict skier access to certain areas of the mountain and destroy the Ridge's beautiful landscape. Verne echoed these concerns. In a *Sun* interview in January

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<sup>394</sup> Scholars have explored how human modifications to natural environments impacted alpine skiing and human relationships to those landscapes. Much of this work has focused on the postwar period, however. See: Andrew Denning, "From Sublime Landscapes to White Gold: How Skiing Transformed the Alps after 1930" *Environmental History* 19 no.1 (2014): 78-108; Andrew Denning, *Skiing into Modernity: A Cultural and Environmental History* (Oakland: University of California Press, 2015); Mark C.J. Stoddart, *Making Meaning Out of Mountains: The Political Ecology of Skiing* (Vancouver: UBC Press, 2012); Don Tyrell, "Ski Heil! 'ski down, tow up' slogan on Grouse," *Vancouver Province*, 22 October 1938.

<sup>395</sup> "North shore winter playground paradise," *Vancouver Sun*, 7 July 1939; "Seymour mountain offers great ski sport," *Vancouver Province*, 11 December 1937.

1944, he no doubt worried Vancouver's ski community by noting that Hollyburn's snow totals had decreased dramatically during the past twenty years – a fact that he attributed solely (and inaccurately) to logging, which he contended had removed the trees needed for extended snow retention.<sup>396</sup> Logging tensions persisted until later that year, when the provincial government allocated 3,500 acres of Hollyburn Ridge as a park reserve.<sup>397</sup>

### 5.3 Death by Misadventure

While snowy, mountainous landscapes were sites for fun outdoor recreation activities like skiing, these spaces were also dangerous, as many skiers and hikers learned during this period. The southern Coast Mountains had a drastically different environment than what many settlers were accustomed to on the coast. The contrast was even more striking during the mountains' prolonged winters. Snow and ice made the terrain slick and difficult to traverse. Well-marked summer trails became buried under heavy winter snows, increasing the chances that one could become lost on the mountain. Early sunsets and late afternoon darkness heightened these dangers. The risk of avalanches, or snow-slides as they were sometimes called, was another serious threat. As snow accumulates during the winter months, factors such as temperature, wind, and moisture content determine snowflake structure and affect how well these snowflakes bond to one another and to previously fallen snow. This creates distinct – and sometimes unstable – layers in the snowpack. Avalanches, the massive release of large amounts of snow from mountain slopes, occur when the bond between two layers of snow break. There are two types of avalanches. The first, a loose snow avalanche, begins at a single point and fans outward as it travels down the mountain. These avalanches are relatively small and tend to follow existing pathways. The other type, a slab avalanche, occurs when the bonds between snow layers fails over a wide area of mountain slope. Slab avalanches can travel downhill

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<sup>396</sup> Rudy J. Verne, "More than scenery," *Vancouver Province*, 9 December 1943; Ivan Denton, "A forest playground's death sentence," *Vancouver Sun Magazine*, 8 January 1944.

<sup>397</sup> "Hollyburn ridge protection," C.J. Hutchison, Chairman, Ski Promotion Committee of Hollyburn Ridge, 22 June 1938, Ski-ing, Folder 2, 995-E-1, AM54-S17, City of Vancouver Archives, Vancouver, British Columbia, Canada; J.I. Little, *At the Wilderness Edge: The Rise of the Antidevelopment Movement on Canada's West Coast* (Kingston: McGill-Queen's University Press, 2019), 50-57.

at over 100 km/h. This rapid and massive release of snow can be incredibly destructive and deadly.<sup>398</sup>

Local mountaineers had the most experience with avalanches and unsafe mountain environments. By the 1920s, many BCMC members had scaled permanently snow-clad peaks throughout the southern Coast Mountain Range. During a climbing expedition in the Tantalus Mountain Range, Neal Carter reported that avalanches crashed around him and his colleagues as they waited helplessly on the mountainside.<sup>399</sup> While mountaineers struggled at times with these winter landscapes – think back to Taylor’s difficulties in 1922 – many had the training, tools, and experience necessary to safely navigate these environments. In the early 1920s, the BCMC began organizing winter climbing expeditions in the North Shore Mountains. These trips were headed by experienced climbers and were used as training opportunities to acquaint less experienced members with winter climbing. Articles in the *B.C. Mountaineer*, the BCMC’s official pamphlet, stressed the importance of reliable gear for winter expeditions. Writers described ice axes and alpenstocks as “absolutely necessary for winter climbing” and snow glasses as an “indispensable” part of a mountaineer’s winter climbing equipment. The club also recommended that all of its climbers “be equipped with strong waterproof boots, properly nailed with hobs and edge nails,” which gave hikers greater traction on snowy and icy surfaces.<sup>400</sup>

Hiking inexperience and unpreparedness could be fatal. On 10 February 1924, David Spencer and Arthur Willis, aged 20 and 21 respectively, became lost near Crown Mountain and failed to return home. Local police and members of the Alpine Club of Canada (ACC) and BCMC, including Taylor, initiated a search party the following day.

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<sup>398</sup> P.A. Schaerer, “Avalanches,” in *Handbook of Snow: Principles, Processes, Management, & Use*, ed. D.M. Gray and D.H. Hale, 475-8; “Avalanche,” *Avalanche.org*, <https://avalanche.org/avalanche-encyclopedia/avalanche/>; Diana L. Di Stefano, *Encounters in Avalanche Country: A History of Survival in the Mountain West, 1820-1920* (Seattle: University of Washington Press, 2015), 4-5.

<sup>399</sup> Neal M. Carter, “Trail quickly wiped out by avalanche,” *Vancouver Province*, 7 April 1923.

<sup>400</sup> “Summer camp,” *BC Mountaineer*, June 1924, volume 2, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; “Food and Equipment,” *BC Mountaineer, Summer Programme 1928*, volume 6, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.

The young men were found dead, having fallen into a steep gully during the night. Rainy, foggy weather and icy slopes had created unsafe and difficult climbing conditions. In the subsequent coroner's inquest, the BCMC's Tom Fyles, who had been a member of the search and rescue team, explained how the two had missed the trail after turning back for home and became lost in the dark. The BCMC pointed to Willis' poor choice of footwear as a contributing factor. While Spencer had nailed boots and an ice axe (which he lent to his friend), Willis had only rubber boots. The recovery of the two bodies and coroner's inquest were front page stories that month. After hearing the evidence, the inquest's jury called the tragedy an unfortunate "death by misadventure." In his remarks, City Coroner Harold Dyer strongly urged the creation of a local search and rescue organization, as the mountains "were becoming a playground" for more and more urban residents. In the aftermath, the *Sun* printed recommendations from Taylor on how to stay safe while hiking in the North Shore Mountains. His suggestions, such as leaving a detailed trip plan, carrying an alpenstock, and wearing proper footwear, were portrayed as ways to prevent other "amateur mountaineers" from meeting similar fates.<sup>401</sup>

Unfortunately, not all hikers heeded Taylor's advice. On 14 December 1926, a search party was organized to locate two boys who had left for Dog Mountain and not returned home that evening. No doubt the party of BCMC mountaineers, who had departed the city at midnight to begin their search early the next morning, let out a collective groan when they learned that the pair had changed their plans at the last minute and had returned from a hike at Hollyburn Ridge – more than 20 km and two mountain ranges to the west. Another search party was dispatched in January 1929 when 21-year-old Andrew Crawford was reported missing on Hollyburn Ridge. The search was aided by a seaplane from the Jericho airport that "flew back and forth at a low altitude over the ridge... the airmen searching all gullies and crevasses for the missing hiker." Crawford was found dead in Cypress Creek three days after he went missing. The ensuing coroner's inquest reported that the young man had died of exposure and exhaustion. Indeed, the jury heard

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<sup>401</sup> "The Spencer-Willis Tragedy," *BC Mountaineer*, March 1924, volume 2, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; "Mountain tragedy revealed when body of youth is found," *Vancouver Sun*, 13 February 1924; "Crown Mountain tragedy verdict is misadventure," *Vancouver Sun*, 16 February 1924.

that Crawford had left home in only light clothing and smooth soled shoes. He had no hat, no matches, and no blanket. The inquest recommended that the municipality of West Vancouver erect signs advising hikers to travel together, only on the main trails, and to take food and supplies with them when hiking. "One cannot stress too much the fact that first class equipment is an absolute essential of winter climbing," noted one February 1929 article in the *B.C. Mountaineer*. "The fact remains... that at this time of the year, the unexperienced climber can run into a great many difficulties that on the surface look perfectly safe."<sup>402</sup>

But experience did not offer complete protection from mountain hazards. On Dominion Day (Canada Day) 1917, Oscar Appleby died in an avalanche on Crown Mountain. The *Province* reported that Appleby "had made many successful trips up the mountain" before. Athol Agur died in a similar accident on nearby Little Goat Mountain ten years later. On 19 February 1927, an avalanche, triggered by Agur and his colleague R.C. Johnston, swept the two men from the side of the mountain, the latter surviving only by grasping a tree atop the tumbling bluff. Agur's death was a shock to Vancouver's mountaineering community. The 29-year-old was an active member of the BCMC; he had been part of the Mundays famous expedition to Mystery Mountain (now called Mount Waddington) the year before. Agur and Johnston were familiar with the area, too. The pair had established a ski camp near Goat Mountain and had been living there all winter.<sup>403</sup> Agur's death highlighted the unpredictability of mountainous winter landscapes for even the most veteran mountaineer. Indeed, with more coastal residents taking to the mountains in the 1920s, there were greater opportunities for serious or fatal accidents on the snow-clad mountains.

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<sup>402</sup> "Rescue Party," *BC Mountaineer*, December 1926-January 1927, volume 5, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; "A mountain tragedy," *BC Mountaineer*, February 1929, volume 7, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada; "Crawford died of exposure," *Vancouver Province*, 26 January 1929; "Hope slim for missing hiker; plane combs ridge," *Vancouver Sun*, 22 January 1929.

<sup>403</sup> "Recovered body of Oscar Appleby," *Vancouver Province*, 9 July 1917; "Snowslide fatal on Grouse Mt," *Vancouver Province*, 19 February 1927; "Snow slide swept man over cliff," *Vancouver Province*, 20 February 1927.

The importance of mountain safety was even more pressing as skiing became more popular in the 1930s. Injuries were a common part of the sport. Skiers injured themselves falling at high speeds or by hitting rocks, stumps, or roots on thinly covered slopes. Avalanches were also a concern. “Warning!” read part of the Tyee Ski Runner’s article in the 25 February 1937 edition of *The Hiker and Skier*. “For the first time in a number of years there are bad slides on the south side of Little Goat Mountain... no chances should be taken as it was in this vicinity [Agur] lost his life.” The ski club encouraged members to stick to the terrain between the Grouse peak and Thunderbird Ridge which was “still safe and wonderful skiing country.”<sup>404</sup> The relative inaccessibility of the ski grounds further compounded injury-related difficulties in the North Shore Mountains. Someone injured on Hollyburn Ridge or Mount Seymour, for example, had to be carried a significant way down the mountain before they could be transferred to a car. On Grouse, the Mountain Highway made this process easier until 1935, when the road was permanently closed to vehicle traffic.

Treating injured skiers on the mountains and transporting them quickly to the city became a greater concern for the Vancouver ski community in the mid- to late 1930s. Until then, the only official first aid person on Hollyburn Ridge was West Vancouver police officer Scotty Finlayson. Chiefly responsible for patrolling the area and “maintaining law and order” on the mountain, Finlayson treated injured skiers, too, and transported them off the mountain using a stretcher and the “Ridge Express,” his sled ambulance.<sup>405</sup> In the late 1930s, Finlayson was joined by volunteers from the St. John’s Ambulance and “ski guards,” volunteers appointed by the Hollyburn Ski Promotion Committee to “eliminate accidents by regulating traffic on the busier hills.” In 1937, the MSSC formed a first aid team to help injured skiers on Seymour. This was followed two years later with the creation of the club’s ski guards: a collection of well-known and skilled skiers who policed that mountain’s hiking and ski trails.<sup>406</sup>

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<sup>404</sup> Art Langley, “Tyee Ski Runners,” *The Hiker and Skier*, 5 no. 7 (1937).

<sup>405</sup> “Hollyburn Memoirs – Scott Finlayson,” *Hollyburn Heritage Society*, <https://www.hollyburnheritage.ca/mtn-lodges/hollyburn-memoirs-scotty-finlayson/>

<sup>406</sup> “The Founding of Mount Seymour’s First Aid Ski Patrol,” *Historypin*, <https://www.historypin.org/en/explore/geo/49.366152,-122.947857,17/bounds/49.363448,-122.950958,49.368856,-122.944756/paging/1>

In January 1940, Vancouver-area skiers established the First Aid Ski Patrol (FASP), a volunteer organization whose members patrolled the North Shore Mountain ski areas. Its creation reflected the growing desire among Vancouver's ski community to provide skiers with medical treatment and support in the mountains. All FASP members had basic medical training. The ski patrol relied on donations from local ski clubs and the municipalities of North Vancouver and West Vancouver to support its activities. FASP quickly made itself an invaluable part of the ski community. During the 1941-42 ski season, FASP treated 206 injured skiers. Women were highly involved with FASP in these early years, as the organization increasingly relied on them to offset the loss of male members to wartime enlistment. During the 1943-44 season, women were elected to key leadership positions, including treasurer (Eileen Publicover) and mountain supervisors (Olivia Pavey for Grouse and Irene Byers for Seymour). This was the case again the following winter.<sup>407</sup> The election of women to these positions reflected larger societal changes during the war years, as they increasingly took on new jobs and leadership roles in the absence of men serving overseas.

## 5.4 Conclusion

"Skiing races inside Vancouver?" So read the curious *Sun* headline on Thursday, 21 January 1943. According to the article, leading members of Vancouver's ski community had spent the previous days scoping out hills to host a slalom and downhill race on the Sunday. Indeed, the 36 cm of snow that had fallen between 18-19 January had temporarily transformed Vancouver into the "veritable skier's paradise." The scouting party chose the steep section of Oak Street between Broadway Avenue and False Creek as the site for its event. Located in the Fairview neighbourhood, the racecourse faced the imposing North Shore Mountains – no doubt an interesting view for those accustomed to looking out *from* the mountains while skiing. The announced addition of a jumping event only added to the excitement. Both the *Province* and *Sun* reported that many of Vancouver's leading skiers planned to compete in the special event. Some notable names

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<sup>407</sup> Nixon, "Highest town on British Columbia coast;" Stanley Burke, Jr., "The ski patrol needs you," *Vancouver Province*, 30 January 1943; Brownie Cleary, "Mr. Bruin gives femmes' Hollyburn cabin fever," *Vancouver Sun*, 23 October 1943; "First aid patrol elects new officers," *Vancouver Province*, 16 October 1943; Ralph MacKenzie, "Ski patrol doing big job on hills," *Vancouver Sun*, 30 October 1942.



included up-and-coming stars such as Ruth Larsen, the then Western Canadian ski champion, and well-known skiers such as Lew Davis and Gertie Wepsala.<sup>408</sup>

The event lived up to expectations. Starting at the Vancouver ferry terminal, a parade of skiers and clowns, led by Grouse ski village's mayor Kyle Stevenson, marched along Hastings Street to the intersection of Granville and Robson streets before taking the BCER streetcar across the Granville Bridge to Fairview. At Oak Street, an estimated three to five thousand locals lined the course to watch competitors race down the street, and to see others fly through the air in an impressive display of "nifty jumping." The *Sun* reported that many youngsters, unable to see over the adults, "filled every tree and roof in the neighbourhood and kept a force of policemen busy chasing them off roofs of doubtful strength." Countless others may have been following the coverage on CKMO, one of Vancouver's local radio stations. Residents were clearly captivated by the sporting event. The crowd along Oak became so immense, in fact, that organizers had to cancel some of their planned events, as the course became too narrow for racing. Despite the shorter-than-expected program, local newspapers considered the event an overwhelming success.<sup>409</sup>

Underlying the event's appeal was the fact that Vancouver had enough snow to host a ski event within its borders at all. Vancouver was Canada's Evergreen Playground after all – skiing was supposed to take place in the mountains, not in the city. This was only the second time an organized ski event had been held in Vancouver, the first being on Point Grey's Sasamat Street in December 1937. "'City folk' should be treated to a rare show by their hill-billy neighbours," joked one *Province* reporter in the leadup to the event.<sup>410</sup> Seen from another angle, the January 1943 ski event also highlighted the incredible growth of skiing in the Vancouver region and the heightened value that mountain snow had acquired during this period. By the early 1940s, skiing had become the primary

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<sup>408</sup> "Skiing races inside Vancouver?" *Vancouver Sun*, 21 January 1943; "Ski races at Oak on Sunday," *Vancouver Province*, 22 January 1943; Brownie Cleary, "Local plankmen to perform in town," *Vancouver Sun*, 22 January 1943; "Skiers are going all out for Sunday's show in town," *Vancouver Province*, 23 January 1943.

<sup>409</sup> "Skiers transform Fairview hillside," *Vancouver Sun*, 25 January 1943; "Thousands crowd Oak St. to see skiers cut capers," *Vancouver Province*, 25 January 1943.

<sup>410</sup> "Ski races at Oak on Sunday," *Vancouver Province*, 22 January 1943.

winter outdoor recreation activity for thousands of coastal residents. Through skiing, the North Shore Mountains had become part of their winter world, a temporary refuge and escape from the urban coast. By bringing this mountain activity to the city, skiers introduced thousands – “most of whom have never seen skiing,” noted one *Province* reporter – to the exhilarating sport.<sup>411</sup> It is possible that the event contributed in a small way to skiing’s incredible growth in the postwar period.

But the snowy North Shore Mountains were more than just a site for winter recreation activities. Mountain snow was key to the city’s very existence. As this chapter has shown, municipal and provincial government officials understood that accurately forecasting and conserving snowmelt run-off was vital to Vancouver’s survival. While the GVWD had taken some steps to improve the region’s water supply, more work was still needed. Between 1921 and 1941, Metro Vancouver’s population almost doubled to nearly 400,000 people, and there was little indication that this growth would slow. GVWD officials had big plans for the future. As local newspapers reported just two days after the ski event, members of the army reserve were cutting timber from the upper Capilano River Valley to offset an ongoing fuel shortage. While GVWD officials had previously deplored logging operations in its watersheds, it actually condoned these operations in the upper Capilano River Valley, the proposed site of a new mega-dam and reservoir. As later chapters will show, snow in the southern Coast Mountains continued to gain greater cultural, societal, and economic value in the postwar period.

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<sup>411</sup> “Skiers are going all out for Sunday’s show in town,” *Vancouver Province*, 23 January 1943.

## Section 4

### 6 The Evermean Sleightground: 1939-1972

Leo Sweeney was Vancouver's leading civic booster in the 1940s and 1950s. Sweeney was born in London, Ontario in 1889, but grew up in Victoria, B.C., when his father moved the family there to open Sweeney Cooperage. Sweeney eventually became a managing director at the company and moved it and his family to Vancouver in 1923. The barrel manufacturer became a fixture in the city, joining organizations such as the B.C. Automobile Association, the Kiwanis Club, and the Knights of Columbus. After the Second World War he was elected President of the Vancouver Tourist Association (VTA); he was elected President of the International Evergreen Playground Association (IEPA) later that decade. The VTA and IEPA had long boasted about the city's pleasant weather and mild climate; Sweeney, however, took this enthusiasm to another level. At public events, he wore a white suit and straw hat. The latter he donned even when it rained to "prove it was only liquid sunshine." As Pierre Berton later wrote in *Maclean's Magazine*, "Sweeney sees himself as the living negation of the canard that it is never wet or cold in Vancouver." At Christmas, Sweeney would be photographed tending to the daffodils or roses in his garden – an impossibility for most other Canadians. In December 1950, Sweeney sent one such Christmas card to mayors in other Canadian cities with the caption: "It's great to live in Evergreen Vancouver where flowers bloom the year round."<sup>412</sup>

For Sweeney, snow was an unwanted and unnatural winter weather phenomenon. Indeed, the VTA president was the embodiment of the evergreen mentality. Snow was "white rain" as Sweeney once remarked in January 1946. "This is just a freak. It hit this side of the Rockies by mistake. Something went haywire. And anyway, it can't last!" he complained during another "white rainstorm" in March 1948. Sweeney's disdain of such "unnatural" weather – and his knack for the theatrics – was on full display on 11 January

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<sup>412</sup> There are numerous newspaper articles in which Sweeney calls rain "liquid sunshine" or local reporters point to that expression as one of his common refrains. Pierre Berton, "The Great Vancouver Love Affair," *Maclean's*, 15 November 1951; "Tourism booster Leo Sweeney dies at age 91," *Vancouver Sun*, 19 September 1977; "Michael Leo Sweeney," *Findagrave.com*, <https://www.findagrave.com/memorial/122625244/michael-leo-sweeney>

1950. It had been a cold, snowy winter to that point. January temperatures were well below the seasonal average, and 76 cm of snow had already fallen on Vancouver. In a choreographed publicity stunt, Sweeney met with Squamish chief Mathias Joe Capilano in a snowy field in Stanley Park. Pulling out a scroll, Sweeney offered to renounce “the white man’s rights to the whole territory” and return it to the Squamish people. Of course, he had no authority to make such an offer. But as the city’s leading weather booster played up for the reporters on hand, he was fed up with the winter weather and did not want Vancouver anymore. “Nuts! Vancouver? You can have it, brother! It would take another 50 years to clean up this mess,” replied Capilano. The famed carver was accustomed to these types of events; Capilano was often asked by white civic leaders to participate and perform in local ceremonies and celebrations in traditional clothing, as he did again on this occasion.<sup>413</sup> Although the ceremony was done in jest, Capilano’s participation was curious given his efforts to protect actual existing land rights (and to obtain others) for the Squamish people.<sup>414</sup> As *Maclean’s* Clyde Gilmour later reflected, “the poignant ceremony was chronicled with dead pan gravity by the Vancouver Press, which, like all the rest of Vancouver, had precious little to laugh at during the coldest, hardest winter in the city’s official history.” Others were equally frustrated by that winter’s weather. As the *Sun’s* Barry Mather wrote a few days after the theatrical ceremony, Vancouver that winter was not the Evergreen Playground, but “the Evermean Sleightground.”<sup>415</sup>

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<sup>413</sup> Capilano’s involvement in these types of events mirrored those of other Indigenous peoples in North America. Historians have examined how Indigenous peoples “played Indian” to exploit white stereotypes to attain greater economic opportunities and prominence in white society. Daniel Francis, *The Imaginary Indian: The Image of Indian in Canadian Culture* (Vancouver: Arsenal Pulp Press, 2011); Paige Raibmon, *Authentic Indians: Episodes of Encounter from the Late 19<sup>th</sup> Century Northwest Coast* (Durham, N.C.: Duke University Press, 2005).

<sup>414</sup> “Indian chief claims Lions Gate Bridge,” *Vancouver Sun*, 19 January 1953; “On guard against the white man,” *Vancouver Sun*, 24 January 1953.

<sup>415</sup> Gordon McCallum, “Hear no snow, see no snow, say no snow,” *Vancouver Province*, 30 January 1946; “This just can’t be Vancouver,” *Vancouver Province*, 22 March 1948; Clyde Gilmour, “When the blizzards hit balmy B.C.,” *Maclean’s*, 1 April 1950; Barry Mather, “Mather’s Nightcap,” *Vancouver Sun*, 16 January 1950.



**Figure 26: Sweeney offering to return Vancouver to Capilano. *Vancouver Sun*, 12 January 1950.**

While most coastal residents continued to embrace the evergreen mentality, some began to question its legitimacy following a spate of cold, snowy winters in the 1940s and 1950s. The *Province's* Jean Howarth was the leading voice of this criticism. In the immediate postwar period, she reminded readers that snow was in fact part of the winter climate and that perceptions to the contrary caused residents nothing but problems. Her articles, and the snowy winters in those decades, had some effect on locals' sensibilities. Some residents believed that their climate had changed – whether or not by nature was unclear – by the early 1950s. These fears slowly faded, and complacency returned, as annual snowfalls declined in the late 1950s and 1960s. This had become the regular response to snow in Vancouver: panic, bewilderment, and calls for better preparedness during exceptionally cold, snowy winters followed by periods of complacency and a collective amnesia about snow and how it had afflicted coastal residents in the past.

Snow experiences continued to evolve in the postwar period. Societal changes with snow were most clearly seen in relation to Vancouver's transportation history. Snow had

significant impacts on travel within and around the city during these three decades. Cars dominated streets in the postwar period. The growing automobility of Vancouver created an increasingly interconnected region. Snow made travel to and from the suburbs hazardous, and at times impossible. Drivers were generally unprepared for snowy or icy conditions. During the worst snowstorms, downtown hotels provided stranded suburban residents with discounted rates so that they could safely wait out the storm. The BCER faced new snow-related problems, too, as the company transitioned from streetcars to buses and trolleys. Adverse winter weather was particularly disruptive to air travel on the coast. Flights to and from Vancouver International Airport grew considerably in the postwar period. Snow and ice grounded planes and cancelled flights for days at a time. In rare circumstances, snowstorms were deadly for air passengers.

Ensuring efficient and timely ground and air travel became a priority for civic leaders. Having invested in a mechanized and motorized snow fleet in the late 1930s, the Board of Works increasingly relied on it to ensure smooth travel on Vancouver's major roads and highways. The airport also relied on similar machines to clear runways. Manual labour was no longer considered good enough to clear expansive transportation corridors. Sand and salt became important tools in the city's snow-fighting arsenal. Seeking to keep costs down, officials held back their motorized equipment and relied primarily on those two products in the hopes that they could improve road conditions in the short term. The Board's strategy continued to be to assist nature, the belief being that warmer or rainier weather would better deal with the problem. Issues arose when snow was deeper or lasted longer than expected. A salt shortage during the 1964-65 winter also demonstrated how the city's overreliance on this product created considerable hardship when it was no longer available. But city officials were unwilling to invest heavily in other snow-fighting equipment. As this chapter shows, the evergreen mentality continued to pervade civic snow policies.

## 6.1 Oh, it's been unusual just like this almost every year

The promotion of tourism to Vancouver – and the Pacific Coast more generally – remained a key priority for civic and regional leaders in the postwar period. As Dawson explains, “tourism was championed as an important element in postwar

reconstruction.”<sup>416</sup> Many parts of the continent experienced a tourism boom in these decades, as North Americans had higher incomes and greater leisure time. Improved transportation corridors in British Columbia and the advent of the commercial airline industry made travel to and within the province easier than ever before. In Vancouver, tourism “was seen as a key ingredient in the city’s overall economy.”<sup>417</sup> Thousands relied on money from domestic and foreign tourists to sustain their businesses. Seeking to lengthen the tourism season, groups such as the British Columbia Government Travel Bureau (BCGTB) targeted the western United States and eastern Canada in an attempt to lure those tourists to visit the coast during the colder winter months.<sup>418</sup>

Sweeney was Vancouver’s leading weather booster in the immediate postwar period. Through newspaper and magazine articles and publicity stunts, he worked hard to sell Vancouver’s mild climate and the evergreen mentality to local, domestic, and international audiences. “Terrible, terrible!” moaned Sweeney after a light snowfall in January 1947. “They had so much of that white stuff on the other side of the mountains that it overflowed there and a little blew here.” What fell in Vancouver each winter was not snow but “white rain” or “frozen dew.” The barrel-maker turned booster espoused the refrain that snow would depart nearly as quickly as it arrived. “It’s been so long since I’ve seen snow... that I wasn’t sure myself,” remarked Sweeney to reporters in January 1946. “But I guess it is snow. Yep, you can say it was snowing in Vancouver... What do you want to bet it won’t be turned to rain by tomorrow?”<sup>419</sup>

Of course, Sweeney was a lightning rod for criticism and ridicule whenever Vancouver’s winter weather turned “un-Vancouver-like.” “It’s a m-m-mirage I tell you! Just a mirage!” shivered a caricatured Sweeney in a November 1946 *Sun* cartoon. “Not that I have anything against Mr. Sweeney, but these mornings when I am pouring hot water down my car’s throat to thaw its tonsils out I often think Sweeney goes a bit too far in his enthusiasm for our climate,” wrote the *Sun*’s Alf Cottrell during a cold snap in January

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<sup>416</sup> Dawson, *Selling British Columbia*, 118.

<sup>417</sup> Ibid, 158.

<sup>418</sup> Ibid, 136-7.

<sup>419</sup> “Business hard hit,” *Vancouver Sun*, 13 January 1947; McCallum, “Hear no snow, see no snow, say no snow,” *Vancouver Province*, 30 January 1946.

1947. “I should have believed them in Hollywood when they told me to bring my sled and my huskies to the evergreen playground of Western Canada,” commented comedian Jack Paar upon arriving in a snowy Vancouver in February 1948. “Where is this guy Sweeney?” Vancouver’s weather booster took the greatest criticism in January 1952, when he departed for a previously planned business trip to Jamaica as the city suffered through a heavy snowstorm. Ever with the quick wit, Sweeney rebuked reporters that he was “really sorry to leave all the ‘solid sunshine’ behind, but business is business.”<sup>420</sup>



**Figure 27: “Tourist chief picks November roses,” *Vancouver Sun*, 20 November 1946.**

Criticism against Sweeney, and the evergreen mentality more generally, peaked in the late 1940s and early 1950s. The four winters between 1948-49 and 1951-52 were exceptionally snowy and cold. The annual snowfalls during these four winters measured between 97 and 123 cm. This heavy snow persisted for longer than normal, too: between 23 and 28 days. These figures were much greater than the 1940-71 averages (56 cm of snow and 13 days with snow-cover). Strong negative PDO patterns during these four

<sup>420</sup> “Tourist chief picks November roses,” *Vancouver Sun*, 20 November 1946; Alf Cottrell, “On the Sunbeam,” *Vancouver Sun*, 29 January 1947; “Where’s Sweeney, asks Paar, astonished by B.C. snow,” *Vancouver Sun*, 3 February 1948; “Snow to pile higher,” *Vancouver Province*, 22 January 1952.



years contributed to these cold, snowy winters. The PDO reversed from a positive cycle to a negative one in 1946, creating climate conditions more favourable to colder winters and increased precipitation totals.<sup>421</sup> Coastal residents had faced snowier winters in the past, but not since the 1910s had snow been so prominent in successive winters. Local reporters – who often perpetuated the evergreen mentality in their articles – and outside observers began to question long-held assumptions about the city’s climate. Writing in *Maclean’s* in April 1950, Clyde Gilmour believed that that winter’s snows showed that Vancouver “had been kidding itself that it possesses a banana belt or subtropical climate.” For two years in a row Vancouver “was just as cold and just as snowy and just as miserable in winter as many other parts of Canada.” As Vancouver’s medical health officer, Stewart Murray, conceded to Gilmour, “We should admit that we’ve been mildly kidding ourselves for a long time, Vancouver is not nearly as balmy a place as we like to think it is. Even at that, though, I wouldn’t trade it for any other place in Canada.” “Oh, come to our Evergreen Playground – the myth of the Tourist Bureau,” wrote one *Province* reporter amidst heavy snow in March 1951. “It’s there, though you cannot perceive it, under feet of our beautiful snow.”<sup>422</sup>

These individuals offered different opinions as to why winters had changed so dramatically in Vancouver. Reflecting on the 1949-50 winter, Sweeney with tongue in cheek blamed those from colder climates for bringing the “strange” weather with them. “Thousands of prairie people flocked out here to live in ’49 and brought their goldarned prairie weather with them!... By next winter, those who stay here will be regular Vancouverites and the weather will be right back to normal.” In his *Maclean’s* article, Gilmour wondered if Vancouver was experiencing some form of temporary or permanent climate change, brought on by humans or nature. The reporter noted that scientists had recently dismissed a popular theory that the detonation of atomic bombs had caused a shift in regional weather patterns.<sup>423</sup> But questions lingered about the impact that atomic

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<sup>421</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Vancouver PMO, BC monthly data report for December – March, 1945-1971, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; “Pacific Decadal Oscillation,” *National Centers for Environmental Information*, <https://www.ncei.noaa.gov/access/monitoring/pdo/>

<sup>422</sup> Gilmour, “When the blizzards hit balmy B.C.,” “The Lantern,” *Vancouver Province*, 9 March 1951.

<sup>423</sup> Gilmour, “When the blizzards hit balmy B.C.”

bombs and nuclear testing had on local and global weather patterns and climates.<sup>424</sup> “On a morning like Monday you find Vancouver people... speculating about the strange ‘change in the climate,’” noted the *Province* in January 1952. “The meteorological history does not bear it out but you find most Vancouver people wondering if the climate is changing because so many trees have been cut, or because atomic tests in the Pacific have shifted ocean currents, or maybe the ice age has begun a slow return.”<sup>425</sup> Although Vancouver had experienced snowier winters in the past, the fact that these conditions prevailed during successive years made it seem as if the city’s climate had indeed changed.

No one was more critical of local views toward snow and winter than the *Province*’s Jean Howarth. She was Sweeney’s foil in the late 1940s and 1950s. Born in Kelwood, Manitoba, in 1917, Howarth spent her first twenty-five winters on the Prairies. She moved to Vancouver in 1943 and joined the *Province* as a columnist. Having lived through many cold, snowy winters in Manitoba and Saskatchewan, Howarth was shocked by how coastal residents thought about and handled snow. “It isn’t the snow that’s bothering Vancouver,” she wrote in late January 1950. “It’s our attitude of mind.” Vancouverites were so uncomfortable with and so unprepared for snow, she believed, “because we don’t like to think of Vancouver as a city that has snow. We will preserve the pretty myth of Evergreen Vancouver if we catch our deaths doing it.”<sup>426</sup> As Howarth saw it, the evergreen mentality was a detriment to the city:

You know something, I think it’s almost time we decided this wasn’t really an Evergreen Playground, at least not all the time, at least not right now nor during most Decembers, Januarys, and Februarys. It’s a nice myth and ought to be carefully preserved in front of all American tourists and eastern relatives who come out here and make disparaging remarks about our weather; but I think it’s about time we let ourselves in on the truth. Most of the year, yes, we are an Evergreen Playground, even if rather a damp one; but let’s face it, almost every

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<sup>424</sup> See these sources for discussions about nuclear testing and climate change research: Michael Dörries, “The politics of atmospheric sciences: ‘nuclear winter’ and global climate change,” in *Klima*, eds. James Fleming and Vladimir Jankovic (Chicago: University of Chicago Press, 2011), 198-223; Fleming, *Historical Perspectives on Climate Change*, 118-19; Edwards, *A Vast Machine*, 208.

<sup>425</sup> “This ‘unusual’ weather,” *Vancouver Province*, 22 January 1952.

<sup>426</sup> Howarth wrote seven articles on climate ideals/snow in Vancouver between 1948 and 1955. “Jean Howarth,” *Vancouver Sun*, 23 June 2004; Jean Howarth, “This column,” *Vancouver Province*, 27 January 1950.

year there comes a time when woollies are a fine idea, also fur-trimmed overshoes, chamois-lined coats, and storm windows. It is all very well to be superior about the frigid prairies, but what do you call this?<sup>427</sup>

The idea that snow was “unusual” needed to be re-evaluated. As one of Howarth’s friends and a long-time resident told her during the snows of January 1950, “Oh, it’s been unusual just like this almost every year since I came here.” Howarth pointed to the city’s meteorological records as proof of snow’s commonness. A new attitude toward snow would mean better decision-making and preparedness. Ignoring snow, she argued, may have given coastal residents a sense of superiority over their fellow Canadians, but it did nothing to address the difficulties that it created. As she explained in January 1954, “If we ever admitted that Vancouver suffers from the same streak of insanity as the rest of her sister cities, we would have to start putting insulation in our house, stock piling the fuel, budgeting for a proper snow removal crew, putting on storm windows, and buying a few more snowploughs. And that would never do in an evergreen playground.”<sup>428</sup>

Criticisms from Howarth and others did not completely dislodge the evergreen mentality, however. The heavy snows and prolonged snow-cover of the late 1940s and early 1950s retreated in subsequent years. Vancouver experienced five exceptionally snowy winters again between the mid-1960s and early 1970s, but these came following years of lower-than-average snowfalls and snow-cover. Excluding these five snowy winters (which had snowfalls of more than 115 cm and over 20 days of snow), Vancouver measured an average of only 29 cm and 9 days of snow-cover between 1954-55 and 1970-71.<sup>429</sup>

Complacency – the very thing Howarth rallied against – returned during these low snow winters. As the *Province*’s editors noted in January 1959, coastal beliefs and attitudes about snow remained a barrier to change. Yet that newspaper continued to espouse ideas that prevented any practical change. “We are not very used to snow in Vancouver,” wrote the editors in February 1963. “And we hope we never have to be.” As Mayor Tom Campbell explained to reporters following criticisms of his snow-clearing policies in

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<sup>427</sup> Jean Howarth, “This column,” *Vancouver Province*, 4 January 1950.

<sup>428</sup> Howarth, “This column,” *Vancouver Province*, 4 January 1950; Jean Howarth, “Jean Howarth,” *Vancouver Province*, 27 January 1954.

<sup>429</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada.

January 1968, “This is the semi-tropics, not Toronto or Montreal, where they have to cope with snow six months of the year. Vancouver has only a bad snowstorm once every six or seven years.”<sup>430</sup> Similar messages were repeated at the national level, too. In the Canadian Broadcasting Corporation’s (CBC) 1967 documentary series, *A City’s Story*, narrator Bill Reid noted how Vancouver enjoyed year-round greenery, “hence our boastful and tiresome slogan about this being an evergreen playground.” The “violent danger signals about the coming winter” – the vibrant autumn colours of Eastern Canada – did not exist on the coast “for nothing very dangerous is in store for us.”<sup>431</sup>

The transition between these two extremes defined long-term snow attitudes in Vancouver: periods of disbelief and outright criticism during high-snow winters followed by complacency and the re-entrenchment of the evergreen mentality during low-snow winters. Pointed criticisms and condemnation returned forcefully with the snow. “Vancouver is no longer the Evergreen Playground,” wrote the *Sun*’s Barry Broadfoot and Mike Graham in the aftermath of the 1970-71 winter, when nearly 2 metres of snow fell on Vancouver. “Perhaps it never was. We believed it because we wanted to... but Mr. Promoter, you can’t fool us anymore. The petals have fallen off our eyes. We can see the truth. And what we see is snow.”<sup>432</sup> The *Sun*’s editors clearly felt that local attitudes toward snow remained the same when they republished a January 1952 Len Norris cartoon in January 1971. As Norris had captured so well nineteen years earlier, coastal residents were unprepared for snow. It was an eastern phenomenon that other Canadians were better equipped to handle.<sup>433</sup> As we have seen in previous chapters – and will see again here – this ebb and flow of the evergreen mentality had significant effects on human responses toward snow.

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<sup>430</sup> “Three inches of snow: chaos,” *Vancouver Province*, 6 January 1959; “City’s gamble pays off, says Mayor,” *Vancouver Sun*, 8 January 1968.

<sup>431</sup> *A City’s Story: Vancouver*, Bill Guns (CBC, 1967), <https://www.youtube.com/watch?v=VmPZdFfyjc>

<sup>432</sup> Barry Broadfoot and Michael Graham, “Evergreen playground has had enough; from under the snow, a cry of Uncle!” *Vancouver Sun*, 2 March 1971.

<sup>433</sup> “Probably one of those silly easterners...” *Vancouver Sun*, 15 January 1971.

## 6.2 A beautiful sight or a white horror?

Coasting remained the favoured snowy pastime for Vancouver's children during these decades. Hilly streets, parks, and golf courses were the sliding places of choice for boys and girls. Children took to the hills en masse during a city-wide school closure in January 1943. War-related labour shortages and civic snow-clearing priorities prevented the city from closing streets to coasters, though. Undeterred, thrill-seeking youths policed their own activities, placing lookouts at intersections to provide the "all-clear" to their friends. The popular policy of closing streets was renewed in the war's aftermath. In the lead up to Christmas 1948, for example, City Engineer Charles A. Battershill set aside 8 streets consisting of 21 blocks for coasters to enjoy. The *Sun* criticized officials two years later when they only set aside 5 streets. Allocating more streets to coasters protected them and other residents from dangerous altercations with cars, they claimed. Closing off the steepest hills limited accidents from drivers who, as the editors explained, drove on winter roads as if "they were being pursued by demons." Perhaps recognizing the need for more safe coasting zones, officials set aside 17 streets in January 1954.<sup>434</sup>

While these sites were blocked off in order to protect children from accidents, coasting injuries and even deaths still occurred. In January 1947, two boys and a girl were lucky to escape major injury when a mail truck broke through a coasting barricade on Scotia Street. Ten years later, 8-year-old Charles Bruce Ross died after sliding past a barricade and into a moving vehicle in Burnaby. The ensuing coroner's inquest ruled that Ross' death was accidental and recommended that officials erect better barricades to prevent future accidents. Speaking later to reporters, coroner E.H. McEwen argued that "too many B.C. children are not familiar enough with snow. They love it but don't know how to take care of themselves" – an assertion that paralleled concerns from the 1910s. Ross' death was a wake-up call for officials in Vancouver, who to that point had yet to set aside any streets for coasting.<sup>435</sup> This practice of setting aside city streets for coasting faded

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<sup>434</sup> "No streets roped for snow playing," *Vancouver Sun*, 23 January 1943; "Sun Ray Club – on patrol; safety in sleigh riding," *Vancouver Sun*, 26 January 1943; "Youngsters make most of rare sleighing facilities," *Vancouver Sun*, 23 December 1948; "We take to the curb," *Vancouver Sun*, 12 January 1950; "Hills closed in city for sleigh-riding," *Vancouver Sun*, 23 January 1954.

<sup>435</sup> "Two small girls hurt sleighing here Saturday," *Vancouver Province*, 6 January 1947; "Hill recommended for sleigh riding," *Vancouver Province*, 5 February 1957.

during the low-snow winters of the 1960s. Doing so was only practical during prolonged snowfalls. The suspension of this policy did not stop the activity, however. In the lead up to Christmas 1968, for example, the *Province* reported that police had received multiple complaints that children were using hilly streets for coasting and skiing.<sup>436</sup>

Youth snowballing was a much reported on topic in the postwar years. While snowball attacks and the destruction of property with those projectiles was not new, coverage of these incidents increased considerably after the war. Concerns about juvenile delinquency including gang activity, vandalism, and general “hoodlumism” rose in Vancouver between the late 1940s and 1970s.<sup>437</sup> Snowballs were an easy-to-make and readily available projectile, and local newspapers reported multiple incidents when children and teenagers used snowballs to break windows. In January 1962, the *Province* reported that “police received so many complaints of snowballs Tuesday night they were able to answer only the most serious ones.” Three years later, in January 1965, a snowball fight involving “two gangs of youths” resulted in 19 broken windows at General Gordon School. While police had not seen the fight take place, the “small puddles... inside the classroom where the windows were broken” pointed to the likely projectiles. “Two young hoodlums” used snowballs in a robbery in the Mount Pleasant neighbourhood just four days after the battle at General Gordon. The *Sun* reported that police tracked the culprits by following the footprints they left behind in the snow. They were both arrested. Interestingly, reports of snowball attacks or property related damage at UBC fell during this same period; the *Ubysey* reported on few such events. Snowball incidents may have occurred nearly as frequently as they did in the 1920s and 1930s – students threw snowballs at the Social Credit’s W.A.C. Bennett when he visited campus in January 1962, for example – but these stories were apparently not as noteworthy.<sup>438</sup>

Snow and cold weather continued to affect those employed in outdoor occupations. In January 1943, outdoor work at Vancouver’s shipyards stopped for four days, as snow and

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<sup>436</sup> “Warm air moves in over coast,” *Vancouver Province*, 23 December 1968.

<sup>437</sup> Francis, *Becoming Vancouver*, 166.

<sup>438</sup> “10-inch snow ties up city, new fall expected today,” *Vancouver Province*, 8 December 1958; “snowballs outdraw SoCred chief,” *Vancouver Sun*, 18 January 1962; “Gordon school a casualty in snow fight,” *Vancouver Province*, 5 January 1965; “Snowball prelude to robbery,” *Vancouver Sun*, 8 January 1965.

ice made working conditions unsafe. The shutdown halted construction on ships intended for the war effort and put 800 men out of work. Logging and its associated industries continued to be the jobs most affected by adverse winter weather. The prolonged snowfalls and cold winters of the late 1940s and early 1950s were particularly impactful on loggers. In January 1950, thousands of loggers remained in Vancouver because their camps were snowed in. The number of temporarily unemployed loggers reached 20,000 at the end of the month. Deep snow in the late 1960s led to further layoffs, not just in the logging industry, but in many outdoor occupations. On 31 December 1968, for example, the *Province* reported that thousands of forest, construction, and trade workers were out of work because of snow and exceptional cold weather.<sup>439</sup>

The number of shovelling opportunities available to these temporarily unemployed men declined in the decades following the war, as the Board of Works increasingly relied on and built up its mechanized snow-fighting fleet. The return of better economic conditions in the city also led to less focus on relief initiatives. Certain work stoppages and snow conditions did affect city decisions, however. In January 1943, as Vancouver was transitioning to mechanized snow-fighting equipment, officials hired 300 to 500 temporarily laid-off shipbuilders daily between 22 and 26 January to clear city streets. In February 1949, the BCER brought on 1,000 extra shovellers to help clear snow. The extra help was needed that winter, as the company was undergoing a shift from streetcars to buses and trolleys; its flangers and other rail-based snow-fighting machines were unable to clear non-streetcar-serviced streets. The Board brought on hundreds of unemployed and laid off men during snowy January 1954. Relief shovelling opportunities were limited in future winters. In December 1958, for example, the city hired only 50 extra shovellers from a pool of 250 applicants. Numbers remained low into the 1970s. Following a heavy snowstorm in January 1971, the city brought on just 50 relief workers to help clear drains. City Engineer R.M. Martin rejected the notion that he should bring on more labourers to help with this work. As he explained to the *Sun*, “you can’t do this

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<sup>439</sup> “2 shipyards close down,” *Vancouver Sun*, 22 January 1943; “Two deaths mounting unemployment toll of B.C.’s relentless cold wave,” *Vancouver Province*, 4 January 1950; “Outdoor jobs wiped out by snowfall,” *Vancouver Sun*, 26 January 1950; “Freeze idles 5,000,” *Vancouver Province*, 31 December 1968.

job with people; it's got to be done with equipment." His sentiments highlighted how the City of Vancouver had transitioned away from manual labour to mechanized and motorized snow-fighting equipment by the 1970s.<sup>440</sup>

Those rare shovelling opportunities were a lifeline for some families, as the *Sun*'s Moira Farrow explained in a profile on 40-year-old Lamonis Virs in December 1964. The unemployed, Latvian-born Virs had a wife and five children and lived across Burrard Inlet in Horseshoe Bay. Shovelling at the Pacific National Exhibition brought him "nothing but joy." "If it wasn't for this job I wouldn't have worked at all before Christmas," said Virs. "We have bought the children a few cheap gifts but now we should be able to get them something more." The arduous job paid Virs \$2.17 per hour. He conceded to Farrow that he hoped for "long hours of work." In following winters, the National Employment Service (NES) called on residents to hire these unemployed men to assist them with snow-clearing work. Shovelling remained an attractive employment opportunity for able-bodied men when it snowed. In January 1966, the NES noted that it was unable to keep up with the number of incoming applications for shovelling positions in both Vancouver and New Westminster. Unfortunately for these men, neither city was hiring in large numbers.<sup>441</sup>

Reports of shovelling injuries and deaths grew in Vancouver during the postwar period. As was the case with youth snowballing, these incidents had happened before, but reports of these events appeared in newspapers more frequently in the postwar period. At least ten people died shovelling snow in Vancouver between 1940 and 1971. Shovelling deaths were assuredly higher than this, especially when one includes deaths for the Metro Vancouver region as a whole.<sup>442</sup> Shovelling was arduous work - especially on the coast, ironically enough, where the snow tended to be wet and heavy. As John Osborne, the

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<sup>440</sup> "Snow clearing costing city \$2,000 daily," *Vancouver Sun*, 23 January 1943; "Mercury to hit bitter 12 tonight," *Vancouver Province*, 12 February 1949; "Winter goes down the drain," *Vancouver Province*, 26 January 1954; Alex MacGillivray, "That white stuff means jobs to line of patient seekers," *Vancouver Sun*, 8 December 1958; "Need more snow? Well, here's more," *Vancouver Province*, 24 December 1964; "Drivers learning to live with snow," *Vancouver Sun*, 12 January 1971.

<sup>441</sup> Moira Farrow, "Snow brings joy to jobless Dad," *Vancouver Sun*, 24 December 1964.

<sup>442</sup> See for example this *Vancouver Province* article, which notes that there were 120 snow-related deaths in Metro Vancouver in January 1969, most of which were attributed to traffic accidents or heart attacks from shovelling or pushing stuck cars. "Snow took heavy toll on lives," *Vancouver Province*, 13 February 1969.



chief of cardiology at Vancouver General Hospital, explained to *Sun* readers in January 1969, a pile of wet snow was between four to ten times heavier than dry snow. “The average householder, if he shoveled 60 feet of sidewalks, plus the walk of his front door, plus his steps, moved a total of four tons of the wet, white stuff,” remarked another *Sun* reporter. Injuries and heart attacks occurred when residents over-exerted themselves. Beginning in the 1950s, local newspapers began issuing warnings for residents to take it easy and provided recommendations on how to prevent injuries and undue strain when shovelling. Taking breaks, pushing the snow gently, or hiring someone else to do the job were just a few suggestions offered by medical experts.<sup>443</sup> As McKelvey points out, advisories such as these became more common in other, snowier North American cities in the postwar period, too. The growing need for North Americans to clear walkways and driveways to access their cars and free them from their driveways probably contributed to the growing number of shovelling-related injuries and heart attacks – a factor that was likely true in Vancouver, too.<sup>444</sup>

Local officials had fewer concerns about snow-related property issues in the postwar period. While snow still collapsed barns, sheds, and older homes, the destruction of newly constructed buildings was much less likely following the passage of the National Building Code of Canada in 1941. The new regulations stipulated that roofs with slopes of 20 degrees or less needed to be able to support snow loads of 20 to 40 pounds per square foot (90 to 180 kg per square metre).<sup>445</sup> In Vancouver, officials chose the heavier weight as their minimum threshold. Even with these new guidelines in place, local officials still encouraged residents to cut channels on their roofs or to clear snow off completely following heavy snowfalls. One fear, according to building inspector Don Matheson, was that rain would saturate the snowpack and push it past the 40-pound threshold. Officials urged caution when working on snow-covered roofs. Injuries and

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<sup>443</sup> Local newspapers published at least a dozen precautionary articles between 1940 and 1971. “Here’s proof white stuff heavy,” *Vancouver Sun*, 9 December 1958; Robert Sarti, “Shovel snow s-l-o-w-l-y, doctor warns over 40s,” *Vancouver Sun*, 3 January 1969.

<sup>444</sup> McKelvey, *Snow in the Cities*, 147, 153, and 168.

<sup>445</sup> Canada, National Housing Administration Department of Finance and the Codes and Specifications section National Research Council of Canada, *National Building Code*, (Ottawa: National Housing Administration Department of Finance and Codes and Specification Section National Research Council of Canada, 1941), 362.

heart attacks were just as likely on the roof as they were on the driveway. As one *Sun* reporter explained in December 1958, 25 cm of wet snow on top of an average-sized roof weighed roughly 12 tons. While newspapers did not report on any heart attacks from roof-shovelling activities, they did note that at least two people died from falls while working on their roofs.<sup>446</sup>

Snow was a pressing concern for residents in the community of West Vancouver in January 1965. In the affluent British Properties (situated over 100 m asl), snow exceeded 180 cm early that month. The snow was abnormally deep closer to sea level, too. As West Vancouver resident and *Sun* reporter Simma Holt recounted, “the snow had become a jail for many and a lockout for those who must work in the city.” While the snowy landscape was a beautiful sight from Vancouver, it was “a hopeless, endless, frustrating nightmare... a white horror” for North Shore residents. Many abandoned their homes for downtown hotels; those who continued to commute back and forth left their cars at the sea level Park Royal shopping centre before trudging in waist-deep snow to their mountain-side homes. The added weight of the snow collapsed some roofs and created serious structural problems in many homes. While some homeowners took it upon themselves to shovel off their roofs, others paid crews to do this work for them.<sup>447</sup>

Snow had a significant impact on air travel to and from the coast. The Vancouver Airport – later the Vancouver International Airport (VIA) – was built on Sea Island in 1931, a project prompted by Mayor L.D. Taylor and the Aero Club of B.C. after being told by Charles Lindbergh that the aviator could not fly to Vancouver because it lacked a field fit to land on.<sup>448</sup> The airport served both private aviators and commercial airlines. Initially owned by the City of Vancouver, the airport was purchased for \$2.5 million by the federal Department of Transport in 1962. Commercial flights to and from VIA increased significantly in the postwar period with the creation of new domestic airline companies

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<sup>446</sup> “Man falls 30 feet from roof,” *Vancouver Province*, 14 February 1949; “Man dies in fall off porch,” *Vancouver Province*, 26 January 1952; “Here’s proof white stuff heavy,” *Vancouver Sun*, 9 December 1958; “Shovel snow off shingles soonest,” *Vancouver Sun*, 5 January 1966; “Ice, not snow, ‘peril to roofs,’” *Vancouver Sun*, 20 January 1969.

<sup>447</sup> Simma Holt, “North Shore hill dwellers start abandoning homes,” *Vancouver Sun*, 30 December 1964; “Worried W. Van calls for troops,” *Vancouver Province*, 4 January 1965.

<sup>448</sup> Francis, *Becoming Vancouver*, 122; John Condit, “Vancouver International Airport,” in *The Vancouver Book*, ed. Davis, 330-31.

such as Trans-Canada Airlines (TCA) and Canadian Pacific Airlines (CP). This growth in local air travel paralleled the expansion of continental and global aviation travel more generally. In its first year of operations, over 1,000 passengers flew into and out of VIA. Forty years later, this number had climbed to over 2 million passengers.<sup>449</sup> The impact of adverse weather events worsened as the total number of flights increased. A severe snowstorm or deep snow coverage created greater challenges for airport operators and airline passengers in the 1970s than it did in the 1930s.

Flight delays and cancellations were the most common snow-related problem at VIA. Snow reduced visibility and created dangerous flying conditions. It also made runways unnavigable and unsafe to land on. The airport's snow-clearing equipment was limited to just a single snowplow in the late 1940s. The machine at times struggled to keep up with the snow. During a heavy snowfall in February 1949, the snowplow broke down seven times as officials tried to keep one runway open to incoming and outgoing aircraft. Officials purchased an industrial snowblower in the early 1950s to improve operations. The \$18,000 machine was able to throw snow more than 60 m off the runway. The airport's snow-clearing arsenal grew in the 1950s and 1960s, as officials sought to ensure timely air travel to and from Sea Island. By 1965, VIA had four snowplows, two snowblowers, two sweepers, one grader, one front-end loader, one bulldozer, and one sand spreader. Clearing snow was a big job at VIA by the 1960s. During heavy storms, crews worked non-stop in 12-hour shifts to keep runways, ramps, and parking areas open and free of snow. Crews could not prevent delays entirely, though. The most notable – and most embarrassing, from the city's perspective – occurred on 1 February 1963, when heavy snow prevented Queen Elizabeth II from landing in Vancouver.<sup>450</sup>

Snow caused major incidents on the coast, too. On 19 December 1948, a TCA airplane with 38 passengers and 3 crew members crashed just short of the Fraser River after failing to gain enough speed for takeoff on the snow-covered runway. No one was injured

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<sup>449</sup> Marnix (Max) Groot, "Photo Feature: Vancouver International Airport: The rise of a Pacific gateway (1960-2000)," *AirportHistory.org*, <https://www.airporthistory.org/yvr-1960-2000.html>

<sup>450</sup> "New snowstorm would close Vancouver's airport," *Vancouver Sun*, 7 February 1949; "More snow due; mild deliveries off; city snowfall 30.7 inches; traffic police say conditions worst since 1935," *Vancouver Province*, 25 January 1954; "Queen lands here," *Vancouver Province*, 1 February 1963; "Manager defends airport snow job," *Vancouver Sun*, 31 December 1965.

in the accident, fortunately. A Royal Canadian Air Force (RCAF) plane narrowly avoided a similar fate in December 1951. As the *Province* explained, the pilot missed his first four approaches in “blinding snow and low visibility” before finally landing his airplane on the fifth attempt, giving “28 military passengers an uneasy 54 minutes.” Eleven years later, the pilot of a small aircraft was forced to make an emergency landing on the Lougheed Highway, east of Vancouver, after being blinded by a heavy snowstorm. And on 2 January 1966, three people died and six were injured after a B.C. Airlines flight crashed short of the VIA runway. The plane, which had just taken off in the heavy snowstorm, had been on its way back to the safety of the airport. Thankfully, serious incidents such as these were rare.<sup>451</sup>

Vancouver’s automobility also increased significantly in the postwar period. New transportation corridors such as the Lions Gate Bridge (opened in 1938), the Upper Levels Highway (1957), the Oak Street Bridge (1957), the Deas Island Tunnel (1959), the Second Narrows Bridge (1960), and the Sea-to-Sky Highway (1966) improved automobile travel in the increasingly interconnected metropolitan region and contributed to the growth of nearby communities such as Burnaby, Richmond, and Surrey. The population of Metro Vancouver ballooned from just under 400,000 people in 1941 to 1 million people in 1971, with much of this growth occurring in those suburban communities.<sup>452</sup> Rubber-wheeled vehicles were the primary mode of transportation for the residents in this expanded metropolitan region. Buses and trolleys supplanted streetcars as the BCER transitioned from “rail to rubber” between the mid-1940s and mid-1950s. The last streetcar was removed from service in 1955. By the 1970s, the B.C. Hydro & Power Authority (BCHPA) – the BCER’s successor – operated 300 electric trolleys and 400 diesel buses on 25 routes covering more than 600 km of Vancouver roadways.<sup>453</sup> The number of private automobiles rose considerably during this period,

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<sup>451</sup> “Close call,” *Vancouver Sun*, 20 December 1948; “Rain forecast tonight but it could be snow,” *Vancouver Province*, 21 December 1951; “Sneaky storm sandbags city,” *Vancouver Sun*, 2 March 1962; “Storms give way to icy air,” *Vancouver Sun*, 3 January 1966.

<sup>452</sup> Burnaby’s population quadrupled during this period. Richmond’s population sextupled. Vancouver’s population increased, too, but at nowhere near the same pace as its neighbours.

<sup>453</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 277; Vic Sharman, “History of Transit in the Vancouver area,” in *The Vancouver Book*, ed. Davis, 327-28; “Hydro asks tenders on 50 buses,” *Vancouver Sun*, 9 November 1965; Charles Wolverton, “600,000 miles and trolley buses roll on,” *Vancouver Province*, 19 August 1970; “Exact fare or no bus ride after April 1,” *Vancouver Province*, 26

too. Like air travel, Vancouver's growing automobility paralleled developments in other North American cities. There were hundreds of thousands of cars in Metro Vancouver by the 1970s. Improved transportation corridors made it possible for suburban residents to commute by car to and from Vancouver for work – something that tens of thousands of coastal residents did daily in the postwar period. By the 1970s, close to 40,000 suburbanites commuted into the city by car each morning.<sup>454</sup>



**Figure 28: Ol' Man Winter halts traffic on the coast. *Vancouver Province*, 24 January 1952.**

Snow made life difficult for drivers, as *Province* cartoonist Butterfield depicted in his 24 January 1952 cartoon. “Don’t tell me that the machine age is stumped by little old me?”

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March 1970; Neale Adams, “Bus riders are lucky in the city, but less lucky in the suburbs,” *Vancouver Sun*, 27 November 1972.

<sup>454</sup> Harry Rankin, *Beat the Traffic Rush! The case for rapid transit*, 11 September 1975, [https://voony.files.wordpress.com/2010/03/the\\_case\\_for\\_rapid\\_transit\\_harry\\_rankin.pdf](https://voony.files.wordpress.com/2010/03/the_case_for_rapid_transit_harry_rankin.pdf); Greater Vancouver Regional District, *The Liveable Region 1976/1986: Proposals to Manage the Growth of Greater Vancouver* (Vancouver: Greater Vancouver Regional District, 1975), 23; Ryan McGreal, “Vancouver’s Extraordinary Transportation Statistics,” *Raise the Hammer*, 30 January 2015, ([https://www.raisethehammer.org/article/2484/vancouvers\\_extraordinary\\_transportation\\_statistics](https://www.raisethehammer.org/article/2484/vancouvers_extraordinary_transportation_statistics)); Sunny Lewis, “The car,” in *The Vancouver Book*, ed. Davis, 328-29.

asked Ol' Man Winter, seated comfortably atop a frustrated driver's vehicle.<sup>455</sup>

Travelling throughout the region was a challenging and sometimes dangerous affair for coastal residents. The number of snow-related accidents increased significantly between the 1940s and 1970s, largely because there were more cars on the roads, and thus greater opportunities for car-to-car or car-to-pedestrian incidents to occur. Drivers faced the greatest challenges with the region's many hills and bridges. Newspapers reported multiple stalls and accidents on hilly streets, especially in the communities of North Vancouver and West Vancouver, which had been built up on the sides of the North Shore Mountains. In Vancouver, officials repeatedly closed the northernmost blocks of Oak Street – where the January 1943 ski event had been held – as those blocks were “too steep to do anything about.” UBC faculty, staff, and students also struggled to access the Point Grey campus during snow events. Snow-covered and ice-coated bridges were another headache for drivers. Bridges freeze faster than land-based roadways, as they are exposed to winds from both above and below the bridge-deck. Packed snow and ice can quickly accumulate and remain for extended periods, making driving conditions difficult. Traffic problems frequently occurred on these bridges when it snowed. During a snowstorm in January 1959, for example, more than 2,000 cars were stuck for hours because of issues on Lions Gate Bridge. The lineup to get on the bridge from West Vancouver extended for nearly 5 km. During another snowstorm in December 1965, officials closed both the Lions Gate and Second Narrows bridges due to unsafe driving conditions.<sup>456</sup>

The timing of a snow event could worsen its impact on drivers. Snow had a lesser effect on drivers during the weekend, when traffic was lighter. During the 1948-49 winter, for example, the City of Vancouver received over 110 cm of snow, making it the snowiest winter since 1936-37. Yet, as the *Province* explained, all of these snowfalls occurred “at just the right time, at weekends, when traffic was lightest.” This gave BCER and municipal crews adequate time to clear major arteries before the resumption of busier

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<sup>455</sup> “Don’t tell me that the machine age is stumped by little old me?” *Vancouver Province*, 24 January 1952.

<sup>456</sup> “No snow tires, chains? Stay home; police warn,” *Vancouver Sun*, 5 January 1959; “Surprise snowfall snarls city,” *Vancouver Sun*, 23 December 1965; “Storms give way to icy air,” *Vancouver Sun*, 3 January 1966.

weekday traffic. Snow had a much greater impact during high traffic periods, such as during the morning or afternoon rush hours. Such was the case on Monday, 23 January 1950, when 20 cm blanketed Vancouver, most of which fell between 3:30 and 6:00 p.m. According to the *Sun*, “the sudden, unannounced snowstorm... stranded thousands of workers in the downtown area.” Busy streets hampered snow-clearing operations during weekday snow events, too.<sup>457</sup>



**Figure 29: B.C. Electric buses on Pender Street at Richards Street in the snow, 26 January 1954, Acc No. 82437, Vancouver Public Library Special Collections Historical Photographs.**

Local police and the B.C. Automobile Association (BCAA) urged drivers to leave their cars at home when it snowed or to be extremely cautious if they needed to drive, whether it be a weekday or weekend. They also encouraged drivers to use tire chains and snow tires whenever possible. Few residents seemed to own these driving accessories, though, perhaps believing that they were unnecessary. “We are not like prairie people, who have to face this sort of condition every year,” remarked Jack Chestnutt, the BCAA’s supervisor of emergency road services during a snowy stretch of weather in December

<sup>457</sup> “We DID get one break in weather,” *Vancouver Province*, 21 February 1949; “Freak storm brings cold,” *Vancouver Sun*, 24 January 1950; Rooney Jr., “The Urban Snow Hazard in the United States,” 553-4.

1964. “Many motorists are absolutely helpless.”<sup>458</sup> Drivers rushed to buy tire chains and snow tires when it snowed heavily. Automobile dealers reported tire chain shortages in January 1947 and February 1948. In December 1958, local newspapers reported that dealers had sold thousands of snow tires during a four-day period. Bourne & Weir, a local automobile dealer, sold 10,000 snow tires during a seven-day stretch in December 1964. Drivers without tire chains and snow tires struggled to navigate hills and uncleared streets throughout the region. In certain instances, frustrated drivers just abandoned their vehicles in the snow, a practice that led to a significant uptick in business for tow truck companies. Unsafe driving practices provoked the ire of the BCAA. In January 1971, David W. Bord, its executive vice-president, proposed that Vancouver City Council pass a by-law mandating snow tire use during the winter months – a proposal that, like many Vancouver drivers that month, gained no traction. Snow tires were a better long-term option than tire chains, which tore up the pavement on cleared streets. Between late December 1964 and early January 1965, tire chains caused extensive and expensive damage to the Lions Gate Bridge deck and wore down the new surface that had been applied just fifteen months earlier.<sup>459</sup>

But even with tire chains or snow tires, drivers were at times unable to safely return to their homes, especially those who lived on the North Shore or in the communities east of Vancouver. During these rare instances, some suburban drivers chose to park their cars and stay at downtown hotels. In January 1965, with many North Shore residents unable to drive up steep, snow-clogged streets in North Vancouver and West Vancouver, hotel operators in downtown Vancouver offered these stranded drivers discounted rates. The Hotel Georgia offered rooms at half-price to anyone who was unable to drive home. On 5 January, the hotel’s Pete Hudson noted that 273 of the hotels’ 315 rooms were filled by “snow bound persons.” This was actually the first time the hotel had been completely – “if not so profitably” – filled. The practice continued in later years. During a December 1967 snowstorm, several hotels offered half-priced rooms to suburban drivers. The Hotel

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<sup>458</sup> “B.C. fair weather drivers trapped; only 1 in 10 prepared for winter, says expert,” *Vancouver Sun*, 23 December 1964

<sup>459</sup> “Snow tire bonanza is mixed blessing,” *Vancouver Sun*, 28 December 1964; “Snow delays new repairs to bridge,” *Vancouver Province*, 5 January 1965; Ian Macdonald, “Snowflakes could obscure the thaw,” *Vancouver Sun*, 7 January 1965; “Record snowfall shuts schools,” *Vancouver Sun*, 13 January 1971.



Georgia again offered discounted rates in January 1971. It reported that its rooms were filled with suburbanites.<sup>460</sup>

### 6.3 Snow Removal Is A Dirty Word

The City of Vancouver's snow-clearing operations became increasingly mechanized and motorized in the 1940s. While manual labour remained an important part of the Board of Works' snow-clearing strategy, this work was supplemented more and more by new machinery. At the start of the Second World War, the Board's snow-fighting equipment included sanding trucks, graders, and its recently purchased snowplows. The fleet was bolstered by the purchasing of an additional 14 sanding trucks, bringing the city's total to 26. Municipal efforts were aided by the BCER, which continued to be the City of Vancouver's most reliable snow-fighting partner with its fleet of plows, sweepers, and flangers operated by a team of well-trained and battle-tested employees. The increasing mechanization and motorization of Vancouver's operations occurred just as the city was experiencing a wartime labour shortage. For most of the war, neither the Board nor BCER could rely on extra shovellers in the same way that they had during the Depression years.<sup>461</sup>

January 1943 was the notable exception. Wartime censorship policies prevented the press from reporting on local weather conditions, but the "traffic tie-up" – as newspapers called the unseasonably cold temperatures (-10°C and colder) and 36 cm of snow that paralyzed the coast in the middle of the month – resulted in school closures, streetcar delays, car accidents, food and fuel shortages, and general disarray. The tie-up even halted work at three of Vancouver's five shipyards, stopping construction on steel freighters intended for the war and putting thousands out of work.<sup>462</sup> The Board and BCER brought on hundreds

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<sup>460</sup> Ormond Turner, "Around town," *Vancouver Province*, 5 January 1965; "Rains gonna wash it away," *Vancouver Sun*, 21 December 1967; "Freeze hanging on," *Vancouver Province*, 13 January 1971.

<sup>461</sup> Excluding the 1942-43 winter, snowfalls during the war years did not exceed 12 cm. Snow lasted no longer than 4 days during these winters. "Few accidents despite ice; drivers wary as heavy fog blankets city," *Vancouver Sun*, 12 January 1940; "Hit and miss; snowstorm gives city first wintry touch," *Vancouver Sun*, 4 December 1941.

<sup>462</sup> Meteorological records Vancouver, B.C. (City), 1898-1974, folder 1, 593-F-05, AM 907, City of Vancouver Archives, British Columbia, Canada; Vancouver PMO, BC daily data report for January 1943, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; "City traffic tie-up shuts all schools," *Vancouver Sun*, 19 January 1943; "Shipyards halt outside work,"

of these temporarily unemployed shipbuilders to assist their mechanized snow-fighting fleets. While both organizations paid these men 55 cents per hour, the BCER sweetened the deal by including a meal ticket and two tickets for free streetcar rides to its extra shovellers. Male students from UBC also got involved with municipal shovelling work. Even young children offered to help shovel the city out of the storm while raising money for the war effort. In addition to extra labourers, the Board rented trucks and re-directed others from various departments to assist with snow removal. These efforts mitigated meltwater flood risks when rains and warmer temperatures returned later in the month. The snow battle was not cheap. The Board spent \$35,000 fighting that January snow.<sup>463</sup>

While the Board relied more on mechanized and motorized snow-fighting equipment, City Council was unwilling to invest too heavily in this equipment. Following a light snowfall in January 1947 (in which the Board dispatched 60 trucks, 20 plows, 5 graders, and an army of men to clear it), the often-critical *Sun* complained that the city's operations were ineffective, and that the engineering department was unprepared to cope with snow. According to the *Sun*, this was not new City Engineer Charles A. Battershill's fault, but the City Council's, which "in the past have turned down the repeated requests of their engineers for mechanical snow loaders." As Battershill explained in a later article, loaders were dual purpose machines that could be used for snow clearing in the winter and then for other jobs in the warmer seasons. The City Engineer did not believe that Vancouver needed to invest more in specific snow-clearing equipment, but rather in machines that had a "year-round usefulness." Aldermen did not feel that further investments were required, however. The *Sun* pointed to the evergreen mentality as one factor in the Council's decision. "Aldermen, sitting in budget committee in the balmy days of spring, have short memories. They also have short purses. They can see many more urgent uses for available funds than the purchase of snow equipment."<sup>464</sup>

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*Vancouver Sun*, 19 January 1943; "Cold snap adds beef shortage to fuel and milk famine here," *Vancouver Sun*, 22 January 1943; "Soldiers to cut wood for city," *Vancouver Sun*, 22 January 1943.

<sup>463</sup> "City pays income tax of snow shovelers," *Vancouver Sun*, 27 January 1943; Marion Dundas, "Job bureau asked for snow and furniture movers," *Ubysey*, 5 February 1943; Diana Gray, "Winter war workers in snow," *Vancouver Province*, 30 January 1943; B.C. Electric, "They were dependable," *Vancouver Sun*, 30 January 1943; "City budget," *Vancouver Sun*, 1 March 1943.

<sup>464</sup> "Still more snow forecast tonight," *Vancouver Province*, 13 January 1947; "Budget for snow loaders," *Vancouver Sun*, 13 January 1947.

A new partnership with the BCER may have further influenced City Council. At the beginning of 1947, the City of Vancouver and BCER had signed an agreement stipulating that the BCER would pay for 20 percent of all snow-clearing costs from bus and trolley routes. The deal was signed in light of the company's ongoing transition from streetcars to rubber-wheeled buses and trolleys.<sup>465</sup> Aldermen may have felt that the BCER would pick up the slack regarding snow-clearing operations, as the company had for the past fifty years. The BCER was still Vancouver's snow-clearing leader, but new changes in the city had complicated its effectiveness and ability to stick to a timely schedule in the snow. The Board's heavy use of sand was one such problem. While sand was a cheap and effective way to improve traction on streets, it gradually accumulated in BCER tracks, preventing streetcars from running until the sweepers or company employees cleared it out. Stalled cars were another serious problem. The company reported that streetcars were "way behind schedule" following the snows of January 1947 because so many stalled cars were blocking its tracks. The BCER hired tow truck companies to remove offenders in order to resume service. The company may have hoped that rubber-wheeled buses and trolleys would not be affected by these same problems.<sup>466</sup>

Both the BCER and the Board were tested frequently during the snowy winters that occurred between 1948-49 and 1951-52. The heavy snowfalls and prolonged snow-covers complicated the Board's normal operations, which were predicated on mitigating and managing snow's impact until better weather returned. While sand helped improve traction on low snowpack or previously cleared roads, it was less effective during deeper snowfalls. In these instances, the Board dispatched hundreds of employees and dozens of snow-fighting machines to clear streets, drains, and catch basins. By the 1950s, it was common to see sanding trucks (and occasionally snowplows) on Vancouver streets following a snowstorm. But clearing snow was not always enough. In December 1948, the Board once again directed employees to dump snow into False Creek in order to better clear streets and reduce the risk of meltwater floods when rain and warm

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<sup>465</sup> Francis, *Becoming Vancouver*, 163; "BCER to pay part of snow clearing cost," *Vancouver Sun*, 14 January 1947.

<sup>466</sup> "Still more snow forecast tonight," *Vancouver Province*, 13 January 1947.

temperatures returned.<sup>467</sup> Despite the technical advances in the city's snow-fighting equipment, clearing policies remained consistent with earlier decades. Battershill and John C. Oliver (who succeeded Battershill in 1949) continued to prioritize the downtown core and major transportation arteries before moving to outlying areas and side streets. Fighting snow was not cheap during these years. The Board's costs were \$158,000 in 1948-49, \$219,000 in 1949-50, \$240,000 in 1950-51, and \$140,000 in 1951-52. These were exceptionally high figures for Vancouver and well over what had been budgeted. The prolonged battles against deep snow contributed to these inflated costs, which included wages for employees and extra shovellers, gasoline for the motorized vehicles, and sand.<sup>468</sup>

Sand was a significant component of the overall expenditures. Of the \$158,000 spent in 1948-49, more than \$82,000 had been spent on it. Indeed, sand was a key component of the Board's snow- and ice-fighting strategy. Dispatching sanding trucks – of which the Board owned 60 by the 1950s – was Vancouver's opening move whenever it snowed. The Board used thousands of tons of sand each winter. 8,000 tons were used during the 1948-49 winter. In January 1952, municipal employees spread 1,000 tons of salt in a single day.<sup>469</sup> Sand was considered the most cost-effective way to manage light to moderate snow in Vancouver. It was a cheap product that improved traction on city streets. Its increased use highlights Vancouver's growing automobility and the importance that local officials placed on maintaining safe driving conditions at all times. The growing use of sand also reflected underlying assumptions that inclement winter conditions were temporary inconveniences that needed to be managed until better weather returned. As Oliver remarked during the snows of January 1950, "A light rain with warmer temperatures would be the ideal answer to the problem of quick snow removal."<sup>470</sup>

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<sup>467</sup> "Colder weather tonight; 500 men dig out city," *Vancouver Province*, 20 December 1948.

<sup>468</sup> "Snow clearing, sand cost \$4,000 a day," *Vancouver Sun*, 25 January 1950; "Snowfall upsets budget to tune of \$17,000 daily," *Vancouver Province*, 7 March 1951; "Rain forecast tonight but it could be snow," *Vancouver Province*, 21 December 1951.

<sup>469</sup> Beginning in the 1950s, some sanding trucks were outfitted with two-way radios so that drivers could update foremen in real time and be moved to priority areas. "Storm slows trains, traffic, cuts phones," *Vancouver Sun*, 9 February 1949; "750 snow men battle to clean city streets," *Vancouver Province*, 22 January 1952; "Valley schools closed by snow," *Vancouver Province*, 23 January 1952.

<sup>470</sup> "\$1000 per hour bill for city snow removal," *Vancouver Province*, 26 January 1950.

Dealing with snow was difficult and expensive for the BCER during these winters, too. With the ongoing transition to buses and trolleys well underway, the company had to fight the snow on two fronts. On streetcar tracks, the BCER's sweepers and flangers were able to keep lines moving with relatively few delays. The situation was poorer for buses and trolleys which were quickly becoming the company's primary mode of transportation. Unsurprisingly, these rubber-wheeled vehicles had difficulty climbing Vancouver's many hilled streets. The company was at times forced to temporarily suspend operations on steep streets or hilly routes. In order to improve traction, the BCER equipped its buses and trolleys with tire chains during heavy snow events. As part of its 1947 agreement with the City of Vancouver, the company also dispatched its own sanding trucks along certain bus routes. It invested in new non-track-based clearing equipment in order to ensure timely bus and trolley service as well. By 1952, the company had purchased 3 graders, 3 trucks with attachable plows, 1 bladed snowplow, and 4 sanding trucks.<sup>471</sup>

The succession of these snowy winters re-ignited debates regarding sidewalk clearing responsibilities. Local newspapers and civic leaders continued to remind residents of the by-law and encouraged them to clear their sidewalks following a snowfall. Compliance remained low, however, as had been the case during previous winters. Confusion about it may have further affected compliance rates in January 1952. "According to the city street and traffic by-law, you don't HAVE to shovel it off, no matter how many dirty looks you get from passing pedestrians," explained the *Province*. After following up with the city's legal department, the authors explained that the by-law did not apply to householders in residential districts, but only to merchants or those living "in an area where more than 50 percent of premises are business establishments." Anyone who fell on a residential sidewalk could not sue the associated homeowner, explained one official. "They're expected to use extreme caution, even if that means wearing snowshoes." While this clarification no doubt pleased those residential homeowners who despised shovelling, it undoubtedly made foot travel in these areas more difficult.<sup>472</sup>

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<sup>471</sup> "5-inch mark breaks 12-year coast mark," *Vancouver Sun*, 12 January 1950; "Road clearing rain due for city tonight," *Vancouver Sun*, 21 December 1951.

<sup>472</sup> "You don't have to shovel – it's YOUR sidewalk," *Vancouver Province*, 22 January 1952.

The Board's adoption of salt was the most significant development that emerged from the snows of the late 1940s and early 1950s. As other scholars have shown, North American cities had used salt in varying degrees since the late nineteenth century. While the BCER had used salt in the late nineteenth and early twentieth centuries, it never became a staple snow-fighting tool for the company. Other North American cities used it heavily following the Second World War. By the early 1950s, American cities such as Rochester and Chicago were spending hundreds of thousands of dollars on salt each winter.<sup>473</sup> As Mergen writes "the rapid expansion of suburbs with thousands of miles of streets and connecting highways meant that municipal governments needed a quick, but not too dirty, fix to propitiate millions of new car owners."<sup>474</sup> Keeping roads open to vehicular traffic was a growing concern for Vancouver officials during this period, too. Salt was much more effective than sand or cinder ashes (used to improve road traction in some North American cities). Some municipalities also moved away from sand because it accumulated throughout the winter and clogged sewer systems.<sup>475</sup> Salt broke down the chemical bonds in snow and ice, allowing snowplows to completely remove them from city streets. Salt also only needed to be applied once or twice, in contrast to sand or ashes, which often needed to be applied multiple times to be effective. And, most importantly for the Vancouver context, whereas the effectiveness of salt becomes limited in temperatures below -12°C, this was typically not a factor on the mild Pacific Coast.<sup>476</sup>

The Board first used salt to unclog frozen drains and catch basins. During the 1948-49 winter, employees spread 200 tons of salt throughout the city. In the early 1950s, the Board began dispatching salting trucks alongside its sanding trucks. In January 1954, for example, municipal employees spread over 100 tons of salt in addition to 350 tons of sand. Salt cleared the streets of ice and light snow and made driving conditions safer. Not all drivers appreciated the product's growing use, though. In January 1952, Harry Duker, president of the BCAA, called on City Engineer Oliver to stop using salt as it "corroded car chassis and ruined paint jobs." Responding to Duker in the *Sun*, Oliver scoffed at

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<sup>473</sup> McKelvey, *Snow in the Cities*, 128; McKelvey, "Snowstorms and snow fighting," 19.

<sup>474</sup> Mergen, "Slush Funds," 12.

<sup>475</sup> McKelvey, *Snow in the Cities*, 108 and 110.

<sup>476</sup> See the following authors for detailed discussions about salt's use in other American cities: McKelvey, *Snow in the Cities*, 115-19; Mergen, "Slush Funds;" Kneeland, *Declaring Disaster*, 37-38.

such “exaggerated” claims. The City Engineer argued that salt made clearing work easier and roads safer – claims echoed by his counterparts in other North American cities. Indeed, similar debates played out in other parts of the continent as local officials increasingly turned to salt to solve their snow and ice problems. “The city has been using salt in snow clearance for years,” remarked Oliver, “and we found no substantiation to charges it has a damaging effort.”<sup>477</sup> His remarks were not completely true. Road salt is corrosive and can cause rust and damage vehicles. Road salt can also harm terrestrial and aquatic environments. Civic leaders in nearby Portland, Oregon, initially opposed salt for environmental reasons, arguing that it would harm gardens in the “Rose Capital.” While gardens and green spaces characterized evergreen Vancouver, civic officials like Oliver believed that plants – and cars – were not seriously threatened by the city’s then limited and infrequent use of salt.<sup>478</sup>

Local efforts to improve driving conditions were at times hampered by cars. Such was the case in January 1954, when nearly a metre of snow fell over a two-week period. The snow became so deep that, in addition to dispatching his entire snow-fighting fleet and hundreds of shovellers, Oliver directed his crews to dump snow into False Creek. So much snow was dumped into the waterway that the city once again had to hire a tugboat to clear it of the miniature icebergs – a sight that no doubt caused many double-takes from drivers crossing the Georgia Viaduct and other False Creek bridges. Snow removal in the downtown was complicated by the number of cars parked along the roads. These cars prevented crews from removing curbside snow which would open up more space for vehicles and help clear drains and catch basins. Hoping to improve this work, Oliver enforced a temporary downtown parking ban on 21 January. The ban covered the areas bounded by Smithe, Burrard, Water, and Columbia streets. As the *Province* explained, the absence of parked cars permitted the Board’s mechanical snow loaders – finally

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<sup>477</sup> “Snow battle costs city \$120,000,” *Vancouver Province*, 9 February 1949; “City engineer discounts claim salt on streets damaging car,” *Vancouver Sun*, 24 January 1952; “Crews in non-stop fight with snow,” *Vancouver Province*, 21 January 1954; “Abandoned victim of mainland snow storm,” *Vancouver Province*, 21 January 1954.

<sup>478</sup> “What road salt does to your car,” *Desjardins Insurance*, 8 February 2018, <https://www.desjardinsgeneralinsurance.com/blog/-/what-road-salt-does-to-your-car>; McKelvey, *Snow in the Cities*, 119; J. Hode Keyser, “Chemicals and abrasives for snow and ice control,” in *Handbook of Snow: Principles, Processes, Management, & Use* eds. D.M. Gray and D.H. Male, 605-07.

purchased – to remove curbside snowbanks. Local officials considered the move a success.<sup>479</sup>

In the aftermath of January 1954, City Council passed the “Snow Clearing Emergency By-law,” a municipal ordinance that empowered the City Engineer to restrict parking on all transit routes and one-way streets in the West End, the downtown core, and (at his discretion) any other city street. Those who did not comply were liable to a fine of between \$15 to \$100. As McKelvey explains, growing numbers of American cities adopted similar parking bans in the 1950s and 1960s in order to improve snow-clearing operations on car dominated streets.<sup>480</sup> Vancouver first used its new ban four years later, when 30 cm of snow fell in early December 1958. City employees placed signs throughout the downtown core and in the West End notifying residents of the impending ban. While most drivers complied, police still issued 170 fines to those who did not move their cars from the affected areas.<sup>481</sup>

Snow was less of a problem in the late 1950s and early 1960s. This was a relatively snowless period for Vancouver, with average snowfalls of 30 cm and just 9 days of snow-cover annually between the 1954-55 and 1963-64 winters. The city was not wholly unprepared for snow, though. The Engineering Department’s *Snow Removal Manual for 1963-64* provides the best insight into the city’s snow-fighting strategies. According to the manual, the coastal snow season stretched from 15 November to 15 March, and employees needed to be ready to battle snow at any point during that period. In the event of snow, the Superintendent of Sanitation, under the direction of the City Engineer, organized municipal snow-clearing operations and coordinated work with other civic branches. As the manual explained, “maximum use is made of normal municipal

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<sup>479</sup> “All parking banned in downtown area,” *Vancouver Sun*, 21 January 1954; “It’s getting warmer – snow stays,” *Vancouver Province*, 22 January 1954; “Snow from streets ends in False Creek,” *Vancouver Sun*, 25 January 1954; “Winter goes down the drain,” *Vancouver Province*, 26 January 1954; “More snow due; mild deliveries off; city snowfall 30.7 inches; traffic police say conditions worst since 1935,” *Vancouver Province*, 25 January 1954.

<sup>480</sup> McKelvey, *Snow in the Cities*, 151; City of Vancouver Engineering Department, *Snow Removal Manual, 1963-64*, Snow removal season, 1963-64, 3, folder 8, 134-B-06, Series 442, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>481</sup> “Warning notice was slapped on 170 cars impeding downtown snow clean up Monday night, but civic authorities won’t prosecute. Clean up continued today in outlying areas,” *Vancouver Sun*, 9 December 1958.



equipment without purchasing specialized snow equipment other than plow or sand and salt spreading attachments for trucks.” As had been the case in the late 1940s, officials did not believe that Vancouver needed to purchase expensive snow-clearing equipment. Additional equipment could be hired “during exceptionally heavy storms” but only “if required.” This echoed the city’s earlier position toward extra shovellers, too – bringing on added help if and when needed.<sup>482</sup>

Close collaboration with relevant stakeholders was vital to these efforts. Coordination with the local Weather Bureau was a priority as “forecasts play an important part in determining action to be taken.” Weather forecasting greatly helped municipal snow-clearing efforts in other North American cities during this period.<sup>483</sup> Municipal officials also worked closely with the BCHA, which operated Vancouver’s bus and trolley systems following the BCER’s acquisition by the provincial government in 1961. Through a deal reminiscent of the 1947 BCER-City of Vancouver one, the BCHA was responsible for clearing 20 percent of the total mileage of its bus and trolley systems. This was equivalent to 40 km of Vancouver’s streets and included major roadways including sections of 41<sup>st</sup> Avenue, Clark Street, Oak Street, and Dunbar Street. The city was responsible for the other 80 percent (160 km) of bus- and trolley-serviced roads. Municipal officials also had to coordinate their activities with the provincial government’s Department of Highways, the organization that operated major thoroughfares such as the Upper Levels Highway and the Trans-Canada Highway and major bridges such as the Lions Gate and Second Narrows bridges.<sup>484</sup>

The City of Vancouver’s snow-fighting strategy was divided into four phases, with salt as its foundation. As the manual outlined, “methods of handling snow storms or frost and ice conditions are necessarily varied... the policy has been adopted however, to make maximum use of salt as a means of snow removal.” Salt worked all winter on the coast,

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<sup>482</sup> City of Vancouver Engineering Department, *Snow Removal Manual*, 1963-64, 40-44, Snow removal season, 1963-64, 3, folder 8, 134-B-06, Series 442, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>483</sup> McKelvey, *Snow in the Cities*, 136.

<sup>484</sup> City of Vancouver Engineering Department, *Snow Removal Manual*, 1963-64, 3 and 45, Snow removal season, 1963-64, 3, folder 8, 134-B-06, Series 442, City of Vancouver Archives, Vancouver, British Columbia, Canada.

and was cheaper than sand, in part because it involved no clean-up costs. Many other North American cities were relying more on salt by the 1960s. Even civic leaders in Portland had been seduced by its ice- and snow-fighting capabilities. During light snowfalls, crews were instructed to spread 500 pounds of salt per mile (227 kg per 1.6 km). For snowfalls up to 6 inches (15 cm), this was increased to 800 pounds per mile (363 kg per 1.6 km). Sand was used in the second phase, specifically during flash frosts or on packed snow. Sand mixed with salt and other abrasives might also be spread during this phase. To assist with the distribution of sand, the Engineering Department placed dozens of emergency sand boxes on transit routes throughout the city. Many of these were positioned on Vancouver's hilliest streets.<sup>485</sup>

Phase three of Vancouver's snow-clearing strategy was plowing. These trucks were only dispatched if snow became heavier or deeper than what could be effectively handled by salt. The goal was "to avoid plowing these routes and let traffic churn the salt-snow mixture as much as possible." Plowing was a more intensive and expensive practice than spreading salt or sand. Believing that snow would not last long, officials were hesitant to dispatch plows, only to have snow melt shortly afterward. The final phase was removing snow entirely, loading it onto trucks for disposal in places such as False Creek. Snow removal was contained to bridges and downtown/business areas and only occurred if snow was too heavy to shovel or if salt failed to work. During severe snowstorms, the City Engineer could enact the Snow Clearing Emergency By-law to ease plowing and removal operations in the downtown core. The multi-phase strategy emphasized the importance that cars, buses, and trolleys had on urban life and inter- and intra-regional transportation by the early 1960s. It was designed to maintain the city's automobility cheaply until favourable natural conditions returned. Plowing and removing snow – the most expensive options – were only to be used when absolutely necessary.<sup>486</sup>

Vancouver's snow preparedness was put to the test during the 1964-65 winter, when over 115 cm of snow fell between 17 December and 7 January. Hoping to keep roads open, the Board dispatched hundreds of employees and its full arsenal of snow-fighting equipment

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<sup>485</sup> Ibid, 4.

<sup>486</sup> Ibid, 4-6.

to salt, sand, plow, and remove snow. City Engineer Martin even enforced a temporary parking ban to speed up clearing and snow-removal operations. Indeed, officials quickly moved into phase four of their snow-fighting procedures as the snow continued to build. Salt was used heavily during this stretch. Municipal employees spread hundreds of tons of it in an effort to keep roads navigable in the lead up to the Christmas holidays. The prolonged snow-cover and wave after wave of snowstorms quickly depleted municipal salt supplies. On 28 December, the Vancouver Salt Company (VSC), the city's primary supplier, notified officials of an imminent salt shortage as flooding in Oregon and California prevented the company from replenishing its stocks from its suppliers in those states. In that day's *Sun*, Martin worried that remaining stocks would be gone within the week. Two days later, Martin admitted that the city only had 400 tons of salt left; it had used 4,500 tons during the previous fourteen days. With the VSC rationing its remaining stock, neighbouring municipalities began turning to alternatives such as calcium chloride. It was less effective and more expensive than salt, at \$68 per ton versus \$28 per ton for coarse salt. These stocks were quickly depleted too. Hooker Chemical Ltd's 6,000 ton stockpile was exhausted in just three days. Relief finally arrived on 5 January, when 500 tons of salt arrived by train from Toronto. The new supplies allowed municipal employees to continue salting Vancouver's 1,200-plus km of roads. The city used a record-setting 40,000 tons by the time the snow began to melt on 7 January.<sup>487</sup>

The multi-week snow battle was costly for Metro Vancouver communities. The City of Vancouver spent an unprecedented \$500,000, five times what had been allocated for the year. North Shore communities, which received even greater snow totals than the City of Vancouver, also spent considerably more than they had budgeted. The District of North Vancouver spent over \$160,000 on its snow fight. In West Vancouver, where nearly two metres of snow had trapped residents living above the Upper Levels Highway in their

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<sup>487</sup> The article from 6 January 1965 indicates that Vancouver used 400,000 tons of salt that winter, but that is improbable, if not impossible, based on what the city had already used by late December and when compared to what other North American municipalities used during normal winters. "Slushy white Christmas?" *Vancouver Province*, 23 December 1964; "Mild period and rain could spell bad flood," *Vancouver Province*, 2 January 1965; "Another kind of snowfall," *Vancouver Province*, 6 January 1965; "Blizzard chaos hits Lower Mainland," *Vancouver Sun*, 28 December 1964; "Snap thaw threat bigger than snow," *Vancouver Sun*, 30 December 1964; "Worried W. Van calls for troops," *Vancouver Province*, 4 January 1965; "Invisible enemy breaks up roads," *Vancouver Sun*, 6 January 1965.

homes for days, officials spent \$120,000 – six times what had been budgeted. Officials there even called on the military to assist with snow-clearing work and to deliver food and fuel to snowed-in residents. The snows forced that municipality into debt.<sup>488</sup> In Vancouver, residents had mixed feelings about how well officials had handled that winter's snows. At the 28 December City Council meeting, Alderman Halford Wilson complained that snowplows had been "few and far between, and called for a report on the snow clearance operations." "Before the mayor, city council, and board of administration are allowed to forget the complete mess into which Vancouver was plunged by the winter's first snow emergency, isn't it time someone reminded them that they should consider what should be done when such a thing happens again?" asked a frustrated E.G.L. in the *Sun*. According to E.G.L., the city needed to set aside more funds to better handle such situations. A resident named F. Raffa pointed to the evergreen mentality as a contributing factor to that winter's snow problems. "By proper planning we should not allow ourselves to get in this kind of mess again. The trouble is that we have believed our own press notices about Canada's evergreen playground. It can happen here, after all."<sup>489</sup>

The city's complacency about snow was a concern for residents. To be fair to local officials, the 1964-65 winter was the snowiest in 15 years. In that time, officials had developed a snow-clearing strategy predicated on certain expectations about snow in Vancouver: relatively light snowfalls spread out throughout the entire winter. Salt had also proven to be an effective snow-fighting tool on its own. It reduced snow's impact on the city's automobility, kept plows and other machinery off the streets, and kept costs down. But preparing for and handling snow "the Vancouver way" left the city vulnerable when it fell to exceptional depths, when it persisted for extended periods, or when salt supplies ran out. The great salt shortage of 1964-65 highlighted the vulnerabilities of relying so heavily on a single product for snow-clearing operations. That winter's snow challenges also demonstrated how deep, long-lasting snow was no longer just a temporary inconvenience, but a serious disruption to urban life. Police reported hundreds

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<sup>488</sup> "Bill \$250,000," *Vancouver Sun*, 29 December 1965; "Grant hike clears out snow bill," *Vancouver Sun*, 25 February 1965; "North Vancouver tax hopes rise," *Vancouver Sun*, 25 February 1965.

<sup>489</sup> "Snow removers praised, blamed," *Vancouver Sun*, 29 December 1964; E.G.L. "What of future snow clearance?" *Vancouver Sun*, 30 December 1964; F. Raffa, "Let's be modern," *Vancouver Sun*, 7 January 1965.

of car accidents that winter, despite pleas for motorists to stay off the roads unless necessary. But staying off the roads was impossible for the tens of thousands of coastal residents who commuted to work every day. Roads were jammed constantly during morning and afternoon rush hours and the BCAA was overwhelmed with phone calls from stranded and unprepared drivers. The snow also hampered the city's economy. The B.C. Division of the Canadian Retail Merchants Association reported that Christmas-related sales were down 30 percent compared to the previous year – a decrease that it attributed to the weather and its impact on regional travel. Yes, metropolitan officials and coastal residents had muddled through that winter's snows, but not without much difficulty and disruption.<sup>490</sup>

Disagreements about how best to handle coastal snow events lingered throughout the 1960s. "Why do the men in charge completely disregard the necessities of the citizens?" asked F.G. Stevens when heavy snow returned in December 1965. He complained that he had not seen a single salting truck, snowplow, or municipal shoveller in his neighbourhood that month – a claim that was probably true if Stevens lived on a side street in a residential area.<sup>491</sup> Defending the city's policies following an ankle-deep snowfall in January 1968, Mayor Tom Campbell argued that City Council had made the right decision not to invest in expensive snow-fighting equipment and to have municipal crews prioritize major arteries over side streets and alleyways. According to Campbell, Vancouver was basically a tropical paradise that did not have the same snow problems as the rest of Canada. There was no need to invest in snow equipment as it would only be needed, in his opinion, "once every six or seven years." "If they want us to, we can go around and pick up every snowflake that falls... [but] I don't feel like spending \$50,000 clearing every back alley and I think the public is generally very happy with the service provided."<sup>492</sup>

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<sup>490</sup> "Snow cuts sales about 30 percent," *Vancouver Sun*, 23 December 1964; BC fair weather drivers trapped; only 1 in 10 prepared for winter, says expert," *Vancouver Sun*, 23 December 1964; "Snow hides new danger, sudden thaw spells flood," *Vancouver Province*, 29 December 1964; Snow dilutes reveller's New Year's eve punch," *Vancouver Province*, 2 January 1965.

<sup>491</sup> F.G. Stevens, "Letter to the editor," *Vancouver Province*, 30 December 1965.

<sup>492</sup> "City gamble pays off, says Mayor," *Vancouver Sun*, 8 January 1968.

Similar arguments were put forward by local officials when more snow fell that December. As Alderman Marianne Linnell explained to the *Sun*, Council needed to decide whether the city should “hole up for a day every three years and call it a winter wonderland, or spend \$12 million on heavy equipment.” Like Campbell, many aldermen were reluctant to invest in expensive equipment. A combination of the evergreen mentality and fiscal restraint influenced these decisions. While snow was becoming more disruptive to local and regional travel, officials believed that it was a temporary blight on the evergreen playground, and that money was better spent elsewhere. Retiring Alderman Reg Atherton was apathetic about the city’s ability to do anything about snow. “It’s an act of God and I don’t know what can be done about it... there’s nothing you can do about it except maybe say an extra prayer on Sunday.”<sup>493</sup>

Criticisms about the city’s growing use of salt were conspicuously absent from these debates. Growing numbers of environmental advocates and driving associations opposed salt’s use in numerous American cities during the 1950s and 1960s. Aside from the disagreement between Duker and Oliver in 1952, such concerns did not pervade public discourse in Vancouver. The product’s limited and infrequent use probably partly explains this lack of opposition. Municipal employees spread just a few thousand tons over a few days each winter. While this was still a significant amount of salt, it was considerably less than what was used in other parts of the continent. Rochester spread tens of thousands of tons of salt on its streets during the 1960s. Montreal stockpiled 83,000 tons in anticipation of the 1967-68 winter – far more salt than Vancouver had ever used in a single winter. While some residents likely opposed salt’s growing use, they kept these opinions to themselves.<sup>494</sup>

There were ramifications for choosing to deal with snow in “the Vancouver way,” however. A snowstorm in December 1968 caused traffic chaos throughout the city. The *Sun* blamed local officials for not dispatching plows until 8 a.m. on 31 December – “10

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<sup>493</sup> “Snow poser for city: Pay \$10 million or hole up 1 day,” *Vancouver Sun*, 31 December 1968.

<sup>494</sup> Montreal stockpiled more than 46,000 tons of salt in preparation for the 1962-63 winter. This figure had nearly doubled five years later. McKelvey, *Snow in the Cities*, 147; “Winter weather is still biggest headache for drivers,” *Montreal Gazette*, 18 January 1963; “Snow-clearing units set to roll,” *Montreal Gazette*, 7 November 1967.

hours after the near blizzard began.” As Martin explained, this had been a deliberate decision in line with Vancouver’s snow-fighting strategy. “We don’t like to use plows because they block intersections and driveways. We try to avoid this by using salt and letting the traffic churn it over on one side.” Besides, plowing, he contended, “is an endless job.” Martin advanced a similar argument in January 1971, when almost a metre of snow blanketed Vancouver over an 11-day period. While Martin was averse to sending out his plows, he also hoped to avoid large-scale snow-removal operations unless necessary. “Snow removal is a dirty word – it costs a fortune,” he explained. “I don’t want to tell you how much because you wouldn’t believe me.” Unfortunately for Martin, removing the snow was necessary in order to keep traffic moving that month.<sup>495</sup>

Clearing and removing snow was also a difficult job, as the *Sun*’s Moira Farrow learned when she rode with municipal snowplow operator Ronnie McHugh. As Farrow recounted to readers, McHugh skillfully navigated his huge snowplow down streets lined with snow-covered cars, squeezing past them “with only inches to spare.” After riding with McHugh for just a half hour, the *Sun*’s reporter was “convinced that snowplow drivers are the most skilled and abused – of all city workmen.” Residents hurled insults at the snowplow operator as he pushed snow piles in front of parked cars and driveways. McHugh admitted that the outbursts bothered him, since drivers would be in a worse situation if the streets were unplowed. “Sometimes they get so mad I’m glad I can’t lipread.” McHugh explained how the enforcement of the city’s parking ban – and the ticketing and impoundment of illegally-parked vehicles – improved the plowing situation in the downtown core. He noted that, although parked cars hindered his work, “it’s the stupid drivers without snow tires who really upset me... whenever you see a bottleneck there’s always some clown up front without snow tires.”<sup>496</sup>

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<sup>495</sup> “Snow chaos grips city,” *Vancouver Sun*, 31 December 1968; “Drivers learning to live with snow,” *Vancouver Sun*, 12 January 1971.

<sup>496</sup> Moira Farrow, “He’s not stuck on car ‘clowns,’” *Vancouver Sun*, 3 January 1966.



**Figure 30: Street scene in deep snow, 4 January 1966, Acc No. 42713, Vancouver Public Library Special Collections Historical Photographs.**

Prolonged snow battles and large-scale clearing and snow-removal work was expensive. Average snow costs in the late 1960s were \$135,000. During the 1968-69 winter, officials spent \$350,000 battling nearly 170 cm of snow. Another \$310,000 was spent to fight almost two metres of snow during the 1970-71 winter. Vancouver's snow-clearing expenditures had grown, but these were still far lower than other Canadian cities. In Ottawa, officials spent close to \$3 million battling a record-breaking 444 cm of snow during the 1970-71 winter. In Montreal, officials spent \$16 million clearing 386 cm of snow that winter.<sup>497</sup> Part of this disparity was a product of climate and geography. Vancouver's longest snow battles – 20 days or more – were shorter than even the shortest snow battles in these snowier Canadian cities. Nature was often a reliable ally on the coast, too, handling much of the snow-removal work for officials. Vancouver's heavy reliance on salt, reluctance to invest heavily in snow equipment, and its prioritization of major transportation arteries and the downtown core over residential side streets factored

<sup>497</sup> "Drivers learning to live with snow," *Vancouver Sun*, 12 January 1971; "Montreal raids 1972 budget for snow removal," *Globe and Mail*, 9 March 1971; Jay Walz, "In Ottawa, where snow is 12 feet deep, there's no place to shovel it any more," *The New York Times*, 5 March 1971.



into these differences, too. Not everyone agreed with how local officials dealt with snow, but choosing to deal with it in “the Vancouver way” meant costs remained lower on the coast than in other parts of the country.

## 6.4 Conclusion

The 1972 municipal election was billed as a possible turning point in Vancouver’s political history. The Non-Partisan Association (NPA), which had held the majority on City Council for over 30 years, was in disarray. Divisive Mayor Tom Campbell, who had governed with NPA support for the previous six years, announced he would not seek a fourth term. While the NPA endorsed Bill Street as its mayoral candidate, he was forced to resign before the election because of his ties to the development industry, “leaving the NPA without a horse in the race.” An investigation by the *Sun*’s Allan Fotheringham further tarnished the NPA’s reputation as he uncovered “shady backroom dealings between Campbell and a local car dealer who also happened to be the NPA president.” Into this void stepped members of The Electors Action Movement (TEAM), a collection of moderate, middle-class, reform-minded professionals who were opposed to a number of NPA-backed development projects including the destruction of the Strathcona neighbourhood for a new downtown freeway, a controversial project which contributed to the NPA’s decline, too. TEAM secured its first electoral victory in 1968, when Art Phillips and Walter Hardwick were elected to City Council. Two became three when Brian Calder was elected to Council in 1970. With the NPA in turmoil, TEAM was poised to make even greater gains in 1972.<sup>498</sup>

The election lived up to the hype. Phillips was elected mayor alongside eight TEAM aldermen, giving the group an overwhelming majority on the ten-person City Council. TEAM candidates were elected to majorities on the school board and the park board, too. While the election was a turning point in local politics, TEAM did not rise to power amidst a swell of popular support. In fact, only 27 percent of eligible voters showed up at

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<sup>498</sup> Francis, *Becoming Vancouver*, 180-183; “Turning point for Vancouver?” *Vancouver Province*, 11 December 1972; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 357.

the polls – the lowest voter turnout since 1942.<sup>499</sup> “Given the combination of a snowstorm, a shoo-in mayoral race, and a surfeit of elections in 1972, Vancouver voters didn’t do that badly,” argued the *Province*’s Bob McConnell. “Snowstorm” was probably too strong a word for the 7 cm that blanketed Vancouver on election day, but the snow did indeed cause problems for voters. Crews had been out salting and sanding major streets, but many voters apparently chose to stay home rather than risk driving their cars – most without snow tires – on the freshly fallen snow. Those who lived on side streets faced even tougher driving challenges, as 11 cm had already fallen in the days leading up to the election. Many of these streets had not been salted, sanded, or plowed; most sidewalks were no doubt still coated in snow and remained treacherous, too. Local newspapers pointed to the weather as a leading factor for the low turnout. As B.C. Premier Dave Barrett commented upon landing in Vancouver the day before the election, the snow was a reminder that “we do have the occasional weather fault.”<sup>500</sup>

For many residents, snow was Vancouver’s *worst* weather fault. While the city had faced a series of snowy winters in the late 1960s and early 1970s, locals still considered it an unnatural and unusual part of the coastal climate. Indeed, there was little shift in how coastal residents thought about snow between the 1940s and 1970s. The heavy snows of the late 1940s and early 1950s had created some cracks in the evergreen mentality, but complacency returned when the snows retreated in the late 1950s and early 1960s. The mentality was firmly rooted in the city’s collective consciousness by this point; it was proving impossible to dislodge. While ideas about snow remained the same, how coastal residents experienced it changed dramatically during the postwar years. The region’s increasing automobility led to the most profound changes. Snow was a disruptive and, at times dangerous, barrier to regional transportation. In their attempt to keep rubber-wheeled vehicles moving freely at all times, municipal officials developed a distinct

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<sup>499</sup> The 1956 civic election for Vancouver Mayor also had an exceptionally low voter turnout, but that was an acclamation vote rather than a contested election.

<sup>500</sup> Bob McConnell, “East side success story negates ward system,” *Vancouver Province*, 16 December 1972; “Phillips proves shoo-in,” *Vancouver Province*, 14 December 1972; Dan Mullen, “New TEAM school board ‘open to outside ideas,’” *Vancouver Province*, 15 December 1972; Hall Leiren, “Landslide by TEAM buries NPA,” *Vancouver Sun*, 14 December 1972; “City voters face blizzard of ballots,” *Vancouver Sun*, 13 December 1972; “Jack Frost runs snow clouds out of town,” *Vancouver Province*, 12 December 1972; “Barrett back home,” *Vancouver Sun*, 13 December 1972.

snow-clearing strategy. They sought to deal with snow as economically as possible, mitigating its effects until favourable natural conditions returned, as they knew would happen. The city's growing reliance on salt and its prioritization of certain transportation corridors over others reflected this strategy, one that municipal officials believed was best suited to coastal snow events. It was just one way that locals developed a relationship with snow that was uniquely "Vancouver," one that was shaped by the coast's natural conditions and by human expectations about them. As this chapter – and others – has demonstrated, issues occurred when those two factors did not align.

## Section 4

### 7 Our Winter Snows are of the Utmost Importance: 1945-1972

The rain fell steadily on the crowd assembled at the base of Grouse Mountain on 15 December 1966. Spectators had gathered to watch B.C. Premier W.A.C. Bennett preside over the official opening of the Grouse Mountain “Skyride” gondola – a 50-person tramway capable of transporting skiers up the mountain in just over four minutes – and a new resort complex, which included a ski shop, souvenir shop, cafeteria, and a 225-seat dining area. At a cost of over \$2 million, these projects were the most recent investments made by Grouse Mountain Resorts, Ltd. (GMR), which had purchased Grouse in 1964, to enhance the mountain’s appeal to tourists and skiers. The GMR and local officials felt confident that these investments would turn Grouse into a world-class destination ski resort. “We expect to double the number of people going up the mountain and using the facilities there,” said GMR manager Al Beaton during construction in 1965. When the Skyride project was first announced in 1964, Vancouver Mayor Bill Rathie had boasted that it would “be a great asset in Vancouver.”<sup>501</sup>

While the Skyride had been operational since February, the official ceremony had been pushed back so as to include the chalet’s completion. The event was meant to coincide with the start of the 1966-67 ski season, but as one *Sun* reporter explained, “it might as well have been billed the opening of the monsoon season.” Those who braved the heavy rains and waited to ride the Skyride to the chalet were then treated to a choir performance, yodelling, a buffet, and glühwein, “that admirable concoction... which après-skiers are wont to consume.”<sup>502</sup> The rainy weather did not dampen enthusiasm for the GMR’s new investments or for skiing at Grouse more generally. Over the next few months, tens of thousands of skiers and tourists rode the Skyride to take in a meal at the Grouse chalet or glided down the iconic mountain’s downhill slopes. Heavy snowfalls and a deep snowpack created excellent skiing conditions in the months following the

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<sup>501</sup> “Grouse Mt tramway gets okay,” *Vancouver Sun*, 12 December 1964; “Contract let for \$1 million aerial tram on Grouse,” *Vancouver Sun*, 22 January 1965.

<sup>502</sup> “Here and there,” *Vancouver Sun*, 17 December 1966.

December rains. During the 1966-67 winter, Grouse Mountain was *A Place to Be*, as the title of the 1967 Vancouver Film Council's short documentary of the ski area made clear.<sup>503</sup>



**Figure 31: Grouse Mountain Skyride panorama: North Vancouver, B.C., Canada, [1969] P-2037, 898-A-06, AM1052, City of Vancouver Archives.**

In the postwar period, skiing in the southern Coast Mountains evolved from a small-scale, local enterprise into a large, capital-intensive industry. Private companies and the provincial government invested millions of dollars to develop the region's ski areas for the tens of thousands of skiers who lived in the Metro Vancouver region and for domestic and international tourists. This funding included investments in major infrastructure projects such as roads, chairlifts, and gondolas as well as large-scale modifications to mountain landscapes to improve skiable terrain. Skiers had altered these landscapes before the war, but postwar modifications were much greater in scale and in their impact on mountain terrain and skier experiences. These developments transformed ski landscapes into what ski historian Andrew Denning calls "organic machine[s] of leisure," spaces where the natural and cultural worlds became increasingly blended. These

<sup>503</sup> *A place to be*, Wilf Gray (Vancouver: A Wilf Gray Film Production, 1967), <https://www.youtube.com/watch?v=8J8RbsFF8Y>

investments and alterations reflected the heightened value that ski operators placed on snow in the postwar period. It was “white gold,” an important natural resource that sustained ski area operations and generated wealth.<sup>504</sup> Thankfully for the region’s ski operators, snow was plentiful following the Second World War. A negative PDO cycle persisted from 1946 until 1976, bringing with it climatic conditions that generally produced cooler, wetter winters in the southern Coast Mountains. Snow was not one hundred percent reliable, however. There was still considerable variability from year to year. For postwar ski operators, short ski seasons or low-snow winters were no longer just mere inconveniences, but serious economic and reputational risks.

Large-scale and capital-intensive infrastructure projects such as the Skyride facilitated easier access to the snowy southern Coast Mountains. While the Skyride was the most visible sign of this heightened connection between the coastal metropolis and the mountainous hinterland, ski operators and enterprising businessmen had invested in smaller-scale technologies such as rope tows and chairlifts to move skiers to and from the mountains since the late 1940s. At Seymour, road improvements greatly enhanced access to that ski area. The pursuit for bigger and better terrain also pushed skiers deeper into the southern Coast Mountains. Whistler Mountain, located more than 100 km north of Vancouver, became an incredibly popular ski area when it opened in January 1966. Here, skiers used gondolas and chairlifts to ascend over 1,300 m to snow rich terrain. In facilitating easier access into and up these mountains, these infrastructure projects helped to bridge the snow gap. In the 1920s and 1930s, Vancouver area skiers had conquered the snow gap through sheer force of will and physical endurance, climbing for hours to reach snow. In the postwar period, new roads and machines such as chairlifts, gondolas, and cars lessened this work and thus made skiing more accessible to more people.

Snow safety was a growing concern as more people travelled into the mountains. Reports of lost, missing, and injured skiers and hikers grew during these decades. The First Aid Ski Patrol (FASP) continued to operate in the postwar period and provided an indispensable service to skiers. While FASP also operated at Whistler, patrollers there

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<sup>504</sup> Denning, “From Sublime Landscapes to White Gold,” 82.

were aided by a professional, full-time unit. In addition to their first aid responsibilities, the Whistler ski patrol worked to improve ski conditions by filling in ruts, packing down snow, and pre-emptively triggering avalanches with explosives in order to lessen the risk of ski-related fatalities. Snow safety was a concern outside of these ski areas, too.

Following the death of 12-year-old Norman Fielders in 1951, mountaineers formed the Mountain Rescue Squad (MRS), a formal volunteer search-and-rescue organization.

While the BCMC had organized impromptu search-and-rescue missions in the past, the MRS was the region's first permanent organization. In addition to their rescue work, the MRS and FASP organized lectures and speaking series to educate coastal residents on the dangers of snowy mountainous terrain. The efforts of these volunteers helped to keep their fellow residents safe as they enjoyed the southern Coast Mountains.

Riding up the Skyride in December 1966, skiers looking to the west would have seen an imposing dam with an extensive reservoir behind it. Completed in 1954, the Cleveland Dam and Capilano Reservoir highlighted the GVWD's desire to bolster its existing freshwater supplies. Snow surveys were an important component of this project. The GVWD and WRB implemented snow courses years before these projects were completed. Having accurate snow survey records allowed engineers to establish important baselines to regulate and manage future freshwater supplies. In the 1950s and 1960s, snow courses were the vanguard of modernization, often preceding or coinciding with the construction of major water storage or hydroelectric facilities. During these decades, snow surveyors increasingly used jeeps, snowmobiles, and helicopters to access remote snow courses. These vehicles did not entirely alleviate the physical labour associated with snow surveys – and they came with their own sets of unique challenges – but they did lessen the time and effort required to complete this work. And it was important work. By the start of the 1970s, the GVWD was responsible for supplying freshwater to one million residents; the BCER/BCHPA was responsible for providing hydroelectricity to those residents and countless industries, too. For these organizations, snow and its stored energy potential were considered too valuable not to be monitored and studied.

## 7.1 The Powder Capital of Canada

Enterprising businessmen and local companies took a renewed interest in developing the North Shore Mountains' winter recreation potential following the Second World War. This desire to develop the region's ski terrain reflected a larger trend in North America's ski industry: the sport's shift from a small-scale, club-based activity to a large-scale, capital-intensive one.<sup>505</sup> In the southern Coast Mountains, this process unfolded during a period of favourable winter conditions. In 1946, the PDO shifted from a positive cycle to a negative one. During negative PDO cycles, winters in the southern Coast Mountains are generally characterized by cool and wet conditions.<sup>506</sup> Snow survey measurements from Grouse Mountain reveal that between 1946 and 1976, the average annual 1 April snow-depth was 295 cm. It is difficult to compare snowpack measurements from this negative cycle to the positive one that came before it since WRB/GVWD measurements on Grouse did not begin until 1936. While BCMC snow records do extend back to 1911, the club's measurements were not taken where WRB/GVWD measurements were recorded. Research by Mood et al. does show that April snowpack totals in the southern Coast Mountains were deeper during the 1946-76 period than during the 1925-45 period. Some winters were exceptionally snowy. The 1 April 1946 snowpack, for example, measured 7.2 m. Negative ENSO events (La Niña) also produced deep snowpack conditions during the 1948-49, 1949-50, and 1955-56 winters. While there was considerable variability (and there were low snow winters during this negative PDO cycle), there were no extreme or multi-year snow droughts, as there had been during the previous positive one.<sup>507</sup>

The transformation of the ski industry played out slowly and unevenly in the North Shore Mountains. In 1945, for example, the Marwell Construction Company (MCC) took ownership of the Grouse Mountain Chalet and the GMHSC's land holdings. As vice-president Hugh Martin explained, the company planned to turn Grouse into another Sun Valley, the famous Idaho alpine ski resort. "This firm is no piker," he told reporters.

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<sup>505</sup> John Fry, *The Story of Modern Skiing* (Lebanon, NH: University Press of New England, 2006), 44-50.

<sup>506</sup> Moore et al., "Weather and Climate," 62-3.

<sup>507</sup> Mood, Coulthard, and Smith, "Three hundred years of snowpack variability in southwestern British Columbia reconstructed from tree-rings," 5129.



“We’re prepared to spend \$300,000 to \$400,000 on making Grouse Mountain a great mountain resort.”<sup>508</sup> These initial developments included the widening of ski runs and the installation of a ski tow on the popular Cut run. In 1948, the MCC announced that it would construct a double chairlift – at a cost of \$100,000 – to transport skiers from North Vancouver to the ski area’s base. Chairlifts were becoming an increasingly popular technology at North American ski areas, as they made the sport more appealing and accessible to a wider audience. The Grouse chairlift officially opened on 2 December 1949. “Skiing comes of age in Vancouver today,” declared local newspapers. The new chairlift transported skiers nearly 500 m up the mountain in just 12 minutes.<sup>509</sup>

The Sun Publishing Company took control of Grouse in 1950 and formed the Grouse Mountain Alpine Resorts, Ltd (GMAR) to manage the mountain’s infrastructure. The GMAR had identical goals to the MCC: turn Grouse into the Canadian equivalent of Sun Valley or St. Moritz, Switzerland. To accomplish this, the company announced that it would log more of the mountain to expand Grouse’s skiable terrain and invest \$200,000 on a second chairlift. Starting at the top of the existing chairlift, it would transport skiers to the Grouse Mountain Chalet. “Grouse will become the most accessible of all ski resorts in Western North America,” boasted Art Hullah, the GMAR’s managing director, following the announced investment. The second chairlift opened in 1951. Together, these two chairlifts reduced the uphill travel time from two hours to just over 30 minutes. “Come for the air, the view, the sports – you’ll enjoy the high time of your life on Grouse Mountain,” proclaimed one full-page advertisement in local newspapers. A third chairlift opened on Hollyburn Ridge that same year. Constructed by Hollyburn Aerial Trams, Ltd., the \$250,000 “Chairway to the Stars” could transport 300 skiers per hour and covered the 550 m elevation between West Vancouver and Hollyburn Ridge’s West Lake in just minutes.<sup>510</sup>

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<sup>508</sup> “Winter highway up Grouse promised skiers, tourists,” *Vancouver Province*, 28 September 1945.

<sup>509</sup> Jim Fairley, “\$100,000 ‘escalator’ for Grouse Mountain,” *Vancouver Province*, 9 October 1948; “Skiing comes of age as Grouse Mountain lift officially opens,” *Vancouver Province*, 2 December 1949.

<sup>510</sup> “Second ski lift, \$200,000 development for Grouse,” *Vancouver Sun*, 28 January 1950; “\$250,000 ski lift for hikers, too,” *Vancouver Province*, 16 January 1951; “Now – Grouse Mountain playground open for everyone!” *Vancouver Sun*, 17 February 1951.

These new chairlifts – coupled with the completion of the Mount Seymour Highway in 1949 and the construction of five rope tows at the Seymour ski area in the early 1950s – drastically improved skier access to the North Shore Mountains.<sup>511</sup> The improved transportation networks had, as *Maclean's* Lana Gilbert explained, “brought the ski slopes at 3,000 feet as close as the nearest bus station.” The number of skiers rose dramatically in the early 1950s. Writing in February 1952, Gilbert noted that the three chairlifts had carried a combined total of 50,000 to 60,000 skiers during the previous season.<sup>512</sup> While improved access no doubt made skiing more appealing, promotional efforts by ski operators also helped to drive traffic to the mountains. In January 1950, the Sun Publishing Company began offering free ski lessons on Grouse. Five hundred pupils signed up for that year’s classes. The lessons attracted locals of all ages. Seventy-four-year-old Joseph R. Abraham used the opportunity to learn a new sport. So too did young Jimmie Robertson, 65 years Abraham’s junior. Not to be outdone by their competitor, the owners of the *Province* newspaper set up their own ski school on Hollyburn Ridge two years later. By the 1960s, these two events drew thousands of skiers each winter.<sup>513</sup> Led by experienced ski instructors, these free classes introduced thousands of Metro Vancouver residents to a sport that had previously been confined to mountaineers and ski club members.

These improved transportation networks altered ski culture in the North Shore Mountains. Whereas the majority of skiers before the war had been ski club members or had owned cabins in one of the three ski villages, as of the 1950s, urban and suburban skiers could arrive on the mountain early in the morning and return home before the end of the day. Single-day ski trips increasingly became the norm in Vancouver. Being able to travel from the downtown to the mountains so frequently and in a relatively short period of time – the base of the lower Grouse chairlift was “only 20 minutes from city centre,” as GMAR advertisements liked to point out – heightened one’s sense that the

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<sup>511</sup> Davis, *The Chuck Davis History of Metro Vancouver*, 271.

<sup>512</sup> Lana Gilbert, “Vancouver takes to the hills,” *Maclean's*, 1 February 1952.

<sup>513</sup> “74 year old joins Sun ski classes,” *Vancouver Sun*, 31 December 1949; Nancy West, “Hollyburn free ski school opening attracts hundreds of enthusiasts,” *Vancouver Province*, 7 January 1952; “On with overshoes – here comes slush,” *Vancouver Sun*, 22 January 1962.

snowy mountains were just on the edge of the city.<sup>514</sup> For ski club members and other cabin owners, however, the Hollyburn, Grouse, and Seymour villages remained important sites of ski culture. While the villages continued to hold elections and events well into the 1950s, their significance to Vancouver's larger ski community waned in subsequent decades.

Chairlifts and roads improved transportation to the mountains, but they came with new challenges. Rising nearly 1,000 m asl, the Mount Seymour Highway was a dangerous stretch of road in the wintertime. The province's Forest Service, which maintained the roadway, required drivers to use tire chains during snowy conditions. Although the department used a large rotary plow to keep the road open, snow at times proved too much for it. Such was the case in late February 1955, when heavy snow trapped skiers overnight on the mountain. It took until the following day for the plow to free them.<sup>515</sup> Lacking the safety protocols and power back-ups that skiers are accustomed to today, chairlifts were not always problem-free. On 25 March 1951, for example, the cable slipped from one of the guide wheels on the lower Grouse Mountain chairlift, causing it to sink suddenly and to spill skiers on the mountainside. Riders such as Mrs. Smith and her 3-year-old daughter Laurie were thrown over 10 m into the deep snow. A total of 20 people were injured in the accident, some so badly that they had to be carried down the mountain on stretchers. New safety protocols were put in place to prevent a recurrence of what lift operators called a "freak accident."<sup>516</sup> Four years later, a mechanical problem stranded skiers on that same chairlift. Operators had to lower passengers backwards in order to get them off the mountain.<sup>517</sup> While mechanical problems such as these were infrequent, they highlighted the challenges that ski operators had with these new devices.

North Shore Mountain ski operators continued to invest in new ski infrastructure and terrain modifications in the 1950s and 1960s. These developments made mountain

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<sup>514</sup> "No other city on earth has it!" *Vancouver Sun*, 17 February 1951.

<sup>515</sup> Peter Spring, "Ski Heil! All cars must use chains," *Vancouver Sun*, 21 December 1951; Kathy Shtykoff, "Pole and planks; take it easy behind the wheel, Mr. Skier," *Vancouver Province*, 31 December 1964; "Snow closes twelve schools," *Vancouver Sun*, 28 February 1955.

<sup>516</sup> "Expert probes ski smash-up," *Vancouver Province*, 26 March 1951; "New safety devise will guard ski lift," *Vancouver Sun*, 27 March 1951

<sup>517</sup> "Repairs rushed today on Grouse chairlift," *Vancouver Sun*, 19 December 1955.

landscapes “more responsive to the rational and orderly dictates of modern sport and commercial tourism,” as Denning writes about the European Alps. Indeed, these investments and alterations contributed to the modernization of British Columbia’s ski industry, a process that paralleled trends in the North American and European ski industries. In British Columbia, like the Swiss Alps, corporations wanted to maximize their profits; postwar skiers wanted to “enjoy the sport with all the trappings of modern luxury and convenience.”<sup>518</sup> These large-scale changes made the sport more appealing to more people. British Columbians enjoyed greater affluence, leisure time, and mobility in the postwar decades. This, in turn, contributed to a surge in outdoor recreation activities. Skiing was an important outlet for those wanting to get outdoors.<sup>519</sup> It was also a lucrative business, not just for ski operators, but for associated businesses such as hotels, clothing stores, and ski shops. In the early 1950s, coastal residents spent upwards of \$500,000 a year on ski equipment. At the start of the 1960s, the province’s 72,000 skiers spent more than \$3 million on skiing and ski-associated costs. Skiing became an important outdoor recreation and winter tourism activity that decade. Ski industry experts believed that these numbers would only continue to grow in subsequent years.<sup>520</sup>

Developments on Grouse demonstrate the growth and evolution of the region’s alpine ski industry. In 1964, the Sun Publishing Company sold its Grouse Mountain holdings to Plato Industries, Ltd. The new owners formed the Grouse Mountain Resorts, Ltd. (GMR) to run its ski operations. Like its predecessors, the GMR was committed to turning Grouse – which now consisted of 1,200 acres of skiable terrain, two chairlifts, and four rope tows – into a world-class ski resort. The company announced its plans to build a new chalet on the plateau and to construct a 50-person aerial tramway, or gondola, up the mountain’s western face to supplement and eventually replace the often-congested chairlifts. In the mid-1960s, skiers were waiting in line for two to three hours to get up the mountain on busy weekends. The new gondola offered better, faster access for ticket-buying guests. The Skyride gondola and the new chalet were both completed in 1966 at a

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<sup>518</sup> Denning, “From Sublime Landscapes to White Gold,” 82.

<sup>519</sup> Jeremy Wilson, *Talk and Log: Wilderness Politics in British Columbia, 1965-96* (Vancouver: UBC Press, 1998), as quoted in Little, *At the Wilderness Edge*, 5.

<sup>520</sup> R.M. Shaw, “Whistler Mt would give skiers new home,” *Vancouver Province*, 30 January 1964.

cost of roughly \$2 million. Seeking to offset these costs and to attract new capital for future projects, the GMR became a publicly traded company that year, offering 20,000 shares at \$7.50 per share. According to the *Province's* R.M. Shaw, members of the public could now get involved in the ski industry, "not only as skiers and sportsmen, but as suppliers of capital."<sup>521</sup>

The GMR hired John E. Hoegg as president that same year. Originally from Calgary, Hoegg was only 31 years old when he joined the company. Since completing his Master's in Business Administration from Stanford University in 1960, Hoegg had worked as a senior executive at the Elite Insurance Company and Laurentide Financial Corp, Ltd. He was also a part-time instructor at Vancouver City College and UBC.<sup>522</sup> The GMR hired the young, hard-working Hoegg to help maximize Grouse's financial and recreational potential. As a public company, the GMR had a fiduciary responsibility to its shareholders. Investors wanted to know that their money was being used wisely and that their investments would grow over time. Drawing more skiers to Grouse was part of the company's long-term strategy. In 1967, the GMR spent \$250,000 to clear 50 acres of land on the mountain's shaded, northeast slope. The new "Blueberry Bowl" boasted five new runs and a new two-person chairlift. The new runs quintupled Grouse's existing ski terrain.<sup>523</sup> In just three years, the GMR had invested nearly \$3 million in Grouse's alpine ski infrastructure. The expanded ski area figured prominently in the 1967 promotional film *A Place to Be*. The short film showed guests riding the red Skyride gondola up the mountain with the camera highlighting the sweeping views of downtown Vancouver and the Georgia Strait that they enjoyed on their trip. At the top, visitors could enjoy a first-class meal at the chalet or ski down snow-covered slopes overlooking Metro Vancouver.<sup>524</sup>

The development of Whistler Mountain further highlights the ski industry's postwar growth. As the sport gained greater popularity in the North Shore Mountains, some

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<sup>521</sup> R.M. Shaw, "Resorts for profit," *Vancouver Province*, 8 February 1966.

<sup>522</sup> "Resort Firm President Appointed," *Vancouver Sun*, 2 August 1966; "John E. Hoegg," *Remembering.ca*, <https://vancouver.sunandprovince.remembering.ca/obituary/john-hoegg-1066056604>

<sup>523</sup> *Grouse Mountain Resorts Ltd. Annual Report 1968* (Vancouver: Grouse Mountain Resorts, 1968).

<sup>524</sup> *A place to be*, Wilf Gray (Vancouver: A Wilf Gray Film Production, 1967), <https://www.youtube.com/watch?v=8J8RrbsFF8Y>

British Columbians began travelling to Garibaldi Provincial Park to practice it. Settlers such as Myrtle Phillips, who ran Alta Lake's Rainbow Lodge, and Pip Brock, a GVWD employee who owned a cabin nearby, were skiing in the area by the early 1930s. Other mountaineers and skiers soon followed. "Garibaldi is knocking at the door, clamoring for notice," wrote one *Province* reporter in March 1934. "Dominated by eternal snows, its slopes banked by glaciers that are a paradise to skiers; it will not be put off."<sup>525</sup> More British Columbians explored Garibaldi's ski potential following the Second World War. In 1947, Joan Matthews, her husband, Ottar Brandvold, and his brother, Emil, constructed the Diamond Head Chalet as a summer and winter retreat. The Chalet became a popular destination for skiers wanting to access Garibaldi's southern terrain. The *Sun*'s Jack Scott believed that Garibaldi had some of "the finest skiing grounds on this continent."<sup>526</sup>

Ski enthusiasts first considered developing an alpine ski resort near this skier's paradise in the early 1960s. Inspired by the success of the 1960 Squaw Valley Winter Olympics, a group of Vancouver businessmen formed the Garibaldi Olympic Development Association (GODA) with the intent to build a world-class ski resort to help bring the Olympics to Vancouver. After surveying the region, GODA settled on London Mountain as the site of its proposed ski area. Reaching more than 2,100 m asl, London was a prime location for a ski area. Experts found that the mountain had "ski runs of Olympic standards and lengths." Beginning in 1962, Garibaldi Lifts Limited (GLL), a partner organization of GODA, developed the mountain's infrastructure and cleared slopes below the treeline. Like the GMR, the GLL relied on investors to help finance the multi-million-dollar endeavour. By the autumn of 1965, the resort consisted of a gondola, a double chairlift, two T-bars, a day lodge, and 14 runs. This work coincided with the completion of a new road connecting the ski area to Vancouver – a task undertaken by the provincial

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<sup>525</sup> "Winter Playground," *Vancouver Province*, 17 March 1934; "Pip Brock part 1," *Whistler Museum* (blog), 25 July 2011, <https://blog.whistlermuseum.org/2011/07/25/pip-brock-part-1/>

<sup>526</sup> Jack Scott, "Our town," *Vancouver Sun*, 15 June 1949; "Garibaldi Provincial Park: Elfin Lakes & Diamond Head," *Hollyburn Heritage Society*, <https://www.hollyburnheritage.ca/hiking/garibaldi-provincial-park/garibaldi-provincial-park-elfin-lakes-diamond-head/>; "The Brandvolds of Diamond Head – Irene Howard," *Hollyburn Heritage Society*, <https://www.hollyburnheritage.ca/hiking/garibaldi-provincial-park/brandvolds-diamond-head-irene-howard/>

government to help with the Olympic bid and to draw locals and tourists to the mountain. The new ski area, named Garibaldi's Whistler Mountain, officially opened to skiers on 15 January 1966.<sup>527</sup>



**Figure 32: A view of the Whistler ski area from near the Roundhouse Lodge.**

*Garibaldi's Whistler News*, April 1968

Whistler was a huge hit with skiers. Hundreds (and later thousands) of skiers drove for hours along the winding and treacherous Sea-to-Sky Highway to reach it each weekend. Many of these skiers were no doubt enticed by promotional materials that highlighted its extensive ski terrain and great snow conditions. Early advertisements boasted about Whistler's deep snowfalls and extended ski season. Beginning in the late 1960s, *Garibaldi's Whistler News* (GWN), a promotional pamphlet produced by the GLL,

<sup>527</sup> Bill Fletcher, "Bill Fletcher," *Vancouver Sun*, 20 November 1965; "A clean slate," *Whistorical: Official Blog of the Whistler Museum* (blog), 28 September 2013, <https://blog.whistlermuseum.org/tag/london-mountain/>

showcased breathtaking imagery of the resort's snow-covered terrain. The GWN referred to Whistler as "the powder capital of Canada," home to some of the best high-mountain skiing on the continent.<sup>528</sup> More than 9 m of snow fell on the mountain each year. Better yet, skiers could expect snow from mid-November to the end of May (~180 days). On Whistler's glaciers, skiing continued well into July and even August. In the 1970s, these glaciers became the site of a popular summer training camp.

Not all coastal residents were in favour of such major ski-related developments, though. In 1964, West Vancouver granted Alpine Outdoor Recreation Resources, Ltd. (AORR) permission to build an extensive and multi-million-dollar commercial development on Hollyburn Ridge. Plans also included expanded ski infrastructure and new ski terrain. As historian J.I. Little explains, "with the growth of environmental consciousness and anti-urban sentiment... a concerted protest movement was inevitable."<sup>529</sup> Opposition was slow to build, but concerned residents were particularly alarmed by extensive logging operations on the Ridge – an issue that had united skiers in the past. Revelations of shady business practices and payoffs to government cabinet ministers brought the project to a halt in 1971 and the provincial government took over the development of the Ridge, pledging to develop a smaller ski area with a less harmful environmental footprint.<sup>530</sup> Interestingly, the GMR faced less opposition following its 1967 announcement to construct an alpine village on that mountain's plateau. Plans for the \$1 million all-season village included "79 single family chalets, 180 garden apartments, a 100-room hotel, small shops, swimming pool, riding trails, tennis courts, picnic areas, barbecue pits and a convention centre."<sup>531</sup> The differing responses may have stemmed from the divergent histories of logging and development on the two mountains. While local businessmen and private corporations had been altering Grouse's mountain environment for decades, Hollyburn Ridge had retained much of the rustic charm that Verne and other skiers had first experienced in the 1920s.

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<sup>528</sup> As can be seen on the cover of the April 1968 edition of *Garibaldi's Whistler News* (on the previous page), Whistler was called "the powder snow capital of Canada" initially. This descriptor was shortened in later years to just "the powder capital of Canada."

<sup>529</sup> Little, *At the Wilderness Edge*, 58.

<sup>530</sup> Ibid, 58-70.

<sup>531</sup> "Alpine village plan for Grouse," *Vancouver Province*, 21 June 1967.



Developments at Grouse and Whistler helped turn alpine skiing into a booming industry in British Columbia. In the late 1960s, the province boasted a skiing population of approximately 180,000 people, the vast majority of whom were based in the Lower Mainland. Thousands took to the slopes each weekend. On one Sunday in early January 1969, for example, Whistler had 2,000 skiers, Grouse 3,500, and Seymour 7,200.<sup>532</sup> As the *Sun*'s Jack Arnett explained, skiing had given the provincial economy "a healthy injection as millions of dollars are spent on everything from ski sweaters and gondola lifts to restaurants nestling in snowy seclusion on mountaintops."<sup>533</sup> British Columbians spent \$7 million on ski equipment and other associated costs such as transportation, accommodations, and lift passes during the 1967-68 winter.<sup>534</sup> The southern Coast Mountain Range's high peaks, substantial snowfalls, and prolonged ski seasons were a big draw. Ski operators were willing to invest heavily in areas such as Grouse, Whistler, and Seymour because they felt confident in the region's snow conditions. They had a relatively easy time selling "snow security," or reliable snow conditions, to prospective visitors. As Denning explains, demonstrating snow security was essential to "convince Alpine skiers to make advance reservations and pay high prices" for winter tourism activities such as skiing. In the southern Coast Mountains, deep, long-lasting snows were the norm. For these enterprising businessmen, snow was "white gold," a valuable natural resource that sustained their operations.<sup>535</sup> Ski operators felt confident that they had adequate quantities of white gold available to attract skiers to their resorts and recoup their investments over time.

But snow did not always cooperate with skiers and ski operators. At Whistler, "the powder capital of Canada" only existed above 1,300 m asl, where most of its runs were located and the area featured in GWN promotional materials. Below this point and closer to the mountain's base, at 650 m asl, snow conditions were less dependable, and the alpine ski season often began later and ended earlier. In late November 1969, for example, the *Sun* reported that only Whistler's Blue and Green chairs (which serviced the

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<sup>532</sup> "Grouse Mountain ski crowd hits all time record on Sunday," *Vancouver Sun*, 13 January 1969.

<sup>533</sup> John Arnett, "Ski Heil," *Vancouver Sun*, 4 February 1966.

<sup>534</sup> "Winter sport leads in growth," *Vancouver Sun*, 31 October 1968.

<sup>535</sup> Denning, "From Sublime Landscapes to White Gold," 82.

areas above 1,500 m asl) were open but “the gondola and red chair will be used only for transportation to the alpine region – they are not yet skiable.” These lower elevations remained closed until later that December.<sup>536</sup> At over 2,000 m, Whistler had considerable snow-cover variation throughout its vertical gradient. There could very well be snow near the Roundhouse Lodge from November until May, but it might only last from December until April near the parking lot. Near the peaks, winter lasted almost year round. These snow gaps were more pronounced than those that existed in the shorter North Shore Mountains. While these differences were natural features of Whistler’s mountain environment, it complicated the GLL’s ability to manage its alpine ski terrain.

In the late 1960s, the GLL used its gondola and chairlifts to bridge this snow gap. Starting from the parking lot, the four-person gondola transported skiers 600 m in elevation to the mid-mountain station. It was – and still is – entirely possible for skiers to travel from grass and rainy, warm weather to cold and snowy weather in a matter of minutes. Once at mid-station, skiers could then access snow-rich, higher elevation runs via the Red, Blue, and Green chairs. When snow was scarce further below (as it was during the early- and late-season), skiers could use the gondola to return to the parking lot. Waiting to download off the mountain could take hours, though, particularly during holidays and busy weekends. In the early 1970s, some skiers adopted the “death before download” mantra, choosing to walk or run down the mountain before even considering taking the gondola. According to Whistler skier Mark Taylor, by running down the mountain he could “get down faster than the chairlift most days” in the late spring.<sup>537</sup> While the lack of snow at Whistler’s lower elevations was inconvenient, the GLL did not consider it to be a major problem during its first few seasons.

In the North Shore Mountains, ski operators did not have this same luxury. While snow often fell in considerable quantities for prolonged periods each winter, it did not always do so. Low-snow winters had frustrated Vancouver area skiers since the late 1920s, but for capital-intensive ski area such as Grouse that relied on snow for its reputation and

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<sup>536</sup> Sally Abbott, “Schuss talk,” *Vancouver Sun*, 27 November 1969.

<sup>537</sup> Mark Taylor, “Mark Taylor – running down the mountain,” *Whistler Museum*, 2016, <https://soundcloud.com/whistlermuseum>

economic well-being, these winters were disastrous. Such was the case during the 1967-68 season, when skiing did not begin on Grouse until mid-December. The new Blueberry Bowl, which officials hoped to open before Christmas, remained closed until the end of the month, as rains made snow “too dangerous to ski.” Warm and rainy weather continued to hamper Grouse that January and February. Severe temperature inversions caused serious problems. On 11 February, temperatures exceeded 20°C at the peak, but only reached 9°C in the City of Vancouver. Snow conditions became so bad that the company closed the popular Cut ski run at the end of February, two months earlier than expected. Only the Blueberry Bowl’s shadier, north-facing slopes remained open that March. In response to customer frustration, the GMR signed an agreement with Whistler and the Tod Mountain ski area that allowed Grouse season ticket holders to ski there instead.<sup>538</sup>

Grouse skiers enjoyed a long, snow-filled ski season the following year. The resort welcomed more than 198,000 visitors during the “big snow” winter of 1968-69. But poor snow conditions again impacted the mountain during the 1969-70 season, a winter that GMR officials believed would heighten the mountain’s international reputation. Grouse had been chosen to host the 1970 Du Maurier International Race, a major World Cup ski event scheduled from 27 February to 1 March. A competition that included the world’s top racers, the Du Maurier was a perfect opportunity for the GMR to show off its multi-million-dollar ski resort to international audiences. The company even spent an additional \$674,000 to improve its existing facilities and to ensure its ski infrastructure met the race’s logistical requirements. The weeks leading up to the race were abysmal, as well-above average temperatures melted the mountain’s below-average snowpack (measured at just 1.5 m at the beginning of February). Temperatures on the mountain reached 20°C when former World Cup champion Jean-Claude Killy tested the Giant Slalom course on 11 February. On 24 February, the *Province* reported that snow was melting fast. The Du Maurier went ahead as planned, but only because of the herculean efforts of GMR employees, who spent days trucking in snow and shovelling it on to the course. “The

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<sup>538</sup> “Snow post,” *Vancouver Province*, 21 December 1967; “Spring just around the corner?” *Vancouver Province*, 12 February 1968; *Grouse Mountain Resorts Ltd. Annual Report 1968* (Vancouver: Grouse Mountain Resorts, Ltd., 1968).

whole affair was a great credit to everybody involved, especially the [GMR] people who gritted their teeth while the bills piled up and the snow diminished... they simply refused to consider the possibility of disaster,” praised Peter Andrews, the President of the Canadian Ski Association’s Western Division, after the event.<sup>539</sup>

While GMR employees saved the Du Maurier, they could not save the rest of Grouse’s ski season. In his 1970 report to shareholders, Hoegg noted that the Cut had only been open for 10 days, compared to 150 days the year before. He described conditions across the rest of the mountain as “marginal.” This lack of snow also forced the cancellation of many of the mountain’s popular ski school programs. “It’s been a disappointing year,” admitted Hoegg. “Throughout the decades that records have been maintained on Grouse Mountain, there is not one year that shows an average snow depth lower than the winter of 1969-70.” This snowless winter hurt Grouse’s bottom line. The company reported \$13,701 in pre-tax losses at fiscal year’s end. As Hoegg made clear, although the GMR had reported strong earnings during the first nine months of fiscal 1970, it was the winter’s poor snowfall that had led to these losses.<sup>540</sup> No doubt the GMR’s president hoped that the 1969-70 winter was an anomaly, and that deep snows – and profitable winters – would return in subsequent years.

## 7.2 To Prevent Tragedies that are Preventable

Snow safety became a greater concern during these decades. Better access and greater leisure time led locals and tourists to explore the southern Coast Mountains in ever larger numbers. By the 1970s, hundreds of thousands of coastal residents and domestic and international tourists were travelling into these spaces each winter. The growing numbers of people in the mountains meant that there were greater opportunities for accidents, injuries, and fatalities. While experienced mountaineers and advanced skiers had greater

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<sup>539</sup> *Grouse Mountain Resorts Ltd. Annual Report 1969* (Vancouver: Grouse Mountain Resorts, Ltd., 1969); *Grouse Mountain Resorts Ltd. Annual Report 1970* (Vancouver: Grouse Mountain Resorts, Ltd., 1970); “No snow: Grouse ski meet faces real handicap,” *Vancouver Sun*, 21 January 1970; “Grouse Mt set for du Maurier,” *North Vancouver Citizen*, 27 February 1970; Peter Andrews, “Weather plagued du Maurier event,” *North Vancouver Citizen*, 6 March 1970.

<sup>540</sup> *Grouse Mountain Resorts Ltd. Annual Report 1970*.

knowledge of these mountain environments and additional safety training, accidents and injuries could happen to anyone who hiked or skied in the southern Coast Mountains.

Injuries happened frequently in the skiing community. Inexperience, unsafe skiing practices, and run-ins with stumps, rocks, or logs contributed to many accidents. FASP continued to treat and transport injured skiers in the years following the Second World War. In 1946, FASP's volunteer patrollers treated 123 injured skiers in the North Shore Mountains. Sixteen years later, these men and women were attending to 400 skiers per season. While this was a significant increase, it was less shocking when one considers it within the context of the sport's massive growth. Throughout the 1950s and 1960s, the patrol boasted between 100 and 120 members, all adorned in bright red parkas blazed with yellow crosses on a blue patch. By the 1960s, at least one-third of FASP's members were women, a figure which highlighted female participation in the sport more generally. In addition to its rescue work, FASP also organized a ski school and educational campaign. Local ski reporters recognized FASP's significance to the region's skiing community during these decades. The *Sun*'s Don Tyrell praised the organization for its work. "The First Aid Ski Patrol render an invaluable service. A volunteer group, they get nothing for the hours they spend in training and on duty... heed their advice and when you pack up for the season say 'Thank you.'" "If you ski, you too may one day be thankful for the First Aid Ski Patrol," wrote Gertie Beaton (Wepsala). As the organization operated on an annual budget of just over \$1,000, the former champion encouraged skiers to purchase a ski patrol button as part of the group's fundraising efforts. As Beaton explained, FASP's services were free, whereas in Europe, skiers paid for first aid.<sup>541</sup>

At Whistler, two ski patrol teams were available to assist skiers. The first consisted of a weekend volunteer program. A division of FASP, it had actually been operating in the area since 1963 in response to growing skier activity in the area. In 1966, the GLL formed its own full-time, professional patrol service. Five men made up the ski patrol

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<sup>541</sup> "Hollyburn leads in ski mishaps," *Vancouver Province*, 5 April 1946; Nancy West, "Patrol aids skiers," *Vancouver Province*, 15 January 1952; Don Tyrell, "Time for fun on skis," *Vancouver Sun*, 29 April 1955; Gertie Beaton, "Ski button helps stops panic button," *Vancouver Sun*, 23 December 1960; Rollie Rose, "Ski patrol members pay to patch you up," *Vancouver Sun*, 21 November 1962.

during its early years: Ian McLeod, John Hetherington, George Bruce, Derek Henderson, and lead patroller Hugh Smyth. All had previous patrol experience and “know the mountain like the back of their hand.” First on the mountain and last off of it, volunteer and professional patrollers traversed Whistler’s extensive ski terrain. The professional team repaired ruts created in lift lines, inspected slopes for hazardous conditions, and helped skiers in need. Blasting for avalanches became an important duty for them as well.<sup>542</sup> As much as ski operators and skiers wanted a deep snowpack at Whistler, too much snow was dangerous. Avalanches posed a serious threat to skier safety in Whistler’s high-mountain terrain. In the late 1960s, ski patrollers there used explosives to trigger avalanches before allowing skiers to access the terrain. This work lessened the risk that skiers would encounter avalanches.

Snow-related injuries and deaths occurred off the ski hills, too. In December 1948, GVWD employee Harry Reid was killed in an avalanche while working at Palisade Lake. His colleague, Dave Austin, survived. Reid, who had lived in North Vancouver, left behind his wife and two young children.<sup>543</sup> A few months later, 19-year-old Michael Blagg, described in the *Sun* as a “skiing novice,” became lost on Grouse for 23 hours. He was found alive by James Thompson, the caretaker for the Mosquito Creek intake. And in early January 1951, 12-year-old Norman Fielders was reported missing on Grouse Mountain. He had planned to ride the chairlift up the mountain to watch the skiers there. As his concerned mother told *Sun* reporters, it was not uncommon for him to go on long hikes alone – he was a former Boy Scout and was described by her as “an experienced hiker” – but he was not “the kind of boy who would stay overnight without letting us know.”<sup>544</sup> For three days, search parties traversed the mountain looking for the young boy. Tragically, his body was found near the Cleveland Dam construction site. The coroner’s inquest found that he had died of exposure. Fielders’ death upset many locals. “It is impossible to prevent all the mountain tragedies, to make all hikers, particularly

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<sup>542</sup> *Garibaldi’s Whistler News*, (Alta Lake, B.C.: Garibaldi Lifts, Ltd., February 1968), 2; *Garibaldi’s Whistler News*, (Alta Lake, B.C.: Garibaldi Lifts, Ltd., February 1969), 14.

<sup>543</sup> Report on snow survey, 30 March 1948, Water Rights Branch 1936-50 (Victoria) – Section I, folder 4, box 65-A-1, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada; “Water Board worker killed, 2<sup>nd</sup> hurt in Capilano snowslide,” *Vancouver Sun*, 31 December 1948; “Deaths,” *The Province*, 4 January 1949.

<sup>544</sup> “Police exhaust hunt for lost boy hiker,” *Vancouver Sun*, 2 January 1951.

young ones, realize that mountains are always dangerous, always ready to pounce on the uncautious and unprepared,” admitted the *Province*’s editors. “But those interested in mountaineering and skiing should make greater efforts to work out speedier and more effective rescue systems to prevent tragedies that are preventable.”<sup>545</sup>

Mountaineers were equally moved by Fielders’ death. Within a few days of the coroner’s inquest, local newspapers announced the formation of the Mountain Rescue Squad (MRS). Led by experienced skier and mountaineer Sam Taylor, the MRS was a volunteer search-and-rescue organization that worked with RCMP, RCAF, and Forest Service to coordinate search and rescue missions in the nearby mountains. Only individuals with 10-plus years of mountaineering experience could join MRS. Taylor and other organizers wanted competent members who were also familiar with the mountainous terrain between Horseshoe Bay and the Indian Arm, the group’s search area. Should someone go missing, MRS volunteers were expected to take to the mountains within two hours of being notified, no matter the time of day or night. The BCMC believed that its members were best suited for this work. “While skiers can search the local mountains adequately, emergencies may arise further afield where skilled alpinists are required,” explained one March 1951 *B.C. Mountaineer* article. The author called on members to put their names forward for the group.<sup>546</sup>

The MRS was soon put to the test, as volunteers were called to help skiers hurt in Grouse’s 25 March 1951 chairlift crash. Volunteers helped bring injured skiers down the snow-covered slopes to waiting ambulances. MRS members were called to multiple search and rescue operations over the following decades. In February 1964, for example, the MRS was called to help rescue a party of seven that had become stuck on the Lions during a winter climbing expedition. While a rescue operation was planned to help bring down the stranded mountaineers, the experienced hikers were able to make it out on their own through dense fog and snow. MRS volunteers were called on missions outside of the

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<sup>545</sup> “Boy’s body found,” *Vancouver Province*, 4 January 1951; “When every hour counts,” *Vancouver Province*, 5 January 1951.

<sup>546</sup> Peter Spring, “Mountain rescues organized,” *Vancouver Province*, 10 January 1951; “Plans laid for mountain rescue squad,” *Vancouver Sun*, 16 January 1951; “Search and rescue,” March 1951, *B.C. Mountaineer*, volume 28, Series 026 – B.C. Mountaineer 1913-2010, British Columbia Mountaineering Club (BCMC) fonds 205, North Vancouver Archives, North Vancouver, British Columbia, Canada.

North Shore Mountains, too. They assisted with search and rescue operations following a massive avalanche at the Granduc Mine near Stewart, British Columbia, in February 1965. The infamous avalanche killed 26 men at the site. Search teams from nearby communities – including in nearby Alaska – and other parts of the province flocked to the mine. More than a dozen miners were uncovered alive from the snow, including Einar Myllyla, who had been buried in the snow for three days. The *Province* commended rescuers such as the MRS volunteers for their role in the rescue efforts.<sup>547</sup> In addition to this work, MRS – and other organizations such as FASP, the BCMC, and the Whistler ski patrol – trained hikers and skiers in safe climbing and skiing techniques and conducted educational campaigns and lectures to teach the public about the dangers associated with outdoor recreation activities in the snowy southern Coast Mountains.<sup>548</sup>

### 7.3 When the Snow Survey Really Pays Off

Snow survey work expanded in the postwar period. This growth was partly fueled by a desire from private companies and public organizations to develop the southern Coast Mountains' local water storage and hydroelectric generating capabilities. Between 1945 and 1949, the WRB and GVWD laid five new snow courses in the North Shore Mountains. These new sampling sites were placed at Burwell Lake, Palisade Lake, Loch Lomond, Hollyburn Ridge, and Dog Mountain. The expansion of the GVWD system was spurred by growing stress on the region's water resources and a renewed interest in a large reservoir on the Capilano River. Between 1941 and 1951, Metro Vancouver's population grew from 393,000 people to more than 561,000 people. The proposed Capilano dam and reservoir would provide the GVWD with a greater supply of freshwater. Towering 107 m above the valley floor, the new dam would eventually create a 5.6 km long lake in the upper Capilano Valley capable of holding 75 billion litres of water – “enough clean mountain water to supply the future needs of a 1,500,000 population,” boasted the *Province*.<sup>549</sup> As GVWD Engineer W.H. Powell explained in a

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<sup>547</sup> “The mountain rescue people,” *Vancouver Province*, 3 March 1965; “Five more bodies found,” *Vancouver Province*, 23 February 1965; “Sun's news team first into camp,” *Vancouver Sun*, 22 February 1965.

<sup>548</sup> “Expert probes ski smash-up,” *Vancouver Province*, 26 March 1951; “Seven stranded climbers walk down from Lions,” *Vancouver Sun*, 11 February 1964.

<sup>549</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 275.



March 1947 letter to R.C. Farrow – promoted to WRB Comptroller following the war – accurate snow survey data from the Capilano watershed would help maintain high reservoir levels and permit for consistent streamflow downstream.<sup>550</sup>

The GVWD and WRB laid these snow courses years before construction began on the new dam. Indeed, the \$10-million dam – called the Cleveland Dam in honour of the former WRB and GVWD comptroller – was not completed until 1954. By implementing snow courses prior to the completion of this project, the GVWD ensured that its engineers would have the necessary data to forecast annual freshets and monitor and regulate the region's water supply. While the GVWD did have data from Taylor's earlier snow survey work and its Grouse snow course, officials clearly wanted a better picture of the watershed's snow conditions before the dam was finished. This would become a dominant theme in the development of B.C.'s snow survey program for the remainder of the century: snow courses would serve as the vanguard of the province's modernization, preceding or coinciding with the construction of new mega-dams and hydroelectric generating facilities. In 1951, for example, the WRB installed a snow course on the Bridge River watershed in advance of the BCER's soon-to-be-completed second powerhouse on that river. A transmission line of more than 200 km then transported this generated hydroelectricity from the Bridge River to the Horne-Payne substation in Burnaby for use throughout the Lower Mainland. In 1959, the WRB laid out two more snow courses in the Bridge River watershed to assist with water regulation at the recently expanded Lajoie Dam. And in 1960, the GVWD placed a new snow course on Seymour Mountain in anticipation of the upgraded and enlarged Seymour Dam.<sup>551</sup>

Recent work by Meg Stanley and Tina Loo helps contextualize the development of B.C.'s snow survey program in the immediate postwar period. They question James C. Scott's assertion that high-modernist development necessarily pitted local knowledge

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<sup>550</sup> W.H. Powell to R.C. Farrow, 20 March 1947, Water Rights Branch 1936-50 (Victoria) – Section I, folder 4, box 65-A-1, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>551</sup> *Water Powers of British Columbia*, 54-58; Department of Lands, *Report of the Lands Services containing the reports of the Lands Branch, Surveys and Mapping Branch, and Water Rights branch for the year ended December 31 1951*, (Victoria: Legislative Assembly, 1952), 138; Department of Lands, *Report of the Lands Service year ended December 31 1959* (Victoria: Legislative Assembly, 1960), 82.

against the expertise of state actors, who sought to use scientific knowledge and technological developments to control and transform nature for the betterment of society.<sup>552</sup> While the engineers involved in high-modernist mega-projects, and B.C.'s modernization more broadly, espoused a "rhetoric of mastery over nature, their knowledge was, in many ways, local. It was characterized by an intense engagement with the biophysical world, which resulted in an understanding of it that was in part embodied, embedded in the particular, and characterized by an acceptance of limits."<sup>553</sup> This was true for hydraulic engineers and snow surveyors, too. Snow course implementation, snow sampling, and run-off forecasting necessitated a close observation and understanding of local conditions. Snow courses needed to be situated in optimal positions to produce good samples, and thus accurate forecasts. However, terrain and accessibility considerations tempered their placement. Moreover, as Farrow explained before the war, snow accumulation and snowmelt behaved differently in distinct watersheds. Forecasts in different parts of the province had to take into account different factors, such as the prominence of low elevation winter rain in the southern Coast Mountains. Snow was a valuable resource for water managers and energy producers in the immediate postwar period, not just in the southern Coast Mountains, but throughout the province. As Farrow wrote in his 1946 Department of Lands report, "From the standpoint of our water-supply, our winter snows are of the utmost importance, since they hold the moisture in storage in the mountains."<sup>554</sup> By taking into account local environmental factors, engineers with organizations such as the GVWD and BCER were able to develop reliable systems that yielded more accurate run-off forecasts and thus more efficient water use and conservation.

Snow surveyors had an important role in this work, not just for their ability to gather quantitative data, but to collect qualitative data, too. All snow surveyors were given double-sided sheets to take with them on their work. One side had space for the surveyor

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<sup>552</sup> James C. Scott, *Seeing like a State: How Certain Schemes to Improve the Human Condition Have Failed* (New Haven: Yale University Press, 1998), 4.

<sup>553</sup> Meg Stanley and Tina Loo, "High Modernism, Conflict, and the Nature of Change in Canada: A Look at Seeing like A State," *The Canadian Historical Review* 92 no.3 (2011): 399-427.

<sup>554</sup> Department of Lands, *Report of the Lands Services containing the reports of the Lands Branch, Surveys and Mapping Branch, and Water Rights branch for the year ended December 31 1946*, (Victoria: Legislative Assembly, 1947), 78.

to record snow depth, snow water equivalency, and snow density. On the flip side, surveyors had space to record weather and snow conditions and other remarks about the state of the snow course. Surveyors could note where the snowline began and whether run-off had begun on any nearby streams. This latter information gave engineers some indication of when larger run-off events might begin. In addition to these notes, snow surveyors communicated directly with engineers and government officials. In the postwar period, B.C.'s snow surveyors exchanged hundreds, if not thousands, of letters with WRB engineers.<sup>555</sup> Some of this correspondence highlighted what conditions were like “on the ground” and recommended changes to improve the program. In August 1951, for example, the WRB relocated the Grouse Mountain snow course on the advice of GVWD snow surveyors, who noted that it was being “seriously disturbed” by skiers from the rapidly expanding Grouse Mountain ski area – a concern that GVWD watershed inspector and snow surveyor William Angus had first raised in 1948.<sup>556</sup> These qualitative remarks provided engineers with a second data input and could be just as important as quantitative snow data.

How and when snow surveyors conducted their surveys changed in the immediate postwar period. In the wake of the devastating May 1948 Fraser River flood – an event that the WRB had actually warned about based on April snow survey measurements – the WRB added additional sampling dates at many snow courses. At the Grouse snow course, new sampling dates were added for 1 February, 1 March, 1 May, and 15 May. WRB engineers hoped that more spring sampling dates would give them and their partnering organizations a better picture of possible run-off conditions and allow them to re-configure their forecasts as needed. GVWD snow surveyors also began using jeeps to access more remote snow course locations. The use of these vehicles reflected a larger trend in the province, as snow surveyors increasingly relied on jeeps, over-snow vehicles, and even helicopters to reach snow courses. While GVWD surveyors still needed to hike

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<sup>555</sup> Many of these correspondences are kept at the provincial snow survey office in Saanich, B.C.

<sup>556</sup> Grouse Mountain – Snow Survey, W. Angus, 20 March 1948, Water Rights Branch 1936-50 (Victoria) – Section I, folder 4, box 65-A-1, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada; Snow course no. 1B, name: Grouse Mountain, 10 August 1951, Dominion of Water Power & Hydrometric Bureau 1936-55, folder 3, 65-A-01, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada.

up mountainsides to reach snow courses such as Loch Lomond or Burwell Lake, the jeeps made the initial overland journey easier and faster. Climbing these mountains could be brutal, as Taylor had recounted in his diary decades earlier. During their March 1948 survey trip to the GVWD's high-mountain reservoirs, Angus and his colleague C. Cottrell climbed hundreds of metres through a snowpack that increased from just a few centimetres to over 4.4 m by the time they reached Palisade Lake. On their trip to Burwell Lake two days later, Angus reported that deep snow and felled trees made the "going very hard."<sup>557</sup> Closer to the city, the Mount Seymour Highway and Grouse and Hollyburn chairlifts improved access to these once hard-to-reach snow course locations, although weather conditions still made work difficult. "This day was a real blizzard," remarked GVWD surveyors on their 28 March 1952 snow survey sheet.<sup>558</sup>



**Figure 33: Powell River Company employees conducting a snow survey, 2015.33.28, c. 1942-46, PRHMA Photograph Collection, qathet Museum & Archives.**

<sup>557</sup> Report on snow survey, 30 March 1948, Water Rights Branch 1936-50 (Victoria) – Section I, folder 4, box 65-A-1, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>558</sup> Snow surveys, Main, Beamish, 28 March 1952, Water Rights Branch 1950-55 (Victoria) – Section 2, folder 1, 65-G-06, Greater Vancouver Regional District fonds, AM1257-S13, City of Vancouver Archives, Vancouver, British Columbia, Canada.

GVWD snow surveyors had it easy compared to their colleagues in more remote corners of the southern Coast Mountains. Logger Lex Ross, who sampled the WRB's Tenquille Lake snow course located north of Pemberton, had to ski or snowshoe 24 km just to reach the snow course. Sampling work took him three days: one to reach the snow course, one to conduct the samples, and one to return to his vehicle. It took PRC snow surveyors three days to complete their work, too, as they had to travel to the north end of Powell Lake before climbing hundreds of metres to reach the snow courses. Snow survey work in these remote mountains could be dangerous. In 1954, the PRC and the WRB tried adding a January trip to their annual sampling schedule. The trip – undertaken by snow surveyors P.R. Lockie and Jim Price and PRC hydraulic engineer Al Chard – was a disaster. It took the team six hours to travel over one kilometre in waist deep snow. They returned to the boat in a snowstorm and had to wait it out for a full day before returning to Powell River. "I don't think we will be able to take a snow survey trip on [that] course every year," wrote a dejected Lockie. "It is to[o] hard on the party."<sup>559</sup> A letter from Lex Ross to the WRB in April 1957 highlights another example:

Dear sir, On my recent trip to Tenquille Lake snow course, #74, I encountered some difficulties I have not been burdened with before. My brother, who was acting as my helper on the snow sampling trip, pulled several ligaments in his leg while travelling on skis. It took two days to pack him out on my back. I clear broke one of my own skis in doing so... He (my brother) is having to spend a week in hospital now, recovering from injuries sustained during trip.<sup>560</sup>

Like their GVWD counterparts, these southern Coast Mountain surveyors increasingly turned to machines to improve travel into the mountains. The PRC began using helicopters in 1964. Flying significantly shortened surveying trips, from three days to a mere six hours. In 1967, Ross began using a snowmobile to ease his trip to the Tenquille Lake snow course. Although these machines made it easier to access difficult locations, they came with new challenges. In 1967, PRC surveyor Graeme McCahon reported that he could only access one of the company's two sites, as the pilot refused to land near the higher-elevation snow course because of an excessively deep and unstable snowpack.

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<sup>559</sup> Snow survey, January 1954, P.R. Lockie, Snow Survey Reports – 54-57, 60, 66-76, F93 2007.13, Powell River Museum, Powell River, British Columbia, Canada.

<sup>560</sup> Lex Ross to A.F. Paget, Tenquille Lake – 77440-20/1D/06, B.C. Snow Survey Offices, Saanich, British Columbia, Canada.

Four years later, the PRC's March trip was grounded for eight days because of low clouds and unsafe flying conditions. PRC employees finally conducted the survey on 1 April – after the publication of that month's *Snow Survey Bulletin*.<sup>561</sup> Those using snowmobiles and other over-snow vehicles had their own difficulties. During Ross' March 1969 trip, his snowmobile became stuck in the snow, forcing him to walk the remaining 13 km to the snow course. Returning home later than expected, Ross found that the RCMP had begun a preliminary search and rescue operation for him.<sup>562</sup>

Despite the difficulties that snow surveyors faced in the mountains, these surveys were too valuable not to be undertaken. As had been the case before the Second World War, snow survey measurements provided engineers and local officials with advance warning of possible floods or water shortages and allowed them to prepare for these events. As PRC engineer R.D. Lloyd wrote to McCahon following his March 1971 survey, "It looks as though this is one of the years when the snow survey really pays off. By having early warning of a probable high runoff at Lois [dam] we should be able to avoid spill and save on purchased power costs."<sup>563</sup> A few other examples from the Vancouver area highlights the importance of this work, particularly in relation to that region's freshwater supply. In the spring of 1959, GVWD snow surveyors measured lower-than-average snow-water equivalent in the North Shore Mountains. GVWD Commissioner Theo Berry stressed that there was no need for Metro Vancouver residents to be concerned, though. While the snow situation looked bad on the Seymour watershed, Berry explained that a new pumping station in the Vancouver Heights neighbourhood would allow the water board to supplement the Seymour system with water from the Capilano one, where both the Capilano reservoir and Palisade Lake were full. Berry re-iterated this optimism later that June, noting that the three high-mountain reservoirs were "full and overflowing" and that

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<sup>561</sup> Report on snow survey – 1967, Graeme McCahon, 31 March 1967, Snow Survey Reports – 54-57, 60, 66-76, F93 2007.13, Powell River Museum, Powell River, British Columbia, Canada; R.D. Lloyd to H.I. Hunter, 30 March 1971, Snow Survey Reports – 54-57, 60, 66-76, F93 2007.13, Powell River Museum, Powell River, British Columbia, Canada.

<sup>562</sup> Notes re Lex Ross' April 1 trip to the Tenquille Lake snow course, Tenquille Lake – 77440-20/1D/06, B.C. Snow Survey Offices, Saanich, British Columbia, Canada.

<sup>563</sup> Dick [R.S. Lloyd] to Graeme McCahon, Snow Survey Reports – 54-57, 60, 66-76, F93 2007.13, Powell River Museum, Powell River, British Columbia, Canada.

average daily water consumption was actually down compared to past years. Cold, wet weather further alleviated concerns about water shortages in the region.<sup>564</sup>

Fears of a water shortage were again raised four years later, when the WRB's March 1963 *Snow Survey Bulletin* reported that the snowpack in the North Shore Mountains was half its normal level. Berry admitted that the GVWD would implement water restrictions if it had to rely on water from the high-mountain reservoirs earlier than expected.

Thankfully, there was no need to do so. Additional storage from the newly upgraded Seymour Dam helped the region's water situation that summer.<sup>565</sup> Constructed between 1959 and 1961, the \$9.5 million dam was 235 m long and 30 m high and created an expanded reservoir with a 25.2 billion litre capacity.<sup>566</sup> The added storage was an important consideration for a region whose population was approaching 800,000 people.

A low snowpack again concerned officials in the spring of 1970. That April's *Snow Survey Bulletin* noted that the southern Coast Mountain's snowpack was "well below average." The *Province* warned its readers that the region was "headed for a drastic water-short spring and summer." That unfortunately was the case in the B.C. Interior, which experienced its worst drought in 40 years. By July, many Metro Vancouver communities – particularly those supplied by the Seymour system – had instituted water use restrictions. Vancouver, Richmond, Burnaby, and New Westminster did not, though. As city officials in Richmond explained, they chose to avoid water restrictions as they found that, paradoxically, residents there used more water when they were told not to do so. The situation was dire in the District of North Vancouver and the City of North Vancouver, which drew some of their freshwater from smaller tributaries such as the Lynn Creek. Neighbourhoods in the District's western area were "virtually without water" by mid-July. The water shortage there was offset by drawing from the already taxed GVWD water supplies. Water restrictions remained in place for many of the

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<sup>564</sup> "We've got plenty of water," *Vancouver Province*, 26 June 1959; "Snow content low," *Vancouver Province*, 18 April 1959.

<sup>565</sup> Paddy Sherman, "Water shortage forecast for B.C.," *Vancouver Province*, 9 March 1963; "Snow levels threaten B.C. drought," *Vancouver Sun*, 14 March 1963.

<sup>566</sup> Kahrer, *From Speculative to Spectacular*, 61.

metropolitan region's one million residents throughout the remainder of the summer.<sup>567</sup>

In all three cases, snow surveys gave officials possible insight into what might lay ahead for the region. This information did not prevent water shortages, but snow surveys and run-off forecasts were planning tools that could be used to prepare for and mitigate those impacts.

## 7.4 Conclusion

Whistler was buzzing with excitement in March 1971. For the second year in a row, "Trudeaumania" had descended upon the popular ski resort. Prime Minister Pierre Elliott Trudeau had drawn considerable attention to the mountain during his seven-day visit the previous March. The excitement was heightened by news that Trudeau had returned to Whistler to celebrate his honeymoon. Days before his arrival, the Prime Minister had married West Vancouver's Margaret Sinclair in a secret ceremony at St. Stephen's Catholic Church in North Vancouver. The two had then driven to Whistler, where Sinclair's parents owned a condominium. Both were avid and excellent skiers. Pictures of the pair skiing down snow-covered slopes appeared in newspapers throughout the country – a welcome bit of free advertising for Whistler Mountain. The GLL capitalized on the three-day trip, using some of those images in the spring 1971 edition of *Garibaldi's Whistler News*. As that publication noted, the honeymooners enjoyed excellent ski conditions "with snow falling all three days."<sup>568</sup>

Whistler officials had little doubt that conditions would be good for the newlyweds that March. After all, this was "the powder capital of Canada." Snow was an abundant resource in the southern Coast Mountains. It was a valuable one, too. Ski operators had invested heavily in new ski infrastructure and modifications to mountain landscapes to create large resorts such as Whistler, Grouse, and Seymour. Expanded road systems and new technologies such as chairlifts and gondolas made it easier than ever for skiers to

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<sup>567</sup> "Water, water, but not so everywhere!" *Vancouver Province*, 7 April 1970; "Water situation critical," *Vancouver Province*, 17 July 1970; "Sprinkling rules continue as heat drains reservoirs," *Vancouver Province*, 20 July 1970; "Water curbs start in Port Coquitlam," *Vancouver Province*, 22 July 1970; "\$400,000 project to provide water," *Vancouver Sun*, 24 July 1970.

<sup>568</sup> *Garibaldi's Whistler News* (Alta Lake, B.C.: Garibaldi Lifts, Ltd., Spring 1971), 2; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 351; "PMs wedding grabs world headlines," *Vancouver Province*, 8 March 1971.



access snow in these mountains. These changes facilitated stronger connections between the coast and the mountains and brought the hinterland more and more into the city's periphery. Snow's value lay outside of its recreational potential, too. Snowmelt remained an important resource for water managers and energy producers in the postwar period. The province's expanded snow course network played an important role in its modernization and provided engineers and local officials with important data for efficient water use and conservation. As had been the case for the ski industry, new technologies made it easier for snow surveyors to access the mountains. The influx of people in these snowy mountain landscapes created new risks, however. Groups such as FASP and MRS were founded to help those who became hurt or lost in the mountains and to teach snow safety skills. By the 1970s, mountain snow was a key part of Vancouver's social, cultural, and economic fabric. Coastal residents had developed certain relationships predicated upon snow's abundance in the southern Coast Mountains. Low-snow winters had been a concern in the past, but these had happened relatively infrequently. The reliability of this mountain snow would be called into question in subsequent decades.

## Section 5

### 8 Lotusland, Schmotusland: 1972-1997

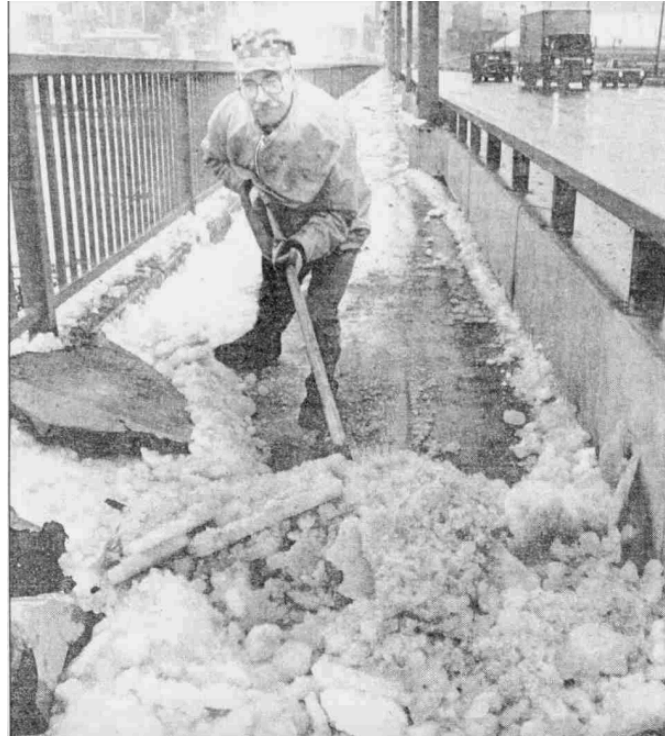
George Fenker was fed up with local officials. It was February 1986, and for weeks, the 47-year-old Fenker had been crossing the recently opened Cambie Street Bridge by foot on his way to and from the downtown. His daily commute had gone smoothly until the middle of the month, when ankle-deep snow and unseasonably cold temperatures blanketed the coast. The bridge's sidewalks became ice rinks. After five days waiting for municipal crews to clear the sidewalks, Fenker decided that enough was enough. On 20 February, he brought his shovel to the bridge and began clearing it himself. "The west side sidewalks are a lake of ice," he told the *Province's* Pamela Fayerman as he took a break from shovelling. "The city maintenance crews should be embarrassed about this, after spending \$54 million building the bridge." Fenker was concerned that someone was going to get seriously hurt if nothing was done. "What really makes me mad is that I'm seeing elderly people slip and slide all over the place and I don't know what's stopping the city from salting and preventing some serious falls." While City Engineer Bill Curtis stressed that his crews *had* been trying to address the problem, he apologized that conditions were not better. But, he added, "ice is hard to handle."<sup>569</sup>

The sidewalks on the Cambie Street Bridge were just one of the many snow-related concerns for local officials that month. The February snows fell in the lead up to two major events: Vancouver's Centennial celebration and the World's Fair, Expo '86. Both events had been in the works for years and had involved major infrastructure developments, some of which were now threatened by the snow. On 18 February, the *Sun* reported that the Expo pavilion's roof was leaking. Expo '86 media relations officer Gail Fritton expected more leaks once the snow began to melt and noted that the organization was spending more than \$100,000 to repair them and strengthen the roof. Thankfully, the snow did not damage or disrupt service on the recently opened \$850 million Skytrain rapid transit system, as it had during trial runs back in November, when snow and cold temperatures froze switches on the tracks. In that instance, switch heaters had not been

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<sup>569</sup> Pamela Fayerman, "Full of icy anger," *Vancouver Province*, 21 February 1986.

turned on despite the warnings for snow and cold. And as residents later learned – and Skytrain officials admitted – the system had not been designed with heavy snow or cold temperatures in mind.<sup>570</sup>



**Figure 34: George Fenker shovelling the Cambie Street Bridge sidewalks.**

***Vancouver Province*, 21 February 1986.**

For many locals, the February 1986 snows were very “un-Vancouver-like.” The city was, after all, the Evergreen Playground, or the “California of Canada” according to *Vancouver on the Move*, a documentary film made for the Centennial celebration. As that video and other promotional films showcased, Vancouver was a city of rainy, overcast winters and warm, sunny summers, the latter the reward for the former. Snow was wholly absent from Vancouver. It was to be found away from the coastal metropolis, in the southern Coast Mountains, the beautiful backdrop for many of the shots used in these promotional films. It was here in these mountains that one could enjoy snow sports for up to 7 months of the year. As a short clip in *Vancouver: The World in a City* showed

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<sup>570</sup> “More snow predicted; side roads remain treacherous,” *Vancouver Sun*, 20 November 1985; “Expo expects future leaks,” *Vancouver Sun*, 18 February 1986.

prospective visitors, from atop the snowy North Shore Mountains one looked down on a city cloaked in winter greenery.<sup>571</sup>

The City of Vancouver had undergone an exceptional transformation during its first century. By 1986, it was one of Canada's largest urban centres, surrounded by a metropolitan area that housed over one million residents. What once had been a small collection of homes "crowded between forest and shore" was now a burgeoning modern metropolis. How coastal residents thought about snow remained the same, however. For nearly one hundred years, the evergreen mentality had held a firm hold on residents. Twentieth century locals considered snow to be just as unusual as their late nineteenth century counterparts. A spate of low snow winters in the late 1970s and 1980s re-enforced this mindset. Shifts in the regional climate and rising global temperatures affected snow's prevalence on the coast in the final quarter of the twentieth century. Complacent coastal residents were thus surprised by the heavy snows of the 1990s. The record-breaking 29 December 1996 snowstorm paralyzed Metro Vancouver and much of the Lower Mainland for days. Growing public discourse on global warming affected how residents thought about and understood these types of snow events in the 1990s. If the global climate was warming, then why was it snowing more in Vancouver, or "Lotusland" as it was increasingly called? The 1990-91, 1992-93, and 1996-97 winters were snowy by late twentieth century standards, but not within a longer historical context. As scientists explained in local newspapers, the full effects of global warming had not yet fully materialized, but extreme weather events would become more common in the future. And on the coast, a difference of just one or two degrees could turn a heavy rainstorm into a paralyzing snow event.

Some of the ways that coastal residents experienced snow continued to evolve in the final decades of the twentieth century. Snow had the greatest impact on regional transportation. It created new problems for the region's emerging rapid transit network, the SkyTrain. The costly system faced periodic snow-related disruptions in the late 1980s

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<sup>571</sup> *Vancouver on the Move* (Okexnon Films Inc, 1996), <https://searcharchives.vancouver.ca/vancouver-on-move>; *Vancouver: The World in a City* (Yaletown Productions, Inc, ca. 1980), <https://searcharchives.vancouver.ca/vancouver-world-in-city>

and 1990s. These were not caused just by the snow itself, but rather by the system's design, which failed to take into account significant snow events. Seeking to improve snow-clearing operations on its increasingly busy streets, municipal officials contemplated the adoption of a more aggressive snow-fighting policy – akin to those employed in places such as Montreal and Toronto – following the heavy snows of the early 1970s. But such thoughts faded with the snow. Instead, municipal officials doubled down and strengthened existing policies such as the sidewalk snow-clearing by-law and parking ban. Instead of investing in new equipment, officials continued to rely heavily on salt in hopes of keeping costs low as they waited for warm, rainy weather to return. Indeed, costs had climbed in the late twentieth century. In the 1990s, the City of Vancouver spent millions to make streets drivable, not just for its 470,000-plus residents, but for the tens of thousands of suburbanites who travelled into the city each day. They also continued to prioritize major transportation arteries to the detriment of side streets and sidewalks. The evergreen mentality influenced these decisions, as it had throughout nearly all of Vancouver's history. But as Fenker's act of shovelling resistance demonstrates, not all locals felt that these strategies were working well.

## 8.1 Saskatoon-on-the-Pacific

Snow was relatively scarce on the coast during the final decades of the twentieth century. Between the 1971-72 and 1996-97 winters, the average annual snowfall at VIA was just 44 cm. The average annual snow-cover during this period was just 10 days – a number that is difficult to compare with earlier measurements from downtown Vancouver given the difference in annual precipitation totals between that station and the one at VIA.<sup>572</sup> The 1980s were a very low snow decade, with an annual average of just 30 cm of snow - 20 cm less than the 1939-1997 average for the airport. No snow whatsoever was recorded during the 1982-83 and 1991-92 winters. Shifting regional climate cycles and anthropogenic climate change contributed to these lower snowfalls. In 1977, the PDO shifted back to a positive cycle, creating climatic conditions that typically produced

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<sup>572</sup> The 1972-97 average (10.4 days) is roughly in line with the longer 1956-97 average (10.6 days) at VIA. This number is difficult to contextualize with data from other meteorological stations across Vancouver, as many did not record snow on the ground, or there are missing data that make comparisons – and measuring the impact of the UHI – difficult.

warmer and drier winter weather. Global warming further impacted snow's prevalence on the coast. Global temperatures began to rise precipitously in the mid-1970s.<sup>573</sup> Average winter temperatures in Vancouver rose during this period too, with the 1980s and 1990s being the two warmest decades of the twentieth century.<sup>574</sup>

The evergreen mentality reigned supreme during these decades, as coastal residents grew complacent about snow. As had been the case in the 1950s and 1960s, memories of heavy snow and cold winters were replaced by February golf and year-round grass. "Snow is a rarity in Vancouver," remarked the *Sun*'s Nicole Parton in February 1989, a line that local reporters had been using for nearly a century.<sup>575</sup> This, after all, was the "California of Canada" or "Lotusland." Popularized in the 1960s and 1970s, Lotusland was a reference to the lotus eaters in Lord Alfred Tennyson's poem *The Lotus-Eaters* and signalled the province's association with "yippies" (a portmanteau of hippie and yuppie) and mind-altering narcotics. But the term also called to mind the warm, temperate climates in which the plant grew. Snow challenged this perception. "Lotus Land, Schmotus Land," mused the writer of the *Province*'s satirical weatherman section in February 1985. "Easterners are pointing fingers at us and snickering. What an embarrassment!" According to the *Sun*'s Keith Baldrey, that month's snow had to be "some sort of joke played on us by eastern cousins who have grown tired of our smug remarks about how we play tennis, golf, and swim just after New Years... after all, Lotusland inhabitants rarely find themselves still shovelling snow more than a month after Christmas." Harking back to Sweeney forty years earlier, the *Province* called snow "white rain." "There is no such thing as snow on the West Coast, as can be proved by

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<sup>573</sup> The report can be found here: [https://archive.ipcc.ch/ipccreports/tar/wg1/pdf/WG1\\_TAR-FRONT.PDF](https://archive.ipcc.ch/ipccreports/tar/wg1/pdf/WG1_TAR-FRONT.PDF) International Panel on Climate Change, *Climate Change 2001: The Scientific Basis* (Cambridge: Cambridge University Press, 2001), 3.

<sup>574</sup> There were some exceptionally snowy winters. During the 1971-72 winter, for example, 118 cm of snow fell at VIA. The snow lasted for a cumulative total of 31 days. Snow persisted for just as many days during the 1984-85 winter, although the total snowfall (just 42 cm) was significantly less. Another 118 cm coated the airport during the 1990-91 winter. It lasted a total of 23 days. And during the 1996-97 winter, a metre of snow fell on the airport, nearly half of this during the infamous 29 December snowstorm, a snow event still remembered well by coastal residents today. These winters were anomalous for the period, however. Only one other winter recorded an annual snowfall of more than 75 cm during this 25-year stretch. Vancouver International Airport, BC monthly data report for December – March, 1971-1997, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>

<sup>575</sup> Nicole Parton, "Snow in Lotus land never fails to bring out the flake in all of us," *Vancouver Sun*, 18 February 1989.

anyone who sends sneering letters back East. And that won't be snow that showers down from the clouds today. That will be white water. Got it?" As Portland resident Georgia Egan remarked on a visit to the city during the snows of February 1995, "this is Vancouver, I didn't expect any of this."<sup>576</sup>

Tourists like Egan were likely influenced by the promotional materials produced during these decades. Local and regional tourist organizations generated a wide array of print and visual advertisements in the lead up to Vancouver's Centennial and Expo '86. Organizers and local boosters expected that the World Fair would draw upwards of 14 million people to Vancouver – a huge economic boost to the city, the region, and the province more generally.<sup>577</sup> Nature was a key selling point in these promotional materials. The sea, the mountains, and the coast's outdoor lifestyle featured prominently in advertisements. Tourism British Columbia's use of natural images and the slogan "Super, Natural British Columbia" reflected how officials considered nature to be an important tourism draw during these decades. And tourism was a significant component of the provincial economy. It generated more than \$8 billion in annual revenue for the province in the final years of the twentieth century. The vast majority of this money was spent in Vancouver and coastal British Columbia.<sup>578</sup>

Promotional materials about Vancouver and the southern coast region continued to emphasize the region's mildness and lack of snow. "When people talk about Vancouver, the subject of weather invariably arise," explained Terri Wershler in 1985's *The Vancouver Guide*. "Vancouverites are either pitied because of the rain or envied because of the balmy weather.... [W]inter is mild with little snow." Instead, rain was a way of life in winter, and Wershler encouraged tourists to bring "a warm raincoat, an umbrella, and

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<sup>576</sup> "The weatherman says," *Vancouver Province*, 10 February 1985; Keith Baldrey, "Snow hides drier winter than usual," *Vancouver Sun*, 11 February 1985; "The weatherman says," *Vancouver Province*, 7 February 1990; Petti Fong, "Noses were red, some hearts were blue, as snow put many in a slithery stew," *Vancouver Sun*, 15 February 1995.

<sup>577</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 425.

<sup>578</sup> *The Value of Tourism in British Columbia: Trends from 1998 to 2008* (Victoria: Tourism British Columbia, 2009), 5-8.

waterproof boots.”<sup>579</sup> Flowers bloomed in February and March as the rest of the country remained blanketed in deep snow, according to other pamphlets and guidebooks. “The often-told stories of skiing in the morning and swimming or playing a few holes of golf in the afternoon are very much a reality,” admitted another 1985 travel guide. The contrast between the snowy mountains and green city were depicted in promotional videos about Vancouver, too. As had been the case in earlier advertisements, local boosters asserted that snow was something that existed in the mountains and not in the city. And this was generally true, as were many of the other claims made in these promotional materials. Vancouver winters were milder and less snowy than other parts of Canada, particularly during the final decades of the twentieth century. But the coast was not always mild nor was it snowless, as tourists such as Egan occasionally learned.<sup>580</sup>

While some locals and tourists scoffed at snow, others tried to assure their neighbours that it was not as unusual as they believed it to be. “The Sunday snow came gently down on the city through the night and in the morning all the people said it was unusual, but there was nothing unusual about it,” wrote the *Sun*’s Paul St. Pierre in December 1975. In December 1984, local meteorologist Bill Scott told residents that, while they had been spoiled with mild, relatively snowless winters for the past five years, that month’s snowy weather was actually more typical of the coastal climate. “It just feels like a lot of snow. No records are being broken by this winter’s snowfall,” remarked the *Province*’s Jan O’Brien after a snowy stretch of weather two months later. “It’s not as if Vancouverites have never dealt with snow before,” wrote Daryl W. Leopold in January 1991 as snow accumulated on the coast. “‘This isn’t like Vancouver’... the phrase rolled off our lips, but actually, this *is* like Vancouver – the Vancouver I grew up in, anyway.” A lifelong resident, Leopold recounted his snow experiences in the 1950s and 1960s. The idea of

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<sup>579</sup> Wershler did admit that “a light snow throws the city into chaos, and the frontier spirit emerges with everyone pitching in during the calamity.” Terri Wershler, *The Vancouver Guide: all you need in one handy volume* (Vancouver: Douglas & McIntyre, 1985).

<sup>580</sup> Carol Baker, *Thomas Cook Travellers: Vancouver & British Columbia* (Hampshire, U.K.: A.A. Publishing, 1993), 58; David Vincent-Jones, *The West Coast Travel Guide: Exploring the Islands, Towns and Byways by Ferry, Car, and Bicycle* (Vancouver: Coastal Publications, 1985), 17; Wershler, *The Vancouver Guide: All You Need in One Handy Volume*, 16-17; Norman E. Adams, *Vancouver & Victoria: The visitor’s guide* (Toronto: Methuen, 1986), xiii; *Vancouver & British Columbia* (Surrey, England: Colour Library Books Ltd., 1987).



“standing thigh to waist deep in snow at 16 Avenue and Manitoba street” no doubt shocked younger readers and those who had moved to the coast in recent decades.<sup>581</sup>

The growing public discourse regarding global warming impacted how coastal residents understood snow events in their city. Global warming linked to growing greenhouse gas emissions was first a concern in the scientific community, then among the general public. The 1987 Brundtland Report, the formation of the United Nations’ Intergovernmental Panel on Climate Change (IPCC), and the Toronto Conference on the Changing Atmosphere in 1988 reflected the seriousness that scientists were devoting to studying anthropogenic climate change and its future impact on humanity. In 1988, National Aeronautics and Space Agency (NASA) climate modeler James Hansen told the U.S. Congress that he was “99 percent” certain that human-induced warming would lead to a 0.5-to-1.5°C increase in annual mean global temperatures by 2020.<sup>582</sup> Local news coverage on global warming-related stories grew considerably in the late 1980s and early 1990s. The creation of a municipal Task Force on Atmospheric Change heightened local discourse on the matter even more. In 1990, the Task Force published its final report entitled *Clouds of Change*, which explored the impact that climate change would have on the city and what residents could do to mitigate these risks. Sea-level rise, increased precipitation totals, and higher temperatures were all probable effects of climate change on the Pacific Coast. “It is difficult to estimate the hazards from atmospheric change,” wrote the report’s authors. But, if warming occurred at a similar pace, “the rate of change will be at a level never before experienced in the previous 160,000 years.”<sup>583</sup>

Locals had a difficult time squaring such concerns with the snowy 1990-91 and 1996-97 winters. “What’s happened to our usual balmy, wet West Coast winters?” asked the *Sun*’s editors as heavy snow fell in January 1991. “Meteorologists report that average temperature measurements around the globe show 1990 was the hottest year since accurate records were kept... but look out the window and it’s a different story.” “So

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<sup>581</sup> “Paul St. Pierre, “Paul St. Pierre,” *Vancouver Sun*, 2 December 1975; Jan O’Brien, “Mark didn’t melt,” *Vancouver Province*, 7 February 1985; Daryl W. Leopold, “It’s not as if Vancouverites have never dealt with snow before,” *Vancouver Sun*, 12 January 1991.

<sup>582</sup> Fleming, *Historical Perspectives on Climate Change*, 135; Edwards, *A Vast Machine*, 390.

<sup>583</sup> City of Vancouver, *Clouds of Change: Final Report of the City of Vancouver Task Force on Atmospheric Change* (Vancouver: City of Vancouver, 1990), 7.

where is the greenhouse effect when you really need it? For ten years they've warned us that pollution is melting the polar caps and what do we get? Saskatoon-on-the-Pacific!" wrote the *Province's* Shane McCune in January 1991. "What we need is more carbon dioxide in the atmosphere to clear the streets." Reporters turned to local climate scientists for an explanation that winter. UBC professor Gordon McBean noted that the global warming trends that scientists were warning about were not yet fully apparent on the coast. He and other researchers, such as climate experts Henry Hengeveldt and Robert Hornung, noted that more extreme weather events would become more common in future years. In Vancouver, only a few degrees separated a heavy downpour from a snowy mess. Climate scientists pointed to similar explanations following the 29 December 1996 snowstorm. Storms such as that one would become more frequent in future years, explained the *Sun's* Stephen Hume in its aftermath – a distressing thought for those still cleaning up from the disruptive and destructive storm.<sup>584</sup>

## 8.2 We just don't normally get this kind of snow

The City of Vancouver's built environment underwent a tremendous transformation during the final three decades of the twentieth century. The downtown core became increasingly dense as older single-family homes and low-level apartment buildings were replaced by high-rise condominiums and glass skyscrapers. Between 1962 and 1975, developers built 200 high-rise apartment buildings in the West End. In Kitsilano, 1,500 new condominiums were built between 1971 and 1976.<sup>585</sup> This densification took off after Expo '86, when Premier Bill Vander Zalm's Social Credit government sold the 165-acre site to Hong Kong developer Li Ka-shing for \$320 million in 1988. As Francis explains, "Li Ka-shing's company, Concord Pacific, filled the Expo site with a small village of high-rise condo towers and townhouses that more or less established Vancouver as the opulent 'city of glass' it has become." According to local historian Chuck Davis, a new office building went up on average every 84 days during the first

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<sup>584</sup> "Our balmy coast snowed under," *Vancouver Sun*, 8 January 1991; Shane McCune, "So where's the rain when we need it?" *Vancouver Province*, 2 January 1991; Suzanne Fournier, "Global warming really is to blame," *Vancouver Province* 10 January 1991; Stephen Hume, "Extreme weather part of global warming," *Vancouver Sun*, 30 December 1996.

<sup>585</sup> David Ley, Daniel Hiebert, and Geraldine Pratt, "Time to grow up? From urban village to world city, 1966-91," in *Vancouver and its Region*, eds. Graeme Wynn and Timothy Oke, 237.

three years of the 1990s.<sup>586</sup> The construction of these tall, thin skyscrapers was part of “Vancouverism,” the urban planning and architectural phenomenon that transformed the city into what author Larry Beasley calls “an inspiring world-class city celebrated for its livability, sustainability, and competitiveness.”<sup>587</sup> Other large infrastructure projects such as the new Vancouver Public Library’s main branch, the GM Place Arena, and the Ford Theatre further altered the cityscape.

This new built environment affected how urban residents experienced snow in Vancouver. The exceptional development of the downtown core increased its urban heat island (UHI), the difference in air temperature between urban centres and rural hinterlands. UHIs occur because densely packed buildings and paved surfaces such as sidewalks, roads, and parking lots trap and amplify heat more effectively than rural environments, where buildings are more spread out and there are more treed and grassy areas. Heat generated by furnaces, air conditioners, and cars add to the temperature difference in a city.<sup>588</sup> As geographers Steven B. Malevich and Katherine Klink note, “urban heat islands (UHIs) are one of the best recorded incidences of anthropogenic climate change.” UBC professor T.R. Oke and federal scientist G.B. Maxwell first examined UHIs in Vancouver in 1974. They found that Vancouver retained heat longer into the night than did surrounding rural areas. Their research was followed up by UBC Master’s student Kathryn Elizabeth Runnalls in 1995. She found that UHIs were “present in Vancouver most of the time” and that the urban-rural difference, on average, was 1.4°C annually. The effect was largest at night, averaging 2.4°C annually.<sup>589</sup>

It is unclear how impactful this UHI was on snowfall accumulation in Vancouver’s downtown. The federal government phased out its downtown meteorological stations at the end of the 1970s in favour of its Sea Island location, so there is not adequate data to

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<sup>586</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 448.

<sup>587</sup> Larry Beasley, *Vancouverism* (Vancouver: UBC Press, 2019).

<sup>588</sup> “Urban Heat Island Effect,” *Climate Atlas of Canada*, <https://climateatlas.ca/urban-heat-island-effect>

<sup>589</sup> T.R. Oke and G.B. Maxwell, “Urban heat island dynamics in Montreal and Vancouver,” *Atmospheric Environment* 9 no. 2 (1975): 191-200; Steven B. Malevich and Katherine Klink, “Relationships between snow and the wintertime Minneapolis Urban Heat Island,” *American Meteorological Society* 50 no. 9 (2011), 1884; Kathryn Elizabeth Runnalls, “Temporal Dynamics of Vancouver’s heat island,” MA Thesis (University of British Columbia, 1995).

make a direct comparison. Meteorological information from Sea Island also does not offer insight into the impact of urban development on downtown Vancouver's climate.<sup>590</sup> Moreover, the region's topography directly influences annual precipitation totals: more annual precipitation falls the farther one moves in a north-north-easterly direction from Sea Island. Some speculation on the interaction between snow and UHIs can be made based on research from other North American cities. Snow's high albedo enhanced the UHI's impact during daytime hours, as snow-covered rural areas reflected more radiative energy than urban spaces, where snow was removed from sidewalks, streets, and parking lots and was darkened by pollution. Snow also affected the UHI at night, as the insulating properties of snow cover decouple rural areas from their underlying heat store and allow rural areas to become relatively cooler.<sup>591</sup> In contrast, the UHI affected the prevalence of snow in downtown Vancouver. A temperature difference of 1.4°C can mean the difference between snow or rain on the coast. In certain instances, snow likely turned to rain as it fell in the downtown. It also melted or turned to slush much more quickly on downtown streets and sidewalks than it did in forested areas such as Stanley Park. As a result, downtown residents probably saw less snow than did their suburban counterparts.

How coastal residents experienced snow continued to evolve during the final decades of the twentieth century. While the city closed a few streets for coasting during the 1971-72 winter, the practice was discontinued in subsequent winters. It is likely that the city ended its once popular policy in the wake of Christopher Iwata's death. On 28 December 1971, the 10-year-old Burnaby boy died when his toboggan slid into the back of a truck on Eglinton Street. Officials were wary of children coasting on any of the region's streets following the accident. "I can't over-emphasize the danger of sleighing on hilly streets anywhere in the lower mainland," said New Westminster coroner Doug Jack. Local police urged similar restraint. While the street closure policy ended, coasting continued to be a popular recreation activity for children in the 1980s and 1990s. Stanley Park, Queen

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<sup>590</sup> As Oke, North, and Slaymaker explained in 1992, the meteorological data from the airport "is therefore of limited value for determining the climatic impact of urban development." T.R. Oke, M. North, and O. Slaymaker, "Primordial to Prim Order: A century of environmental change," in *Vancouver and its Region*, eds. Graeme Wynn and Timothy Oke, 159.

<sup>591</sup> Malevich and Katherine Klink, "Relationships between snow and the wintertime Minneapolis Urban Heat Island," 1892.

Elizabeth Park, and other hilly parks were crowded with young children whenever it snowed. Retail giant Canadian Tire reported a run on toboggans during snow events in February 1990 and January 1991.<sup>592</sup>

Snow continued to snarl car traffic in the region. Metro Vancouver's automobility increased substantially as its road network expanded and more people moved to the suburbs. Between 1971 and 1996, Vancouver's population grew from 426,000 people to over 510,000 people. The population of Metro Vancouver nearly doubled during that same period, growing from just over 1 million people to 1.8 million people.<sup>593</sup> Cars were the primary mode of transportation between the city and suburbs for metropolitan residents. Vancouver's 1997 Transportation Plan found that 75,000 cars travelled from the suburbs to the city each morning – almost double the figure from the late 1960s.<sup>594</sup> Coastal drivers struggled on the region's busy streets when it snowed. During these decades, the BCAA and the Insurance Corporation of British Columbia (ICBC) received thousands of calls asking for assistance. Stalled and abandoned vehicles and accidents with pedestrians or other drivers were big issues, too. Local officials and residents blamed these problems on the lack of snow driving experience and unpreparedness. Many coastal residents had little experience driving on snowy or icy roads. That very few drivers had snow tires on their cars during the winter months exacerbated these issues. Local police and other officials pointed to the lack of snow tire equipped vehicles as a leading factor in the city's driving woes.

Metro Vancouver drivers were *supposed* to use snow tires. In 1975, the provincial government amended its *Motor Vehicle Act*, specifically Section 138, "driving without consideration for others." British Columbians who caused an accident or obstructed traffic during a snow event and were caught driving on summer tires faced six demerit

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<sup>592</sup> "Mishaps spark toboggan warning," *Vancouver Province*, 29 December 1971; "Coroner plea to kids; don't slide on streets," *Victoria Times Colonist*, 29 December 1971; Tom Hawthorn, "More winter wonderland," *Vancouver Province*, 9 January 1991; John Trethewey et al., "City's hammered flat; it's a nightmare everywhere as people battle the white stuff," *Vancouver Province*, 16 February 1990.

<sup>593</sup> "Demographics of Metro Vancouver," *Wikipedia*, [https://en.wikipedia.org/wiki/Demographics\\_of\\_Metro\\_Vancouver](https://en.wikipedia.org/wiki/Demographics_of_Metro_Vancouver)

<sup>594</sup> *The City of Vancouver Transportation Plan 1997* (Vancouver: City of Vancouver, 1997), 8.

points.<sup>595</sup> The lack of snow tires had been a big problem that winter, as abandoned and stuck vehicles blocked roads and created major traffic disruptions in Vancouver. Many drivers did not heed the policy change, though. In November 1977, reporters noted that drivers with summer tires caused “hell on wheels” on snowy streets. Cars unequipped with snow tires reduced traffic to a crawl again in December 1980. Similar stories played out in subsequent winters. Believing snow to be rare, many drivers who owned snow tires did not put them on before the winter months. Others did not even own snow tires. Like toboggans, snow tires were hot commodities when it snowed in the 1990s. But owning snow tires and actually putting them on one’s car were two very different things.<sup>596</sup>

Coastal residents earned a reputation as bad drivers because of these snow-related issues. “We keep hearing from drivers from the Prairies, the North (of Hope), and the East that we are rotten drivers in the snow,” wrote the *Province*’s Lorne Parton in December 1975. “They may have a case. I haven’t seen so much fish tailing since the cohoes made the run to the Capilano Hatchery last fall.” “Among the qualities in which Vancouver people are said to be deficient... our inability to drive in snow is frequently noted by outlanders,” remarked the *Sun*’s Paul St. Pierre three years later. Even experienced and well-prepared drivers were, in Jamie Lamb’s opinion, “reduced to idiot status by the sheer awfulness of the drivers around them.” The *Province*’s Bruce McLean called unprepared and inexperienced winter drivers “Typical Vancouver Drivers” or TVDs. If, as McLean explained, one’s immediate response was to pray, cover one’s eyes, or brake wildly when their car slid out of control on snow or ice, that person was considered a certified TVD. Another sign was not properly clearing off one’s vehicle. He noted one instance where police had stopped a driver who had carved out a small hole on the front windshield of his otherwise ice-encrusted car – a move that earned him “a little chat about the hazards of peephole driving.”<sup>597</sup>

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<sup>595</sup> Harvey Southam, “Record snows – a driver’s nightmare,” *Vancouver Province*, 1 December 1975; “Too few snow tires and it was hell on wheels,” *Vancouver Sun*, 24 November 1977.

<sup>596</sup> “Too few snow tires and it was hell on wheels,” *Vancouver Sun*, 24 November 1977; “Snow snarls traffic in city as blizzard batters valley,” *Vancouver Sun*, 4 December 1980; “Killer snowstorm claims 2 lives,” *Vancouver Sun*, 5 December 1980; “Milder winds, rains expected to break cold snap,” *Vancouver Sun*, 7 January 1982; “Cold boosts gas consumption,” *Vancouver Sun*, 22 November 1985.

<sup>597</sup> Lorne Parton, *Vancouver Province*, 2 December 1975; Paul St. Pierre, *Vancouver Sun*, 7 January 1978; Bruce McLean, “Typical Vancouver drivers keep plowing on,” *Vancouver Province*, 28 November 1985; Jamie Lamb, “What goes down must gum up everything,” *Vancouver Sun*, 21 December 1992.

Coastal drivers indeed struggled in the snow, but McLean highlighted that he had seen TVD qualities displayed by drivers in snowier cities, too. Other reporters noted that this reputation was not entirely the fault of drivers. Metro Vancouver was hillier than other metropolitan regions in Canada, they argued. The coast's wet snows also created slick and unsafe road conditions.<sup>598</sup> Disparate intra-regional snow-clearing capabilities further affected drivers. While Metro Vancouver was a highly connected region, each municipality was responsible for its own snow-clearing work. Highways and major bridges such as Lions Gate and Second Narrows fell under provincial jurisdiction. Private contractors began handling these routes in the late 1980s, when the Social Credit government privatized highway snow work in an effort to lower those costs.

These intra-regional disparities were most clearly evident in January 1991, when over a metre of snow fell during an 11-day period. Looking to see how well neighbouring communities were handling the snow – “despite pleas from every police force in the Lower Mainland to stay off the roads” – the *Province's* Shelly Easton and photographer Peter Hulbert set out on a 155 km circuit around the region. Having completed their tour, Easton reported that Richmond had the clearest roads while those in Port Coquitlam and Surrey were the worst. In the latter communities, main roads were “clogged with snow” and side streets “were littered with cars that hadn't moved in weeks.” Vancouver's side streets were also “thick with snow that hasn't been cleared in days,” a product of that municipality's snow-clearing priorities. Many of the region's highways were in poor condition, too. Some highways, such as the eastern section of the Trans-Canada Highway, had to be closed temporarily. B.C.'s Minister of Transportation and Highways, Rita Johnston, blamed these closures on the private contractors. “The money saved by taxpayers through privatization is certainly not at the expense of safety,” replied Johnston to criticisms that public safety had been threatened by negligent contractors.<sup>599</sup>

Some drivers turned to public transit when it snowed. Buses and trolleys were a good option for coastal residents. By the mid-1990s, Metro Transit (the BCHPA's successor)

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<sup>598</sup> Paul St. Pierre, *Vancouver Sun*, 7 January 1978; Bruce McLean, “Typical Vancouver drivers keep plowing on,” *Vancouver Province*, 28 November 1985.

<sup>599</sup> Shelly Easton, “Gotta drive? Richmond's clear,” *Vancouver Province*, 8 January 1991; Harold Munro, “Snow-removal review underway,” *Vancouver Sun*, 7 January 1991.

operated 1,000 buses and 245 trolleys throughout an 1,800 km<sup>2</sup> area.<sup>600</sup> Increased public transit had been an important component of the Greater Vancouver Regional District's (GVRD) 1975 regional development plan entitled *Livable Region Strategy*.<sup>601</sup> While buses were often well-equipped to handle the snow, and the transit organization worked collaboratively with local officials to clear major routes, service was often disrupted or slowed during snow events. Stalled and abandoned cars created the biggest headaches for bus operators and commuters. As one Metro Transit spokesperson explained in December 1980, "our buses are well equipped to deal with snow but unfortunately there are still some motorists who don't bother to buy snow tires." This traffic slowed service on some routes by up to two hours.<sup>602</sup> The City of Vancouver's heavy use of salt further impacted trolley service. Salt mixed with slushy, melting snow created an electrolytic solution that short-circuited the trolley's electric systems. In February 1985, the salt-slush mixtures scuttled 100 trolleys. While officials claimed to have solved the problem that summer, 30 trolleys were affected by similar issues later that December. Salty, slushy conditions short-circuited 174 of Metro Transit's 224 trolleys in January 1991. According to the *Province's* Tom Hawthorn, these salt-related short-circuits were considered "a chronic problem" by that point.<sup>603</sup>

The SkyTrain rapid transit system was another popular transportation alternative in the late 1980s and 1990s. The system was one of the many infrastructure projects undertaken by the province's Social Credit government for Expo '86. As Francis explains, Premier Bill Bennett saw large-scale projects such as the SkyTrain, the BC Place stadium, and the Expo pavilions "as a means of stimulating economic development for the city, which had been losing population to the surrounding suburbs, and securing political support for his

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<sup>600</sup> Glenn Bohn, "SkyTrain crawls while many downtown buses stalled," *Vancouver Sun*, 31 December 1996.

<sup>601</sup> Robert N. North and Walter G. Hardwick, "Vancouver since the Second World War: An economic geography," in *Vancouver and its Region*, eds. Graeme Wynn and Timothy Oke, 212.

<sup>602</sup> "Snow snarls traffic in city as blizzard batters valley," *Vancouver Sun*, 4 December 1980

<sup>603</sup> For more information on how salt and water impacts electrical circuits, see: Stephen Lower, "Electrolytes and Electrolytic Solutions," *Libretexts Chemistry*, 20 February 2022, [https://chem.libretexts.org/Bookshelves/General\\_Chemistry/Book%3A\\_Chem1\\_\(Lower\)/08%3A\\_Solutions/8.10%3A\\_Ions\\_and\\_Electrolytes/8.10.9A%3A\\_8.10.9A%3A\\_Electrolytes\\_and\\_Electrolytic\\_Solutions](https://chem.libretexts.org/Bookshelves/General_Chemistry/Book%3A_Chem1_(Lower)/08%3A_Solutions/8.10%3A_Ions_and_Electrolytes/8.10.9A%3A_8.10.9A%3A_Electrolytes_and_Electrolytic_Solutions); "Moisture trips trolleys," *Vancouver Province*, 3 December 1985; Mary Lynn Young and Brian Morton, "Slush fund to dry a little amid sunny outlook," *Vancouver Sun*, 10 January 1991; Tom Hawthorn, "Meltdown turns roads into rivers," *Vancouver Province*, 1- January 1991.



government.”<sup>604</sup> Completed in 1985 at a cost of \$850 million, the 22.5 km SkyTrain monorail stretched from the Vancouver harbourfront to New Westminster, following much of the original interurban track that had connected the two cities earlier in the century.<sup>605</sup> The provincial government and BC Transit heralded the SkyTrain’s opening as a “day of celebration” when service officially began on 11 December 1985. The system expanded in the following years. In 1990, the \$179 million, 3.1 km SkyBridge opened, extending the system across the Fraser River to the sprawling suburb of Surrey.<sup>606</sup>

The SkyTrain was not built to withstand the region’s periodic cold snaps and heavy snow events. Initial trial runs in November 1985 were delayed by these conditions. Four years later, in February 1989, wet, heavy snow brought the system to a halt once again. According to BC Transit spokesperson George Stroppa, snow had slid from the station shelter rooftops onto the safety sensors. This had triggered the pressure-sensitive platform intrusion emergency system, which was designed to stop the train in the event that someone fell on the tracks. The SkyTrain network faced further challenges during the 1990-91 winter. “Mother Nature spanked BC Transit’s billion-dollar baby yesterday,” wrote the *Province*’s John Trethewey in December 1990. Blowing snow and cold temperatures froze train doors and forced officials to shut the system down completely – a first in the monorail’s short history. BC Transit employees used a de-icing machine to try to keep tracks clear as snow continued to create more problems that January. This work – and the ever-building snow – slowed service. The system did not fare any better following the 29 December 1996 snowstorm. The deep snow again tripped emergency sensors and forced officials to temporarily halt service. Issues continued the following day, as only 11 of the system’s 33 cars had been de-iced and were in service.<sup>607</sup>

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<sup>604</sup> Francis, *Becoming Vancouver*, 200-202

<sup>605</sup> Ibid, 201.

<sup>606</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 444.

<sup>607</sup> “More snow predicted; side roads remain treacherous,” *Vancouver Sun*, 20 November 1985; Justin Hunter, “Rain turns area’s snowfall into slush after day of traffic woes, power outages,” *Vancouver Sun*, 18 February 1989; John Trethewey, “SkyTrain sidelined,” *Vancouver Province*, 31 December 1990; Keith Fraser, “Traffic waltzes on ice as BC Hydro prays,” *Vancouver Province*, 7 January 1991; Glenn Bohn, “SkyTrain crawls while many downtown buses stalled,” *Vancouver Sun*, 31 December 1996.

These snow-related delays frustrated coastal residents. “The novelty has worn off; we just want this to melt,” complained a frustrated Carol Snoeck in January 1991. Government officials were also upset by these disruptions. Newspapers reported that Transportation Minister Rita Johnston called for a report “on SkyTrain’s performance under adverse weather conditions” that month. “The problems we’ve had because of the weather are of great concern to me. We can’t just be a fair-weather system – it has to be an all-weather system.”<sup>608</sup> BC Transit officials blamed the delays on exceptional weather events.

According to spokesperson Diane Gendron, BC Transit had reviewed 25 years of weather data before deciding on the design for the SkyTrain system. It was built “for the type of weather we normally have,” she said. Stroppa made a similar argument during the system’s first shutdown in 1989. “There’s nothing wrong with the trains,” he explained to a concerned populace. “We just don’t normally get this kind of snow.”<sup>609</sup> BC Transit officials undoubtedly reviewed the region’s weather history prior to constructing the billion-dollar system, but Stroppa and Gendron’s comments are curious given the snow data that they had available. Assuming that officials looked at weather data for the 25 years prior to 1982, when construction began, they would have seen the average annual snowfall at VIA was 58 cm. Six of those winters had annual snowfalls of over 100 cm. Events such as the 29 December 1996 snowstorm were exceptional, but the other snow events that had shut down the system were closer in line with historical averages. Moreover, the wet, heavy snow that tripped the emergency sensors in 1989, 1990, and 1991 *was* the “kind of snow” that normally fell in Vancouver. It is possible that the evergreen mentality affected the system’s construction. With snowfalls on the decline throughout the 1970s and 1980s, BC Transit officials may have believed that snow would not be a concern in the future.<sup>610</sup>

Snow caused significant problems for the airline industry, too. Air travel to and from Vancouver continued to grow in the last three decades of the twentieth century. In 1996,

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<sup>608</sup> “Meltdown looms at last as milder spell expected,” *Vancouver Sun*, 8 January 1991; Mary Lynn Young and Harold Munro, “Johnston wants report on SkyTrain service delays,” *Vancouver Sun*, 9 January 1991.

<sup>609</sup> Justin Hunter, “Rain turns area’s snowfall into slush after day of traffic woes, power outages,” *Vancouver Sun*, 18 February 1989; Mary Lynn Young and Harold Munro, “Johnston wants report on SkyTrain service delays,” *Vancouver Sun*, 9 January 1991.

<sup>610</sup> Vancouver International Airport, BC monthly data report for December – March, 1957-1982, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>.

more than 14 million passengers passed through VIA. An average of 800 planes took-off from and landed at Sea Island each day.<sup>611</sup> Snow delayed service and frustrated passengers. Newspapers reported multiple snow-related disruptions between 1972 and 1997. The airport relied heavily on its snow-fighting equipment to keep runways open during these snow events. Large storms were sometimes too much for airport employees. Snow prevented the Tampa Bay Lightning hockey team from landing at Sea Island in January 1993, forcing the National Hockey League to postpone the Lightning-Canucks game to a later date. Airport officials had to shut down runways twice on 20 January 1996 in order for crews to safely complete their clearing work. Following the 29 December 1996 snowstorm, the airport was able to keep one runway open to arrivals thanks to the work of 10 snowplow operators. Only 60 of that day's 500 planned flights left, leaving 100,000 people stranded on New Year's Eve.<sup>612</sup>

Back within the city limits, snow made life difficult for Vancouver's elderly population. Snow had affected elderly residents since the late nineteenth century, but these hardships were reported on more by local newspapers in the late twentieth century. Snowy and icy sidewalks and shovelling remained troublesome for older residents. Derek Thorkelson urged *Sun* readers to clear the sidewalks for elderly residents when snow fell on the city in December 1985. In a letter sent to City Engineer William Curtis in January 1991, 77-year-old C.A. Winch complained that, having finished clearing his sidewalk, snowplows pushed snow and ice chunks from the road back onto it. Suffering from a long-term injury, Winch was unable to break apart the newly piled snow and ice. "Some consideration should be given to pedestrians and those who have seriously taken their responsibility to clean the sidewalk," he asserted.<sup>613</sup> Thankfully, Winch did not have a medical scare during this work. Local newspapers reported only one snow-related heart

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<sup>611</sup> Rick Ouston, "Floods loom as latest menace after traffic-crippling snowfall," *Vancouver Sun*, 30 December 1996; "Vancouver International Airport," *Wikipedia*, [https://en.wikipedia.org/wiki/Vancouver\\_International\\_Airport](https://en.wikipedia.org/wiki/Vancouver_International_Airport)

<sup>612</sup> Stuart Hunter, "It's snow time, folks," *Vancouver Province*, 4 January 1993; Petti Fong, "Vancouver region warned to brace for fresh snowfall," *Vancouver Sun*, 22 January 1996; Lora Grindlay, "1 in 10 chance of flying," *Vancouver Province*, 30 December 1996.

<sup>613</sup> C.A. Winch to Curtis, 6 January 1991, Engineering – Snow Removal, Nov 19 1985 – Feb 21 1995, folder 7, 854-H-3, Series 669, City of Vancouver Archives, Vancouver, British Columbia, Canada; Derek Thorkelson, "Consider the seniors – shovel the sidewalk," *Vancouver Sun*, 4 December 1985.

attack during this period, but this is almost certainly a factor of reduced coverage rather than an accurate assessment of shovelling-related heart attacks and injuries.

Snow impacted the elderly in other ways. In January 1991, for example, snow halted food deliveries from both the Vancouver Food Bank and Meals on Wheels. This was the first time in 23 years that the latter organization had cancelled deliveries to elderly residents in the metropolitan region. A total of 1,050 meals went undelivered. “It’s breaking our hearts, but we have no choice,” explained director Charlotte Rock. The missed meals added to the challenges that elderly residents faced that month. Russel Hunter, vice-president of the Council of Senior Citizens Organization, explained that the slick conditions and unshovelled sidewalks heightened the risks of fall-associated injuries – factors that had motivated Fenker to act years earlier. Many nurses and therapists were also unable to visit their clients. Home care nurse Gail Roberts may have been one of the only caregivers able to visit her clients early that January. As one *Sun* reporter explained, Roberts had traded her car for her cross-country skis, using them to slide along snowy streets instead. “It was a very efficient way to travel, but it was the first time I skied in a year so I don’t know if I’ll be able to get out of bed tomorrow... I’m afraid I’ll be so stiff,” she admitted.<sup>614</sup>

Physically disabled residents struggled to navigate through snowy weather. Lack of compliance with the city’s sidewalk snow-clearing by-law meant that many stretches of sidewalks were impassable for residents in wheelchairs. “Unless you go from underground parking lot to underground parking lot you are housebound,” explained the B.C. Paraplegic Association’s Jenny Berntsen in January 1991. According to Berntsen, few wheelchair-bound residents went out in snowy or icy conditions. Disabled Students Association president Stephen Heaney criticized UBC for its poor job clearing the snow in January 1990. “It’s frustrating,” said Heaney. “Making sure ramps are clear should be a number one priority. But if you can’t even get to those ramps, what’s the point.” Some students such as Heaney, who was visually impaired, chose to stay home rather than risk

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<sup>614</sup> Tom Hawthorn, “More winter wonderland,” *Vancouver Province*, 9 Jan 1991; Mary Lynn Young and Anne Mullens, “Snow has piled on burdens for sick, elderly,” *Vancouver Sun*, 10 January 1991; “Skis save nurse from spinning her wheels,” *Vancouver Sun*, 9 January 1991.

an injury on campus. Snow had no doubt complicated the ability for physically disabled residents to move around Vancouver before, but these issues were not reported on prior to the 1990s. Snow-related mobility restrictions were a concern in other Canadian cities during this period, too. Physically disabled residents in these cities faced similar difficulties to their Vancouver counterparts. “For the disabled, winter can turn home into a prison,” wrote the *Windsor Star*’s Janice Vansickle in January 1982. In Windsor, physically disabled residents turned to Handi-Transit Bus Lines for transportation on snowy streets, or to the city’s home support services program, which cleared the sidewalks and driveways for 150 people.<sup>615</sup> Vancouver did not offer similar snow-clearing relief, but as of 1990, it became the first in Canada “to provide scheduled bus service to people with disabilities,” as BC Transit installed wheelchair lifts on its buses.<sup>616</sup> Of course, snow restricted access to these bus stops. City employees began clearing wheelchair ramps as part of their snow-clearing work that decade.<sup>617</sup>

### 8.3 We do the best we can with what we’ve got

Snow clearing was a front-of-mind issue for municipal officials following the snowy 1970-71 winter. Snow had been a prolonged and expensive problem that winter. Unfortunately, heavy snow returned the following year. Close to 120 cm of snow fell during the 1971-72 winter. City Engineer Gord Lawson dispatched shovel-wielding employees, salting trucks, and snowplows as the snow began to build in December 1971. Hoping to improve and speed up plowing work on increasingly congested downtown streets, City Council amended its downtown parking prohibitions. According to the new by-law, cars could only park on the even side of the street on even numbered days and the odd side on odd numbered days. Officials hoped this would create more space for snowplow operators and let them completely clear downtown streets. Constant salting and clearing work led to high costs. By 31 December 1971, the City of Vancouver had

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<sup>615</sup> Mary Lynn Young and Anne Mullens, “Snow has piled on burdens for sick, elderly,” *Vancouver Sun*, 10 January 1991; Janice Vansickle, “Winter locks disabled in snowy prison,” *Windsor Star*, 2 January 1982; “Campus rendered inaccessible to disabled,” *Ubysssey*, 8 January 1990.

<sup>616</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 447.

<sup>617</sup> Ben Parfitt, “Salting, sanding causes city to blow its budget,” *Vancouver Sun*, 30 December 1992.

spent \$750,000 on its snow-fighting work – three times what had been budgeted for the year.<sup>618</sup>

Some officials were not impressed by the city's efforts. On 21 December, Aldermen Harry Rankin and Art Phillips called on the City Engineer and Board of Administration – the renamed Board of Works – to prepare reports on Vancouver's snow-fighting operations and explore how these could be improved or modified in future years. Key issues were whether or not the city could afford to clear Vancouver sidewalks, if it had the capacity and finances to clear residential streets in one day following a snow event, and if it could create a snow-removal fund that could build during low snow winters for use in high snow winters. Alderman E.G. Adams requested another report in January 1972 to examine the practicality of that winter's new parking regulations.<sup>619</sup> The Engineering Department completed that study first. Lawson and his employees argued that "the proposal had significant potential benefits," but believed there were decided limitations to the new parking policy. Since heavy snowfalls often blocked laneways, where most residential garages were located, the City Engineer worried that drivers would be forced to park on the street and that "there will be many blocks where it is impossible to accommodate all cars from the block on one side." Moreover, property owners would not have much warning to move their vehicles, as the policy would only be implemented on an *ad hoc* basis. Lawson felt that the policy "should be tried" but that the city should advertise it heavily on local radio and television when it was needed.<sup>620</sup>

Lawson and the Board of Administration presented their other snow report later that January. The comprehensive report detailed "existing snow clearing procedures,

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<sup>618</sup> Notice of motion, Parking prohibition: Snow Clearance, Council Meeting Minutes, 21 December 1971, folder 03, 025-D-03, COV-S31-F108.14, City of Vancouver Archives, Vancouver, British Columbia, Canada; Kathy Tait, "City stuck with small snow budget," *Vancouver Province*, 31 December 1971.

<sup>619</sup> Alderman Rankin - Snow Clearance: side streets, Council Meeting Minutes, 21 December 1971, folder 03, 025-D-03, COV-S31-F108.14, City of Vancouver Archives, Vancouver, British Columbia, Canada; Alderman Phillips - Snow Clearance, Council Meeting Minutes, 21 December 1971, folder 03, 025-D-03, COV-S31-F108.14 City of Vancouver Archives, Vancouver, British Columbia, Canada; Motions, Parking prohibition: snow clearance, Council Meeting Minutes, 11 January 1972, folder 05, 025-D-03, COV-S31-F108.16 City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>620</sup> Work & Utility Matters, Consideration, Snow Clearing, Council Meeting Minutes, 18 January 1972, folder 06, 025-D-03, COV-S31-F108.17, City of Vancouver Archives, Vancouver, British Columbia, Canada.

comparison with other cities, and various alternatives possible in Vancouver.” As the report explained, existing procedures had been designed to take into account the “extreme variation of snowfall” from winter to winter. That was why Vancouver’s snow-fighting equipment was multi-purpose: almost all of it was converted for construction projects during the summer months. Even if the equipment sat idle all winter, officials knew the expensive machines would be used later that year. The City of Vancouver’s snow policies had changed little since the early 1960s. Its six snow-fighting phases now consisted of: small-scale salting; large-scale salting; plowing of major arteries and bus routes; manual labour to clear intersections, catch basins, and bus stops; plowing of residential streets; and finally, snow-removal. Costs escalated as the city moved through each phase. Using an earlier 15 cm snowfall as an example, the report showed that the city spent a total of \$67,100 dealing with the snow. Phases one and two had cost \$8,700 and \$5,100 respectively, while phases four and five had cost \$36,300 and \$17,000 respectively. This breakdown demonstrated why officials relied so heavily on salt: it was the cheapest and most effective snow-fighting tool available.<sup>621</sup>

The report also examined how Vancouver compared to other North American cities including Seattle, Edmonton, Calgary, Winnipeg, Toronto, and Montreal. The authors found that Vancouver actually provided a level of snow-clearing service that was better than the first three cities: Seattle, Edmonton, and Calgary did not clear residential streets. Costs were still significant in the two Alberta cities, however, where longer, snowier winters were common. In those cities, the battle against snow lasted four or five months.<sup>622</sup> In Vancouver, officials had spent an average of \$224,000 per winter during the past twenty years – roughly 52 cents per person each winter based on its 1971 population. City officials spent \$473,000 (\$1.11 per person) fighting the 196 cm of snow that coated the downtown for 30 days during the 1970-71 winter. Edmonton and Calgary spent \$2.1 million and \$991,000 respectively - \$4.81 and \$2.45 per person respectively –

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<sup>621</sup> Engineering Department to Board of Administration for Council, 20 January 1972, subject: snow clearing – City of Vancouver (for Council Consideration), 2-3, Snow Removal, folder 7, 20-G-01, Series 20, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>622</sup> During the 1970-71 winter, snow blanketed Calgary for more than 130 days; it coated Edmonton for more than 170 days. This was much longer than Vancouver’s 1970-71 snow fight, which had only lasted 30 days (almost a record for the city, though).

on snow-fighting that winter. Costs in Seattle which had a comparable climate to Vancouver were much lower, at \$146,000 (roughly 9 cents per person) because that city had received 150 cm less snow than its northern counterpart that winter and because officials did not clear residential streets. Vancouver offered less and slower service than its Eastern counterparts. Winnipeg, Toronto, and Montreal all cleared residential streets within one day (compared to Vancouver's 2 to 4 days) and cleared all the sidewalks in residential areas. As the authors explained, this "high degree of service is provided at a correspondingly high cost." Snow clearing cost those cities millions of dollars. In Toronto, officials spent over \$3.1 million (~\$1.48 per person) fighting snow. In Montreal, the war against snow cost the city \$15.5 million (\$12.70 per person) during the 1970-71 winter.<sup>623</sup>

The authors offered possible alternatives for Vancouver based on these comparisons. In order to provide service comparable to what Montreal offered – residential streets cleared in one day and all sidewalks cleared by the municipality – Vancouver would need to invest \$1.7 million in capital expenditures including new trucks, graders, loaders, jeeps, salt spreaders, and storage facilities. The authors estimated another \$493,000 would be spent each winter on employee salaries, training, salt, and maintenance. Based on average snow-clearing expenditures of \$224,000, officials could expect to spend roughly \$717,000 each winter. This equated to a jump in spending from 52 cents to \$1.68 per person. Regarding the creation of a dedicated long-term snow fund, the report concluded that the city had the financial resources to adequately address exceptionally snowy winters under its existing procedures. Such a fund was considered advisable should officials decide to modify these procedures.<sup>624</sup>

The authors offered City Council five courses of action based on the report. The first option was to maintain existing snow-clearing procedures, but to more strongly enforce its sidewalk snow-clearing by-law, to extend it to more residential areas, and to implement parking prohibitions for alternating sides of the streets. Essentially, this option

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<sup>623</sup> The report says that snow-clearing work in Winnipeg was \$729,000, but the authors explain that it is not an accurate figure for the entire winter. Ibid, 4 and Table V.

<sup>624</sup> Ibid, 8.



meant asking residents to become more involved in municipal snow-fighting efforts. All subsequent options included these changes with further alterations. The second option, for example, modified existing procedures so as to clear all residential streets within one day of a snowfall. The third involved the city taking responsibility for residential and commercial sidewalks. The fourth course of action was a combination of options two and three. The final option called for the city to just clear the sidewalks on “some frequently travelled streets.”<sup>625</sup>

City Council voted on these recommendations in November 1972. Council chose option one: the continuation of existing policies but with new parking regulations and a tougher, more expansive sidewalk snow-clearing by-law.<sup>626</sup> Council records do not reveal why exactly aldermen voted for this option, but the high costs associated with the expanded snow-clearing programs probably dissuaded them from adopting further changes. If that was the case, then Council’s decision closely mirrored those taken by previous Councils when it came to dealing with snow. The weather and climate data presented in the report may have further swayed Council’s vote. In its review of historic snowfall data, the Board of Administration demonstrated that there was a clear snow pattern in Vancouver. Local meteorological data showed that annual snowfall amounts peaked and valleyed on 15- to 20-year cycles. The mid-1910s, mid-1930s, late 1940s/early 1950s, and late 1960s/early 1970s had high average winter snowfalls. In contrast, the mid-1900s, mid-1920s, early 1940s, and late 1950s had low average winter snowfalls.<sup>627</sup>

While the authors noted that there was no guarantee that the cycle would continue, they expected that average annual snowfalls would likely decline in the 1980s. As they explained, “if the cycles are assumed to continue, they provide a guide as to when additional equipment should be purchased... a poor time to add equipment would be just after a peak has been passed, as may be the case at the present time.” With aldermen

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<sup>625</sup> Ibid, 8.

<sup>626</sup> Report reference and Board of Administration Report, Snow Clearing: City of Vancouver, Council Meeting Minutes, 28 November 1972, folder 10, 025-B-02, COV-S31-F111.10, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>627</sup> Engineering Department to Board of Administration for Council, 20 January 1972, subject: snow clearing – City of Vancouver (for Council Consideration), 1 and Graph II, Snow Removal, folder 7, 20-G-01, Series 20, City of Vancouver Archives, Vancouver, British Columbia, Canada.

being told that snow was not a likely problem for the foreseeable future, it is not surprising that they voted to continue with the status quo. The report's authors – members of the Engineering Department – must have known that such a statement would resonate with fiscally-concerned aldermen. The engineers may have well concluded that snow was a temporary inconvenience that they just needed to manage until nature removed it for them. In reviewing this data, aldermen ultimately decided that Vancouver did not need to spend at the same per-person rate as Toronto to fulfill similar services. Clearing snow was just one of the many expenses in the city's annual budget, after all. Based on the expected snow cycle, Vancouver would not need an expanded snow-clearing program until the early- to mid-1990s.<sup>628</sup>

City Council moved forward with its new policy changes. Aldermen formally adopted the alternating sides parking prohibition and instructed the city's legal department to amend the sidewalk snow-clearing by-law. The new by-law required "owners of all properties in the downtown and West End area, that is the area between False Creek and Burrard Inlet from Main Street to Stanley Park, to clear all snow and ice from the sidewalks abutting their properties, not later than ten o'clock in the morning of any day except Sunday."<sup>629</sup> City Council relaxed this by-law requirement on Granville Street north of Nelson Street, when it closed that stretch to car traffic and turned it into a pedestrian mall. Sidewalks here were widened to 3.6 m to accommodate increased foot traffic. The question for city officials, then, was how to equitably clear snow along this stretch. Was the city now responsible for the entire sidewalk? Were property owners? Both parties? In response to these concerns, new City Engineer William Curtis proposed a needlessly complex solution. To ensure "equitable treatment" for both parties, property owners would be responsible for clearing the first five feet (1.5 m) of sidewalk "immediately adjacent to their properties." The city – using two tractors and one snowblower bought during the Granville Mall renovation – would then clear a "strip" of sidewalk immediately adjacent to the one cleared by property owners as well as "access strips" to all bus stop locations.

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<sup>628</sup> Ibid, 1 and Graph II.

<sup>629</sup> Report reference and Board of Administration Report, Snow Clearing: City of Vancouver, Council Meeting Minutes, 28 November 1972, folder 10, 025-B-02, COV-S31-F111.10, City of Vancouver Archives, Vancouver, British Columbia, Canada.

The city and Granville Mall property owners would share the costs of city-maintained “strips.” As Curtis explained in 1975, the plan was created to ensure equitable treatment between property owners on Granville Mall and those located throughout the rest of the downtown. If the city cleared the entire sidewalk, others would expect similar treatment.<sup>630</sup>

Snow was less of a concern in the late 1970s and 1980s. Average annual snowfalls declined during these years, as the Board of Administration had predicted. The priority for local officials and partnering organizations such as BC Transit and the Department of Highways was to ensure safe travel on the region’s highways and major arteries when it did snow. As historian Timothy W. Kneeland explains in his work on snow and automobility in Buffalo, “to maintain the vital services of a city, even in winter, it became imperative to keep traffic flowing.”<sup>631</sup> While Metro Vancouver officials had focused their efforts on maintaining the region’s automobility during snow events since the 1950s, this work took on greater significance following the expansion of the region’s road network and the substantial growth of Vancouver’s suburban communities in the 1970s and 1980s.

Salt was used in ever growing amounts during these decades. City employees spread more than 2,000 tons during a three-day snowstorm in December 1975. In December 1980, the *Sun* reported that between 20,000 and 40,000 tons were used each winter on roads throughout the Lower Mainland. Coastal residents were seemingly content with its heightened use on their roadways. There are no articles or letters to the editor criticizing salt’s use during these decades, nor are there any such letters or files found in snow-clearing records at the City of Vancouver Archives. This lack of public opposition was consistent for Vancouver but differed drastically from other North American cities. In Central and Eastern Canadian cities, motorists worried about the corrosive effects associated with growing salt use. Residents in these places also questioned the impact

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<sup>630</sup> Sidewalk Snow Clearing – City of Vancouver (adopted by Council Dec 1972), Snow Removal, folder 7, 20-G-01, Series 20, City of Vancouver Archives, Vancouver, British Columbia, Canada; Department Report, Information, Granville Street Pedestrian Transitway snow and ice control procedure, Council Meeting Minutes, 14 January 1975, folder 15, 897-C-05, COV-S31-F119.03, City of Vancouver Archives, Vancouver, British Columbia, Canada.

<sup>631</sup> Kneeland, *Declaring Disaster*, 10.

that salt had on trees, greenspaces, and nearby waterways. Dumping snow into rivers was a common snow-removal practice in many Canadian cities in the late twentieth century. Environmentalists pointed out that snow laden with salt and other chemicals damaged aquatic ecosystems. During these decades, some municipalities began examining road salt's impact on freshwater ecosystems. In 1996, Montreal outlawed its snow-dumping practice – the city dumped 3 million cubic metres of snow into the St. Lawrence each winter – because of salt and pollution concerns.<sup>632</sup>

Although municipal employees rarely dumped snow into Burrard Inlet, meltwater still ran into it via storm sewers. The idea of salty water running into more salty water probably dampened some environmental concerns. And while cars still splashed salt and snow onto trees and greenspaces, the environmental and corrosive effects of the product were presumably mitigated by the city's comparatively limited and infrequent use of salt. The 2,000 tons of salt that Vancouver used in December 1975 represented just 2 percent of what Montreal procured in preparation for the 1975-76 winter.<sup>633</sup> The fact that opposition to the product was non-existent is still surprising, however, given Vancouver residents' attachment to environmentalism during these decades.

While city employees had few difficulties handling the light snowfalls of the 1980s, there were a few notable snow-related issues. Light snow in February 1981 caused traffic chaos on Vancouver streets, in part because it fell during rush hour, but also because there was no one available to salt or clear it: the snow fell while Canadian Union of Public Employees were on strike. Members were actually picketing outside the Cambie Street work yards – where the salt and snow-removal equipment was stored – that evening. Homebound drivers faced poor conditions nine years later, when snow fell again during rush hour on Valentine's Day 1990. While the city was able to salt some major streets before rush hour, operations were suspended when traffic began to build. "My guys had the same problem as everyone else – they had no room to move," explained assistant

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<sup>632</sup> "Sun, salt help \$118,000 city snow clearance," *Vancouver Province*, 16 December 1975; *Vancouver Sun*, 3 December 1980; Mergen, *Snow in the Cities*, 130, 170-175; Graeme Hamilton, "Looking for a \$15-million 'slush' fund," *Montreal Gazette*, 7 January 1994; David Johnston, "Salt-pebble experiment a qualified success," *Montreal Gazette*, 1 March 1991; Tom Spears, "Winter's war on trees," *Ottawa Citizen*, 28 December 1994.

<sup>633</sup> Nigel Gibson, "New chemical hope for saltless streets here," *Montreal Gazette*, 6 January 1976.

engineer Tom Timm. Drivers reported awful road conditions and police noted numerous accidents throughout the region the following morning, as more than 30 cm had fallen overnight. The city implemented its alternating sides parking prohibition to help its snowplow operators clear streets more efficiently. In just two days, the city spent \$160,000 on snow-fighting work. While this was a significant expenditure, annual snow-clearing budgets had increased substantially by that point. By the start of the 1990s, the City of Vancouver set aside between \$500,000 and \$1 million each winter, a change that reflected the effects of inflation and the significant amount of time and energy associated with salting and clearing snow in a car-dominated city, rather than an increase in annual snowfalls.<sup>634</sup>

This budget was stretched thin during the 1990-91 winter, when 118 cm of snow fell on Sea Island. This was the first time in nearly two decades that Vancouver had received more than 100 cm of snow in one winter. Much of this snow fell in the 11 days between 30 December and 9 January. Municipal employees carried out their normal snow-clearing operations: salting and plowing streets and clearing the city's 10,000-plus catch basins to mitigate meltwater flood risks. Looking to expedite clearing operations, City Engineer Curtis redirected employees from the sewer and water departments to assist with this work. Curtis also urged residents to shovel their sidewalks. The City Engineer reminded residents that they risked fines worth hundreds of dollars for leaving their sidewalks snowy. Unlike previous winters, this threat actually carried some weight. Eighteen people had been charged the previous year and paid fines of roughly \$100 each. The Engineering Department issued 600 written warnings in January 1991. It is impossible to establish compliance rates, but these warnings probably motivated some previously uncooperative homeowners to pick up a shovel.<sup>635</sup>

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<sup>634</sup> "Pickets ensure snow stays where it falls," *Vancouver Province*, 12 February 1981; Salim Jiwa, Tom Watt, and Bob Henderickson, "The city stalls as snowfall turns to ice," *Vancouver Province*, 15 February 1990; "B.C. Transit's 1,000 buses and the SkyTrain were snowed under," *Vancouver Province*, 16 February 1990; "Outlook bright after snowfall," *Vancouver Sun*, 16 February 1990.

<sup>635</sup> Vancouver International Airport, BC daily data report for December – January 1990-91, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; Mary Lynn Young and Brian Morton, "Slush fund to dry a little amid sunny outlook," *Vancouver Sun*, 10 January 1991; Shelly Easton, "Budgets in red over white stuff," *Vancouver Province*, 7 January 1991; Gerry Bellett, "City intends to rake in fines for not shovelling," *Vancouver Sun*, 9 January 1991.

The 1990-91 winter was a costly one. Curtis' department spent roughly \$2 million that winter - \$1 million more than had been budgeted. The City Engineer expected to spend another \$1 million on winter-related road repairs, i.e., fixing potholes and cracked asphalt. Costs were again high during the 1992-93 winter, when snow blanketed Vancouver for 22 days between 29 December and 20 January. The city spent \$600,000 in December 1992 alone. Assistant Engineer Timm reported that Vancouver was spending another \$100,000 per day in early January. While annual snowfalls were significantly lower during the next three winters, snow-related work continued to cost the city hundreds of thousands of dollars per year. Nearby suburban municipalities such as Surrey and Coquitlam also had high snow-clearing budgets of between \$200,000 and \$500,000 during the 1990s.<sup>636</sup> Clearing snow from major roadways was an important consideration in these communities, as many of their residents relied on cars to travel within them and to the City of Vancouver. While it was expensive work, it was necessary to maintain daily life on the coast.

Snow budgets in Metro Vancouver had grown considerably, but they still paled in comparison to other, snowier Canadian cities. In the mid-1990s, Winnipeg spent between \$9 million and \$16 million on snow-clearing work each winter. In Montreal, these efforts cost taxpayers around \$50 million in the late 1990s.<sup>637</sup> Shorter snow battles, a reliance on favourable weather conditions (rain and warm temperatures), and policy decisions – such as choosing not to clear residential streets within a day and offloading sidewalk clearing responsibilities onto residents – meant Vancouver's costs stayed lower than its Canadian counterparts. Planning the annual snow budget remained a considerable challenge, however, as annual snowfalls fluctuated widely. "Vancouver's bill for snow removal is as unpredictable as a white Christmas," remarked the *Sun*'s Glenn Bohn in January 1996. As assistant traffic engineer Don Brynildsen explained, considering the significant

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<sup>636</sup> Shelly Easton, "Budgets in red over white stuff," *Vancouver Province*, 7 January 1991; Glenn Bohn, "Global warming threat despite white blanket," *Vancouver Sun*, 5 January 1993; Judy Swanson and Wendy McLellan, "Snow shovelling has bills piling up," *Vancouver Province*, 5 January 1993.

<sup>637</sup> "Cleaning up their act," *Montreal Gazette*, 29 December 1997; Flambard et al., "Snow removal auctions in Montreal: costs, informational rents, and procurement management," *Canadian Journal of Economics* 40 no. 1 (2007), 245; Glenn Bohn, "Snowstorm estimated to cost ICBC about \$1 million a day," *Vancouver Sun*, 23 January 1996.

snowfall and snow-cover variation from winter to winter, “we can’t really anticipate what kind of year it will be. We do the best we can with what we’ve got.”<sup>638</sup>

Nothing could prepare Brynildsen and his colleagues for 29 December 1996. Overnight, a snowstorm dropped 41 cm at Sea Island – the heaviest 24-hour snowfall since January 1935. Comparisons between the two storms were inevitable. As had been the case during the earlier snowstorm, the December 1996 one paralyzed Vancouver. Air, water, and land travel was brought to a halt. The snow stranded 100,000 passengers at VIA. Lines of cars, buses, and trolleys sat idle at the bottom of the region’s hilliest streets. In one dramatic example on Granville Street, hundreds of public transit passengers abandoned their rides to walk up the snowy slope between West 7<sup>th</sup> Avenue and West Broadway Avenue. Some residents opted instead for cross-country skis to glide around otherwise unnavigable streets. Hoping to prevent a repeat of the 1935 Exhibition Place Forum collapse, BC Place officials sent employees to clear that stadium’s domed roof, already sagging from the weight of the snow. The stadium had been constructed so that hot air could be pumped between the two-layered fabric dome to melt snow, but officials worried that the pump could not keep pace with the rapid snow accumulation. Vancouver’s building inspector urged residents to not clear their roofs unless their drains were clogged, as most roofs were capable of handling the wet snow – an indication of the tangible impact that the National Building Code had on homes built in the postwar period. Crews worked frantically to clear the city’s many boat sheds, however, as these had not been constructed to bear such added weight. The snow led to the cancellation of the Vancouver Canucks-San Jose Sharks hockey game, as officials did not want people driving on unsafe roads.<sup>639</sup>

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<sup>638</sup> Glenn Bohn, “Snowstorm estimated to cost ICBC about \$1 million a day,” *Vancouver Sun*, 23 January 1996.

<sup>639</sup> Jill Slattery, “A look back: 1996 ‘snow storm of the century’ hits Vancouver and Victoria,” *Global News*, 28 December 2016, <https://globalnews.ca/news/3146344/a-look-back-1996-snow-storm-of-the-century-hits-vancouver-and-victoria/>; Dianne Rinhart and Lori Culbert, “Most people take latest snowfall in their slip, slide, or stride,” *Vancouver Sun*, 30 December 1996; Rick Ouston “Floods loom as latest menace after traffic-crippling snowfall,” *Vancouver Sun*, 30 December 1996; Glenn Bohn, “SkyTrain crawls while many downtown buses stalled,” *Vancouver Sun*, 31 December 1996; Lora Grindlay, “Snow’s ok on the roof,” *Vancouver Province*, 31 December 1996; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 407.



**Figure 35: Skiing through Dunbar during the storm, Brett Wilkie, in Jill Slattery, “A look back: 1996 ‘Snow Storm of the Century’ hits Vancouver and Victoria,” Global News.**

The city dispatched its full snow-fighting fleet in an attempt to make streets navigable once again. Fearing meltwater floods should rain or warm temperatures return, City Engineer David Rudberg directed crews to clear the city’s 45,000 catch basins. It was a good thing he did, as temperatures rose, and rain began to fall the following day – another parallel to the January 1935 storm. Newspapers reported minor flooding on Vancouver streets and in Metro Vancouver homes. As plumber Leon Ward remarked, “some guys can actually swim in their basements if they want.”<sup>640</sup> Flooding was a greater concern in other communities in the Lower Mainland and on southern Vancouver Island, where the snow had accumulated to even greater depths. In Victoria, the snow-cover had eclipsed 77 cm that month – a record for Canada’s “snow-free” city. Back on the mainland, the Fraser Valley communities of Abbotsford and Chilliwack recorded 45 cm and 81 cm respectively. The snow – which had trapped some drivers on the Trans-Canada Highway in the Fraser Valley for up to 17 hours – became a significant flood danger as

<sup>640</sup> “Snow clearing strains municipal budgets,” *Vancouver Sun*, 31 December 1996; Keith Fraser, “Sandbags shipped to flood front,” *Vancouver Province*, 31 December 1996; Greg Middleton, Gordon Clark, and Keith Fraser, “After the snow, floods the woe,” *Vancouver Province*, 2 January 1997.



temperatures rose. Residents in these communities filled hundreds of thousands of sandbags in order to mitigate the threat and protect their homes.<sup>641</sup>

The infamous December 1996 snowstorm was a costly one for British Columbians. Approximately \$200 million was spent on damage and clean-up costs. ICBC reported \$120 million in insurance claims – the largest total claim for a single event in British Columbia history to that point.<sup>642</sup> The storm decimated municipal snow-clearing budgets, which had already been stretched thin by prior snowfalls in November and early December. Cities such as Vancouver and Surrey spent two to three times more than what they had initially budgeted fighting these storms. Fraser Valley municipalities likewise spent double or triple their existing snow-clearing budgets. Spending in the North Shore communities was also high. These increased costs worsened the financial situations for many of these municipalities, already struggling from earlier funding reductions by the provincial government.<sup>643</sup>

## 8.4 Conclusion

The December 1996 snowstorm could not have happened at a worse moment for UBC librarian Ruth Patrick. For two and a half years, she and her team had been preparing to move half a million books from the university's Main Library to the recently completed \$24 million Walter C. Koerner Library. The move – the largest in the university's history – was slated to happen over a three-week period between 20 December and 6 January, when students were away on holiday break. It was a daunting task. As the *UBC News* explained, “imagine a row of books stretching from UBC to Boundary Road, a total of 16.5 kilometres. Now imagine moving them to a new home, making sure they arrive in exactly the same order so they can be methodically shelved.” Experts from the National Library Relocations team were brought in to assist with the complex move. The deep,

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<sup>641</sup> Jill Slattery, “A look back: 1996 ‘snow storm of the century’ hits Vancouver and Victoria,” *Global News*, 28 December 2016, <https://globalnews.ca/news/3146344/a-look-back-1996-snow-storm-of-the-century-hits-vancouver-and-victoria/>; Rick Ouston, “Floods loom as latest menace after traffic-crippling snowfall,” *Vancouver Sun*, 30 December 1996.

<sup>642</sup> Glenn Bohn and Lindsay Kines, “Storm bill nears \$200 million,” *Vancouver Sun*, 2 January 1997; Victoria Buzz Staff, “20 years ago: 96 photos from the ‘blizzard of 1996’ in Victoria,” *Victoria Buzz*, 21 December 2016, <https://www.victoriabuzz.com/2016/12/20-years-ago-today-96-photos-blizzard-1996-victoria/>

<sup>643</sup> “White stuff leads to red ink,” *Vancouver Province*, 5 January 1997.

debilitating snows arrived just as the moving team was nearing its final week of work. The storm halted work for two days. Thankfully for the movers, the ensuing melt did not flood the library, as it had in January 1935 when students and faculty had rushed to save books from meltwater leaking through the roof. It was the second time that snow had complicated library operations – another parallel amongst the countless other connections made between the January 1935 and December 1996 snowstorms.<sup>644</sup>

Although Patrick and her team had planned for just about every possible disruption and developed contingencies to address them, knee-deep snow had probably not been considered a realistic problem during the planning process. What snow fell in Vancouver was usually light and short-lived. While Vancouver had faced some heavier snowfalls in recent years, snow was generally scarce in the final quarter century of the twentieth century. The low-snow winters of the late 1970s and 1980s had contributed to the re-entrenchment of the evergreen mentality in the city's collective consciousness. Coastal residents became complacent about snow during these years. Snow was at times quite heavy and prolonged in the 1990s, but even these winters were not as “un-Vancouver-like” as residents considered them to be. Growing discourse regarding global climate change further contributed to dominant attitudes about snow on the coast. Was snow not less likely in a warming world? While annual snowfalls had indeed declined in Vancouver, scientists warned that the potential for extreme weather events similar to the December 1996 snowstorm would be *more* likely in the future.

Snow was less prevalent on the coast in this period, but it was no less impactful on urban life. It had the greatest effect on regional travel. Snow halted planes, trains, and automobiles. Ideas about the coast's snowlessness contributed to some of these issues. As SkyTrain officials explained to residents, the system had not been built with coastal snow – the wet, heavy type – in mind. Believing that snow was not a serious concern, few coastal drivers were prepared for it when it fell. Policy decisions by municipal officials

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<sup>644</sup> Dorwin Baird, “Snow sweeps university, campus life paralyzed,” *Ubysey*, 23 January 1935; “Books make move to new quarters during holiday break,” *UBC News*, 12 December 1996, <https://news.ubc.ca/1996/12/12/archive-ubcreports-1996-96dec12-library/>; “Dashing through the snow: Koerner move makes history,” *UBC Library Bulletin*, no. 249 (January 1997), 1; Sarah O'Donnell, “Snow storm disrupts move of half a million,” *Ubysey*, 7 January 1997.

added to these travel challenges. Aldermen chose not to develop robust policies or make significant investments in snow-fighting equipment because they accepted that snow was a temporary disruption that just needed to be waited out. Often nature dealt with snow quickly and efficiently. Moreover, salt had proven to be an effective snow-fighting tool during low snow winters. It cheaply maintained the region's automobility. But heavy storms or even the lightest snowfall at the wrong time seriously disrupted coastal life in the late twentieth century. Criticisms toward local snow policies emerged most forcefully at these times. Municipal officials were willing to suffer the pushback that followed these snow events. Such snow was unnatural in Lotusland, they claimed, a refrain with which many coastal residents agreed with too. And, as had been the case since the late nineteenth century, snow-related concerns generally faded as winter gave way to spring. By then, snow was only on the minds of those coastal residents who sought out snowy adventures in the southern Coast Mountains.

## Section 5

### 9 Master, When Will the Snow Arrive?: 1972-1997

Anxiety levels were high in Whistler in December 1976. Snow was conspicuously absent in the powder capital of Canada that month. The American Thanksgiving weekend – the traditional start of the ski season – had come and gone, and normally white slopes were still green and brown. A strong El Niño had produced warm, dry, and sunny conditions in the southern Coast Mountains. Crowds of warmly bundled skiers were replaced by short-sleeved tennis players. The lack of early season ski tourism hurt local businesses. Hotels, restaurants, ski shops, and even the ski resort laid off dozens of employees that month. The local newspaper, the *Whistler Question*, implored readers to “THINK SNOW.” In early December, it reported that residents had organized a “Pray for snow dance” at the popular Christiana Inn in the hopes of bringing snow back to the region. Attendees were encouraged to “bring your old skis & burn them!”<sup>645</sup>

The snow was short-lived when it finally arrived later that month. Whistler, which had opened to great relief in late December, closed just a few weeks later as temperatures warmed and rain drenched much of the mountain. Desperate to reopen, GLL officials borrowed an artificial snow-making machine from Grouse Mountain, which had used the equipment since 1973. The goal was to create enough artificial snow around the base of the mid-mountain Green Chair so that skiers could reach the natural snow higher on the mountain. The sight of the snow-gun caused quite a stir in the valley. “Snowmaking on Whistler mountain?!” read one *Whistler Question* headline that February. The task of installing the machine fell to Whistler’s ski patrol. It was a unique job, as former patrollers John Hetherington and Roger McCarthy later recalled. Needing a reservoir to supply the machine with a reliable water supply, Hetherington, McCarthy, and their colleagues detonated a case of explosives to create one in a creek near the Green Chair. “Back then, Whistler was pretty wild and out there and things were pretty loose,” admitted Hetherington later. “Nobody gave a damn what you did on the mountain.” The

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<sup>645</sup> “No snow,” *Whistler Question*, 24 November 1976; “Still no snow,” *Whistler Question*, 1 December 1976; “Pray for snow dance,” *Whistler Question*, 1 December 1976.

small reservoir provided them with enough water to create artificial snow for a few hours each day, allowing Whistler to partially reopen until natural snow returned later that February.<sup>646</sup>

Southern Coast Mountain ski resorts relied more and more on artificial snow-making machinery in the final decades of the twentieth century. Grouse initiated this revolution when it installed one of the world's largest snow-making systems in 1973. Whistler and Blackcomb followed suit with their own systems in the 1980s. The installation of this equipment reflected the importance that ski operators placed on snow security. Mountain-based winter outdoor recreation activities and ski tourism were big businesses in British Columbia. Millions of local skiers and domestic and international tourists took to the mountains each winter in the 1980s and 1990s. Whistler, Blackcomb, and other southern Coast Mountain ski resorts were some of the province's leading ski areas. Seasonal variability, which had impacted ski operations in the past, was unacceptable at these capital-intensive ski areas, where a spate of low snow winters could lead to financial ruin.

Unfortunately for ski operators and skiers, mountain snow became increasingly variable and unpredictable. The southern Coast Mountains were plagued by low average annual snowpack totals in the final quarter of the twentieth century. Regional climate change affected snow's abundance and reliability. In 1977, the PDO shifted back to a positive cycle, bringing with it climatic conditions that typically produced warmer and drier winter weather. Strong positive ENSO patterns – such as the one that afflicted Whistler during the 1976-77 winter – worsened the snow situation in certain winters. Increasingly, snow-making machinery became a tool for ski operators to mitigate this variability and protect their resorts from uncooperative winter weather. Ski operators now had the ability to create and modify snow conditions that reflected the alpine ski industry's needs rather than natural circumstances. This equipment promised greater snow security and insurance

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<sup>646</sup> “Snowmaking on Whistler mountain?!” *Whistler Question*, 9 February 1977; “Making it snow,” *Whistler: The official blog of the Whistler Museum & Archives Society* (blog), 11 January 2022, <https://blog.whistlermuseum.org/2022/01/11/making-it-snow/>; “Snownews,” *Whistler Question*, 16 February 1977; “Snownews,” *Whistler Question*, 23 February 1977; John Hetherington, “Here’s the crazy story of how they made snow in Whistler for the first time over 40 years ago,” *Vancouver is awesome*, 23 January 2020, <https://www.vancouverisawesome.com/outdoors/first-snowmaking-crazy-story-whistler-1976-2042235>

against uncooperative winter weather and allowed ski operators to preserve – and at times enhance – the existing relationship that skiers had formed with snow in the mountains. In order to do so, ski operators altered the traditional snow-water cycle that humans had developed in the mountains during the twentieth century. Instead of drawing meltwater for use in the urban metropolis, ski operators re-directed rainwater and snowmelt back onto mountains in the form of artificial snow. But these machines only operated under certain natural conditions – conditions that were less reliable in the late twentieth century. As Grouse Mountain’s experience with snowmaking demonstrates, these systems were not always able to overcome nature or meet the lofty expectations that humans placed upon them.

Diminishing average annual snowfalls in the southern Coast Mountains were a concern for all coastal residents, not just the skiing community. Snowmelt continued to provide these residents with a substantial portion of their freshwater. Snowmelt from these mountains – and, as of the late 1960s, snowmelt from the Peace and Columbia rivers – also supplied the region with hydroelectricity. Measuring the snowpack in order to monitor and accurately forecast annual freshets was of heightened importance for the WRB and its partnering organizations. While organizations such as the GVWD – renamed the Greater Vancouver Regional District (GVRD) – had developed extensive water storage capabilities in order to supply residents with adequate freshwater during the normally dry summer months, lower-than-average snowpack totals strained the region’s water resources. Growing water consumption by Metro Vancouver residents put further stress on the system. In the 1990s, outdoor summer water restrictions became the norm – a product of growing water usage and changing climate conditions in Vancouver and the southern Coast Mountains.

With millions travelling into these mountains each winter, snow safety became an even more pressing issue. At Whistler and Blackcomb, avalanche blasting and search-and-rescue became a priority. Hoping to improve recovery times, the Whistler ski patrol began relying on dogs to locate victims. In Vancouver, organizations such as Mountain Equipment Co-op (MEC) offered avalanche training programs and sold gear to keep residents safe in the mountains. Volunteer rescue groups such as the North Shore Rescue

(NSR) shouldered an even greater workload in these years, as more urban and suburban residents travelled into the North Shore Mountains. By the 1990s, these mountains were firmly integrated into the metropolitan region. Ensuring that coastal residents were well-trained and well-equipped to safely enjoy these snowy landscapes was of vital importance for local officials and these search and rescue organizations.

## 9.1 Go... Consult the Snow-Making Machines

The number of British Columbians engaging in winter outdoor recreation activities increased tremendously between the 1970s and 2000s. This mirrored a larger trend in the growth of outdoor recreation in Canada and the United States more generally. In British Columbia, outdoor enthusiasts used the province's expanded transportation corridors to travel into the mountains. Metro Vancouver drivers increasingly used the winding Sea-to-Sky Highway to reach Garibaldi Provincial Park, Whistler, and other areas of the southern Coast Mountains. The provincial government also placed greater emphasis on land conservation and the expansion of its parks system during these decades. While British Columbians increasingly partook in sports such as cross-country skiing, ski touring, and snowshoeing, alpine skiing was the leading outdoor recreation activity for millions of locals and tourists. In the mid-1970s, alpine skiing and its associated industries generated millions of dollars for provincial and local economies.<sup>647</sup>

Seasonal variability remained a pressing concern for southern Coast Mountain skiers and ski operators. These ski operators depended on nature for their economic success. Uncooperative winter weather had a detrimental effect on these capital-intensive ski resorts.<sup>648</sup> At Grouse Mountain, skiers enjoyed ski seasons of more than 150 days during the 1970-71 and 1971-72 winters – a welcome recovery from the abysmal 1969-70 winter. But skiers faced poor conditions again during the 1972-73 winter. “Many shareholders will recall the ‘snowless’ year experienced during the 1969-70 season,”

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<sup>647</sup> For scholarship on the growth and importance of outdoor recreation in B.C. in these decades, see: Little, *At the Wilderness Edge*; Little, “The Recreation/Ecology/Heritage Triangle: Developing Bowen Island’s Crippen Regional Park, 1978-2005,” *B.C. Studies* 194 (Summer 2007): 119-248; Reichwein, *Climber’s Paradise*; Philip Van Huizen, “‘Panic park:’ Environmental Protest and the Politics of Parks in British Columbia’s Skagit Valley,” *BC Studies* 170 (Summer 2011), 67-92.

<sup>648</sup> Denning, “From Sublime Landscapes to White Gold,” 98.

wrote Hoegg in his 1973 annual report. “It is difficult to imagine facing yet a more depressing winter environment just three years later, but such was the case during the most recent 1972-73 season.” A warm and snowless December had kept Grouse closed during the Christmas holidays, a phenomenon that had not happened since 1965. The resort opened for less than two weeks in January before rains washed away the mountain’s meagre snowpack. It closed for a week before conditions improved and skiing resumed. Grouse remained open through February and March, but the company was unable to offset its poor start. The GMR reported after-tax losses of \$29,169 for fiscal 1973, which it attributed largely to the poor winter.<sup>649</sup>

Devastated by that winter’s snow drought, the GMR decided to act. On 17 April, the company announced that it would invest \$1.4 million to install the world’s third largest snow-making system.<sup>650</sup> First developed by Connecticut’s TEY Manufacturing Corporation in 1950, snow-making systems created artificial snow by forcing compressed air and water through specialized nozzles at high speeds. High-pressure air released from one nozzle expanded and cooled suddenly, freezing the water from the second nozzle into hexagonal snow crystals. These crystals shot outwards as a cloud-like spray before settling and thickening. The artificial snow produced in this manner was denser and more compact than natural snowflakes, making it more durable in rain and warm weather. While the basic science of snowmaking has remained the same since then, engineers and ski operators developed new ways to coat their ski areas with artificial snow. In 1958, for example, Alden Hanson created fan snow-guns. These large, cylindrical machines used strong fans to throw snow higher and over longer distances. Doing so gave snow crystals more time to form and consolidate before hitting the ground.<sup>651</sup>

This was a significant investment for the GMR. In the early 1970s, snow-making machines were widespread in eastern North America, but relatively unseen west of the

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<sup>649</sup> *Grouse Mountain Resorts Ltd. Annual Report 1973* (Vancouver: Grouse Mountain Resorts, Ltd., 1973).

<sup>650</sup> “Plan to boost skiing – Grouse makes snow,” *Vancouver Sun*, 17 April 1973; “Grouse gets real snowjob,” *North Vancouver Citizen*, 19 April 1973.

<sup>651</sup> Charlotte Albright, “The science of snowmaking: A lesson on the slopes,” *Dartmouth*, 4 January 2018, <https://home.dartmouth.edu/news/2018/01/science-snowmaking-lesson-slopes>; Mary Bellis, “Who invented the snowmaking machine?” *Thought Co.* 22 May 2019, <https://www.thoughtco.com/who-invented-the-snowmaking-machine-4071870>; “Snowmaking science,” *Snow at home*, [https://www.snowathome.com/snowmaking\\_science.php](https://www.snowathome.com/snowmaking_science.php)



Rocky Mountains. In the east, ski operators in places such as Vermont, New Hampshire, and Quebec had successfully used these machines to extend their ski seasons and to create favourable conditions for their guests. At Quebec's Camp Fortune – Canada's pioneering snow-making ski area – the technology had greatly improved in-season snow conditions and lengthened the ski season from 115 days to 133 days.<sup>652</sup> But in the west, ski operators believed that this expensive machinery was unnecessary at their high-altitude, normally snow-rich resorts. Humidity had also been considered a constraining factor for resorts located near the moisture-rich Pacific Ocean. Under drier or less humid conditions, water droplets cool faster and thus artificial snow can be made at temperatures closer to the freezing point. But in high humidity regions, the air is more saturated with moisture which means that water droplets require colder temperatures to freeze. As such, there are fewer opportunities to create artificial snow.<sup>653</sup>

The GMR's decision to install such an extensive and expensive system indicated the company's continued desire to turn Grouse into a leading, internationally recognized alpine ski resort. Hoegg believed that the equipment signified a new and exciting chapter in the resort's history. As he stressed to shareholders in his 1973 report:

This progressive step will have a dramatic positive influence on the business affairs of Grouse Mountain Resorts, bringing an era of predictability to customers' utilization of the mountain, to the revenue accruing to the corporation, and to the return on shareholder investment. In summary, your company has experienced a major financial setback due to the weather. It has happened before. Technological advances now permit something to be done about it.<sup>654</sup>

Providing predictable and consistent snow conditions was vital for Hoegg and the GMR. The company's success relied heavily on a long and busy ski season. Snowless and warm winters limited the GMR's ability to recoup its investments and to generate profits. As GMR general manager John Stokes told the *North Vancouver Citizen*, "We have \$7 million worth of equipment and 350 employees.... We can't have a bad year." As ski

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<sup>652</sup> These figures are based on my previous research into the history of snowmaking at Camp Fortune.

<sup>653</sup> Tom Harris and Talon Homer, "How Snow Makers Work," *How Stuff Works*, 26 January 2022, <https://adventure.howstuffworks.com/outdoor-activities/snow-sports/snow-maker3.htm>; "Snowmaking science," [https://www.snowathome.com/snowmaking\\_science.php](https://www.snowathome.com/snowmaking_science.php)

<sup>654</sup> *Grouse Mountain Resorts Ltd. Annual Report 1973*.

historian Andrew Denning argues, “the ski industry became so lucrative and highly capitalized that a warm winter created an economic catastrophe on par with a harvest failure.” This was true in British Columbia, too. Grouse had experienced a few such winters already. The GMR did not want to face any more. Poor snow conditions also hurt Grouse’s reputation with local skiers. As Hoegg explained in a *Sun* interview, Metro Vancouver skiers were a “discriminating, demanding crowd.” The company felt “tremendous pressure to provide first class service for its skiers” lest they abandon Grouse for the nearby Mount Seymour ski area or the incredibly successful Whistler ski area. Hoegg and other GMR officials needed to offer skiers first-class service and provide them with snow security, even when nature failed to co-operate.<sup>655</sup>

Construction began that summer. Manufactured by London, Ontario’s North American Engineering Company, the system included 25 traditional snow-guns, 2 fan-guns, 117 water hydrants (to allow snow-guns to be moved to different locations), and 16 km of underground pipes to carry water from nearby Kennedy Lake to the Peak, Cut, Paradise, and Blueberry slopes. Through an agreement with the District of North Vancouver, the GMR secured the rights to draw 545 million litres of water from that lake each winter. (Metro Vancouver residents used approximately the same amount of water every four days). Indeed, snow-making machinery required considerable amounts of water to create artificial snow.<sup>656</sup> When the new system was finished, the GMR would be able to coat the entire Cut ski run with 30 cm of snow in less than 24 hours: a task that would use more than 10 million litres of water.<sup>657</sup> With the District of North Vancouver no longer as

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<sup>655</sup> Denning, “From Sublime Landscapes to White Gold,” 98; Anne Anderson, “Ski Trends,” *Vancouver Sun*, 22 February 1973.

<sup>656</sup> “New technology makes Grouse system possible,” *North Vancouver Citizen*, 19 December 1973; Grouse Mountain Resorts – request for use of Kennedy Lake for snow making, Minutes of the meeting of the policy and planning committee of the council for the corporation of the District of North Vancouver, 16 April 1973, District of North Vancouver fonds 3401 – Office of the Mayor and Council, Series 02 – Council Minutes, Museum of North Vancouver & Archives, North Vancouver, British Columbia, Canada; Council Meeting, District of North Vancouver, 24 April 1973, District of North Vancouver fonds 3401 – Office of the Mayor and Council, Series 02 – Council Minutes, Museum of North Vancouver & Archives, North Vancouver, British Columbia, Canada; “1970 water consumption sets record,” *Vancouver Sun*, 17 June 1970.

<sup>657</sup> In his 17 April 1973 interview with the *Vancouver Sun*, Stokes noted that the system would use water “at a rate of 2,000 gallons a minute.” He noted that the system was also capable of covering one acre with 30 centimetres of snow each hour. “Plan to boost skiing – Grouse makes snow,” *Vancouver Sun*, 17 April 1973; “Make snow as sun shines,” *Vancouver Province*, 11 October 1973.

reliant on freshwater from the Lynn Creek – into which Kennedy Lake flowed – local officials were not concerned with the human impact that this diversion would create.<sup>658</sup> Drawing water from Kennedy Lake altered the traditional relationship that humans had formed with snow and meltwater in these mountains. Whereas humans had drawn melting mountain snow for use in urban households, the GMR was drawing stored rainwater and meltwater to create artificial snow for recreation purposes in the North Shore Mountains.

British Columbians had mixed feelings about the project. The *Sun*'s Norman Gidney lamented the excessive changes caused by the construction. "Grouse is another desert on top, courtesy of Grouse Mountain Resorts," he complained in an August article about the ski industry's impact on the southern Coast Mountains. "There once was a pleasant trail through the timber to the various peaks in back of the chalet... that is, until the company bulldozed an ugly track over the top and down the back to Kennedy Lake." Others applauded the GMR for its efforts. "Grouse is to be congratulated for its contribution to the ski industry," remarked the *Sun*'s ski reporter, Anne Anderson. "If all goes well... city skiers will enjoy a longer season, more skier days (and nights) and better snow conditions." Anderson's counterpart at the *Province*, Diane Alden, touted the system's dependability as a positive for skiers. "If the road to Whistler is cut off, if the weather plays similar up-and-down temperature tricks as last season, or if it is a dry winter with little snow, Grouse will still be there." "Why make snow?" asked the *Alberni Valley Times*' Joe Van Bergen in an article on Grouse's system. "Well, with millions of dollars worth of ski lifts, lodges, and ski equipment and staff all waiting to be used an extra month of skiing can make the difference between a profit and loss business."<sup>659</sup>

Construction issues delayed the system's completion until November 1974. While it had limited use that winter, it was a boon to skiers during the 1975-76 winter. The GMR opened the Cut on 20 November, the earliest that run had ever opened. "This is largely

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<sup>658</sup> District of North Vancouver engineer T.C. Gardner told the *Sun* that Grouse's snow-making work "would have no effect on the lake level, as 3.6 million gallons of water a day flow out of it during average winter conditions" and that "the district has not used water from Kennedy Lake... since the early 1960s."

<sup>659</sup> Norman Gidney, "Grouse is gashed, is Whistler next?" *Vancouver Sun*, 8 August 1973; Anne Anderson, "Winter fun – it's guaranteed," *Vancouver Sun*, 8 November 1973; Diane Alden, "Lift lines," *Vancouver Province*, 11 October 1973; Joe Van Bergen, "Ski club news," *Alberni Valley Times*, 23 October 1973.

due to the area's complicated snow-making system, which is finally beginning to pay off," reported Anderson. Local media outlets noted that snow conditions on Grouse were much better than neighbouring Seymour which had "touch and go" operations that November. By early December, Grouse employees had covered 7 acres with 30 cm of artificial snow – a process that required approximately 2.5 million litres of water from Kennedy Lake. Grouse continued to rely on its artificial snow-making system for the remainder of the season. When it closed on 20 April to service the mountain's tramway, its ski season had extended 151 days. Hoegg was pleased with the system. As he explained in the *Province* on 10 April, Grouse's snow-making machines gave the ski area "an element of predictability" unmatched anywhere in British Columbia. For the GMR, predictability meant profits.<sup>660</sup>



**Figure 36: Snowmaking, Grouse Mountain North Vancouver, Item I-09903, Beautiful British Columbia Magazine photographs, Series GR-3265, BC Archives.**

<sup>660</sup> Anne Anderson, "Snowtime like now for skiing," *Vancouver Sun*, 20 November 1975; Jack Wasserman, *Vancouver Sun*, 3 December 1975; "Gains seen for Grouse," *Vancouver Province*, 10 April 1976.

Grouse's snow-making system did not meet the lofty, long-term expectations that GMR officials had for it, though. Much of this can be attributed to unfortunate timing. Grouse installed its new snow-making system just as British Columbia's climate was changing. In 1977, the PDO reversed from a negative pattern to a positive one. This shift brought climatic conditions that generally produced warmer and drier winter weather. This PDO reversal also coincided with a strong El Niño pattern that brought warm, dry air to the southern Coast Mountains.<sup>661</sup> The snowless conditions that hampered Whistler that winter affected North Shore Mountain ski areas, too. Seymour and the fledgling Cypress Mountain ski area remained snowless well into December. The situation was slightly better at Grouse. That month, Grouse's artificially snow-covered Paradise ski run was the only one open in the southern Coast Mountains. Unfortunately for skiers and the GMR, warm and snowless conditions persisted into January. The GMR closed Grouse on 5 February, as the mountain's snowpack measured a record-low 28 cm. Unseasonably warm temperatures prevented employees from producing artificial snow. The ski area finally re-opened on 26 February with the return of natural snow and cold weather. This rebound could not save Grouse's season. In his report to shareholders, Hoegg lamented that the GMR had lost \$1.5 million between November and April. The company had expected 47,000 skiers in February – only 59 came. It had also forecast 14,000 ski lessons, but only gave 2. "The year can only be classified as an unparalleled disaster for Grouse Mountain," lamented Hoegg.<sup>662</sup>

Grouse's expensive snow-making system could do frustratingly little to prevent this catastrophe. "The snow-making system remained essentially idle throughout the winter as the temperature stayed above freezing almost every day and night throughout the entire season," Hoegg explained to concerned investors. The 1976-77 season had demonstrated the Achilles' heel of the world's third largest snow-making system: the machinery was only usable when temperatures were below freezing. Any warmer, and snow-guns were just large, expensive sprinklers. The GMR's hopes for greater snow dependability had

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<sup>661</sup> Moore et al., "Weather and Climate," 63 and 67.

<sup>662</sup> "Warm spell has ski operators cooling their heels," *Vancouver Province*, 2 December 1976; Judy Lindsay, "Snow business firms struggling to survive," *Vancouver Sun*, 27 January 1977; *Grouse Mountain Resorts Ltd. Annual Report 1977* (Vancouver: Grouse Mountain Resorts, Ltd., 1977); "We expected 47,000 skiers – and 59 came," *Vancouver Sun*, 30 April 1977.

been tempered by uncooperative winter weather – the very thing that it hoped the snow-making system would overcome. But the situation could have been worse. Snow-making machinery had failed to completely offset the season’s low snowfall, but it had kept Grouse partially open when other southern Coast Mountain ski areas had been closed – a slight silver-lining for Hoegg and other GMR officials.<sup>663</sup>

Warm and snowless weather plagued the southern Coast Mountains for three of the next four winters. Grouse skiers experienced shorter-than-normal ski seasons and mid-season resort closures during the 1977-78 and 1979-80 ski seasons, which lasted ~110 and ~100 days respectively. Grouse closed twice during the latter season. Warm temperatures restricted the company’s ability to supplement low natural snow conditions with artificial snow. The GMR lost more than \$3 million during these two seasons. As Hoegg explained to investors in 1978, while the company sought to diversify its portfolio and expand into summer-based tourist activities to protect itself from unreliable winter weather “the fundamental fact remains that Grouse Mountain’s fortunes inexorably remain tied to winter skiing activities.... It will take several such seasons to effect the needed improvement in the corporation’s balance sheet.”<sup>664</sup>

These improvements never came. Sadly, the 1980-81 winter was the final nail in the coffin for the GMR. Temperatures on Grouse were unseasonably warm that winter: the average temperature between 1 December 1980 and 31 March 1981 was 1.8°C. Extended warm spells prevented the accumulation of natural snow and the creation of artificial snow. Grouse opened on 5 December only to close on 18 December. GMR snow-guns stood quietly and stoically over green and brown slopes that January. The average temperature on Grouse that month was 3.9°C – 5 degrees warmer than what average temperatures had been during the previous nine Januarys. Ski conditions were less than

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<sup>663</sup> “We expected 47,000 skiers – and 59 came,” *Vancouver Sun*, 30 April 1977.

<sup>664</sup> *Grouse Mountain Resorts Ltd. Annual Report 1978* (Vancouver: Grouse Mountain Resorts, Ltd., 1978); “Snogun,” *Province* 24 January 1978; “Grouse needs aid ‘from God,’” *Vancouver Sun* 20 January 1978; “Grouse skiers upset by little snow,” *Vancouver Province* 19 January 1978; “Millions staked in Grouse Mountain gamble,” *Vancouver Sun* 6 March 1978; “Snow sparks ski resort smile,” *Province* 18 September 1978; “Rains shut down Grouse ski runs,” *Vancouver Sun* 1 March 1980; “Ski report,” *Vancouver Sun* 13 March 1980; “Third warm, dry year for Grouse,” *Province* 3 March 1980; “Spring skiing has big finish,” *Province* 13 April 1980; “Grouse Mountain slides back into the red,” *Province* 10 July 1980.

ideal when Grouse reopened in early February. The *Province*'s Mike Gasher reported that the resort was "virtually empty because of the terrible conditions" when he took to the mountain that month. Conditions did not improve in February or March. With a snowpack of just 11 cm at the end of March, GMR officials announced the cancellation of the Labatt's World Cup Championship, a major international event that had been scheduled for the start of April. By that point, Grouse Mountain had only been open for 10 full days.<sup>665</sup>

The return of heavy natural snow that April could not save Grouse's ski season or the GMR's future. The compounding losses from these low-snow winters were too much for the company to overcome. On 30 June 1981, Grouse Mountain Resorts, Ltd. entered receivership with more than \$12 million in debt. As the *Sun*'s Patrick Durrant explained, although the company had tried to diversify its activities and corporate holdings, "the single most important ingredient for the company's success – snow – has been conspicuously lacking in too many years."<sup>666</sup> This is exactly what the GMR hoped to avoid when it installed its massive snow-making system in 1973. At the time, company officials believed that its equipment would ensure greater snow security for skiers and financial stability for its shareholders. Grouse's snow-making system did marginally improve ski conditions and was a competitive advantage at times: it allowed the ski area to remain partially operational when others were bare and closed. But the equipment was unable to completely mitigate the warm, rainy weather that afflicted the southern Coast Mountains in the late 1970s and early 1980s. Exposed as it was to the Pacific Ocean and lacking the substantial elevation of Whistler, the Grouse Mountain ski area was poorly situated to handle these warmer and snowless climate conditions. During these winters, the GMR lacked the conditions necessary to turn water into snow and re-coup the substantial investments it had made in the mountain's ski infrastructure.

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<sup>665</sup> North Vancouver Grouse Mountain Resort, BC monthly data report for December – March 1980-81, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>; "From sea to slopes, city has it all," *Vancouver Province*, 16 February 1981; "Rick Ouston and Robert Klovance, "Super, natural, but skiing is downhill," *Vancouver Sun*, 3 January 1981; Steve Berry, "Snow comes too late for Grouse Mountain," *Vancouver Province*, 3 April 1981.

<sup>666</sup> Patrick Durrant, "Grouse needs financial angel," *Province* 3 July 1981.

While the GMR's snow-making system did not turn Grouse into a leading alpine ski resort, its pioneering initiative with this equipment did influence the development of other southern Coast Mountain ski areas. By the late 1970s, Whistler was British Columbia's leading alpine ski resort. Major industry publications such as *SKI* magazine considered Whistler one of the best ski destinations in western Canada because of its snow and first-rate high elevation terrain. Looking to build on Whistler's success and to grow the region's winter tourism potential, the provincial government put out a call to develop Whistler's neighbouring mountain, Blackcomb. In 1979, Calgary's Fortress Mountain Resorts, Ltd. (FMR) was chosen. The FMR invested more than \$10 million in the ski area's development. By the autumn of 1980, the Blackcomb ski area consisted of four chairlifts, 350 acres of skiable terrain over 1,200 m of elevation, access to glacier skiing, and two on-mountain restaurants. Even before it opened, Blackcomb was "recognized by many as potentially the greatest ski resort in North America." Blackcomb's development coincided with the construction of the Whistler Town Centre, a multi-million-dollar alpine village nestled between the two resorts that included hotels, restaurants, and other shops. Provincial and local officials expected millions more would be invested in future years to further develop the region's winter tourism potential.<sup>667</sup>

These massive investments occurred just as the region's annual snowfalls were becoming less reliable. While the short 1976-77 ski season had negatively affected the GLL and Whistler skiers, it was disastrous for the local economy. Dozens of employees were laid off that winter, and associated industries lost out on hundreds of thousands of dollars of potential revenue. Persistent, unreliable snow conditions were most impactful on early season skiing and tourism. Whistler remained closed again during the 1978 and 1979 American Thanksgiving weekends. The resort temporarily laid off much of its staff both years, as it had in 1976. Local ski shops reported lower-than-normal sales and hotel owners complained about empty rooms and cancelled bookings as a result. These closures had a profound impact on Whistler's early-season reputation. According to the *Whistler Question*, in 1978 "U.S. visitors were told not to bother coming here for their

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<sup>667</sup> William Berry "What's New at Whistler," *SKI*, March 1979; Tamsin Venn, "Return of the Ski Boom?" *Skiing* September 1980, 26; Ian Fraser, "Whistler boom town sets its sights high," *Vancouver Sun*, 28 November 1979.



Thanksgiving holiday and thousands of dollars were refunded and thousands more did not get spent here.” The newspaper encouraged Whistler’s marketing team to “re-assess their promotional literature” and to re-frame November as part of the “shoulder season” rather than the start of the ski season.<sup>668</sup>

Snow problems affected Blackcomb during its inaugural season, too. In December 1980, skiing was confined to Blackcomb’s upper reaches, around Lifts 3 and 4. Everything below the top of Lift 2 (1,050 m asl) remained closed. This posed serious challenges for the resort’s ski operators, as Lift 2 was not designed for downloading, or transporting skiers from the lift’s top to its bottom. Officials had built the lift expecting snow at this elevation. The need to download put considerable strain on the system and slowed the movement of skiers up and down the mountain. Conditions became so bad that Blackcomb actually closed on 22 January. Hoping to avoid an extended closure, Blackcomb pulled a page from Whistler’s playbook and borrowed two snow-guns from then-closed Grouse Mountain to create artificial snow near the bottom of Lift 3 and the top of Lift 2. With these machines, Blackcomb hoped to connect skiers with the better high elevation snow. The resort finally re-opened on 5 February. While conditions were good at these higher elevations, skiing was impossible on the lower half of that mountain and neighbouring Whistler, as photographs from the *Whistler Question* clearly showed. The *Sun* asked prospective skiers to “ignore the mud at the bottom of the slopes” and instead to look forward to the mountain’s snowy heights.<sup>669</sup>

Seeing how snow-making machinery had benefitted Blackcomb that winter – and perhaps reflecting on its own success using such equipment in January 1977 – Whistler invested in its own experimental system in 1982. This “system” consisted of one small snow-gun capable of creating 2 cm of artificial snow over one acre each hour. This system doubled in size the following winter, when officials added a second machine to its arsenal.

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<sup>668</sup> “Employees laid off,” *Whistler Question*, 1 December 1976; “Still no snow,” *Whistler Question*, 8 December 1976; “Shades of 1976,” *Whistler Question*, 29 November 1977; “Here we go again! – or do we?” *Whistler Question* 21 November 1979.

<sup>669</sup> “Short winter,” *Whistler Question*, 18 December 1980; “Disturbing skies,” *Whistler Question*, 24 December 1980; “What else but the weather!” *Whistler Question*, 8 January 1981; “Weather continues to be unseasonal,” *Whistler Question*, 15 January 1981; “Snow drought over,” *Whistler Question*, 29 January 1981; “Blackcomb re-opens Friday,” *Whistler Question*, 5 February 1981; Alison Griffiths, “Tactics change for Spring skiing,” *Vancouver Sun* 24 March 1981.

Officials saw great potential in the machines' abilities to create artificial snow on Whistler's lower-elevation slopes. In December 1983, for example, the *Whistler Question* reported that the resort was already making artificial snow in advance of a March World Cup ski race. "It's not for skiing now," explained snowmaker Sandy Boyd, "it's for skiing in the spring."<sup>670</sup> The machines helped Whistler open in time for the 1985 and 1986 American Thanksgiving weekends, too. Without artificial snow, Whistler's mid-mountain slopes would have remained closed during both holiday seasons.

Impressed by these results, both Whistler and Blackcomb invested in permanent snow-making systems in 1987. Whistler spent \$1 million installing ten new fan snow-guns on its lower slopes and constructing weirs along the mountain's creeks. The weirs allowed Whistler to use gravity to move water down through its system, instead of pumping it up from the valley. At neighbouring Blackcomb, the resort spent \$2 million installing a dozen new fan snow-guns and installing the piping needed to draw water from Fitzsimmons Creek. As the *Whistler Question* explained, these investments "represent a major effort on their part to ensure earlier skiing and more dependable snow at lower elevations."<sup>671</sup> The sight of all of these new machines left a mark on locals. In November 1987, the *Whistler Question* featured a cartoon by local photographer and cartoonist Brian Smith. In it, a young man wearing sandals and a backpack kneels on the grassy slope with his palms together. On the mountain peak sits a bald, old man. Looking at the older man, the young man asks: "Master, when will the snow arrive?" "Go, My Grasshopper," replied the old man, "Return to the valley and consult the snow-making machines."<sup>672</sup> As Smith saw it, humans, and not just nature, determined when snow arrived in the powder capital of Canada.

The installation of snow-making machinery on these lower slopes altered ski area operations. To start, snow-making machines shrunk Whistler and Blackcomb's snow gap.

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<sup>670</sup> Unfortunately, Whistler's preparedness was foiled by warm spring weather. Concerned about melting snow conditions, the resort helicoptered in more than 22,000 kilograms of snow from its upper reaches onto the lower course. "Snow blow," *Whistler Question*, 15 December 1983.

<sup>671</sup> *Whistler Question*, 18 November 1982; "\$2 million snow making system in place, waiting," *Whistler Question*, 12 November 1987; "See a whole new world at Blackcomb this winter," *Whistler Question*, 10 September 1987.

<sup>672</sup> Brian Smith, "Questionable," *The Whistler Question* 12 November 1987.

By creating artificial snow, ski operators had the ability to open low-elevation ski runs earlier and keep them open later in the season. While Denning notes that inclement weather “could still harm business... the ability to produce snow ‘a la carte’ placed the ski industry on firmer financial footing.”<sup>673</sup> It also improved skier confidence in these resorts. Downloading during holidays and busy weekends took considerable time and upset many skiers. According to one October 1987 *Sun* article, reports of snowless lower elevation slopes had even turned international tourists away from the region. Noting that Whistler was behind other North American ski areas in terms of snowmaking, Boyd, who was now Whistler’s vice-president of operations, argued that it was “the missing link to tie this resort together and make it into the destination resort we want it to be.” By blending artificial and natural snow, Whistler and Blackcomb attempted to create seemingly “natural” conditions that masked winter’s inherent variability and reduced the snow gap. For Whistler and Blackcomb’s management teams, snowmaking was seen as a viable and effective solution to their low elevation snow problems.<sup>674</sup>

Blackcomb invested heavily in its snow-making system. The machinery was considered an important tool in bridging the snow gap there and improving that mountain’s operations. By 1987, skiers there had had to download via Lift 2 for over 50 percent of all ski days since Blackcomb first opened in 1980. The need to download slowed ski operations and frustrated the hundreds of thousands of skiers who visited the resort each winter.<sup>675</sup> By 1990, that resort’s snow-making system consisted of 28 snow-guns and stretched from Rendezvous Ridge (1,860 m asl) to the Whistler Town Centre (675 m asl), the longest vertical distance of snowmaking in the world. Snowmaking covered 8 percent of the mountain’s 1,800 acres of skiable terrain. This increased snow-making capacity required ever greater amounts of water to operate. In 1990, Blackcomb could convert close to 960,000 litres of water into artificial snow each hour – up dramatically from the 81,000-plus litres per hour when the system was installed three years earlier. The resort

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<sup>673</sup> Denning, *Skiing into Modernity*, 167.

<sup>674</sup> “Whistler guaranteed snowy slopes,” *Vancouver Sun*, 19 October 1987; “Mountain snowmaking plans hinge on government loan,” *Whistler Question*, 5 March 1987.

<sup>675</sup> More than 600,000 skiers visited Blackcomb during the 1988-89 ski season. “Mountain snowmaking plans hinge on government loan,” *Whistler Question*, 5 March 1987; Lisa Taylor, “Ski plan causes clash,” *Vancouver Sun*, 4 May 1989.

built a 56-million-litre reservoir near the top of the mountain to supply the required water.<sup>676</sup> Indeed, Blackcomb's management felt the extended snow-making capabilities were well warranted. In September 1990, *Snow Country Magazine* called Blackcomb's unpredictable lower-elevation snow conditions the resort's "key flaw."<sup>677</sup> Snowmaking offered the best means to mitigate the resort's lower-elevation snow problems and to extend the alpine ski season near its base.

These snow-making machines had tangible and positive impacts at both resorts. At Blackcomb, snow-making machinery allowed it to open earlier than expected in November 1990 and 1993. The resort advertised its snow-making technology as a key component of its alpine skiing experience. As one February 1994 *Sun* advertisement read: "Ski conditions on top are excellent. And with colder temperatures recently our snow-making's been in high gear so ski-out conditions are excellent all the way to the valley." By using advertisements such as these, Blackcomb looked to assure skiers that they could find great alpine skiing conditions across the entire resort, and not just in its higher elevations. "When it comes to snowmaking on Blackcomb we aim to please."<sup>678</sup> At Whistler, this machinery was a key consideration in securing the rights to World Cup ski racing events in the mid-1990s. Whistler had some experience with these events, having successfully hosted downhill competitions in the 1980s, but those had been held in February and March, when the snowpack was deeper. These new races were scheduled for late November and early December, a hit-or-miss period for Whistler's lower elevation snow. Whistler spent \$3 million to expand its snow-making system on the Dave Murray downhill run, the site of the World Cup race, and to improve the course. According to Whistler's Dick Gibbons, FIS probably would have chosen an alternate location had Whistler not installed the machinery. In an ironic twist of fate, the 1996 race

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<sup>676</sup> The *Province* reported that the new reservoir was only 3.9 million litres, but it is likely that the reporter meant 39 million litres. The *Whistler-Question* reported that it was 56 million litres. I'm more inclined to believe the *Whistler-Question's* figure, as the smaller reservoir would be depleted faster based on Blackcomb's new snow-making capacity. Fraser Martin, "It's all downhill from here," *Province* 16 November 1990; "Blackcomb intends to open Saturday," *Whistler Question*, 8 November 1990; "A vertical mile," *Snow Country Magazine*, September 1990.

<sup>677</sup> "A vertical mile," *Snow Country Magazine*, September 1990; "Blackcomb spends \$14 million on ski facilities," *Vancouver Sun*, 30 June 1988.

<sup>678</sup> "On Blackcomb we shoot to thrill," *Vancouver Sun*, 4 February 1994.

was cancelled, not because of a lack of snow, but too much. One metre fell in the week leading up to the race, creating unsafe race conditions.<sup>679</sup>

In 1997, Whistler and Blackcomb merged to form Whistler-Blackcomb, the largest ski area in North America. With chairlifts stretching high into its alpine region, the new mega-resort boasted the greatest vertical rise on the continent, at over 1,600 m.

Snowmaking was an integral part of the new resort's operations. That year, it invested another \$1 million to bolster the existing snow-making infrastructure on the Dave Murray downhill course. By 1998, Whistler-Blackcomb's snow-making system was the ninth largest in North America, covering 530 acres of the resort's 7,000-plus acres of skiable terrain.<sup>680</sup> The resort's significant investments in this machinery reflected the importance that Whistler-Blackcomb officials placed on its potential benefits. Snowmaking gave the resort the ability to shrink the snow gap. It was also a useful tool to have when skiable low elevation snow conditions failed to materialize. Since the late 1980s, skiers on both mountains had enjoyed longer ski seasons and better snow conditions below the mid-mountain than ever before. Snow was not always perfect close to the mountain's base – and events were still cancelled because of inclement weather and a low snowpack – but with snowmaking, there was at least the chance that Whistler-Blackcomb could create artificial snow conditions that were more reliable than what nature could produce alone. Doing so was vital for that resort's reputational and economic well-being.

## 9.2 Snowmelt and Water Shortages

Snowmelt was an important resource for Metro Vancouver in the 1970s. The meltwater released in the spring freshets fed the Capilano, Seymour, and Coquitlam reservoirs and helped to sustain the region's continually growing population during the drier summer months. Metro Vancouver residents and industries continued to draw hydroelectric power from nearby facilities such as the Stave Lake and Buntzen Lake-Coquitlam Lake generating stations. This power was increasingly supplemented by hydroelectricity from

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<sup>679</sup> "World Cup at Whistler," *Vancouver Province*, 6 December 1996; "Fanfare," *Vancouver Province*, 27 September 1996; Dana Gee, "Downhill classic gets snowed out," *Vancouver Province*, 8 December 1996.

<sup>680</sup> "Rockies," *Snow Country Magazine*, September 1997, 105; Roger Toll, "Whistler/Blackcomb," *Snow Country Magazine*, September 1998, 98; Jim Fox, "Improved Whistler rated continent's best," *Victoria Times Colonist*, 20 December 1997.

the province's interior, from the Gordon M. Shrum Generating Station and W.A.C. Bennett Dam, located on the Peace River, and the Columbia River Treaty dams and the Revelstoke Dam, located on the Columbia River. The development of B.C.'s hydroelectric potential had been a priority for Premier W.A.C. Bennett in the 1960s. As historians Tina Loo and Meg Stanley explain, Bennett's plan called for the simultaneous development of the Peace and Columbia Rivers and the re-imagining of the Rocky Mountain Trench, turning it into a massive reservoir that could then be converted into hydroelectric power. Construction on the Peace River began in 1963 and was completed five years later, with a single transmission line directing power to Metro Vancouver at the end of the decade. A second 500 kilovolt transmission line was added in December 1970. The Mica, Duncan, and Arrow (later Keenleyside) dams – the three Columbia River Treaty dams – were built to manage streamflow on the Columbia and further bolster Canadian and American hydroelectric power generating capabilities. When the Mica Dam was completed in 1973, it added 870,000 kilovolts of hydroelectricity to the BC Hydro (formally the BCHPA) power grid. The power of the Columbia River was further harnessed with the construction of the Revelstoke Dam in 1983. It bolstered the province's power capacity by 2.4 million kilovolts.<sup>681</sup>

Engineers relied on snow survey data to effectively use and conserve the meltwater on these rivers. At the start of the 1970s, the GVWD had 8 snow courses situated throughout the Capilano and Seymour watersheds. BC Hydro also operated snow courses near its Stave and Buntzen Lake-Coquitlam Lake generating facilities. Snow surveys were even more important along the Peace and Columbia river systems. Unlike the Capilano and Seymour, which are supplied fairly evenly by snowmelt and rainwater throughout the year, the Peace and Columbia rivers are fed primarily by snowmelt. The spring freshets in the Rocky Mountains release incredible amounts of stored energy each year. On these rivers, spring freshets account for more than half of total annual streamflow. Accurately forecasting this event in the provincial interior was critical: over-estimating the spring

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<sup>681</sup> Stanley and Loo, "High modernism, conflict, and the nature of change in Canada," 402; British Columbia Hydro and Power Authority, *Ninth Annual Report*, 31 March 1971, 8, <https://digital.library.mcgill.ca/images/hrcorpreports/pdfs/6/632594.pdf>; Davis, *The Chuck Davis History of Metropolitan Vancouver*, 375.

run-off could lead to water and power shortages, while under-estimating could lead to spillover and wasted energy. As had been the case with other major hydroelectric developments, snow courses preceded the completion of these projects. Between 1960 and 1969, BC Hydro and WRB laid out 20 snow courses along the Peace River. Another 20 were added to the Columbia River's existing snow course system between 1964 and 1969. As WRB engineers explained in their annual reports, some of these sites had been located near alpine meadows or lakes so surveyors could access them with airplanes and helicopters – another indication of the continuing evolution of B.C.'s snow survey program.<sup>682</sup>



**Figure 37: Snow surveyors conducting a snow survey at Molson Creek. Report of the British Columbia Water Service, 31 December 1974.**

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<sup>682</sup> Eaton and Moore, "Regional Hydrology," 86 and 99; *Report of the Land Services year ended 31 December 1960* (Victoria: Department of Lands, Forests, and Water Resources, 1961), 102-3; *Report of the Land Service and the Water Resources Service year ended 31 December 1962* (Victoria: Department of Lands, Forests, and Water Resources, 1963), 113; *Report of the Water Resources Services year ended 31 December 1968* (Victoria: Department of Lands, Forests, and Water Resources, 1969), 62-3; *Report of the Water Resources Services year ended 31 December 1969* (Victoria: Department of Lands, Forests, and Water Resources, 1970), 59-62.

Obtaining accurate snow data was essential to generating accurate forecasts. Beginning in the late 1960s, the WRB and its partnering organizations increasingly relied on automated snow sampling devices. The inspiration came from advances in the United States. Earlier that decade, engineers with the U.S. Soil Conservation Service (SCS) had developed a “snow pillow,” a 12-foot diameter neoprene bag filled with water and anti-freeze. As snow fell on the pillow, the internal pressure increased. That pressure corresponded with the weight of the snow, or the snow water equivalent. Linked to a manometer (a pressure gauge), snow pillows provided continuous snow water equivalent measurements. SCS tests revealed that, when compared with “manual” or human snow samples, snow pillows produced just as accurate snow water equivalent measurements.<sup>683</sup>

Some of the WRB’s first snow pillows were established in the southern Coast Mountains. The province’s first snow pillow was installed at the Blackwall Mountain snow course, located in Manning Provincial Park, in 1966. This was followed by snow pillow installations at the Bridge River snow course and the Mount Seymour snow course in 1969, the latter being a joint venture between the WRB and UBC’s Department of Civil Engineering. Ten years later, the WRB and GVWD installed a snow pillow at the Orchid Lake snow course to monitor snowmelt conditions near the headwaters of the Seymour River. Three other snow pillows were also placed along the Parsnip, Omineca, and Findlay rivers, three of the Peace’s main tributaries. Another seven were situated along the Columbia and its tributaries, too. What made snow pillow technology even more attractive was the ability to automatically transmit information from the pillow to a central location. The SCS first demonstrated this in the late 1960s when it used an electronic telemetry system to transmit hourly data from its Mt. Hood test site to its Portland station, located more than 80 km away.<sup>684</sup> These transmitting devices were added to the Peace River snow pillows in the early 1980s.

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<sup>683</sup> R.T. Beaumont, “Mt Hood pressure pillow snow gage.” Paper presented at the *Western Snow Conference, Colorado Springs, 1965*,

<https://westernsnowconference.org/sites/westernsnowconference.org/PDFs/1965Beaumont.pdf>

<sup>684</sup> *Report of the Land Service and Water Resources Service year ended 31 December 1966* (Victoria: Department of Lands, Forests, and Water Resources, 1967), 56; *Report of the Water Resources Services year ended 31 December 1969* (Victoria: Department of Lands, Forests, and Water Resources, 1970), 60-2; Water Management Branch, *Summary of snow survey measurements in British Columbia 1935-1985* (Victoria: Ministry of Environment, 1985), v; W.G. Shannon, “Snow surveying by electronic telemetry.”



While snow pillows provided the WRB and its partnering organizations with more consistent data, the new machines were not without their problems. In March 1966, for example, a leak in the Blackwall Mountain snow pillow negatively affected that month's readings. Snow creep, the slow movement of snow down a slope, was a problem at the Orchid Lake snow pillow and impacted readings there.<sup>685</sup> These machines did not erase the need for engineers and surveyors to travel into the mountains either. WRB technicians still needed to travel to the sites to maintain the pillows and to repair any damage caused by inclement weather. And although snow pillows transmitted data much more frequently than snow surveyors, the qualitative aspects of snow sampling were lost by shifting to this mechanized program. Snow pillows only measured and transmitted snow water equivalent measurements from one fixed location. Snow surveyors, in contrast, could see and record important natural indicators that snow pillows missed, such as changes to the mountain landscape or lower elevation melting events. No one at the WRB believed that automated snow courses would replace humans entirely; the machines were simply too expensive to even consider that idea in the 1980s. But the increasing adoption of automated snow sampling machines reflected the WRB's desire to understand snow and snowmelt conditions more fully throughout the province.

The importance of snow survey work was increasingly evident in the final decades of the twentieth century. The reversal of the PDO in the late 1970s and strong ENSO events had significant impacts on annual snowpack totals in the southern Coast Mountains. The possibility for water shortages were heightened during those years. Drought fears were widespread in the province following the low snow 1976-77 winter. GVRD commissioner Frank Bunnell warned that it was a possibility, but "not a certainty" for the Metro Vancouver region that March. The idea of such a severe water shortage was new to many residents; the region had not experienced a drought in decades, thanks in part to its expanded water storage capabilities. As Bunnell explained, the water supply was not a

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Paper presented at the *Western Snow Conference, Lake Tahoe, 1968*,

<https://westernsnowconference.org/sites/westernsnowconference.org/PDFs/1968Shannon.pdf>

<sup>685</sup> J.A. Whyte to R.P. Richards, "Re: Snow creep study – Orchid Lake snow pillow 3A19," 1 June 1992, Orchid Lake – 77440-20/3A/19, Snow survey offices, Saanich, British Columbia, Canada; *Report of the Water Resource Services year ended 31 December 1967* (Victoria: Department of Lands, Forests, and Water Resources, 1968), 65.

problem that March as both the Capilano and Seymour reservoirs were overflowing. This was not uncommon. While snow accumulated on high elevation peaks during the autumn, winter, and spring months, heavy rains fell at lower elevations closer to the coast. The GVRD's water storage infrastructure was unable to fully store these significant rainfalls. The region relied on snowmelt to build back these reservoirs and supply residents during the summer – a season when water consumption increased considerably. By the late 1970s, Metro Vancouver used 567 million litres of water per day during the winter months. In the summer, water consumption increased to a daily average of 946 million litres as residents used it for gardening, watering their lawns, or washing their cars. Snowmelt was a considerable portion of this summer water supply. While the GVRD had planned to run an advertising campaign urging residents not to waste water, the return of snow in early April alleviated fears of a water shortage.<sup>686</sup>

Late season snow averted another possible drought situation during the 1981 summer – yet another year with an extremely low snowpack. While snowpack totals were higher for the remainder of the decade, these figures were below the historic average. The warmer, drier weather associated with the positive PDO meant that snow did not accumulate to the depths that locals had become accustomed to before the mid-1970s. Diminished annual snowfalls and a growing population strained the region's water supply. Between 1980 and 1985, the region's water consumption increased nearly three times as fast as its population did.<sup>687</sup> During this period, the region's population jumped from 1.1 million people to 1.5 million people. By the mid-1980s, Metro Vancouver residents used an average of over 867 million litres of water per day.<sup>688</sup> Water consumption in the Metro Vancouver region was 30 to 40 percent higher compared to other major North American municipalities such as Toronto and Seattle, a fact that journalists attributed to the perceived abundance of the region's water supply and lack of financial deterrents. In the

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<sup>686</sup> "Water saving needed now says ministry," *Vancouver Province*, 8 March 1977; John Braddock, "Simple snow test obtains ominous results," *Vancouver Province*, 19 March 1977; "Snows cut threat of water shortage," *Vancouver Sun*, 4 April 1977; "No problems for Greater Vancouver," *Vancouver Province*, 23 April 1977.

<sup>687</sup> Larry Pynn, "Quenching Vancouver's thirst," *Canadian Geographic*, May/June 1994, 58, in Orchid Lake – 77440-20/3A/19, Snow survey offices, Saanich, British Columbia, Canada

<sup>688</sup> Chung Wong, "Two homeowners face sprinkler fines," *Vancouver Province*, 29 July 1992.

1980s, homes in the metropolitan region were not equipped with water meters and residents paid some of the cheapest water rates in the continent.<sup>689</sup>

The GVRD re-evaluated how it managed low water conditions following the autumn of 1987. Hot, dry weather and high-water consumption strained water resources in Metro Vancouver during the summer and early autumn. Municipalities such as Surrey and Coquitlam instituted emergency water restrictions, limiting the frequency with which residents could water their lawns and gardens. The autumn rains that normally replenished the region's reservoirs failed to materialize until November, leaving Metro Vancouver residents in a precarious situation for much of the autumn. By late October, the Capilano and Seymour reservoirs were at their lowest levels in thirty years. Concerned about future water crises, the GVRD commissioned a series of studies on its water supply capabilities and created a "Water Shortage Response Plan." The plan outlined three phases of action to be taken should a water shortage happen again. The first stage was voluntary conservation; the second, sprinkling regulations; the third, a ban on all outdoor water use.<sup>690</sup>

The GVRD was forced to implement this plan just a few years later. An extremely low snowpack, hot, dry summer weather, and high-water consumption all contributed to a water shortage in 1992. On 1 April, Grouse's snowpack was just 56 cm. It shrank to just 22 cm one month later – the lowest 1 May measurement on record. The resultant low spring run-off was unable to replenish the region's reservoirs. GVRD officials reported record or near record low freshets that spring. In early June, the *Sun's* Gordon Hamilton noted that water levels in the Capilano, Seymour, and Coquitlam reservoirs were dropping at a time when they should be overflowing with meltwater. Dry spring weather compounded the difficulties created by the relatively snowless winter. By mid-June,

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<sup>689</sup> Pynn, "Quenching Vancouver's thirst," 52; "Water, water everywhere... but for how long?" *Vancouver Sun*, 14 November 1990.

<sup>690</sup> Kim A. Stephens, Ted Van der Gulik, and Tom Heath, "Water, water everywhere..." *The BC Professional Engineer*, 43 no. 8 (September 1992): 3-7; Bob Hendrickson, "Rationing eases water shortage," *Vancouver Province*, 3 July 1987; Tony Eberts, "Fish high and dry," *Vancouver Province*, 15 October 1987; Neal Hall, "Drought starting to bring worry," *Vancouver Sun*, 22 October 1987.

average daily water consumption had eclipsed 1.6 billion litres, 300 million litres more than what officials had forecast.<sup>691</sup>

The GVRD asked residents to voluntarily cut back on their water use – phase one of the Water Shortage Response Plan. Residents were encouraged to water their lawns just once a week. The request had no effect on water consumption patterns, which continued to rise alarmingly amid scorching temperatures. Metro Vancouver municipalities collectively agreed to a region-wide sprinkling ban on 24 June as reservoir levels continued to fall. Metropolitan residents had not faced such stringent water restrictions since the 1940s and 1950s, and these had been related to water distribution difficulties rather than just supply issues. Local officials hoped that the ban would reduce average daily water consumption by 10 to 12 percent. Residents faced significant penalties for non-compliance: up to \$2,000 if caught illegally using water, although enforcement officers offered a warning to first-time offenders. Approximately 900 warnings were handed out within the first month. In Vancouver, officials received at least ten calls a day about illegal watering.<sup>692</sup> Adhering to the watering moratorium was difficult for those residents with expansive gardens. As Surrey's Victor Lewis explained, he had been able to keep his roses alive during partial restrictions. This was impossible without breaking the law when the sprinkling ban came into effect. While water usage spiked at various points throughout the summer, overall consumption declined by 11 percent as most residents complied with the ban. It was relaxed that September to allow residents to water their lawns and gardens twice a week. GVRD water administrator Tom Heath reported that the region had saved an estimated 20 trillion litres of water because of the restrictions. These were fully lifted in October.<sup>693</sup>

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<sup>691</sup> Gordon Hamilton, "Region's water levels taking a serious dip – but don't panic yet," *Vancouver Sun*, 5 June 1992; William Boei, "Floodgates to open in effect to replenish reservoirs," *Vancouver Sun*, 23 June 1992.

<sup>692</sup> In drought-stricken Seattle, residents used a "snitch line" to report this type of activity. Gordon Hamilton, "Stealthy water cops prowl streets of (former) Emerald City," *Vancouver Sun*, 16 June 1992.

<sup>693</sup> William Boei, "Floodgates to open in effect to replenish reservoirs," *Vancouver Sun*, 23 June 1992; Kim Heinrich, "Board to turn down sprinklers as citizens get hot under the collar," *Vancouver Sun*, 24 June 1992; Shane McCune, "Water shortage washes in on a wave of waste," *Vancouver Sun*, 26 June 1992; Lindsay Kines, "Sprinkling ban, official warnings help turn tide in water-use battle," *Vancouver Sun*, 29 June 1992; Harold Munro, "Sprinkling ban mows down grass profits," *Vancouver Sun*, 8 July 1992; Chung Wong, "Two homeowners face sprinkler fines," *Vancouver Province*, 29 July 1992; Paul Chapman,

Metro Vancouver municipalities were forced to limit outdoor watering activities during the next three summers as low mountain snowpack totals again raised water shortage concerns. During the 1993 summer, for example, outdoor sprinkling was restricted to just two days per week. Partial sprinkling bans became the norm for Metro Vancouver residents in the 1990s. In fact, officials continued to enforce modified sprinkling regulations – limiting outdoor watering to just two days per week between June and September – throughout the 1990s and early 2000s. These initiatives were considered one of the more effective tools for regulating water and mitigating the effects of a diminished winter snowpack and high summer water consumption. In early August 1996, for example, Metro Vancouver residents used a daily average of 3.9 billion litres of water.<sup>694</sup> While the Capilano, Seymour, and high-mountain reservoirs had been built to ensure adequate freshwater supplies for a population of millions, these water storage facilities were unable to keep pace with ever-growing demand in an era of low mountain snowpack totals and drier spring and summer weather.

### 9.3 A False Sense of Security

Snow safety was a pressing concern as growing numbers of British Columbians and domestic and international tourists travelled into the southern Coast Mountains each winter. Expanded road networks and ski infrastructure made it easier than ever for people to access these mountains, located on the very edge of the metropolitan region. Urban and suburban residents and tourists increasingly sought out mountain snow for the thrill of exploring snowy landscapes and escaping into nature. Many of these individuals had no experience with snowy mountain landscapes however, as had been the case for much of the twentieth century. But it was not just the inexperienced and unprepared individuals who became lost or injured in the southern Coast Mountains. Experienced mountaineers and ski tourers increasingly sought out new and more challenging terrain. Their pursuit

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“Sprinklers ok twice weekly,” *Vancouver Province*, 1 September 1992; Harold Munro, “Calculating the cost of water,” *Vancouver Sun*, 5 September 1992.

<sup>694</sup> Pynn, “Quenching Vancouver’s thirst;” Harold Munro, “Water rationing plans in full flood,” *Vancouver Sun*, 9 February 1993; Tom Hawthorn, “Water: soft, cheap, and running low,” *Vancouver Province*, 30 May 1993; Glenn Bohn, “Curb your sprinkler, starting today,” *Vancouver Sun*, 28 May 1994.

for higher peaks and deeper powder brought them into greater contact with avalanche-prone terrain and heightened the chances that they might become lost or injured.

Snow-seekers had to balance their safety with the perceived risks of snowy mountainous landscapes. Risk was a dominant feature of modern society in the late twentieth century as scholars such as sociologist Ulrich Beck have argued. As he explains, “risk is the modern approach to foresee and control the future consequences of human action.”<sup>695</sup> Writing about masculinity and modernity in postwar Vancouver, historian Christopher Dummitt argues that mountaineering was a fine balance of risk taking and risk management.<sup>696</sup> This was the case for mountain-based winter outdoor recreation activities such as alpine skiing and ski touring, too. New technologies such as avalanche rescue beacons – electronic devices that transmitted a continuous signal to rescuers when switched on – mitigated but did not eliminate these risks. A passage in the 1985-86 winter catalogue for Mountain Equipment Co-operative (MEC), an outdoor recreation co-operative based in Vancouver, highlights this point. “Although an avalanche beacon greatly increases the survival chances for a buried victim, it should not be used as a license to travel in terrain that would otherwise be considered too dangerous.”<sup>697</sup>

Risk management was an important consideration for ski patrollers at Whistler and Blackcomb. Avalanche risks were high in these alpine regions, especially on steep slopes or following heavy snowstorms. In March 1978, for example, Whistler ski patroller Bruce Watt and Rick Mandahl, a visiting ski patroller from Utah, were hit by a large slide while conducting avalanche control work. While Watt was able to free himself, Mandahl was completely covered by the snow. He was found unconscious but was revived by Watt and his fellow patrollers. Not all avalanche victims were so lucky. One of the worst accidents happened in April 1972, when four skiers were reported lost in Harmony Bowl following a heavy snow squall. A massive two-day search and rescue mission followed. All four skiers were found dead, with rescuers concluding that an avalanche had caused their deaths. Seven years later, in February 1979, 22-year-old Doug Robertson was killed

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<sup>695</sup> Ulrich Beck, *World Risk Society*, (Cambridge: Polity Press, 1999), 3.

<sup>696</sup> See Christopher Dummitt, *The Manly Modern: Masculinity in Postwar Canada* (Vancouver: UBC Press, 2007), chapter four.

<sup>697</sup> *Mountain Equipment Co-Op Winter 1985-86* (Vancouver: Mountain Equipment Co-op, 1985).

in a large slab avalanche. As the *Whistler Question* reported, Robertson and his friend, Doug Correy, were experienced skiers. Robertson had recently attended an avalanche awareness course and both he and Correy were wearing avalanche beacons. As Correy later recounted, the two had become separated when they travelled outside the patrolled ski boundary. Whistler ski patrol and the RCMP organized an extensive search for Robertson, whose body was later recovered from the slide site. Following the accident, GLL officials implored visitors to stick to the resort's patrolled boundaries.<sup>698</sup>

The Whistler ski patrol adopted different strategies to protect skiers from fatal encounters with avalanches. Education was one method. Beginning in the mid-1970s, Whistler began offering avalanche courses. A booklet from a 1974 course run by the British Columbia Institute of Technology and National Research Council (NRC) provides insight into the types of information that skiers received. The four-day event covered topics including the physics of snow cover, snow profile and weather observation, hazard evaluation, and practice rescues. Lectures were run by leading avalanche experts such as Peter Schaerer.<sup>699</sup> Whistler continued to offer similar courses into the 1990s. In addition to educating skiers on the dangers of avalanches and how to identify them, ski patrollers at times closed certain sections of the ski resort in order to eliminate any possibility for deadly encounters. Such was the case following Robertson's death in 1979. In April, ski patrollers physically barred visitors from accessing snow in the popular but unstable Whistler Bowl. Signage and a physical presence were not always enough to dissuade powder-seeking guests, though. Ski patrollers told the *Whistler Question* that some skiers had ignored verbal warnings and chosen to enter potentially dangerous areas anyway.<sup>700</sup>

Roping off prime ski terrain was not an option that Whistler or Blackcomb wanted to adopt frequently. Tourists visiting these mountains wanted to experience the powder

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<sup>698</sup> Megan Lalonde, "They just vanished," *Pique News Magazine*, 10 April 2022, <https://www.piquenewsmagazine.com/cover-stories/they-just-vanished-5242364>; "Pro patroller buried in avalanche," *Whistler Question*, 15 March 1978; "Avalanche claims one," *Whistler Question*, 28 February 1979.

<sup>699</sup> BCIT/NRC Avalanche Courses 1974-75, Whistler Mountain General Course, Maclaurin\_2017\_011\_001\_001/WA\_2017\_011\_001\_001, Whistler Museum, Whistler, British Columbia, Canada.

<sup>700</sup> "Closed! Skiers confront the ski patrollers who are guarding the fence at the entrance to Whistler Bowl on Saturday, April 14," *Whistler Question*, 18 April 1979.

capital of Canada. Blasting and avalanche mitigation work was thus a priority for ski patrollers as both resorts expanded into high alpine terrain. In 1985, for example, Blackcomb installed its 7<sup>th</sup> Heaven T-bar. This opened up more high-alpine terrain and access to the Blackcomb glacier. Whistler responded a year later by adding its Peak Chairlift. Skiers there now had access to the very top of Whistler Mountain and new, challenging, and more avalanche-prone terrain.<sup>701</sup> Patrollers used explosives to trigger avalanches in closed off areas early in the morning before skiers took to the slopes. These explosives included hand-charges and rounds launched from the “avalauncher,” a gun capable of firing explosives over far distances. As Hetherington later wrote, he and his colleagues used “approximately 1,000 avalauncher rounds and 2,000 hand charges” during a typical season. Precautionary blasting from the avalauncher and hand-charges reduced the risk of skier-triggered avalanches leading to injuries or fatalities.<sup>702</sup>

But using explosives was dangerous. On 28 April 1991, 36-year-old ski patroller Sean Walsh was killed when the charge inside the avalauncher exploded. This was the first time that an avalauncher-related death had occurred at Whistler in the 20 years it had been used there, and only the second time it had ever happened in North America. Walsh had worked at Whistler for 14 years prior to the accident. Whistler, the RCMP, the coroner’s office, and the Worker’s Compensation Board (WCB) all launched investigations into Walsh’s death. The subsequent coroner’s inquest placed the blame on Vancouver inventor Elmo Sitnam. The jury learned – and Sitnam later admitted – that he had falsified his credentials in order to obtain NRC funding to develop a prototype avalauncher charge for Whistler. He did not have a PhD in aeronautic engineering, as he had previously claimed.<sup>703</sup> In creating his prototype, Sitnam had removed important safety mechanisms inside the projectile. No criminal charges were laid against the inventor, as the Charter of Rights and Freedoms protected him from self-incrimination at

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<sup>701</sup> Diana Caputo, “The History of Whistler’s Lifts,” *Whistorical: Official Blog of the Whistler Museum* (blog), 4 April 2015, <https://blog.whistlermuseum.org/2015/04/04/the-history-of-whistlers-lifts/>

<sup>702</sup> “Avalanche control and thundering snow,” *Whistorical: Official Blog of the Whistler Museum* (blog), 1 December 2020, <https://blog.whistlermuseum.org/2020/12/01/avalanche-control-and-thundering-snow/>

<sup>703</sup> When asked by WCB lawyer Kevin Murray how many Gs (the force of gravity acting on an object) a falling pen produced, “the witness responded by saying a couple.” The correct answer was one – something that any aeronautics engineer should know, argued Murray.



the coroner's inquest. The inquest did instruct the NRC to conduct background checks before approving research funding – something it had not previously done.<sup>704</sup>

Fast and effective search-and-rescue operations were a priority for Whistler ski patrollers after an avalanche. Minutes matter for a victim buried in the snow. Shock, exposure, and injuries from the snow or from collisions with rocks and trees can kill skiers. Suffocation – either from a lack of oxygen, a compressed chest, or the inhalation of snow and the clogging of the lungs and oesophagus – is another threat.<sup>705</sup> While search teams typically relied on avalanche probes (long steel tubes) and avalanche beacons during rescue operations, some Canadian rescuers began using dogs to assist with this work. Humans had been using dogs for these activities for hundreds of years. Using their superior sense of smell, dogs can locate people buried under deep snow. St. Bernard dogs had famously helped monks at the St. Bernard Hospice rescue lost and injured travelers in the surrounding Swiss Alps since at least the early eighteenth century. In the late 1930s, the Swiss Army began using dogs to help with its search-and-rescue operations. In Canada, the RCMP were the first to use dogs for these purposes. As Katherine M. Calvert and Dale Portman explain, the RCMP played an important role in the “evolution of search-and-rescue dogs in Canada” as they “developed a sophisticated understanding of working dogs and a well-rounded comprehension of how scent works in different situations.” Parks Canada's Alfie Burstom and Ginger, a half-German shepherd, half-coyote, became the first professional avalanche dog team in North America when they completed the RCMP training program in 1972. Seeing their success, the RCMP began training their own dogs for this purpose. RCMP dogs were actually involved in the search for the four missing skiers in April 1972 and for Robertson in February 1979.<sup>706</sup>

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<sup>704</sup> Andy Jukes, “Tragic end to Whistler's ski season,” *Whistler Question*, 2 May 1991; Paul Dillon, “Prototype bomb responsible for fatal blast, explosives expert tells coroner's inquest,” *Whistler Question*, 16 January 1992; Paul Dillon, “Jury recommends NRC be required to check qualifications,” *Whistler Question*, 23 January 1992.

<sup>705</sup> P.A. Schaerer, “Avalanches,” in *Handbook of Snow: Principles, Processes, Management, & Use* eds. D.M. Gray and D.H. Male, 498.

<sup>706</sup> Kathy Calvert and Dale Portman, *Guardians of the Peaks: Mountain rescue in the Canadian Rockies and Columbia Mountains* (Calgary: Rocky Mountain Books, 2006), chapter five; Jess Blumberg, “A brief history of the St. Bernard Rescue Dog,” *Smithsonian Magazine*, 1 March 2016, <https://www.smithsonianmag.com/travel/a-brief-history-of-the-st-bernard-rescue-dog-13787665/>

Whistler's decision to begin its own canine search-and-rescue operation was spurred by patroller Bruce Watt's avalanche accident in March 1978. The ski patrol had been exploring the possibility of using dogs for this work earlier that January, but Watt's accident spurred the team to follow through on this initiative. Watt and his black German shepherd, Radar, were trained as Whistler's first avalanche dog team for the 1979-80 ski season. In addition to developing Whistler's rescue dog program, Watt was instrumental in the formation of the Canadian Avalanche Rescue Dog Association (CARDA) to help train other avalanche rescue dogs. At this time, other ski patrollers, such as Fernie's Rod Pendlebury, believed that dogs added considerable value to these operations. In the 1980s, Watt and Pendlebury trained other Canadian dog teams. Unlike the RCMP or Parks Canada, CARDA did not limit its dog selection to German shepherds. As Calvert and Portman write, "at a typical CARDA course in the late eighties, all kinds of dog breeds were represented. Golden retrievers and border collies were some of the best dog breeds for this work."<sup>707</sup> Whistler hosted training sessions for CARDA dog teams in subsequent years. Other teams joined Watt and Radar at Whistler. In 1992, Pat Coulter and Skipper, a five-year-old golden retriever, became the only dog team in Canada to hold a Level III avalanche certification. The growing presence of rescue dogs at Whistler – and at other North American ski resorts – reflected their enhanced ability to locate lost and injured skiers. As Whistler ski patroller Anton Horvath explained in the 2002 avalanche safety film *Know the Snow*, trained rescue dogs could search a one-hectare area six to eight times faster than human rescuers using the probe line technique: walking in a line while sticking steel poles into the snow. Dogs performed well compared to rescuers who used avalanche rescue beacons to locate beacon-wearing skiers buried in the snow, too. "Quite frequently, nine out of ten times, actually, the dog will find the Pieps [rescue beacon] before the person with the Pieps."<sup>708</sup>

Snow safety was a concern outside of these popular alpine ski resorts. Millions of locals and tourists took up mountain-based outdoor recreation activities during this period. Concerned mountaineers and skiers formed new volunteer search and rescue

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<sup>707</sup> Calvert and Portman, *Guardians of the Peaks*, 225.

<sup>708</sup> *Know the Snow – Whistler Avalanche Safety*, Edward Homer (2002), [https://www.youtube.com/watch?v=CS\\_eALhaiaI](https://www.youtube.com/watch?v=CS_eALhaiaI)

organizations to provide aid to those in need. Whistler Search & Rescue formed following the four deaths in the Harmony Bowl avalanche in 1972. Other organizations such as Lions Bay Search and Rescue were also formed during this period. Older organizations such as the BCMC continued to educate urban and suburban residents on the dangers associated with mountain exploration. As the club explained in its 1973 pamphlet *Get Back Alive! Safety in the BC Coast Mountains*, mountain recreationists crossed the boundary between wilderness and civilization when they left the highway or got off the chairlift. “Easy access breeds a false sense of security and, for the unwary, the crossing of this invisible line often means going from safety to danger.”<sup>709</sup> MEC was highly involved in promoting snow safety during these decades. The outdoor recreation co-operative hosted avalanche training courses at its Vancouver location. It also sold avalanche beacons, snow safety literature, and various safety equipment for snow-based outdoor recreation activities.

North Shore Rescue (NSR) became the leading search and rescue organization in the North Shore Mountains during these decades. NSR was the successor of the MRS, which disbanded in 1965. The NSR was first organized as an urban search and rescue unit to provide support in the event that the Soviet Union dropped a nuclear bomb on the region. As co-founder Dave Brewer explained in the 2020 documentary series *Search and Rescue: North Shore*, the group was initially trained to save people from collapsed buildings and to manage large crowds – “all of those things that are related to a civil disaster.” Co-founder Gerry Brewer pointed to 1968 as the turning point for the NSR and its transition from an urban emergency defense organization to a wilderness-based search and rescue program.<sup>710</sup> That year, the group was called to help recover the body of a young man who had fallen off the north face of Goat Mountain. Brewer remembers hiking in through waist-deep snow and difficult weather conditions to reach the site. One volunteer developed severe exposure during the mission. As Brewer later reflected, “we obviously didn’t know what we were doing when we were up there, and we could have

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<sup>709</sup> *Get Back Alive! Safety in the BC Coast Mountains*, as quoted in Dummitt, *The Manly Modern*, 83.

<sup>710</sup> “History,” Whistler Search & Rescue Society, <https://whistlersar.com/history/>; G.H. Brewer, *A Brief History of the North Shore rescue team*, August 1990, File 3, Public Education, Communication – Series 3, NSR Fonds 224, Museum of North Vancouver & Archives, North Vancouver, British Columbia, Canada.

killed ourselves. That was the most influential thing to change our training.” Despite the challenges, volunteers continued the search and recovered the body two days later with help from RCAF Squadron 442.<sup>711</sup>

Like its predecessors, the NSR engaged in educational campaigns and outreach programs to raise awareness about the importance of mountain safety. Search and rescue was its main purpose, however. While the organization was busiest during the summer and autumn months, it did engage in numerous winter and spring search and rescue missions. Between 1978 and 1993, 40 percent of NSR’s calls occurred between December and June, when snow was present in the North Shore Mountains. While the organization received just a handful of calls each year early on, by the 1990s the NSR was averaging approximately 25 calls per year.<sup>712</sup> The December 1992 rescue of Brian Jackman is one example of the type of work the NSR carried out during these years. A search began when Jackson failed to return home from a snowshoe trip on Seymour Mountain. The two-day mission involved NSR volunteers as well as other rescue teams from Lions Bay and Coquitlam, the RCMP, and the Canadian Armed Forces 442 Search and Rescue Squadron, based in the Vancouver Island community of Comox. Twenty-eight volunteers and 3 helicopters searched the area for two days. Rescuers finally located Jackman on the ledge of a narrow ravine near Dog Mountain. “He’s very lucky to be alive with several days’ exposure in this climate at this time of year,” remarked Jim Goulding, a doctor at St. Paul’s Hospital where Jackman received treatment following his rescue. Jackman’s rescue earned the NSR considerable praise from local media outlets, which noted the group’s importance to those travelling into the southern Coast Mountains.<sup>713</sup>

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<sup>711</sup> *Search and Rescue: North Shore, Episode One: Giving the Time* (British Columbia’s Knowledge Network, 2020), <https://www.knowledge.ca/program/search-and-rescue-north-shore/el/giving-time>; Chad Pawson, “Hikers too reliant on smartphones, says North Shore Rescue founding member,” *CBC British Columbia*, 2 July 2018, <https://www.cbc.ca/news/canada/british-columbia/q-a-founding-north-shore-member-gerry-brewery-1.4728790>

<sup>712</sup> “Call out statistics for 1978-93,” *On Track, September 1994*, File 2, Internal Publications, 1993-4, 2004-5, Communications – Series 3, NSR Fonds 224, Museum of North Vancouver & Archives, North Vancouver, British Columbia, Canada.

<sup>713</sup> Mark Hume, “Safe! Hiker plucked off cliff,” *Vancouver Sun*, 31 December 1992; Charlie Anderson, “Finders of the lost,” *Vancouver Province*, 3 January 1993.

## 9.4 Conclusion

The Great Snow Earth Water Race (GSEWR) was for decades the most anticipated sporting event of Whistler's May long weekend celebrations. Founded by Bryan Halhovec in 1975, the GSEWR was a combined event that incorporated four sporting disciplines: skiing, cycling, canoeing, and running. It involved teams of five, including at least two women. The race started in the high alpine with a "Le Mans"-styled start: contestants running to their skis and putting them on to begin. Once down the mountain, that person would pass the baton to their team's cyclist, who would then carry it to their two canoeists, and finally to the runner to finish the race.<sup>714</sup> The race was a celebration of the region's three main physical elements – snow, earth, and water – and its vibrant sporting culture. Taking place on the May holiday weekend, the GSEWR also marked the end of Whistler's winter season and the beginning of summer – a transitional moment evident in the combination of sporting disciplines, too. Twenty-eight teams competed in its inaugural season. At its tenth-year anniversary, upwards of 200 teams competed, with thousands of tourists flocking to Whistler to watch it. The race became so well-known that in 1988 a helicopter crew filmed it for Japanese television.<sup>715</sup>

The GSEWR was a gruelling event. The skiing portion was particularly brutal. While snow was plentiful in the high-alpine, the snowpack quickly deteriorated as contestants got closer to the valley. There was often no snow on the bottom half of the mountain. Skiers had to run down this final section of the course with their boots, poles, and skis in tow (the contestant could not pass the baton unless he or she had all of their ski equipment). Former racer Richard Hartl remembers duct-taping running shoe soles to the inserts of his ski boots. This allowed him to keep the boot's plastic shell clipped into the skis while also improving his traction on the run. Other contestants developed other creative means to reach the bottom. Some took the gondola down. World Cup ski champion and former participant Nancy Greene Raine remembers driving team member

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<sup>714</sup> A cross country ski event was later added to the beginning of the race. *The Great Snow Earth Water Race: A look back with Bryan Halhovec & past participants* (Whistler: Whistler Museum, 2021), [https://www.youtube.com/watch?v=sZzDE\\_vO2v8](https://www.youtube.com/watch?v=sZzDE_vO2v8)

<sup>715</sup> Ibid.

Joe Csizmazia's car from the snowline to the valley during the first race. It was a harrowing drive down, as both Greene Raine and Csizmazia later recalled.<sup>716</sup>

Unseasonably warm weather and a low spring snowpack created even more difficult race conditions for skiers. These types of conditions were more common after the PDO's reversal in 1976. "The trip down the mountain was the real crunch for most competitors," remarked the *Whistler Question* following the 1977 GSEWR. During the 1981 race, skiers struggled to make it down the mountain's mid-elevation slopes, which were "quickly running out of snow." Around 1,500 m asl, racers faced "numerous exposed logs and little snow" that proved to be the "downfall of a number of the skiers." The next year, racers were forced to navigate a narrow ribbon of snow on otherwise green and brown slopes. Conditions were particularly bad for the 1992 race, a year in which GSEWR organizers – in a case of unfortunate timing – had chosen to push it from mid-May to July. Organizers shortened the alpine ski event because of rain, fog, and deteriorating snow conditions at higher elevations.<sup>717</sup>

Regional climate change affected human relationships with snow in the southern Coast Mountains in the final decades of the twentieth century. The snow issues and extended running distances in the skiing portion of the GSEWR were clear examples of these changing and uncertain conditions. While snow was often scarce on Whistler's lower slopes in late May, it had been much more reliable at the highest elevations when the race began in 1975. In the following decades, snow became increasingly variable. Lower-than-average snowpack totals became the norm in the southern Coast Mountains. These changes occurred precisely when snow gained its greatest value. The southern Coast Mountains were an important site for outdoor winter recreation activities; snow here supported thriving alpine ski and winter tourism industries. The growing emphasis on avalanche prevention and search and rescue work highlighted how ski operators, local officials, and other mountain-goers sought to keep the millions of people who travelled

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<sup>716</sup> In that same race, another contestant hired someone to pick them up with a motorcycle. Ibid.

<sup>717</sup> "The Great Snow Earth Water Race," *Whistler Question*, 25 May 1977; Paul D. Burrows, "The GREAT great race," *Whistler Question*, 21 May 1981; Bonny Makarewicz, "Race revival leaves organizers planning for next year," *Whistler Question*, 9 July 1992; John Colebourn, "Snow, Earth, Water a mix of brains and brawn," *Whistler Question*, 9 July 1992.

into these snowy spaces safe. Mountain snow also sustained Metro Vancouver, providing coastal residents with freshwater and hydroelectric energy during the summer months. Indeed, the low snow winters that occurred during these decades underscored how precarious human relationships with snow in the southern Coast Mountains had become. Coastal residents had formed specific relationships with snow and snowmelt that were predicated on the assumption that there would be considerable annual snowfall in these mountains. The low snow winters of this period strained these relationships. Sprinkling bans and snow-making machines were just two of the strategies that humans adopted in order to adapt to these changing conditions. As the conclusion will show, further adaptations will be needed if these relationships are to continue in some form during the twenty-first century.

## Conclusion

### 10 The Future of Snow in the Evergreen Playground

The 2010 Vancouver Winter Olympics had been half a century in the making. Inspired by the 1960 Winter Olympics in Squaw Valley, California, a group of local businessmen sought to bring the games to Vancouver in 1968. The development of the Whistler ski area and the Garibaldi region had been pivotal to their proposal. In fact, GODA's application stated that all the events would take place in the Whistler Valley – an ambitious plan considering the region's remoteness and inaccessibility at the time. Despite GODA's optimism, the initial bid was unsuccessful; the games were instead awarded to Grenoble, France. Bids for the 1972 and 1976 Winter Olympics were passed over, too. GODA was actually offered the latter games when residents in Denver, Colorado voted against hosting the 1976 Winter Olympics – the only city to ever reject the Winter Olympics after having been awarded them – but declined due to a lack of political and financial support. While Olympic dreams faded in subsequent decades, they were revived in 1996 when Tourism Vancouver and Sport BC decided to apply once again. The new application proposed that events be split between Metro Vancouver, Whistler-Blackcomb, and Cypress, the latter included to take some strain off the mega-resort. The Vancouver bid was officially endorsed by the Canadian Olympic Committee (COC) two years later. Locals had mixed feelings about the idea of hosting the games in Vancouver. Some felt that money could be better spent on pressing local issues such as social housing in the Downtown Eastside. A plebiscite in February 2003 showed that 64 percent of voters supported the games – not an overwhelming majority, but a majority, nonetheless. On 2 July 2003, the City of Vancouver was officially chosen by the IOC as the host city for the 2010 Winter Olympic and Paralympic games.<sup>718</sup>

The Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games (VANOC), the City of Vancouver, Whistler-Blackcomb, Cypress, and other

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<sup>718</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 542; “Celebrating Whistler’s Olympic milestones,” *Whistorical: The Official Blog of the Whistler Museum* (blog), 18 February 2020, <https://blog.whistlermuseum.org/2020/02/18/celebrating-whistlers-olympic-milestones/>; “The 1976 Winter Olympics,” *Whistorical: The Official Blog of the Whistler Museum* (blog), 17 February 2018, <https://blog.whistlermuseum.org/2018/02/17/the-1976-winter-olympics-a-dream-almost-realized/>



partnering organizations spent the next few years busily preparing to welcome the world to Vancouver. New sporting facilities such as the Richmond speed-skating oval and the Whistler Olympic Park were built. Others, like the Pacific Coliseum and Rogers Arena, were renovated to meet IOC standards. New housing facilities were constructed on the south shore of False Creek to host the athletes. The residential towers of the Olympic Village transformed the once-industrial space. The SkyTrain's Canada Line was extended to VIA to efficiently move tourists between the airport and the downtown. Portions of the Sea-to-Sky Highway were also widened to improve driving safety for the tens of thousands of people who would need to travel between coastal Vancouver and Whistler-Blackcomb. The Squamish, Tsleil-Waututh, Musqueam, and Lil'wat – on whose ancestral lands the Olympics were to take place – were also given funding to develop museums and cultural centres. In total, more than \$7 billion was spent on these Olympic-related developments.<sup>719</sup>

As the games drew closer, VANOC officials turned their thoughts to the weather. They hoped for deep snow in the mountains and none on the coast – what most coastal residents hoped for each winter. The reverse would be catastrophic. Officials had recently seen how coastal snow could throw the metropolitan region into disarray. Close to 80 cm had fallen in late December 2008. The heavy snow snarled traffic, caused service delays on TransLink buses and the SkyTrain, and created havoc at VIA, where thousands became stranded due to cancelled and delayed flights. The ensuing rains and snowmelt led to floods and collapsed roofs in parts of the metropolitan region. Occurring just 14 months out from the opening ceremonies, these snow-related issues raised concerns about whether VIA, the City of Vancouver, and other Olympic partners could adequately handle heavy snow if it fell on Metro Vancouver during the games. The inability to do so would disrupt planned competitions and be an international embarrassment for organizers. While officials considered that winter's snows to be a 1-in-10-year event, they increased their snow-fighting capabilities just to be safe.<sup>720</sup>

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<sup>719</sup> Davis, *The Chuck Davis History of Metropolitan Vancouver*, 542

<sup>720</sup> Ibid, 536; Kelly Sinoski, "Expect a 'slushy, mushy mess,'" *Vancouver Sun*, 27 December 2008; Kelly Sinoski, "Stranded passengers desperate to leave," *Vancouver Sun*, 24 December 2008; Frank Luba, "Old military snowblower Vancouver's ace up sleeve this winter," *Vancouver Province*, 11 December 2009;

Of equal concern was a lack of snow in the mountains. Again, VANOC officials had seen what uncooperative winter weather would mean for planned alpine events at Cypress and Whistler-Blackcomb. Warm, rainy weather had plagued these southern Coast Mountain ski areas in January and February 2005. Portions of the North Shore Mountain ski areas were temporarily closed due to the bad weather. Even Whistler-Blackcomb's highest elevations were not spared from the rains, which heightened the avalanche risk in the alpine region and forced extended closures across the resort. The 2004-05 winter was one of the worst in the mega-resort's history. Snow-making machinery offered some protection from these weather problems, but ski operators still needed cold weather to make artificial snow. Taking advantage of what limited snowmaking windows they had, resort employees converted more than 680 million litres of water into artificial snow – a new record for the mega-resort. As ski operators and VANOC officials knew, snow's absence – even for a short period of time – threatened the viability of many Olympic sporting events. Seeking to avoid these problems, officials invested \$1.2 million to install a new snow-making system at Cypress; Whistler-Blackcomb spent \$20 million expanding its system, too.<sup>721</sup>

The Winter Olympics opened to great fanfare in February 2010. Within the city, the weather cooperated: snow was largely absent from Metro Vancouver that winter. The 2 cm that fell at VIA that winter was the lowest snow total since the snowless 1991-92 winter and one of the least snowy since meteorological records began at the airport. It was a warm winter, too, thanks in part to the emergence of an El Niño weather pattern. The mean temperature in January was 7.2°C – about 3°C warmer than average. The coast remained unseasonably warm when the Olympics began on 12 February. Vancouver's average temperature was a spring-like 7°C during the games. Temperatures exceeded 10

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Denise Ryan, "Storm follows snow," *Vancouver Sun*, 9 January 2009; John Colebourn and Stuart Hunter, "Flood, roof-collapse warnings issued," *Vancouver Province*, 7 January 2009.

<sup>721</sup> Doug Ward, "Some season ski passes no bargain," *Vancouver Sun*, 29 March 2005; Claire Ogilvie, "Soggy weather plagues B.C. ski resorts," *Vancouver Province*, 25 January 2005; "Whistler whets appetites in wet," *Vancouver Sun*, 22 January 2005; Doug Ward, "This is the winter that wasn't for Whistler's powder hounds," *Vancouver Sun*, 2 March 2005; "Highs and lows at Whistler-Blackcomb," *Ski Area Management*, <https://www.saminfo.com/news/sam-headline-news/6103-4621-154-highs-and-lows-at-whistler-blackcomb>; Alison Taylor, "Whistler's \$60-million snowmaking system opens the slopes, saves the holidays," *Pique News Magazine*, 8 January 2014.

and 11°C at times, cementing Vancouver’s status as the warmest city to ever host the Winter Olympics. In fact, the 2009-10 winter was the warmest in the city’s history. Photographs of green grass, flowers, and coastal residents strolling about in light jackets contrasted sharply with photographs from other Winter Olympic sites such as Salt Lake City, U.S.A., Nagano, Japan, and Calgary. The City of Vancouver was truly an evergreen playground that winter: a temperate paradise nestled along the shores of the Pacific Ocean.<sup>722</sup>

The warm weather created problems in the mountains, however. Heavy snows had blanketed the southern Coast Mountains in the autumn; both Cypress and Whistler-Blackcomb opened earlier than expected, and the latter boasted a record 5.4 m snowpack in November. But the snow turned to rain in January. Officials closed public access to Cypress earlier than expected to protect its melting snowpack. In late January, VANOC employees began using snow grooming machines to move snow around the resort. “There is no intention of moving from this venue,” replied VANOC’s vice-president of sport, Tim Gayda, in response to questions about the weather. “We are very, very confident that we have enough snow to be able to weather any kind of inclement weather we have rolling into the Games.” While Gayda hoped to alleviate growing concerns about the deteriorating conditions, his comments were overly optimistic. A few days later, VANOC began transporting snow from Manning Provincial Park – 260 km away – to Cypress to supplement the meagre snowpack. Helicopters also began moving snow from other areas of the resort to the competition sites. Global media outlets followed these developments closely; photographs of the snowless resort began appearing in major international newspapers and magazines. Frustratingly for VANOC officials, Cypress’ new snow-making system was useless during this warm stretch. Thanks to the hard work of VANOC’s crews, the freestyle and snowboarding events went ahead as planned, with only slight delays to the training programs. Freestyle skier Alexandre Bilodeau won Canada’s first gold medal at Cypress on 14 February on a course that had been un-skiable

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<sup>722</sup> Chad Skelton, “No snow, no surprise. Vancouver is warmest city to ever host Winter Olympics,” *Vancouver Sun*, 9 February 2010; Vancouver International Airport, BC daily data report for January – February 2010, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>.

just a few weeks earlier. Unfortunately for spectators, the rest of the mountain was a muddy mess.<sup>723</sup>



**Figure 38: A truck transporting snow up Cypress Mountain. *Vancouver Province*, 3 February 2010.**

The 2010 Vancouver Winter Olympics was a defining moment in the city’s history and provides an interesting lens from which to reflect on historical relationships between people and snow in Vancouver and the southern Coast Mountains. The city’s Olympic bid was proposed with certain expectations about snow in mind. While outside observers questioned how a temperate city such as Vancouver could host the Winter Games, organizers knew that they could expect cold, snowy weather in the southern Coast Mountains. Those mountains had been home to snow-based recreation activities for decades. Organizers knew it was possible to hold ski and snowboard events at Cypress and Whistler-Blackcomb while locals enjoyed mild weather and winter greenery on the coast. As the *Sun*’s Chad Skelton wrote when the games were awarded to the city in

<sup>723</sup> Terry Bell, “Snow scarce, so skiers, boarders train at Whistler and Blackcomb,” *Vancouver Province*, 7 February 2010; Jeff Lee, “Cypress Mountain gives Mother Nature a hand,” *Vancouver Sun*, 29 January 2010; Ian Austin, “Trucks hauling snow to Cypress,” *Vancouver Province*, 3 February 2010; Tom Robbins, “Whistler: Too much snow to ski? No such thing,” *The Guardian*, 29 November 2009; Kim Pemberton, “Cypress Mountain pass holders must wait for decision on closure compensation,” *Vancouver Sun*, 14 January 2010.

2003, “Vancouver’s lack of snow will have no practical impact on the games.” The most pressing weather challenge for local officials, Skelton believed, was rain and “promot[ing] the city as a tourist destination during what is one of the most miserable months of the year.”<sup>724</sup>

Problems emerged when these expectations did not align with natural conditions, of course. The issues created by the snows of December 2008 had scared VANOC organizers and municipal officials. Heavy snows such as those were few and far between, but snow was still a seasonal occurrence in the twenty-first century, as it had been during the previous century. Local officials needed to be prepared to deal quickly and efficiently with any snow that fell in Vancouver that February, as it would threaten to disrupt Olympic events and travel and tourism in the region. Luckily for VANOC organizers, snow stayed away from the coastal city that winter. It was the lack of snow at Cypress that created the greatest headaches. VANOC had proposed Cypress as an Olympic site because of its normally reliable snow conditions. While they had expected some variation – the resort’s snow-making system had been installed as a safeguard against inclement weather conditions – they were not prepared for the extreme warmth that winter. Mountain snow was an incredibly valuable resource; its absence was notable and concerning. As Skelton admitted that February, as snow-filled trucks continued to roll up Cypress, his 2003 statement about snow having “no practical effect on the games” read poorly given that resort’s ongoing problems.<sup>725</sup>

The Olympics highlighted how societal changes had affected human experiences and relationships with snow, too. The advent of skiing and the modernization of the alpine ski industry brought millions of people into the southern Coast Mountains during the extended winter season. Whistler was a remote ski outpost when it first opened in 1966. IOC officials initially overlooked it as a suitable Olympic destination in part because of its inaccessibility and the ruggedness of the Whistler Valley. But the continued growth of the postwar ski industry, investments in winter tourism, and the resort’s enviable snow

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<sup>724</sup> Chad Skelton, “No snow, no surprise. Vancouver is warmest city to ever host Winter Olympics,” *Vancouver Sun*, 9 February 2010.

<sup>725</sup> Chad Skelton, “No snow, no surprise. Vancouver is warmest city to ever host Winter Olympics,” *Vancouver Sun*, 9 February 2010.

conditions soon made it an attractive ski destination. At the start of the twenty-first century, Whistler-Blackcomb was one of the continent's leading ski resorts because of its snow. Back in Vancouver, further investments in snow-clearing machinery reflected the importance that officials placed on maintaining regional automobility during the games. The snows of December 2008 had shut down the city for weeks. People needed to be able to move freely during the Olympics, no matter the weather. While most tourists could rely on the SkyTrain to move about the region, streets still needed to be cleared for buses, trolleys, and cars. Indeed, snow was not merely an inconvenience to coastal life, as it had been a century earlier. In the twenty-first century, even a slight snowfall seriously disrupted local travel.

The Olympics also highlighted snow's importance as a connecting force between the coast and the mountains. Vancouver had been selected because of its proximity to the southern Coast Mountains. Transportation corridors had been designed to access these snowy spaces; these were expanded to accommodate the hundreds of thousands expected to attend the Olympics. From downtown Vancouver, Cypress and Whistler-Blackcomb could be reached by car in 30 and 120 minutes respectively. New ski infrastructure improved skier movement within these spaces, too. It is no coincidence that Whistler-Blackcomb installed the \$51 million Peak-to-Peak gondola before the Olympics, providing their guests with better connectivity between Whistler and Blackcomb's high-mountain terrain.<sup>726</sup> Even the movement of snowmelt to the coast had benefitted Olympic athletes and visitors. Melting snow provided residents and tourists alike with freshwater and hydroelectric energy that February – albeit many months earlier than local water managers would have liked.

Snow was an important part of Vancouver society in the early 2000s, as it had been for more than a century. The city has a rich snow history, one that has been concealed by its snow-free reputation for just as long. Snow stories abound in the Evergreen Playground: the 2010 Winter Olympics was just one recent example. By uncovering stories such as this one, this work demonstrates how coastal and mountain snow affected so many

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<sup>726</sup> "Peak to Peak," *Whistorical: The Official Blog of the Whistler Museum* (blog), 1 September 2016.

aspects of Vancouver's history. Since the start of the twentieth century, both the city and the mountains have been defined by snow – by both its apparent absence and awesome abundance respectively. During that time, coastal residents have formed unique relationships with it that have been shaped by particular expectations about snow, societal developments, and evolving climatic conditions. Mountain snow helped modernize the city; it offered recreational and economic opportunities to coastal residents, too. In the city, snow – while enjoyed by some – was largely seen as an inconvenience, something that needed to be tolerated until “typical” weather conditions returned. And, although many of the ways that people experienced snow evolved over time, how twenty-first century coastal residents think about snow remains remarkably similar to their late nineteenth century counterparts. Snow that falls on the coast is a rare phenomenon that is expected to promptly leave. It is to be found more naturally in the nearby mountains, providing a white backdrop to an otherwise green coast.

In exploring this snowy past, this dissertation pushes snow to the historiographic forefront. It directs attention to human relationships with snow in Canada, a country where there is an abundance of snow and snow stories that have yet to be uncovered by historians. The focus on Vancouver reveals snow's impact on a seemingly snowless place, raising greater insight into its effects on human life in a distinct environment. Extending this narrative into the southern Coast Mountains further highlights its significance to the City of Vancouver's history and demonstrates the connectedness between those two spaces. Snow brought these two spaces more closely together. Moving to the mountainous hinterland also emphasizes snow's importance to urban life outside of winter; it asks historians to consider how snow in other parts of Canada affected people and their relationships with the natural world in other seasons. Critically, this work demonstrates how particular relationships with snow were conditioned by a combination of natural conditions, societal circumstances, and perceptions about the natural world. These three factors influenced how coastal residents thought about and experienced snow on the coast and in the mountains throughout the twentieth century. In charting a history of snow in this particular corner of Canada, this dissertation invites other historians to explore snow stories in other parts of this country so that we may better understand its significance on human life in Canada.

But this history also raises questions about the future of snow in the Evergreen Playground. The snow problems of the 2010 Winter Olympics most clearly demonstrated the impact that natural climate cycles and anthropogenic climate change had on human relationships with snow in these two spaces. El Niño weather patterns generated warmer temperatures in Vancouver and the southern Coast Mountains that winter, as it had in other El Niño winters. Rising global temperatures were another culprit. In the twenty-first century, winters in Vancouver and the southern Coast Mountains were warmer on average than they had been half a century earlier. Snow was not as prevalent as it had once been either. In the most southerly portions of the Coast Mountains, the annual snow depth had declined by more than thirty percent since 1950. The snow season was shorter, too: in some parts of Western Canada, the snow season had declined by nearly four weeks. As former Olympian Thomas Grandi and climate change specialist Ian Bruce wrote in February 2010, that winter's snow challenges showed why it was so important to tackle anthropogenic climate change. "West Coast winters just aren't what they used to be," they explained.<sup>727</sup> The lack of snow at Cypress was a sign of what was to come if average global temperatures continued to climb.

Indeed, recent research shows that warming will occur faster in Metro Vancouver than many other parts of the world. By 2050, temperatures in the Metro Vancouver region are projected to be 3°C warmer than they are now. Annual average temperatures will be nearly 5°C warmer than current levels by 2080. Similar warming will occur in the nearby mountains, too. Scientists predict that only the highest reaches of the southern Coast Mountains will have average winter temperatures below 0°C by the 2050s. Warmer temperatures are just one result of anthropogenic climate change. Climate research compiled by Metro Vancouver shows that the metropolitan region can also expect longer summer dry spells, more fall, winter, and spring precipitation, and more extreme weather events.<sup>728</sup>

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<sup>727</sup> Thomas Grandi and Ian Bruce, "Games show why global warming must be tackled," *Vancouver Sun*, 23 February 2010; "Climate Change," *Environmental Reporting BC*, <https://www.env.gov.bc.ca/soe/indicators/climate-change/snow.html>

<sup>728</sup> Metro Vancouver, *Climate Projections for Metro Vancouver* (Burnaby: Metro Vancouver, 2016), 7.



Anthropogenic climate change will significantly alter snow patterns on both the coast and in the mountains. Snow will be less likely in the metropolitan region as average winter temperatures increase. Average daytime high temperatures in the winter – currently 5°C – are projected to increase to 7.4°C by 2050, and to 9.4°C by 2080. Nighttime low temperatures are also expected to rise. The total number of frost days – days in which the temperature is less than 0°C – will also decline, although the number of such days is already very low in Vancouver. While winter precipitation is projected to increase by 5 percent by 2050, warmer winter temperatures will decrease the likelihood that this precipitation will fall as snow.<sup>729</sup> Light snowfalls will become less likely, but the region will still face extreme snow events, similar to the January 1935 and December 1996 snowstorms, when supercharged storm systems from a warmer Pacific Ocean arrive on the coast during infrequent cold spells. In the mountains, the snowpack is expected to decrease considerably over the next few decades. As warmer temperatures become more common in the North Shore Mountains, rain will increasingly replace snow and wash away what little snowpack has accumulated. The 1 April snowpack is expected to decline by 38 percent by 2050. Thirty years beyond that, the average 1 April snowpack in the Capilano, Seymour, and Coquitlam watersheds is expected to measure just 56 cm, an 82 percent decrease from the current average.<sup>730</sup>

These changes in seasonal snow patterns will have multiple and disparate effects on coastal residents and their relationships and experiences with snow. Warmer and virtually snowless winters will finally match the expectations that residents have about the coast's winter climate. Snow will be rare. The baseline for what will be considered “normal” snow conditions on the coast and in the mountains will shift. First proposed by fisheries scientist Daniel Pauly, “shifting baseline syndrome” occurs when one generation evaluates the normalcy of natural conditions based on the present day and not on historical trends. With each successive generation, the baseline for what is considered normal shifts in line with evolving natural conditions.<sup>731</sup> In a world of less snow, coastal

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<sup>729</sup> Ibid, 8, 12, 32.

<sup>730</sup> Ibid, 15-16.

<sup>731</sup> The original idea for shifting baseline syndrome was published as a postscript entitled “Anecdotes and the Shifting Baseline Syndrome of Fisheries” in *Trends in Ecology and Evolution* 10 (1995), 430. Daniel

residents may more readily assume that Vancouver not just is, but *always was*, Canada's Evergreen Playground. The evergreen mentality will reign supreme for the remainder of the twenty-first century. In that sense, the loss of snow in Vancouver is likely to have much less impact than if it were to happen in Montreal or Ottawa. Any snow that does fall in Vancouver will continue to surprise residents. While children will have fewer opportunities to toboggan down snowy hillsides, an even more snowless Vancouver will probably be welcomed by drivers, already collectively unprepared for inclement winter conditions. The City of Vancouver, too, will probably be able to get by with fewer investments in snow-clearing equipment, although it will undoubtedly continue to rely on salting trucks to cover the region's growing road network.

But complacency about snow will leave the metropolitan region vulnerable to snowier-than-normal winters or extreme snow events. Examples from this dissertation have shown how the city's preparedness has declined during extended periods of low snow.

Municipal officials and residents were not always adequately equipped to handle the return of snowier winter weather. While these winters will be less common in the future, they will still happen. In the shorter term, coastal residents will continue to experience snow each winter. Fifty four cm of snow fell at VIA during the 2021-22 winter, the highest one-year snow total in five years. As of 1 March 2023, over 60 cm has coated VIA, more than a third of which fell during a single storm on 20 December 2022.<sup>732</sup> As this dissertation has shown, even light snowfalls can temporarily paralyze the region, and low snow winters can still cost hundreds of thousands of dollars to clear. Coastal residents and local officials will need to decide how seriously they want to prepare for snow as they enter a future where it will fall less frequently but at times more heavily.

Anthropogenic climate change will have an even greater effect on human relationships with snow in the southern Coast Mountains. For over 130 years, snow has been an important connecting force between the coastal metropolis and the mountainous

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Pauly, "The Shifting Baseline Syndrome of Fisheries," in *Vanishing Fish: Shifting Baselines and the Future of Global Fisheries*, ed. Daniel Pauly (Vancouver: Greystone Books, 2019). 94-98.

<sup>732</sup> Anecdotally, from chatting with friends and family in Vancouver and from watching local Vancouver news, it is clear more snow has fallen in other parts of Vancouver. Vancouver International Airport, BC monthly data report for December – March 2021-2023, in Environment and Climate Change Canada Historic Climate Data Archive, <https://climate.weather.gc.ca>.

hinterland. Snow has been an important resource for mountain-based recreation and businesses. It has also had a considerable effect on the urbanization and modernization of coastal settler communities. How people experience mountain snow – both directly and indirectly – will change in future years. A diminished snowpack will create new challenges for Metro Vancouver water managers. Snowmelt will become a smaller component of the region’s water supply. Its slow dissolution during the spring will no longer replenish reservoirs in the lead up to peak summer demand. Instead, winter rain will fall and run off quickly. Metro Vancouver and BC Hydro will need to build up their existing water storage infrastructure in order to collect this massive run-off and avoid spillover. Metro Vancouver is already planning ahead. In its 2019 report, *Water Supply Outlook 2120*, the organization highlighted that it was vulnerable to future water supply shortages because of a declining snowpack and hotter, drier spring and summer weather. Metro Vancouver identified possible sites to expand existing infrastructure or to create new storage capabilities. More restrictive outdoor watering bans may also become more frequent as demand for water increases during drier, hotter summer months. Metro Vancouver’s annual implementation of Stage 1 water restrictions between 1 May and 15 October is already an indication of how regional officials are adapting to climate change. The implementation of other restrictive measures may become more frequent as demand increases and water supplies decrease.<sup>733</sup>

The possibility for rain-on-snow events will also become more common as mountain precipitation fluctuates between the two types. Rain-on-snow events can produce extremely strong and dangerous run-offs. This was seen most recently and dramatically in November 2021, when heavy rain fell on an already deep mountain snowpack across southwestern British Columbia and Washington State. Flood waters washed out entire communities in the Fraser Valley, and at least five people died, as well as more than 600,000 farm animals. Washed out lowlands and mudslides in mountain passes severed the Lower Mainland’s road connections with the rest of the country for days. Fearing a

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<sup>733</sup> Page 28 of Metro Vancouver’s *Water Supply Outlook 2120* provides useful diagrams that highlight how shifting snow-cover patterns will influence water use and conservation in the region. Kelly Sinoski, “Metro reservoirs ready for summer,” *The Vancouver Sun*, 29 April 2015; Metro Vancouver, *Drinking Water Conservation Plan* (Burnaby: Metro Vancouver, 2021), 8; Metro Vancouver, *Water Supply Outlook 2120* (Burnaby: Metro Vancouver, 2019), 10.

gas shortage, Metro Vancouver communities restricted gas purchases to just 30 litres per visit. The flooding caused billions of dollars in damage.<sup>734</sup> Concern about tracking and forecasting these types of events has taken on greater importance. In the wake of the November 2021 floods, B.C.'s snow survey branch was given additional funding and tasked with installing more automated snow pillows in high-priority watersheds.<sup>735</sup> Snow surveys, particularly automated snow sampling devices, will become even more important tools for tracking changing snow and weather conditions in the mountains. Better snow measurements will lead to better run-off forecasts which will assist with flood warnings, as well as water use and conservation by BC Hydro and Metro Vancouver.

Southern Coast Mountain ski areas face a grim future based on these climate projections. Less snow and shorter ski seasons will become the norm this century. Research from UBC geographer Michael Pidwirny and his various collaborators details what the future might look like for the North Shore ski areas and Whistler-Blackcomb in a warming world. Between 1971 and 2000, the average ski season at Cypress was over 100 days, and at Whistler-Blackcomb, closer to 160. Based on different climate warming models, Pidwirny and Ethan Clark predict that skiing will no longer be possible in the North Shore Mountains by 2085. There will simply not be enough snow over a long enough period to open. Operating a North Shore ski area will no longer be a lucrative venture. The impact is slightly less dramatic at Whistler-Blackcomb, but the ski season there is projected to fall to between 50 and 110 days. These ski resorts have invested millions of dollars to expand their existing snow-making systems to mitigate current and future warming. In 2015, Whistler-Blackcomb explored the feasibility of creating artificial snow on the Horstman Glacier, located 2,200 m asl, to slow melting there. While ski operators concluded that wind conditions made snowmaking too difficult, similar pilot projects may be needed should Whistler-Blackcomb want to preserve title of the powder capital of Canada.<sup>736</sup>

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<sup>734</sup> “November 2021 Pacific Northwest floods,” *Wikipedia*,

[https://en.wikipedia.org/wiki/November\\_2021\\_Pacific\\_Northwest\\_floods](https://en.wikipedia.org/wiki/November_2021_Pacific_Northwest_floods)

<sup>735</sup> From personal conversations with snow survey branch employees in July 2022.

<sup>736</sup> Michael Pidwirny et al., “The Blob Winter of 2015,” *Michael Pidwirny – University of British Columbia* (blog), <https://blogs.ubc.ca/michaelpidwirny/theblob/>; Michael Pidwirny and Shane Pederson, “Winters

Anthropogenic climate change will also heighten the dangers associated with travel in these snowy mountainous spaces. Avalanches may become more common in the mountains, as extreme temperature variations will lead to less cohesion between distinct snow layers. Winter rain events will also build ice layers between snowfalls, increasing the avalanche risks. And, although the overall snowpack will decrease, the possibility for intense snowstorms will increase, creating optimal avalanche conditions.<sup>737</sup> Outdoor recreation enthusiasts may go to more extreme lengths to seek out and reach snow in the future. Doing so will put them in more avalanche-prone terrain or increase their risk of getting lost or injured. While the loss of mountain snow will mean the decline of snow-based outdoor recreation activities, other already popular activities such as hiking and mountain biking may take over. These activities are already practiced year-round in lower elevations of the southern Coast Mountains. Soon, practitioners may be able to carry out these activities at higher elevations throughout the winter months. The growth of these sports will lead to new business opportunities in the mountains or give ski areas new avenues to expand their businesses and remain economically viable.

The loss of snow in Vancouver and the southern Coast Mountains will have myriad impacts on the people living in this part of the world. Its value may become most apparent as it becomes scarcer. For those who enjoy its infrequent visits in the city – or who stare longingly up at the blanketed North Shore Mountains from the Point Grey shoreline – it will be missed. In the long term, however, out of sight is likely to mean out of mind. Most residents will not appreciate snow's role in the city, let alone its creation and development – a fact that has been true for much of the City of Vancouver's history. That, I believe, is the real value in this work: capturing human experiences with snow –

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2014/15 vs 2015/16" *Michael Pidwirny – University of British Columbia* (blog), <https://blogs.ubc.ca/michaelpidwirny/winters-201415-vs-201516/>; Michael Pidwirny et al., "Climate change challenges for alpine ski resorts in western Canada," *Michael Pidwirny – University of British Columbia* (blog), <https://blogs.ubc.ca/michaelpidwirny/694-2/>; Ethan Clark and Michael Pidwirny, "Impact of future climate change on ski season length for western North American ski resorts," *Michael Pidwirny – University of British Columbia* (blog), <https://blogs.ubc.ca/michaelpidwirny/699-2/>; Braden Dupuis, "Snowmaking pilot project on Horstman Glacier is ongoing," *Pique News Magazine*, 10 October 2016; "New snowmaking infrastructure: In action," *Grouse Mountain*, 10 November 2015, <https://www.grousemountain.com/news/new-snowmaking-infrastructure-in-action#.YzXB1ezMJTY>

<sup>737</sup> Bob Berwyn, "How climate change may influence deadly avalanches," *Scientific American*, <https://www.scientificamerican.com/article/how-climate-change-may-influence-deadly-avalanches/>

while there still *is* snow – before it melts away. Only by exploring this snowy past can we fully understand and appreciate the history of Canada’s Evergreen Playground.

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## Appendices

### Appendix A: List of abbreviations

ACC – Alpine Club of Canada

AORR – Alpine Outdoor Recreation Resources, Ltd

BCAA – British Columbia Automobile Association

BCER – British Columbia Electric Railway Company

BCGTB – British Columbia Government Travel Bureau

BCHPA – British Columbia Hydro & Power Authority

BCMC – British Columbia Mountaineering Club

CARDA – Canadian Avalanche Rescue Dog Association

CNR – Canadian National Railway

COC – Canadian Olympic Committee

CP – Canadian Pacific Airlines

CPR – Canadian Pacific Railway

CRL – Consolidated Railway & Light Company

CSC – Cavell Ski Club

ENSO – El Niño Southern Oscillation

FASP – First Aid Ski Patrol

FMR – Fortress Mountain Resorts, Ltd

FSC – Fuji Ski Club

GLL – Garibaldi Lifts Limited

GMAR – Grouse Mountain Alpine Resorts, Ltd

GMHSC – Grouse Mountain Highway & Scenic Resort Company, Ltd

GMR – Grouse Mountain Resorts, Limited

GMSC – Grouse Mountain Ski Club

GODA – Garibaldi Olympic Development Association

GSEWR – Great Snow, Earth, Water Race

GVPB – Greater Vancouver Publicity Bureau

GVRD – Greater Vancouver Regional District  
 GVWD – Greater Vancouver Water District  
 GWN – Garibaldi’s Whistler News  
 HPSC – Hollyburn Pacific Ski Club  
 ICBC – Insurance Corporation of British Columbia  
 IEPA – International Evergreen Playground Association  
 IOC – International Olympic Committee  
 LIA – Little Ice Age  
 MCC – Marwell Construction Company  
 MRS – Mountain Rescue Squad  
 MSSC – Mount Seymour Ski Club  
 NRC – National Research Council  
 NSR – North Shore Rescue  
 PDO – Pacific Decadal Oscillation  
 PNTA – Pacific Northwest Tourist Association  
 PRC – Powell River Company  
 RCAF – Royal Canadian Air Force  
 RCMP – Royal Canadian Mounted Police  
 TCA – Trans-Canada Airlines  
 TEAM – The Electors Action Movement  
 UBC – University of British Columbia  
 UHI – Urban Heat Island  
 VAC – Vancouver Automobile Club  
 VACMC – Vancouver Athletic Club’s Mountaineering Club  
 VANOC – Vancouver Organizing Committee for the 2010 Olympic and Paralympic Games  
 VERL – Vancouver Electrical Railway & Light Company  
 VIA – Vancouver International Airport  
 VIPB – Victoria and Island Publicity Bureau  
 VMC – Vancouver Mountaineer Club  
 VOC – Varsity Outdoor Club

VPC – Vancouver Power Company

VSC – Vancouver Salt Company

VTa – Vancouver Tourist Association

WPC – Western Power Company

WRB – Water Rights Branch

WVT – Westminster Vancouver Tramway Company

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