IMPROVING NATURE:
Remaking Stanley Park's Forest, 1888–1931[1]

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On 27 September 1888 the opening of Vancouver's landmark urban park signalled great promise for the young Pacific metropolis. The sun sparkled off the restless waters of Burrard Inlet under a cloudless blue sky as spectators gathered at Prospect Point to mark the official opening of Stanley Park, just over a year after the federal government had granted the city permission to use the peninsula as a public park. Provincial and civic dignitaries marched in a procession from Powell Street to the park and took their places on a platform before the crowd. Vancouver Mayor David Oppenheimer gave a speech to formally open the park to the public and deliver authority for its management to the newly appointed park committee. This is one of the best known moments in the history of Vancouver, famously chronicled by the city's first archivist, James Skitt Matthews. However, historians have failed to note the significance of Oppenheimer's remarks on that day. Today, Vancouverites take for granted the natural beauty of Stanley Park, the so-called "jewel" of the city. But when Oppenheimer spoke of the park in 1888, he saw *future* potential, not inherent beauty. He recognized the many "natural advantages" of the peninsula but considered them deficient without the aid of human intervention. Oppenheimer believed that, with careful modification and improvement, "art will unite with nature in making this the finest park on the continent." Only the union of human artifice and natural scenery would "ultimately realize our present hopes of being able in a short time to say we have the most

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beautiful park in the world." In short, Oppenheimer and other early park advocates saw a natural landscape in need of a helping hand.[2]

This perspective might seem extraordinary to contemporary park tourists and admirers who today value Stanley Park as an untouched natural environment (at least prior to the series of major windstorms in 2006-07), unaware of the enormous, but largely concealed, human effort that has gone into managing the production of this landscape.[3] In examining the first decades of the management of Stanley Park, it becomes clear that the Vancouverites who first called for the preservation of wild nature in the forest of Stanley Park did not operate on the same understanding of nature that one might assume today – a forest unimpaired by human intervention, guided by forces beyond or outside human control. Instead, as this article shows, early park advocates and Park Board officials actively sought means to "improve" nature by controlling non-human forces, such as fire and insects, that threatened to alter the visual or aesthetic appearance of the "virgin" forest. Rather than turning to the expertise of celebrity landscape architects like the Olmsted brothers or Frederick Todd, the Vancouver Park Board employed scientists to alter the appearance of the park.[4] The board used forestry and entomological sciences as a form of landscape art to remake the forest of Stanley Park so as to conform to popular expectations of idealized wilderness. The Park Board followed the policy recommendations of federal scientists from the Canadian Department of Agriculture's entomology division to eliminate a number of different insect pests and to avoid the risk of fire. The impact on the visual landscape of the peninsula can easily be seen in historical photographs of Stanley Park (Figure 1). In the late 1880s, the forest had a ragged, variable, and untidy appearance, but by the 1940s, the landscape of the park clearly appeared more dense, orderly, and homogenous.

This research challenges the literature on the history of urban park development and earlier scholarly studies of Stanley Park, which have tended to overlook the dynamic characteristics of non-human nature

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[2] *Daily News-Advertiser*, 28 September 1888, 8; J.S. Matthews, *The Naming, Opening, and Dedication of Stanley Park, Vancouver, Canada, 1888-1889* (Vancouver: Archives of Vancouver Society, 1964).

[3] For more on the history of windstorms in Stanley Park, see Sean Kheraj, "Restoring Nature: Ecology, Memory, and the Storm History of Vancouver's Stanley Park," *Canadian Historical Review* 88, 4 (2007): 577-612.

[4] The Vancouver Park Board did commission the famous British landscape architect Thomas Mawson to design improvements for the Coal Harbour entrance to the park in 1913. While the board approved one of Mawson's designs, it never actually implemented it.

Figure 1: The appearance of the trees at the entrance of Stanley Park shown above in the 1890s and below in the 1940s illustrates the extent to which forest management work transformed the landscape of the park. *Source*: City of Vancouver Archives (hereafter CVA), Major Matthews Photograph Collection, LGN 1048, CVA and Photograph Collection, 586-340.

that have influenced urban park design.[5] In particular, Robert A.J. McDonald's early work on Stanley Park examines the competing social and political interests during the prewar debates over the development and design of the Coal Harbour entrance of the park. His contention is that different public attitudes towards nature in Stanley Park could be attributed to class perceptions of public green space. Vancouver's social elite, according to McDonald, advocated "the purest form of traditional park, based on romantic principles," while middle-class reformers on the Park Board, along with workers, saw a need for greater human intervention through the construction of athletic fields and playgrounds. The city's elite strove to protect the park's wilderness qualities and the beauty of the forest by resisting overt human intrusions into nature. Yet, as this article demonstrates, those same elite spokespeople who cried "Hands Off Stanley Park" shared the Park Board's perspective that nature needed human improvement. They *endorsed* the expansion of human intervention into the forest of Stanley Park through the application of modern forest management strategies.[6]

At the same time that debates raged over plans for Coal Harbour, the Park Board, with the full support of many of Vancouver's business leaders and social elite, embarked on a long-term project to engage the expertise of forestry and entomological scientists to combat the threat of both fire and insects to Stanley Park. They shared a modernist belief, common during this period in the North American parks movement, that scientific intervention was beneficial to the production of an aesthetically satisfactory park landscape based on a romantic and static vision of nature. They were not naïve about the difficulty of achieving this vision but were, in fact, quite aware that, ironically, the production of this iconic natural landscape required active human effort. The creation of one of the largest and best-known parks in Canada was

[5] For a more detailed discussion of this historiography, see Kheraj, "Restoring Nature." Major works in North American urban park history that explore the social and political forces that influenced park design include David Schuyler, *The New Urban Landscape: The Redefinition of City Form in Nineteenth-Century America* (Baltimore: Johns Hopkins University Press, 1986); Galen Cranz, *The Politics of Park Design: A History of Urban Parks in America* (Cambridge: MIT Press, 1982); Roy Rosenzweig and Elizabeth Blackmar, *The Park and the People: A History of Central Park* (Ithaca: Cornell University Press, 1992); Roy Rosenzwieg, "Middle-Class Parks and Working-Class Play: The Struggle over Recreational Space in Worcester, Massachusetts, 1870-1910," *Radical History Review* 21 (1979): 31-46; Stephen Hardy, "Parks for the People: Reforming the Boston Park System, 1870-1915," *Journal of Sport History* 7 (1980): 5-24. Terrence Young's *Building San Francisco's Parks, 1850-1930* (Baltimore: Johns Hopkins University Press, 2004) builds upon this literature by focusing on both the cultural *and* environmental dimensions of urban park history.

[6] Robert A.J. McDonald, "'Holy Retreat' or 'Practical Breathing Spot'?: Class Perceptions of Vancouver's Stanley Park, 1910-1913," *Canadian Historical Review* 45, 2 (1984): 129.

not simply a passive process of cordoning off a portion of the forest from industrialization; rather, it was an active process that demanded elaborate human intervention.

DISCOVERING THE VIRGIN FOREST

Trees have long held a significant symbolic place within the urban environment. As Anne Whiston Spirn reminds us, trees have provided pleasure to urban dwellers for over twenty-five hundred years, since the first city parks of Nineveh in Mesopotamia. She points out that trees in cities are more than sculptures and have certain requirements to ensure their survival and growth. But trees sometimes grow and change in ways that contradict popular aesthetic expectations. Consequently, humans have sought to mitigate those delinquent forces. In order to achieve a particular aesthetic look, according to Spirn, the "alteration of that natural arrangement by human intervention requires an expenditure of energy." Vancouverites were captivated by the allure of the dense forest of Stanley Park from the outset and were deeply concerned with guarding its evocative wilderness qualities from non-human natural forces of change.[7]

The forest has always been the centrepiece of the landscape composition of Stanley Park. This is evident in artwork and photography of the park, including most famously Emily Carr's early watercolours from 1909 to 1910 (Figure 2). But before Carr, Lauchlan A. Hamilton, a Canadian Pacific Railway surveyor and Vancouver alderman, produced the earliest artwork depicting the peninsula. In 1885, he carefully painted the skyward verdure of the peninsula's trees reflected in the calm waters of English Bay (Figure 3). As he quietly captured the landscape of the peninsula, Hamilton knew that the new transcontinental railway, expected to terminate at Coal Harbour, would soon make a city and that the city would unmake the forest. Prior to the incorporation of Vancouver, people exploited the peninsula's timber as a consumable commodity through selective logging practices, but by 1887 they found greater value in letting the trees stand. Park advocates, led by Hamilton and others, succeeded in transforming the forest into a recreational resource for non-consumptive use when the federal government granted

[7] Anne Whiston Spirn, *The Granite Garden: Urban Nature and Human Design* (New York: Basic Books, 1984), 184.

Figure 2: *Winter Moonlight (Stanley Park)*, 1909. Emily Carr's earliest watercolour paintings of Northwest Coast forests depicted the deep woods of Stanley Park, where she struggled to capture the unique effect of the light filtered through the branches. *Source*: Glenbow Museum, 56.7.

Figure 3: L.A. Hamilton's watercolour painting of English Bay, looking out at the Stanley Park peninsula, in 1885. *Source*: CVA, Major Matthews Photograph Collection, St. Pk. 77.

Vancouver's city council permission to use the nearly four-hundred-hectare peninsula as a public park.[8]

Photography and postcard art provide historians with a glimpse into the symbolic significance of the forest. Early postcard artwork most commonly represents Stanley Park through images of deep woods and large conifers, thus helping to define the peninsula's much admired wilderness qualities (Figure 4). In the vast collection of nineteenth-century photography of Stanley Park held at the City of Vancouver Archives, one of the most

[8] I borrow the term "non-consumptive use" from Tina Loo's *States of Nature* (Vancouver: UBC Press, 2006), in which she argues that wildlife conservationists in Canada at the turn of the century sought to manage wildlife for non-consumptive purposes. In doing so, they eliminated the use of wild animals for food and trade. Similarly, park advocates in Vancouver strove to protect the forest of Stanley Park for recreational uses by outlawing consumptive use of timber in the park, including commercial logging. This, of course, differs from the pattern in national and provincial parks in Canada at the turn of the century, where park authorities permitted commercial logging, mining, and hydro-electric development. Stanley Park did not officially open to the public until 1888, one year after it was granted to the city for use as a public park.

Figure 4: "Path Through the Woods, Stanley Park, Vancouver, BC," postmarked 25 March 1908. *Source*: Author's collection.

Figure 5: Posing for photographs inside the Hollow Tree has been a tourist tradition in Stanley Park since the late nineteenth century (1890). *Source*: CVA, Major Matthews Photograph Collection, St Pk P19N239.

common images is that of men and women standing next to the base of very large coniferous trees (Figure 4). The most famous example of this tourist tradition is the Hollow Tree, an enormous hollow cedar stump in the middle of the peninsula. Thousands of park visitors posed for photographs inside the Hollow Tree, even going so far as to park carriages and later automobiles inside the stump (Figure 5).

Standing next to a large tree was also meant to illustrate that the trees in Stanley Park were ancient. The notion that the trees in Stanley Park were so old they were "virginal" – that is, they embodied some sense of untainted originality – became common. For instance, a 1936 tourist brochure for Stanley Park claimed that the peninsula "remains today as it was at the time the 'white man' came … a virgin forest, and just a short walk from the shopping section of the city." In addition to the obvious sexualized dimensions of the notion of a virginal forest, this perception rendered any kind of change or disturbance to the landscape a violation of that static and stable composition.

Throughout the first decades of the development of Stanley Park, many park goers, especially members of the city's social elite, led by F.C. Wade, admired the beauty of the forest and sought to reduce the impact of park construction projects on the visual landscape. Wade carried out

loud protests against the widening of the park road, proposals for an electric streetcar line, and improvements to Coal Harbour in order to protect what he called "Stanley Forest."[9] But his crusades to eliminate disturbance to the forest of Stanley Park were not limited to human intrusions: he was deeply concerned about non-human threats like fire and insects. He believed that science and active forest management should be used to correct this problem and to maintain the image of the virgin forest.[10]

Wade and his supporters opposed overt acts of human intervention in the park that would produce an obvious sense of artificiality. They were equally concerned with non-human natural interventions that produced the "wrong" kind of nature for their class-based perception of nature in Stanley Park. If we consider the debate over Coal Harbour, Wade opposed Thomas Mawson's grandiose plan for a neoclassical, formalist entrance to Stanley Park because it made human artifice the central landscape feature. He did not, however, oppose Frederick Fellowes' design for the causeway and Lost Lagoon, which the Park Board eventually adopted. Even the city's social elite agreed that the shifting tides of Coal Harbour were unsightly and needed improvement. They did not protest the construction of the causeway because it rid the park of the muddy flats of Lost Lagoon while maintaining a naturalistic appearance. Lost Lagoon appears as though it were as nature intended, but it is an artificial lake. Wade's class-based perception of the environment and his admiration for Stanley Park as a "Holy Retreat" was conditional. Nature was imperfect. It had attributes that he and others sought to excise from the landscape in order to make it conform to the vision of a holy retreat. They had faith in humanity's ability to change nature. Culturally, we can see this as a modernist environmental outlook.

CONTROLLING FIRE

The Park Board first sought to improve the forest of Stanley Park by eliminating disturbance brought by fire. In the summer before its official opening in 1888, Stanley Park burned. Dozens of blazes lit up the forest and filled the air with smoke. Dry weather conditions combined with careless roadwork on the construction of the first park road led to the spread of several small fires. The distant haze of smoke over the park

[9] See McDonald, "'Holy Retreat' or 'Practical Breathing Spot'?" for more on Wade's opposition to these development projects.

[10] City of Vancouver Archives (hereafter CVA), PD289, "Stanley Park: World's Most Wonderful Natural Park" (1936).

worried anxious observers, who were concerned that "the fire has been burning … for several days, and in the present state of things there is no one whose duty it is specially to see to the protection of this portion of the city's domain." Without the active intervention of city officials, fire would, according to nervous park admirers, irreparably destroy the beauty of the park. The fires grew in intensity and raged throughout the peninsula in the late summer, prompting pessimism among critics who felt that "probably by the time steps are taken to protect this magnificent heritage of the city there will be nothing left but a lot of blackened stumps." This kind of public commentary about Stanley Park portrayed the peninsula as a valued municipal landmark that required special human intervention against fire in order to avoid the production of an unsightly scorched landscape. Park authorities proved incapable of doing anything to stop the flames. Serendipitously, a spell of late summer rain extinguished both the fires and the public angst. As a result of the fires and public pressure, city council temporarily hired a caretaker to patrol the road to guard against future blazes.[11]

Little is known about the role of fire in Northwest Coast forests. In this region of primarily coniferous trees, some ecologists believe that "large wildfires typically correspond to episodes of drought rather than simple patterns of fuel history." That is to say, fires in this region usually occur according to climatic conditions rather than according to more predictable patterns associated with the build-up of debris on the forest floor. Studies of the fire history of southwestern British Columbia during the Holocene reveal that the great variability in fire frequency can be linked to climate through large-scale atmospheric circulation patterns. During the contemporary fire period, known as the Fraser Valley Fire Period, First Nations peoples of the Northwest Coast used fire prior to colonization to alter the ecology of local environments and to produce conditions for the growth of target succession plant species. Sally Hermansen and Graeme Wynn's work on the history of Camosun Bog in Vancouver provides one specific example of an environment that Aboriginal people once burned to encourage the growth of foods such as blueberries. Robert Boyd finds that fire employed by Aboriginal people was "by far the most important tool of environmental manipulation throughout the Native Pacific Northwest." Nancy J. Turner's work on Aboriginal fire use in British Columbia contends that First Nations peoples used landscape firing neither casually nor sporadically but,

[11] *Daily News-Advertiser*, 18 August 1888, 4; 19 August 1888, 4; 4 September 1888, 8; 6 September 1888, 8; CVA, Vancouver City Council Minutes, vol. 2. MCR 1-2, 20 August 1888.

rather, deliberately and for a variety of purposes. For centuries prior to the creation of Stanley Park, natural and human-induced fire had played a role in reshaping the landscape of the region.[12]

The creation of Stanley Park altered the fire regime of the peninsula. Construction of park infrastructure increased the risk and incidence of anthropogenic fire and fed a preservationist impulse to implement strategies of fire control in order to protect the trees.[13] Stephen Pyne describes fire control as a threefold strategy: prevention of ignition, modification of the fire environment, and suppression of small fires. The Park Board followed all three strategies.[14] The rules and regulations for Stanley Park sought to prevent ignition by outlawing the use of fire in any public park, stating: "No person shall light any fire in any public park or place in the custody, care and management of the Park Board, except in such portions thereof and at such times as may be authorized."[15]

In order to reduce the impact of accidental fire, the board modified the fire environment by removing forest debris and slash to reduce the stockpile of fuel. The third and most complicated strategy involved the suppression of small fires. The city employed a caretaker to patrol the park in order to alert city fire services of any small fires before they grew out of control. The board later passed this role on to the park superintendent, whose job was, about twice a week, to see that there were no fires in the park and no fallen timber or fallen branches on the road. Firefighters had a limited ability to tend to fires that broke out deep within the forest, far from the park's roadways and a convenient water supply. Richard Rajala notes a similar problem for federal forestry officials who sought to suppress fires on vast forest reserves of thousands of acres. Axes, hoes, and shovels were the main tools for manual fire suppression until the 1920s, when technological developments in portable

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[12] Stephen J. Pyne, Patricia L. Andrews, and Richard D. Laven, *Introduction to Wildland Fire*, 2nd ed. (New York: Wiley and Sons, 1996), 209; Douglas J. Hallett, Dana S. Lepofsky, Rolf W. Mathewes, and Ken P. Lertzman, "11,000 Years of Fire History and Climate in the Mountain Hemlock Rainforests of Southwestern British Columbia Based on Sedimentary Charcoal," *Canadian Journal of Forest Research* 32, 2 (2003): 292-312; Sally Hermansen and Graeme Wynn, "Reflections on the Nature of an Urban Bog," *Urban History Review* 34, 1 (2005): 9-27; Robert Boyd, "Introduction," in *Indians, Fire, and the Land in the Pacific Northwest*, ed. Robert Boyd (Corvallis, OR: Oregon University Press, 1999), 2; Nancy J. Turner, "'Time to Burn': Traditional Use of Fire to Enhance Resource Production by Aboriginal Peoples in British Columbia," in Boyd, *Indians, Fire, and the Land in the Pacific Northwest*, 187.

[13] For more on the history of fire prevention in British Columbia, see John Vye Parminter, "An Historical Review of Forest Fire Management in British Columbia" (MF thesis, University of British Columbia, 1978).

[14] Stephen J. Pyne, *Fire in America: A Cultural History of Wildland and Rural Fire* (Princeton: Princeton University Press, 1982), 27.

[15] CVA, Board of Parks and Public Recreation, Board Minutes, MCR-47-1, 7 November 1906.

pumps and chemical fire extinguishers improved fire control in Stanley Park.[16]

Eventually, expansion of the water supply throughout the park solved the problem of fighting flames deep within the forest. In 1910, the Park Board commenced the construction of a system of watermains and fire hydrants to distribute water from the city reservoir at Prospect Point to various locations throughout the park. This elaborate construction undoubtedly disturbed the environment of the park but was carried out with the aim of improving the forest. In consultation with the city waterworks superintendent, from 1910 to 1914 the Park Board extended the hydrant system to Second Beach, Ferguson Point, Brockton Point, and Prospect Point. Although the hydrants provided improved access to a water supply for firefighters, the system proved inadequate during the particularly dry summer of 1920. Superintendent W.S. Rawlings reported dozens of large fires that were too distant from the limited hydrant system for it to provide adequate water supply and pressure for suppression. He pleaded for an expansion of the existing hydrant system and insisted that: "Every precaution has been taken by day and night patrols to keep guard, but this is only a small measure. The danger of fire increases every year as the park becomes more developed and with it is the corresponding anxiety. We have been extremely fortunate in the past, but this good fortune may not always follow us."[17] The Park Board did not build an expanded system until 1924 when ratepayers approved a plebiscite for a $65,000 scheme for fifty-six new hydrants. The Park Board adopted an increasingly elaborate system of fire control for Stanley Park in order to preserve from disturbance what it considered a valued natural landscape. When it came to fire, board members pursued a very interventionist forest policy.[18]

These policies illustrate the perspective of the Park Board and park advocates who believed that human intervention could be efficiently employed to improve nature. By controlling fire within the park, the board hoped to maintain the image of an undisturbed natural forest. The Park Board constructed networks of pipes and hydrants throughout the forest to ensure a reliable and convenient source of water with which to

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[16] Ibid., 14 September 1904; CVA, George Henry Cowan Fonds, legal files, *City of Vancouver vs. Ludgate*, 1899-1911, Add. MSS. 800, 588-C-4, file 3; Richard Rajala, *Feds, Forests, and Fire: A Century of Canadian Forestry Innovation* (Ottawa: Canada Science and Technology Museum, 2005).

[17] CVA, Board of Parks and Public Recreation, Board Minutes, MCR 47-4, 8 September 1920.

[18] Ibid., MCR-47-1, 9 November 1910, 8 September 1920; CVA Board of Parks and Recreation Correspondence, 49-C-5, file 7; CVA Board of Parks and Recreation Fonds, Annual Reports, 1921, PDS 12.

quickly extinguish fires. Ironically, clearing paths and roads to make the forest more accessible to firefighters and cutting through the woods to lay and bury pipes likely caused a good deal of disturbance to the park. But these increasingly intrusive interventions into the forest stirred far less public alarm than did forest fires in Stanley Park.

OUTBREAK

Beginning in 1910, the Park Board faced new challenges in the management of Stanley Park and the maintenance of its forest when an acute insect and fungus outbreak struck. Park Board officials and the public noticed considerable areas of dead and defoliated trees throughout Stanley Park. Vancouver's crown jewel appeared to be fading, and the public demanded immediate action.

F.C. Wade and his group of self-proclaimed "Lovers of Stanley Forest" met in April 1910 to discuss the condition of Stanley Park and the role of the Park Board in directing its revival. This group of primarily elite residents of Vancouver's West End (the prestigious neighbourhood abutting Stanley Park) feared that these insects and fungi would fundamentally alter the appearance of the park. They stood opposed to human encroachments into the park, such as the construction of an electric streetcar line and the widening of the park road, but favoured the application of modern forest management techniques to address the insect and fungus outbreak. Wade wrote to the park commissioners, chastising them for mismanaging Stanley Park's forest and lacking sufficient expertise in forest management. In a resolution passed at the April meeting, Wade and his followers asserted that, "as Stanley Forest is the city's most valuable asset[,] we are of opinion that the park commissioners should in future act on the advice of expert foresters of the greatest eminence." While these elite residents sought to impose a particular class perception of nature on Stanley Park based on the idea of a virginal forest for passive leisure, they did not advocate a completely "hands-off" approach to park management. Wade placed tremendous value on the power of scientific forestry and entomology and called upon the Park Board to do the same.[19]

As the insect and fungus infestation started to alter the appearance of the trees in Stanley Park, the Park Board sought help from the federal

[19] *Vancouver Daily Province*, 12 April 1910, 1; CVA, Board of Parks and Recreation Fonds, Correspondence, 48-c-1, file 4, Letter from F.C. Wade, Chairman of meeting of citizens held in the Board of Trade Rooms, Molson's Bank Building, to A.E. Lees, Chairman of the Park Board, 12 April 1910.

Department of Agriculture's entomology division to stem the outbreak. Members from the division conducted a brief examination of the park and found "that some of the most valuable large trees were dying fast and that certain bark boring beetles and wood destroying fungi appeared to be the principal causes of damage done." Three years later, the Dominion botanist, Hans T. Gussow, led a more comprehensive survey of the forest conditions in Stanley Park. He blamed the continued presence of insects and fungi on the thick underbrush of fallen and dying trees. He observed that the "ground is densely covered with under growth, [and] dead trees and limbs also cover the ground at every place, so that the whole is an almost impenetrable jungle, shutting out light and air." Gussow also attributed the problem to edge, or remnant, effects. As it stands, he wrote:

> Stanley Park … is part of an immense area of woodland which has been exterminated as the city grew, and what is left now, though an area of considerable size, is somewhat exposed and unprotected, hence, as is common in the preservation of isolated areas of forest, the trees along the edge begin to die slowly and will continue to do so from insect pests, fungus attacks and physical exposure unless every possible means are taken to encourage favourable conditions for the growth of the trees by destroying all material carrying infection and preventing the spreading of contagious pests and diseases by up to date methods of forestry.[20]

While the causes remained uncertain, Gussow's conclusions marked a turning point in thinking about the management of Stanley Park. Gussow's report argued that, instead of simply preserving the trees by suppressing fires, the park required active management and the expenditure of human energy in order to produce a stable forest. Without these "up to date methods of forestry," uncontrolled non-human forces would wear upon the forest and change the appearance of the park. The insect and fungus problem continued throughout 1913, killing "large numbers of some of the finest specimens in the park," according to one Park Board estimate. It identified the destruction of nearly all types of coniferous tree species in the park, especially western hemlock (*Thuga heterophylla*) and Sitka spruce (*Picea sitchensis*). The Park Board turned to the federal government for the best possible advice for dealing with the diseased trees, and, in response to this, the Dominion entomologist,

[20] CVA, Board of Parks and Recreation Fonds, Correspondence, Entomological Dept. re insect posts, 48-C-5, file 3.

Figure 6: Dr. James Malcolm Swaine, shown here in 1943, played a pivotal role in reshaping the forest of Stanley Park in the early part of the twentieth century (along with other scientists from the federal Department of Agriculture's entomological division). *Source*: Library and Archives of Canada, PA-140403.

Charles Gordon Hewitt, sent his chief of forest entomology, James Malcolm Swaine, to investigate (Figure 6).[21]

More so than any landscape architect, James Swaine played a pivotal role in remaking the forest of Stanley Park. He was a young scientist with the entomology division and a recent graduate from Cornell University, specializing in the emerging field of economic entomology. Swaine conducted numerous surveys of the forest conditions in Stanley Park in order to better understand the situation.

Swaine and his assistants produced a preliminary report in January 1914 that summarized the forest conditions in Stanley Park and placed blame on particular species of trees. An outbreak of hemlock loopers (*Lambdina fiscellaria*) ravaged large areas of hemlock. This kind of infestation is most noticeable because the loopers defoliate the trees. Swaine found that "dead hemlocks comprise the majority of the dead trees in Stanley Park." This outbreak was particularly troubling because, "in addition to being extremely unsightly these dead and dying trees form a breeding ground for injurious insects and fungi, which will surely have a harmful affect [sic] upon the remaining hemlocks if allowed to breed undisturbed."

[21] Robert Glen, comp., "Entomology in Canada up to 1956: A Review of Developments and Accomplishments," *Canadian Entomologist* 88, 7 (1956): 290-371. For more on the centralization of entomological research in Canada, see Stephane Castonguay, "Naturalizing Federalism: Outbreaks and the Centralization of Entomological Research in Canada, 1884-1914," *Canadian Historical Review* 84, 1 (2004): 1-34; and "The Emergence of Research Specialties in Economic Entomology in Canadian Government Laboratories after World War II," *Historical Studies in the Physical and Biological Sciences* 32, 1 (2001): 19-40.

The report clearly revealed that, at an early stage of the investigation into the insect outbreak, aesthetics were a primary concern. Swaine suggested that the infected and dead trees be immediately cut down and the slash burned. The hemlock should then be replaced with Douglas fir (*Pseudotsuga menziesii*). The spruce trees were most affected by an unidentified species of gall aphid, likely ragged spruce gall aphids (*Pineus similis* [*Gill.*]) or Cooley-Spruce gall aphids (*Adelges cooleyi* [*Gill.*]). These aphids form conspicuous galls on the ends of spruce twigs, where they live out a portion of their lifecycle. While they are not usually fatal to forests, they do produce a ragged appearance to foliage and can result in a rusted brown colouration. Swaine's remedy was to remove and burn all the affected trees. He found that the western red cedar trees (*Thuja plicata*) in the park suffered most from fungus, but this was apparently a common condition on the Northwest Coast. He recommended that the dead cedar tops be cut off to improve the overall scenic appearance of the landscape. His ultimate conclusion was that the Park Board should remove all dying and dead trees "as soon as their usefulness is gone" and replant the cleared areas with Douglas fir, a species Swaine believed to be more durable and suited for park purposes. He contended that a definite policy of fir replacement would gradually put the park into "a permanent healthy condition." Swaine designed policy recommendations to eradicate the insect and fungus infestation in order to produce a more aesthetically pleasing park landscape – one that would retain the park's sense of unblemished wilderness.[22]

J.B. Mitchell, from the provincial forest branch, also conducted a thorough survey of the infestations in March 1914. He concluded that, except for a portion of trees with dead tops and hollow trunks, the Douglas fir and cedar trees were the most healthy throughout the peninsula. Mitchell estimated that "of the Hemlock 25% is already dead, and about 60% more or less seriously affected by insect attack, while the 15% remaining are apparently healthy as yet." The spruce were in even worse condition, with less than 8 percent in a healthy state, over 50 percent diseased, and the remainder dead.[23] Overall, his assessment was bleak and painted a stark picture of the extent of the problem: "No particular area can be pointed out as being unaffected, in fact, the damage done has been widespread; but on one area of about 15 acres to the north of the Park, near Prospect Point, practically every hemlock

[22] CVA, Board of Parks and Recreation Fonds, Correspondence, 48-c-5, file 2, "Preliminary Report on Insect Conditions in Stanley Park, Vancouver, BC," January 1914.

[23] CVA, Board of Parks and Recreation Fonds, Correspondence, Entomological Dept. re insect posts, 48-c-5, file 3, "Report on Silvicultural Conditions in Stanley Park," March 1914.

and spruce has been killed."[24] Mitchell's report provides some sense of the anxiety surrounding the state of Stanley Park in the prewar years. The Park Board continued to seek the advice of experts in order to resist and correct the effect of non-human natural forces upon the landscape of Stanley Park.

Swaine and the Dominion entomologists offered several recommendations for control measures, including experimental insecticide spraying. Hemlock loopers could be most effectively killed, according to Swaine's report, by spraying the affected trees with lead arsenate. To stay the spread of the gall aphids, he endorsed the application of fish oil soap to the infected trees. Swaine admitted that the use of insecticides in Stanley Park would be experimental because "control measures for similar insect outbreaks have never been attempted … on such an extensive scale" and for such large trees. He looked upon the insect problem in Stanley Park as an opportunity to expand the Entomological Division's role in forest entomology research and the dissemination of insecticides. This work could cement the branch's scientific status. Swaine used Stanley Park as a laboratory, a sample Northwest Coast coniferous forest, to test those insecticides. Insecticide spraying in Stanley Park would, Swaine hoped, improve the visual landscape of the park.[25]

As the Park Board debated Swaine's numerous recommendations, including clearing underbrush, removing dead and dying trees, and experimental insecticide trials, public discussion of the issue was largely supportive. One cartoonist depicted the insects as a larger-than-life menace set to destroy Stanley Park (Figure 7). The *Vancouver Sun*, one of the most vocal opponents of human intrusions upon nature in Stanley Park during the electric streetcar and road construction debates, firmly supported the work of Swaine and his colleagues and urged the Park Board commissioners to heed their advice:

> We have no doubt whatever that it is the conscientious desire of the commissioners to do all they can to stop the spread of disease among the trees and keep this splendid forest as an unimpaired heritage for

[24] Ibid.

[25] Ibid.; George M. Cook, "'Spray, Spray, Spray!' Insecticides and the Making of Applied Entomology in Canada, 1871-1914," *Scientia Canadensis* 22-23, 51 (1998-99): 7-50. Cook argues that British Columbia did not play a significant role in the development of entomology in Canada, but the case of Stanley Park demonstrates that the province played a very prominent role in the early experiments in forest entomology, particularly with regard to the application of chemical pesticides by pumps and aerial spraying. Cook's oversight is likely due to the fact that his research (and most research on entomology in Canada) is limited to horticultural and agricultural applications for pesticide use.

> future generations. But the policy they adopt in endeavouring to accomplish this should be dictated by knowledge, should, in fact, be framed on the advice of entomologists of assured standing and not at the haphazard suggestion of members of the board or of casual visitors to the city.[26]

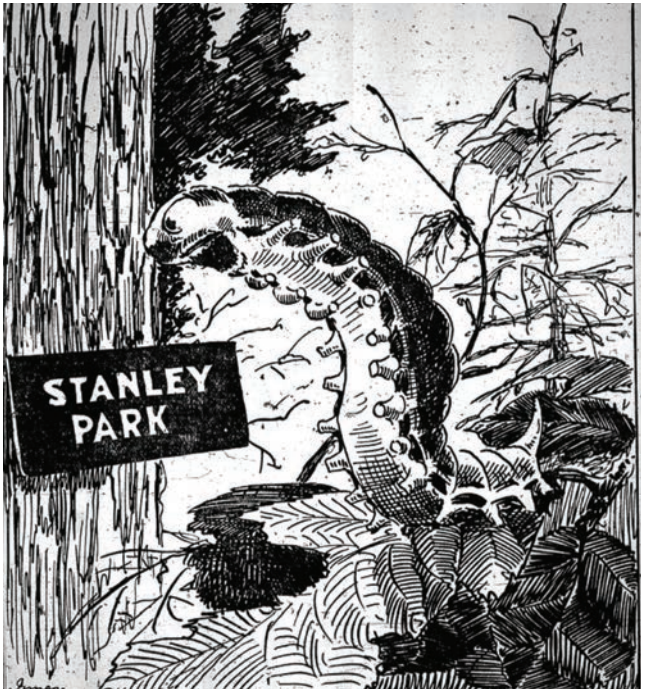

Figure 7: Cartoon from 1914 depicting the first insect outbreak studied by the entomological division of the Department of Agriculture. The artist's representation reveals popular perceptions of the insect threat. *Source*: *Vancouver Sun*, 24 March 1914, 1.

The editorial reveals a common faith in the efficacy of science to combat autonomous natural forces that threatened to change the "unimpaired heritage" of Stanley Park.[27]

J.B. Mitchell, from the provincial forestry branch, was sceptical about Swaine's recommendations for the use of insecticides. He did not see the use of insecticides as a practical solution in the long term because "spraying is a slow and costly operation, which, while quite practicable in the case of ornamental and isolated trees, would be unfeasible for a large area such as Stanley Park, where the crowns of the larger trees only begin at a point higher than the strongest pump could throw a spray."[28] Instead, Mitchell favoured other methods to control the insect problem in Stanley Park. These included "the judicious removal of a certain proportion of the underbrush," which he believed would "have all the desired effects, without giving rise to the sudden change in ground cover which might be injurious to the other trees." Furthermore, he endorsed the continuous removal of dead and dying

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[26] *Vancouver Sun*, 17 February 1914, 6.

[27] Ibid., 9 April 1914, 2.

[28] CVA, Board of Parks and Recreation Fonds, Correspondence, Forestry – Stanley Park, October 1913 – September 1919, 48-c-5, file 2, "Copies of reports made by Dominion Entomological Department on conditions of trees in Stanley Park, insect pests, etc."

trees. Finally, in order to improve the aesthetic appearance of the park, Mitchell tentatively lent support to the topping of dead cedar trees.[29]

Mitchell was not alone in his criticism of the insecticide experiments in Stanley Park. The Park Board consulted members of the US Forest Service and the game warden of Oregon, both of whom concluded that "spraying would be ineffective and practically impossible." Using the emerging language of ecology, they suggested that "the balance of Nature must be restored by encouragement of the life of the insectivorous birds." According to their argument, crows had driven off smaller birds, which prey upon the problem insects. By placing a large number of birdhouses throughout the park, the board could encourage more favourable bird species. This solution represented yet another hypothesis regarding the cause of the infestations. The debate demonstrated the limits of forestry and entomological sciences in the early twentieth century, when they were only beginning to understand the complex biology of Northwest Coast forests.

Swaine's solutions sought to address the problem directly by eradicating the insects with chemical insecticides and by reducing the amount of debris on the forest floor, which Swaine believed provided breeding grounds for insects. Rather than seek the underlying cause, he sought to construct an insect-resistant forest through fir reforestation. In the absence of scientific consensus on the cause of the outbreak, the Park Board deferred to federal authorities and moved ahead with Swaine's experimentation plans.[30]

In March 1914, the Park Board permitted Swaine's assistant, R.C. Treherne, to conduct a series of experiments with chemical insecticides in Stanley Park. Using both whale oil soap and kerosene emulsion (two commonly used chemical insecticides at the time), Treherne sprayed twenty-three trees (spruce and hemlock) in the park near Coal Harbour. From the provincial fruit inspector he borrowed a sprayer that could reach heights of fifty feet. Swaine insisted that "the work that we are having Mr. Treherne do in Stanley Park this spring is purely *experimental*," and that, although he could identify the insect threat and remedy, "there are many details to be learned about a problem so extensive and unique as that in Stanley Park."[31]

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[29] Ibid.

[30] CVA, Board of Parks and Recreation Fonds, Correspondence, Entomological Dept. re insect pests, 48-c-5, file 3.

[31] Ibid.; CVA, Board of Parks and Recreation Fonds, Correspondence, Entomological Department, Regarding Insect Pests, 1913-1915, 48-c-5, file 3, Letter from J.M. Swaine, Assistant Entomologist for Forest Insects, Division of Entomology, Central Experimental Farm, to W.S. Rawlings, Superintendent of Parks, 19 March 1914.

By July, Swaine re-examined the park and was more convinced of the effectiveness of his insecticides. Their measures against the gall aphids, he claimed, "have satisfied us that this pest can be effectively controlled by spraying with contact sprays." Regarding the hemlock looper, "the caterpillars are readily controlled by spraying." He also identified an emerging threat from the spruce bark-beetle (*Dendroctonus obesus*), which could be controlled by "felling and marking the infested trees." In addition to pressing the Park Board towards the regular application of insecticides in Stanley Park, Swaine was adamant that the hemlock trees on the peninsula should be completely removed and replaced with Douglas fir. He argued that "Douglas Fir is the one healthy timber tree of this region. If this were done, the Park would be preserved and would be eventually more beautiful than it has been since the big firs were cut years ago." As he reiterated more explicitly a few months later in the *Agricultural Gazette*: "It should be made a settled policy to replace the hemlock, as it gradually dies, by the much more healthy Douglas Fir." Swaine advocated total reforestation as a means of resisting future insect infestations and thus improving the landscape beauty of Stanley Park. His scientific recommendations were, in essence, a form of landscape art.[32]

The work of removing trees from Stanley Park did not, of course, occur without some controversy. In 1915, the park superintendent attempted to follow Swaine's recommendations to remove dead and dying trees from the park and to clear portions of the underbrush. He reported that the insect infestation had spread from Pipeline Road towards Prospect Point on a tract of thirteen acres where he found very few remaining live trees. The board hired contractors to remove the dead trees but, in the process, raised alarms at the *Vancouver Sun*, which accused it of "vandalism" and of attempting to "civilize" the park. "Stanley Park is famous the world over as a forest, within the confines of a city," the newspaper contended, a place "where nature has been allowed to go about her business." Some feared that "weeding" the peninsula would transform Stanley Park into an "artificial park." Although earlier public commentary regarding the insect infestation supported the work of the Dominion entomologists, the optics of loggers in Stanley Park seemed to contradict popular expectations that the forest was "virginal" and "unimpaired."[33]

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[32] CVA, Board of Parks and Recreation Fonds, Correspondence, Forestry - Stanley Park, October 1913 – September 1919, 48-C-5, file 2, "Report on Condition of Stanley Park, July 1914."

[33] CVA, Board of Parks and Recreation Fonds, Correspondence, 49-B-5, file 2, "Forestry in Stanley Park: Extracts from Superintendent's Annual Reports"; *Vancouver Sun*, 9 February 1915, 1-2.

By April 1915, the board allowed R. Neil Chrystal (another of Swaine's assistants) to construct a small laboratory in the park to conduct further experiments on the forest. Active forest management in Stanley Park continued along the pattern outlined by James Swaine from 1916 to 1919, becoming, according to the park superintendent, "one of the most important branches of the work in Stanley Park." Annual Park Board expenditures on forestry work grew from $487 in 1916 to $2,801 in 1919. Park authorities continued to remove dozens of infected trees throughout the peninsula, replacing them with Douglas fir, according to Swaine's designs. The park superintendent expressed satisfaction with the policy in 1917, claiming that "a big improvement in the appearance of the park can be noted from the driveway as a result of this work." In 1918, the entire area behind the playground at Second Beach, "one of the most unsightly spots in the park," was logged and burned. Contractors removed nearly all the spruce and hemlock trees from the Big Hill area. Loggers cut new trails in Stanley Park to reach deeper areas of the peninsula. In addition to removing dead and dying trees, the Park Board also encouraged the removal of red alder trees, a deciduous succession species that tends to occupy areas of disturbance in Northwest Coast forests. The superintendent argued that "their removal gives greater opportunity for the growth of conifers which should be encouraged." The board's forestry work during this period transformed Stanley Park into a more homogenous forest, where conifers (especially Douglas fir) dominated the landscape. However, in spite of these forest management measures, the insect problem persisted, and a new outbreak of hemlock loopers took hold.[34]

POISONS FROM THE SKY

In 1919, Park Superintendent W.S. Rawlings reported that large portions of Stanley Park were, once again, infested with hemlock loopers. He believed that the problem was out of his control because the Park Board did not have the necessary equipment to launch another insecticide campaign. Rawlings pleaded with the park commissioners, claiming that "a suitable pump for spraying is very necessary." Nonetheless, facing yet another insect outbreak, the Park Board retained its belief that this nuisance could be controlled and nature improved. The board turned,

[34] CVA, Board of Parks and Recreation Fonds, Correspondence, 49-B-5, file 2, "Forestry in Stanley Park: Extracts from Superintendent's Annual Reports."

once again, to the scientific experts of the Dominion entomology division.[35]

Swaine returned to Vancouver in the summer of 1919 to conduct another survey of the forest conditions in Stanley Park. He praised the board for its strict adherence to his recommended control measures over the past three years, pronouncing that, "if no control work had been done in the meantime, Stanley Park would have been an eyesore today." He did, however, note the poor condition of many of the hemlock trees throughout the peninsula. "The hemlock," he argued, continuing his earlier campaign against this tree species, "is not thrifty under park conditions and it is the least desirable species for this purpose." Once again he urged the Park Board to "make Douglas fir and cedar the basis of reproduction, so that eventually Stanley Park will be covered chiefly by these two species." He reiterated the aesthetic foundation of his policy of removing dead trees, stating that they "detract from the beauty of the park and are eventually a constant menace from falling branches and tops." Swaine continued to promote the growth of Douglas fir to produce a particular landscape effect.[36]

Dominion entomologists George Hopping and R.C. Treherne joined park authorities to study the insect problem, and Superintendent Rawlings forged ahead with Swaine's plans to remake Stanley Park. Rawlings kept in contact with Swaine and provided updates on the progress of his work:

> The whole of the dead spruce and hemlock, numbering several hundred trees, will have, by the end of this week been entirely cut down and burnt up, in the entire area surrounding Beaver Lake, and you will readily understand the vast improvement this has affected in the appearance of this district, which heretofore has been one of the big blots in the forest area. A very fine stand of healthy trees now takes the place of what was a veritable cemetery of dead timber.[37]

He tapped into the resources of the city's relief department to recruit the labour he required to remove the dead and dying timber from Stanley Park. The work was slow, he admitted, but "only by systematic plodding in dealing with a specific area, and completing it, can the ambition of

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35 Ibid.

36 CVA, Board of Parks and Recreation Fonds, Correspondence, 48-C-5, file 3, "Report on Present Condition of Tree Growth in Stanley Park, Vancouver, August 1919."

37 CVA, Board of Parks and Recreation Fonds, Correspondence, 49-B-5, file 6, Letter from the Superintendent of Parks to J.M. Swaine, Chief, Division of Forest Insects, Entomological Branch, Department of Agriculture, Ottawa, 5 July 1921.

a natural park of healthy trees and growths be realized." In Rawlings' opinion, there was no contradiction in expending an enormous amount of human labour to produce a "natural park"; he was improving the visual landscape of Stanley Park and, thus, improving nature. He continued to clear portions of the park, occasionally used insecticides to control certain insect outbreaks, and proceeded to plant more Douglas fir.[38] In 1929, Hopping reported a new outbreak of hemlock looper and tip moth (*Rhyncionia frustrata*). He convinced the Park Board to broaden its use of insecticides in a very dramatic fashion: the board hired an airplane to dust insecticide over Stanley Park. Superintendent Rawlings reported that "extensive spraying operations by aeroplane were carried out on June 23rd, when eight tons of lead arsenic were used to dust the entire park, the cost being $6,750." With little public debate or scrutiny the Park Board approved this measure, allowing Hopping to dust Stanley Park with this powerful poison.[39]

Public support for aerial dusting measures was even stronger than were earlier endorsements of the application of expert knowledge to forest management in Stanley Park. In fact, one editorial, urging the board to act quickly, drew the following analogy: "Nero, fiddling while Rome burned, has been held up through the ages as a horrible example of callous indifference and fatuitous indolence. But fiddling while Rome burns is not essentially different from arguing while the looper eats up Stanley Park."[40] The aerial dusting campaign demonstrated the persuasive power of expert scientists in determining the Park Board's forestry policies. Public officials, and the public at large, were confident that specialized knowledge could rid the park of the undesirable insect "invaders." Nobody raised concerns over the possible environmental health effects of using lead arsenic, a proven deadly poison.[41] Park Board chairman Jonathan Rogers soon declared victory in the insecticide campaign:

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[38] CVA, Board of Parks and Recreation Fonds, Annual Reports, 1921, PDS 12.

[39] Ibid., 1930. PDS 12.

[40] *Vancouver Daily Province*, 24 April 1930, 6.

[41] *Vancouver Sun*, 24 March 1914, 1. In North America, arsenic-based insecticides were used extensively for agriculture and horticulture in the late nineteenth and early twentieth centuries, but at the turn of the century public health officials in the United States and Europe became aware of the long-term ill health effects of exposure to arsenic. Britain applied strict limitations to the use of such insecticides beginning in 1903, following a public health crisis related to traces of the poison in the food supply. Canada and the United States resisted efforts to legislate similar restrictions. By 1930, while lead arsenate was still widely used, scientific knowledge of its adverse health effects was well known. See James C. Whorton, "Insecticide Spray Residues and Public Health, 1865-1938," *Bulletin of the History of Medicine* 45, 3 (1971): 219-41.

> The authorities at Ottawa advised us that unless we [had] sprayed Stanley Park for Hemlock Looper last Spring, there would [have been] a very serious loss in that beautiful park … the Park Commissioners could not do anything else but have it sprayed even though they had to curtail their expenditure in other directions. The spray was very successful having been done by aeroplane and at least a ninety percent kill being recorded.[42]

Aerial insecticide spraying of Stanley Park continued as a standard Park Board procedure into the 1960s.[43]

Following the first use of airplanes to dust the park with insecticide, in 1931 the Park Board organized a conference of top forestry specialists in British Columbia to review their forest management strategies. James D. McCormack, A.E. Munn, H.R. Christie, and G.A. Peck met with the park superintendent to review past forest reports and to conduct a brief survey of the forest conditions of Stanley Park. According to their report, they examined all aspects of forest management, including "insect control measures, diseased and dead tree removals, tree topping, underbrushing and reforestation." The group made a number of policy recommendations that echoed earlier reports by James Swaine and the other Dominion entomologists. They endorsed the continuous clearance of dead and dying trees and lent support to the Douglas fir reforestation efforts. "From the scenic standpoint," they argued, there can be no question about the value of removing "dead and diseased trees, alder, etc. from the fringes of the main driveways and trails." They cited this policy as one of the principal purposes of such forestry work – to improve the visual effect of the landscape for visitors viewing nature from the park roads and trails. The delegates sanctioned tree topping – the evidence of which can still be seen in Stanley Park – because they believed it "will not only remove one of the outstanding eyesores of the park, but will remove a real menace from falling limbs and perhaps the whole tree." Their report consolidated decades of experimental park forestry work and confirmed what had by 1931 become an implicit assumption about park management: "modern forestry methods must be applied" in order to ensure the preservation of Stanley Park. The Park Board adopted all of the policy recommendations to come out of this conference and thus formalized the work of the previous two decades. With active

[42] CVA, Board of Parks and Public Recreation, Board Minutes, MCR 47-5, 14 January 1931.
[43] CVA, Board of Parks and Recreation Fonds, Annual Reports, 1958-61, PDS 12.

forest management, one report stated, "the future of Stanley Park as a beautiful City park forest area will be assured."[44]

CONCLUSION

From the first efforts to control fire in 1888 to the adoption of a formal forest management policy in 1931, the case of Stanley Park in the late nineteenth and early twentieth centuries reveals a modernist approach to the creation of protected park space in British Columbia. Park advocates and officials had faith in humanity's ability, through scientific expertise, to control non-human nature. Despite the increasingly interventionist role of foresters and scientists, even Vancouver's social elite, who held a romantic view of urban park space, continued to see Stanley Park as a

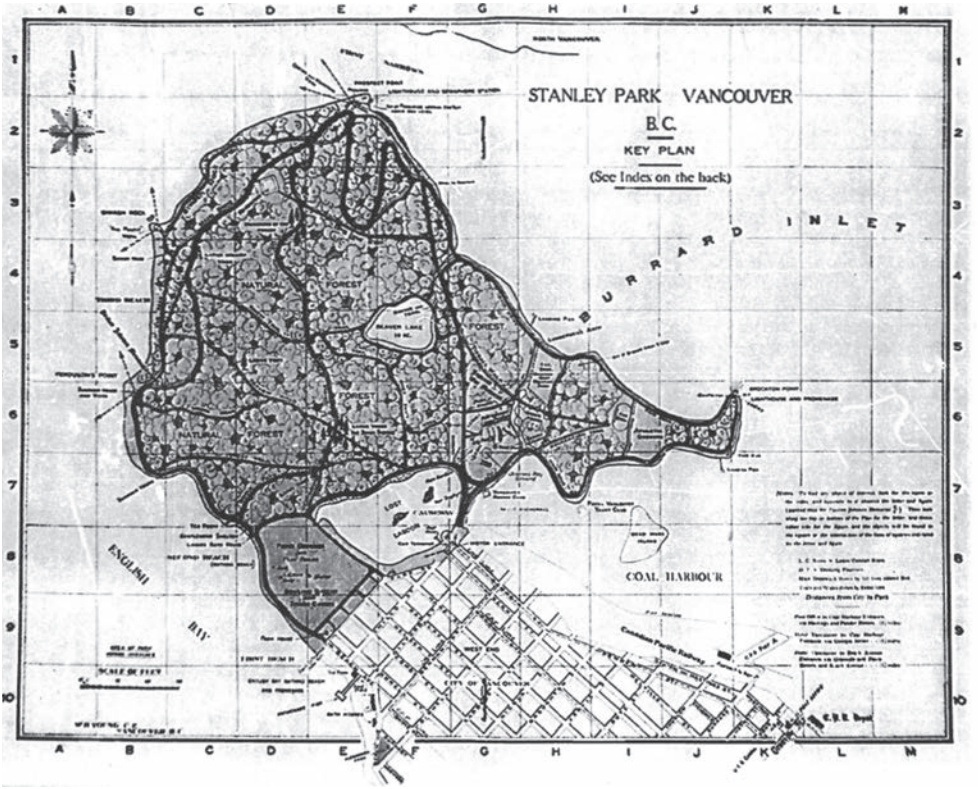

Figure 8: Standard tourist map of Stanley Park from 1923, with forest marked as "Natural Forest." *Source*: CVA Pamphlets Collection, 1923-23.

[44] CVA, Major Matthews Collection, Topical and Categorical Files, Stanley Park, Trees, AM0054.013.04370; CVA, Board of Parks and Public Recreation, Board Minutes, MCR 47-5.

natural forest. In its 1923 guide to Stanley Park, the Park Board proudly declared that the greater portion of the nearly one-thousand-acre tract of land is in "the condition of natural forest" (Figure 8). From this perspective there was no contradiction between the natural and the scientifically improved forest because board members considered forestry and entomological sciences to be tools only for the improvement of nature's undesirable attributes. By accounting for dynamic non-human forces such as insects and fire, this case study illustrates that early park creation did not simply involve the preservation of a patch of forest from the ecological destruction of urbanization and industrialization but also involved an active process of human resistance to an unpredictable and irrational nature. James Swaine and his colleagues promised to bring new order to the untidy forest by applying the latest techniques in insecticide spraying and forest management. His prescriptions for Stanley Park, he believed, would create a more stable landscape composition.[45]

Concern for the visual appearance of the landscape drove the developing forest management program for Stanley Park. The Dominion entomologists' recommendations were intended to improve the health of the forest in the interest of enhancing the aesthetics of the park landscape. Popular conceptions of idealized nature on the Northwest Coast informed their aesthetic vision but contrasted sharply with the untidy and random natural forces – including fire and insects – that changed the forest. The entomologists called for the complete replacement of hemlock, spruce, and alder tree species with Douglas fir because they believed fir to be a more durable and pleasant-looking tree species for park purposes. They also recommended that the dead tops of some trees be removed to improve the visual effect. This transformed the skyline of the park, which once had appeared ragged and irregular, into a more manicured landscape. This kind of judicious forestry work was intended to compensate for the shortcomings of the peninsula's natural aesthetics, which failed to meet human expectations for an ideal "virgin" forest. In this way, the Park Board used forestry and entomological sciences as a form of landscape art to maintain the appearance of undisturbed wilderness.[46]

Even in a physical environment that seemed so natural, and thus outside the purview of human control, human labour and intervention

[45] CVA, Pamphlets Collection, 1923-23, "Standard Tourists' Guide to Stanley Park, Vancouver, BC" (1923).

[46] CVA, Board of Parks and Recreation Fonds, Correspondence, Stanley Park, 1920-21, 49-B-5, files 2-6, "Forestry in Stanley Park: Extracts from Superintendent's Annual Reports"; CVA, Board of Parks and Public Recreation, Board Minutes, MCR 47-4, 10 November 1920.

had deeply influenced the construction of the forest. Through the expertise of forestry and entomological scientists, the Park Board sought to improve Stanley Park by eliminating non-human natural forces that altered the appearance of the "primeval" woods. Science became an instrument of landscape art designed to balance the deficit between popular cultural expectations and the ecology of the forest. These popular perceptions of idealized nature, held by people like F.C. Wade, left no room for the variability and unpredictability of a Northwest Coast forest. However, Vancouver's elite did envision a prominent role for humans, who were to correct these shortcomings in order to produce a more predictable, stable, and, therefore, more aesthetically satisfying park.

Forestry and entomology experts significantly influenced policy for the management of Stanley Park's forest, facilitating numerous transformations to the park's ecology. Various policies to prune and perfect the image of the trees turned the park into a veritable forest garden. However, a cast of non-human actors also played their parts in reshaping forestry policy. Fire, loopers, aphids, and fungi interacted with human efforts to alter Stanley Park's landscape, demonstrating that park design was not simply the product of competing political and social factors but was also an example of social and biological interdependence. While changing human ideas about wilderness and landscape were crucial to the transformation of Stanley Park, they operated in relation to an autonomous natural world.

The early history of forest management in Stanley Park inverts many of our contemporary assumptions about the preservation of natural spaces. Instead of reducing their role in nature, humans intervened in increasingly more intrusive ways to improve nature and, in doing so, altered the landscape to conform to popular expectations of an idealized wilderness. This is precisely what Oppenheimer's speech suggested: a union of art and nature. Dead and dying trees had to be removed; splintered tree tops had to be pruned; underbrush had to be thinned; deciduous trees, like red alder, had no place in an idealized Northwest Coast coniferous forest. Even today, Vancouverites cannot imagine Stanley Park as anything other than a dense cluster of tall conifers. Public reaction to the violent windstorms of 2006-07, which recently ripped up thousands of trees in the park, reveals that Vancouverites still expect this peninsula to be flush with evergreens. In order to meet those expectations, the Park Board will likely seek to improve the forest of Stanley Park in order to compensate for its uncooperative and volatile nature.