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“A Forestry Program that Cannot be Equalled in Canada”
Kimberly-Clark’s Extraordinary Silvicultural Project in Northern Ontario, 1928-1976

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Résumé de l'article

Cet article présente l’histoire du programme exceptionnel de reboisement effectué à Kapuskasing par Kimberly Clark après la Seconde Guerre mondiale. La plupart des historiens ont soutenu que l’industrie forestière ne s’intéressait qu’aux profits et prêtait peu d’attention à la gestion des forêts. Toutefois, Kimberly Clark a réalisé ce projet pour plusieurs raisons, y compris une culture d’entreprise éclairée, mais surtout parce qu’il avait assuré la tenure du bois. Nous soutiendrons que les entreprises étrangères ne sont pas nécessairement un danger pour les forêts ontariennes, et soulignerons les facteurs qui pourraient jouer un rôle essentiel dans la résolution des problèmes environnementaux auxquels nous sommes confrontés aujourd’hui.

"A Forestry Program that Cannot be Equalled in Canada"

Kimberly-Clark's Extraordinary Silvicultural Project in Northern Ontario, 1928-1976*

by Mark Kuhlberg

In a nation as wooded as Canada, it is sadly ironic that we know so little about our forest history, and the snippet that we do know is generally filled with misunderstandings and misconceptions. Although much of our country's economic and social backbone was built of forest products, authors have shown surprisingly little interest in writing about these subjects. On the few occasions when they have delved into it, they have been practically universal in denouncing the industry's behaviour, particularly in terms of how it treated the forests upon which it depended. These authors argue that, for the longest time, industry and government worked in concert to avoid adopting meaningful forest management measures in an effort to maximize profits and economic development. Tellers of this tale rank the pulp and paper industry as the worst offender in this regard, giving nary a thought to sustainability. The motor that turned all these cogs in the forest industry factories, so the story goes, was capitalism and the corporate greed it spawned. Jamie Swift captures the pith of this interpretation when he declares that "industry... has always taken the attitude of cut and get

* This article is dedicated to the late Kent Virgo (1949-2004). He graduated with his Bachelor of Science in Forestry in 1971 and almost immediately began practising his profession on northern Ontario's Clay Belt. After roughly a decade with the Ministry of Natural Resources, he was hired by Spruce Falls Power and Paper Company in Kapuskasing in 1981 (it would be acquired by Tembec in 1991) and spent the rest of his career striving to improve its forest management program. He, and Paul Krabbe, who also worked with Tembec, granted me access to the firm's archival documents back in the mid-1990s. Paul was particularly kind in terms of facilitating my work at the mill, and the materials I reviewed served as the evidentiary basis for this article. I am so grateful to the two of them for all that they did for me. In addition, I would like to thank several experts who reviewed earlier versions of this article, namely Ken Armson, Herb Emery, Malcolm "Mac" Squires and Bill Thornton. Julie Latimer, museum curator extraordinaire in Kapuskasing, and Kevin Delguidice, Planning Superintendent with RYAM, which currently owns the mill in Kapuskasing, were most obliging in helping me obtain the images that accompany this article. Finally, over the years the staff at the Archives of Ontario, University of Toronto Archives, the Iroquois Falls Archives of the former Abitibi-Consolidated Inc., and the late Marc Dube at the former St Marys Paper mill in Sault Ste Marie, provided invaluable assistance by facilitating my research.

Abstract

This article presents the story of the extraordinary reforestation program that was carried out in Kapuskasing by Kimberly Clark after the Second World War. Most historians have argued that the forest industry was only interested in profits and paid little attention to forest management. Kimberley Clark, however, carried out this project for a number of reasons, including its enlightened corporate culture and, most importantly, because it had secured tenure to its timber. The article highlights how foreign firms are not necessarily a danger to Ontario's forests and underscores those factors that could potentially play a crucial role in tackling the environmental issues we face today.

Résumé: *Cet article présente l'histoire du programme exceptionnel de reboisement effectué à Kapuskasing par Kimberly Clark après la Seconde Guerre mondiale. La plupart des historiens ont soutenu que l'industrie forestière ne s'intéressait qu'aux profits et prêtait peu d'attention à la gestion des forêts. Toutefois, Kimberly Clark a réalisé ce projet pour plusieurs raisons, y compris une culture d'entreprise éclairée, mais surtout parce qu'il avait assuré la tenure du bois. Nous soutiendrons que les entreprises étrangères ne sont pas nécessairement un danger pour les forêts ontariennes, et soulignerons les facteurs qui pourraient jouer un rôle essentiel dans la résolution des problèmes environnementaux auxquels nous sommes confrontés aujourd'hui.*

out. To industry, the wood is simply a supply factor for a distant mill, the corporate profit centre... The future of the forest eight or ten decades down the line simply isn't part of this equation."[1]

Considering Ontario's settlement pattern, it is understandable why this standing interpretation of our forest history remained unchallenged for so long. The province has long been the most urbanized in Canada and the overwhelming majority of its residents live in its southern reaches, far from commercial forestry activities. This isolation tends to cultivate a highly romanticized and unrealistic view of the woods among city-dwellers, whose impression of forestry activities is often created by organizations whose very raison d'être is to battle the loggers and curtail their activities. If the urbanite ever happens to come across a tract of forest that has been harvested, it is frequently experienced ephemerally from the seat of a car speeding along a highway or a jet flying thousands of feet above the ground, perches from which

[1] A.R.M. Lower, *The North American Assault on the Canadian Forest* (Toronto: Ryerson Press, 1938); H.V. Nelles, *The Politics of Development* (Hamden, Connecticut: Archon Book, 1974); R.P. Gillis and T.R. Roach, *Lost Initiatives: Canada's Forest Industries, Forest Policy and Forest Conservation* (New York: Greenwich Press, 1986); D. Mackay, *Heritage Lost: The Crisis in Canada's Forests* (Toronto: Macmillan of Canada Limited, 1985). J. Swift, *Cut and Run: The Assault on Canada's Forests* (Toronto: Between the Lines, 1983), passim and the citation is from 23; R.A. Rajala, *Clearcutting the Pacific Rain Forest: Production, Science and Regulation* (Vancouver: UBC Press, 1998).

the cutover is typically seen as a blight upon the earth.

While there is no disputing that forestry practices have improved dramatically across Canada since the Second World War, telling the story about the forest management program that Kimberly-Clark (KC) conducted in northern Ontario from 1928 until 1976 can help explain much about the dynamics that were at work in our woodlands during these years.[2] KC, through its subsidiary, Spruce Falls Power and Paper Company, owned and operated a large pulp and paper enterprise in Kapuskasing, and it initiated and paid for a comprehensive suite of silvicultural activities (silviculture is the science of raising tree crops). It did so at a time when the Ontario government, which owned nearly all the forests upon which Spruce Falls depended, did practically nothing to manage them.

Recounting this story from the last century is timely because it sheds light on several issues that are prevalent in our contemporary world. KC had been established in 1872 in Neenah, Wisconsin, and by the time it began building its enterprise in Kapuskasing after the First World War, it was well on its way to becoming a behemoth in the American pulp and paper industry. As a result, KC's sustained and significant investment in practices such as growing seedlings and planting them in the remote woods of northern Ontario undermines the view that corporations are the enemy of sound forest stewardship. Similarly, the firm's conduct calls into question the assumption that only domestic firms can be trusted to operate as responsible guardians of the environment in general and woodlands in particular. Furthermore, KC infused its silvicultural work with a strong dose of ecological sensitivity, a fact that should help correct one of the most prominent myths about industrial forestry.

Ultimately several factors explain KC's behaviour. Foremost among them was the security of tenure that Spruce Falls enjoyed to the timberlands it leased from the government. It stood alone in this regard among all the major pulp and paper makers in Ontario even though they had long sought perpetual and practically irrevocable access to a sufficiently large tract of timberlands both to support their mills' operations and to make it worthwhile to re-invest profits in forestry measures. As a veteran timber operator succinctly put it in the mid-1940s, "nobody wants to go farming unless they can harvest their crop."[3] Second, Spruce

[2] Only a handful of authors mention KC's mill project in Kapuskasing and even fewer note its forestry program: S.E. Tifft et al., *The Trust: The Private and Powerful Family Behind the New York Times* (New York: Little, Brown and Co., 1999), 140-41, 157, 320, 329 and 359; Thomas Heinrich and Bob Batchelor, *Kotex, Kleenex, Huggies: Kimberly-Clark and the Consumer Revolution in American Business* (Columbus, OH: Ohio State University Press, 2004); Mackay, *Heritage Lost,* 120-21; K.A. Armson et al., "History of Reforestation in Ontario," in R.G. Wagner and S.J. Colombo, *Regenerating the Canadian Forest: Principles and Practice for Ontario* (Markham, ON: Fitzhenry & Whiteside Limited, 2001), 11.

[3] Archives of Ontario [AO], RG18-125, Box 3, File—Public Hearings held... 19 November - 3 December 1946, [hereafter all archival references will be referenced as fond, box, file], 17.

Falls benefited from KC's enlightened corporate culture, which was built on an unrivalled commitment to research and development in all realms of its activities.[4] Third, Spruce Falls' woodlands were overseen by a coterie of dynamic foresters who won management over to their cause. The final reason is related to the first, namely the firm's constructive and favourable relationship with the landowner (i.e., the Ontario government). Ultimately, Spruce Falls carried out its extraordinary forestry program during this period for many reasons, and explaining them both enhances our understanding of our forest history and provides valuable insight into the preconditions that could play a crucial role in tackling the daunting environmental issues we face today.

The setting for the story is northern Ontario's Great Clay Belt. It is a relatively flat, amoeba-shaped swath of land consisting mostly of heavy clay soils, and it stretches across northern Ontario and Quebec above the height of land for a few hundred kilometres in each province. The terrain's poor drainage results in it being dominated by extensive swamps between the large rivers that bisect the area.[5]

The Boreal Forest Region gives the clay belt its defining flora, and fire has always played the central role in creating this landscape. Long before humans began decrying the forest companies for allegedly aiming to re-establish monoculture tree crops in cutovers, Mother Nature had perfected this practice. The region's harsh conditions limited the types of trees that could survive there to about a half dozen species, and all of them have developed strategies for both surviving and reproducing after the periodic fires (i.e. depending upon local conditions, they occur on average every 60 to 135 years). On the clay belt, black spruce was unrivalled at doing so, and it was thus predominant. Intense fires killed the seeds and roots of competing plants in the humus (i.e., the thick mat of organic matter that carpeted the forest floor) and also reduced it to a fine textured material in close contact with the underlying soil (i.e., it remained moist). Fire thus destroyed all the existing and potential growth that would otherwise compete with spruce trees and created an ideal, untrammelled seedbed for their offspring. Their cones grew high up near their crowns and were serotinous; they needed fire's heat to open them. The pre-industrial boreal forest was thus dominated by thick swaths of black spruce trees of the same age that stretched as far as the eye could see. When less intense fires burned in the clay belt's boreal forest but did not destroy the species that competed with spruce, the result was mixed stands of conifers and deciduous trees on the region's better drained, up-

[4] Heinrich, *Kotex,* passim.

[5] Spruce Falls Inc. Archives [SFIA], 1930-1980—Miscellaneous Forestry Reports [1930-1980], "[draft] Management Plan for the Ontario Limits and Freehold of the Spruce Falls Power and Paper Company, Limited [SFPP]," 1947.

land sites.[6]

Although the town of Kapuskasing has a relatively short history, humans have been in the area for at least several hundred years. Long before the arrival of the Euro-Canadians, the Anishinaabe fished in, trapped and camped along, and travelled on the Kapuskasing River while living their semi-sedentary existence. During the colonial period, Indigenous and non-Indigenous fur traders alike used the waterway to access northern posts. By the turn of the twentieth century, the Ontario government was portraying the Great Clay Belt as Canada's next breadbasket, and spent millions of dollars trying to draw settlers to the area. The construction of railways rendered the area far easier to access, and the National Transcontinental was built across the clay belt in the years before the First World War. The site at which it crossed the Kapuskasing River was originally named McPherson and re-christened Kapuskasing in 1917.[7]

Enlightened observers quickly realized that the only crop that would sustain a prosperous local community would be arboreal in nature. In the early 1900s, eastern Canada emerged as the ideal location in North America in which to make newsprint because the region was endowed with prodigious supplies of the raw materials needed to make it, namely black spruce, clean water, and waterfalls whose hydraulic potential could be tapped. In fact, soon after the railways opened Ontario's Great Clay Belt to development, two mills were built just east of Kapuskasing. Over the course of 1916-19, a consortium of Americans endeavoured to build a pulp and paper mill in "Kap," but the Ontario government's decision to give it tenuous tenure to the local pulpwood and waterpower resources delayed its project.[8]

Kimberly-Clark Corporation (KC) acquired the pulpwood and hydro power contracts in 1919; almost immediately it became the Ontario government's most favoured operating pulp and paper maker, and arguably for good reason. KC was one of the largest and most progressive firms in the American industry. During the Great War, for example, it had developed a process for making "cellucotton" from spruce wood pulp as a substitute for cotton-based surgical dressings. When the conflict ended, it converted cellucotton into a line of new consumer nondurables—such as feminine napkins—that were far more profitable than traditional pulp and paper products. In dire need of acquiring a dependable, long-term supply of high quality pulp, KC eagerly

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[6] *Ibid*.; S.J. Pyne, *Awful Splendour: A Fire History of Canada* (Vancouver: UBC Press, 2007), 21-31; J. Beverly, and D.L. Martel, "Characterizing Extreme Fire and Weather Events in the Boreal Shield Ecozone of Ontario," *Agricultural and Forest Meteorology*, 133:1-4 (2005), 5-16.

[7] A.J. Ray, *Indians in the Fur Trade: Their Role as Trappers, Hunters, and Middlemen in the Lands Southwest of Hudson Bay, 1660-1870* (Toronto: UTP, 1974); SFIA, 1930-1980, E. Bonner, February 1965, "History of the Woodlands—Spruce Falls Power and Paper Company, Limited, Kapuskasing."

[8] M. Kuhlberg, *In the Power of the Government: The Rise and Fall of Newsprint in Ontario, 1894-1932* (Toronto: UTP, 2015), ch. 4.

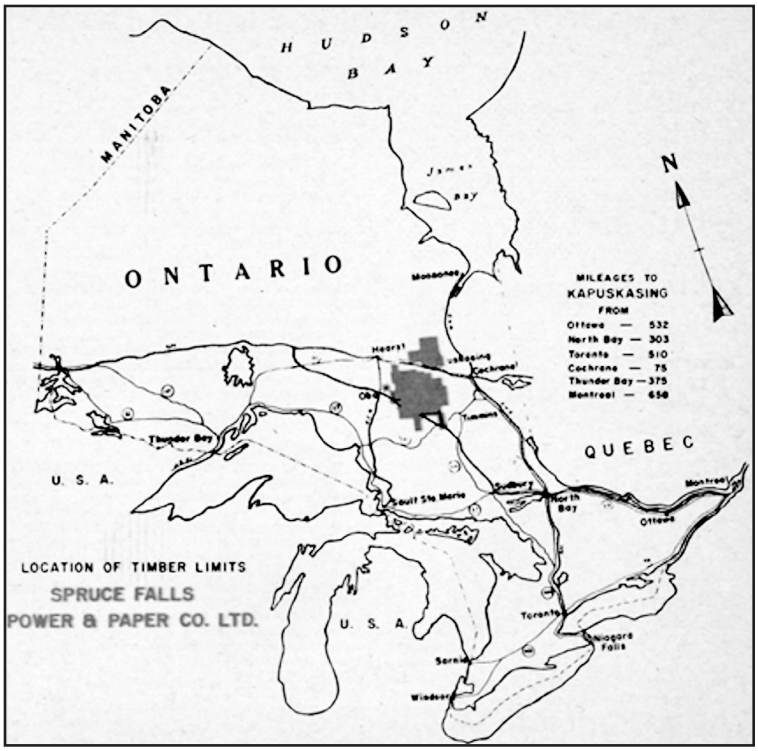

Image 1: Map of Spruce Falls Power and Paper Company's Timber Limits in Northeastern Ontario. (Spruce Falls Review, 1971 and Courtesy of Rayonier Advanced Materials, Kapuskasing).

embraced the chance to build a mill in Kapuskasing.[9] For its part, the Ontario government desperately needed a pulp and paper maker to construct a plant in Kapuskasing in order to create a market for the spruce timber that the settlers, whom the politicians had enticed to the area, cleared from their lots as they sought to eke out an existence in the hinterland. To facilitate this enterprise, the provincial government even agreed to pay for constructing the new community's infrastructure, a privilege the politicians did not afford either of the two other companies that built mills in the region during this period. Thereafter, the Ontario government was a full-fledged partner in this venture, which explains why the provincial politicians gave KC highly favourable leases in the early 1920s to the timber and hydraulic resources that it needed to support the 150-ton sulphite pulp mill the company built in Kap.[10]

Within short order, KC carried out a plan to expand its operations in Kapuskasing dramatically, and the Ontario government happily facilitated its designs. In 1926, *The New York Times* entered into a partnership with KC to build a massive new newsprint mill in the town and expand its existing pulp mill; they incorporated the Spruce Falls Power and Paper Company to carry out the venture.[11] To support the undertaking, over

[9] Heinrich, *Kotex,* ch. 2.

[10] Kuhlberg, *In the Power,* ch. 9.

[11] In 1920, KC had incorporated the Spruce Falls Company Limited, and transferred to it all the pulpwood and water power leases KC had acquired in Kapuskasing. After creating the new firm six years later, KC transferred all the capital stock in the Spruce Falls Company to the new enterprise.

the course of 1923-26 the Ontario government granted the company practically all the local supplies of pulpwood and water powers even though a neighbouring mill desperately needed them (Image 1).[12]

The Ontario government's treatment of Spruce Falls was nonpareil among its competitors in the province. At the time, industry officials desperately sought to acquire what they defined as a perpetual supply of pulpwood (i.e., 2,250,000 cords of pulpwood per every 100 tons of newsprint mill capacity) and secure tenure to their timber. Among all the operating mills in Ontario, the provincial government granted only Spruce Falls these generaous terms, and then some. Spruce Falls' contract to its pulpwood guaranteed it unlimited renewals of the agreement (other companies' agreements were limited to one 21-year term with either no, or one 21-year, renewal) and it included an extraordinary clause. The latter provided, as one insider reported in a telegram at the time, "for right by company to receive timber from government lands in event area now set aside insufficient... [Spruce Falls was] ... jubilant result negotiations and consider contract best ever issued by province." It most definitely was.[13]

These factors gave Spruce Falls an unshakeable legal foundation for its enterprise, and its owners' exceptional corporate outlook inclined them to capitalize fully on this opportunity. Already in the early 1900s, for instance, KC had begun purchasing woodlands in Michigan and Minnesota and applying the latest forestry principles to managing them. Similarly, the owners of *The Times* agreed to become a partner in the project in Kapuskasing on the premise that the plant's woodlands would be managed sustainably. It was thus predictable that, in mid-1928, just as Spruce Falls' new mill began shipping its first rolls of newsprint, the company established its forestry department.[14]

Critics could hardly have been faulted for dismissing this move as nothing but a public relations stunt, for that is largely how the Ontario government had approached forestry both prior to this time and for long after it. Since the late 1800s, a steady stream of public and private officials had called upon the provincial government to manage prudently the Crown woodlands that it owned, but for at least a few decades it had done virtually nothing in this regard. Beginning in the mid-1910s, however, it hired a sizeable corps of foresters, established a rudimentary forest fire fighting system, enacted laws that called for better forest management, and funded limited research into how to achieve this aim. But when the studies indicated that the most valuable commercial species were not regenerating after harvesting, the results were

[12] Heinrich, *Kotex,* chs. 2-3; Kuhlberg, *In the Power*, 238-47.

[13] *Ibid*.

[14] R. Spector, *Shared Values: A History of Kimberly-Clark* (Greenwich Publishing Group, Inc.: Lyme, Conn., 1997), 44; New York Public Library Archives, A.H. Sulzberger Papers, 247, 4, 29 September 1922, A.S. Ochs Jr. to A.S. Ochs Sr.

buried. All the while, the government kept reassuring the electorate that it was "the trustee and manager of the forests... owned by the people of Ontario" and was doing all it could to carry out its fiduciary duty in managing them.[15]

In sharp contrast, Spruce Falls' actions demonstrated its fervent commitment to acting as a prudent steward of the woodlands it leased from the government. From the outset, it decreed that professional foresters would direct its wood procurement program, and doing so demonstrated that it fully understood what silviculture entailed. Although the public then and now often associates it strictly with treeplanting, it encompasses all aspects of the woodlands operations, including planning and conducting the harvest. Furthermore, Spruce Falls poached two budding superstars from the Laurentide Paper Company in Quebec, Canada's leader in forest management, to head up its silvicultural program. Laurentide had launched a major reforestation program in the early 1900s, and by the early 1920s Robert "Bob" Lyons was running it and Gordon G. Cosens was his assistant. Lyons and Cosens also managed Laurentide's logging operations and, more importantly, they increased within short order its annual treeplant to over 3,000,000 seedlings. When Spruce Falls hired Lyons to be its first Woodlands Manager and Cosens his assistant in 1928, they represented the first foresters that KC had hired within its entire organization. They both went on to enjoy lengthy careers with the company and rise to near the top of KC's corporate ladder.[16]

Together, Lyons and Cosens faced a formidable, immediate task, namely providing Spruce Falls with enough pulpwood to supply its vast new industrial enterprise, but they also recognized the pressing need to lay the administrative and empirical foundation for their future forestry work. To realize the latter aim, they hired new field and office staff and directed them to abide by strict protocols for calculating, gathering and organizing data regarding all aspects—particularly the cost—of administering the woodlands.[17]

Lyons and Cosens were acutely aware that these facts and figures would play a critical political role in their campaign. Although KC and *The Times* were philosophically supportive of effectively managing their mill's woodlands, forestry in North America was still in its infancy. The foresters also realized that they would make mistakes and detractors would cast aspersions on investing

[15] M. Kuhlberg, *One Hundred Rings and Counting: Forestry Education and Forestry in Ontario and Canada, 1907-2007* (Toronto: UTP, 2009); September 1942, "The History and Status of Forestry in Ontario", *Canadian Geographical Journal*, 34, from which the citation is taken.

[16] University of Toronto Archives [UTA], A2004-0017/10, G.G. Cosens; *ibid*., /26, R.W. Lyons.

[17] SFIA, 1930-1980, 7 January 1965, E. Bonner to F.N. Wiley; *ibid*., SFPP, Woodlands Department, Annual Report of the Manager for the Year Ending 30th April, 1928; *ibid*., Statistics on SFPP Woodlands Department—Wood Cost Statements, 1928-1944; *ibid*., Miscellaneous Correspondence, 19 October 1931, R.W. Lyons, "Memo to Employees of the Woods Department;" *ibid*., Timber Limits, R.W. Phipps, "Doomsday Book, 1930-1931."

in this type of activity. Moreover, they knew that periodically, particularly when times got tough, senior management would look to pare costs. On these occasions, spending precious capital resources in the present on forestry measures that held no hope of producing returns for decades would seem to be an unaffordable luxury. As Lyons recounted in retrospect, he spent forty years "trying to 'sell' a forestry policy to company and government officials and to the general public. As in any sales effort, it is necessary to have basic data." Consequently, the company's foresters made research a central focus of their work.[18]

In doing so, however, they learned some disquieting news. The departure point for their investigations was compiling a comprehensive inventory of their woodlands, one that ultimately took a quarter century to complete. They also sought to determine what happened to the forest after it was harvested. Black spruce was preponderant in the local woodlands, and white spruce was also common, and the firm's mills required a diet that was composed almost entirely of these two species. Spruce Falls thus aimed to foster regeneration of them in its cutovers. And, after conducting several surveys, the company's foresters learned that the worst sites for growing trees in their forest—the low-lying flats and sphagnum moss-laden swamps—generally regenerated naturally to a thick crop of black spruce after cutting. This revelation was reassuring on the one hand because these wet, bog-like conditions were prevalent on their timber limits. On the other hand, however, trees did not enjoy robust growth on these sites.[19]

More worrisome was the deeply troubling discovery that came out of Spruce Falls' inaugural silvicultural studies. The best sites for growing trees on their woodlands were the well-drained, upland areas that were covered in either spruce or stands in which it was mixed with balsam fir, aspen and poplar. Once these sites were cut, however, they regenerated to these other species, ones that the mill could not or preferred not to process. Spruce Falls estimated that these upland tracts made up about one-third of its total forest area, and because they were the premier ones for growing trees, regenerating them to spruce was crucial to assuring the firm a long-term supply of high-quality fibre.[20]

Realizing this goal thus became paramount for the foresters at Spruce Falls, and initially they had good reason to believe it would be best to rely on Mother Nature to do so. For starters, Lyons had visited Sweden shortly after joining Spruce Falls and had learned that this eminent forestry nation relied upon nat-

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[18] UTA, A2004-0017/26, R.W. Lyons, 6 August 1954, R.W. Lyons to J.B. Sisam.

[19] In addition to the sources listed in endnote 17, see SFIA, Regeneration Studies & Surveys [Regeneration], G.W. Phipps, "Growth and Yield Plots—Season 1930-1931;" *ibid*., History of Spruce Falls [History], 29 January 1969, R.H. Armstrong, "Silviculture From an Industrial Forester's Viewpoint."

[20] *Ibid*., Regeneration, "SFPP: Report on Regeneration Studies, May 1938."

ural regeneration for 80% of its cutovers each year.[21] In addition, this approach was much cheaper than expensive artificial measures such as seeding or tree-planting. Finally, the broad, expansive stands of even-aged spruce growing on Spruce Falls' timber limits had been born of fire. Considering the magnificent job the flames had initially done in stocking the firm's woodlands, it was only natural to hope that they would again serve as the most effective means of producing the best possible timber crop.

By this time, Spruce Falls' foresters realized that addressing their regeneration issues was going to be a complex task, and so they sought assistance from the University of Toronto's Faculty of Forestry. The company laid the groundwork for what would become a symbiotic relationship with the forestry school for decades to come by supporting silvicultural research projects that the faculty's first wave of graduate students and professors conducted into Spruce Falls' most pressing forestry problems.[22] The firm's connection to the faculty grew much closer when Gordon Cosens joined its ranks as a professor in 1934 and then served as its dean (1941-1947). The faculty so valued Cosens' presence that it allowed him to remain on a retainer from KC during his entire tenure in academia and secretly took steps to ensure that the school's brightest lights ended up in the firm's employ.[23]

With the faculty's help, Spruce Falls embarked on a decade and a half of experiments that aimed to promote natural spruce regeneration on upland sites, but they all failed. The company's attempts to use fire to re-establish a new crop of spruce in its cutovers proved abortive; the forester overseeing these trials deduced after years of disappointing results that "burning... is not the answer."[24] Employing different cutting methods produced equally dismal news. The company tried "strip-cutting," for example, which entailed alternately harvesting a narrow band of trees and leaving the next band of them standing. The theory was that the residual spruce would provide seed for the new crop in the thin strips of cutovers, but this approach did not produce the desired result. Spruce Falls also experimented with leaving seed trees in cutovers and girdling hardwoods in mixed wood stands to support spruce regeneration, but again the efforts proved abortive. The company's foresters repeatedly realized that the problem was that the seedbed was inhospitable to sustaining spruce seedlings because once the stand was opened, the mat of organic material

[21] UTA, A2004-0017/26, R.W. Lyons, 15 June 1927, R.W. Lyons to C.D. Howe; Iroquois Falls Archives, unnamed file, ca. 1926, Notes by Professor O. Eneroth—Forestry Professor, Sweden.

[22] For example, see UTA, A2004-0017/30, J.B. Millar, all documents.

[23] Kuhlberg, *One Hundred Rings*, 100 and 128.

[24] SFIA, Regeneration, J.B. Millar, "Regeneration on Kitigan Cut, July 12, 1933," from which the first citation is taken; *ibid*., G.W. Phipps, 1 May 1930, "Brush Burning Experiment: SFPP, Woods Department;" *ibid*., "SFPP: Report on Regeneration Studies, May 1938;" *ibid*., Forest Nursery, 26 July 1949, Phipps to Glanzer, enclosing "The Silvicultural Program of the SFPP by E. Bonner, Chief Forester, SFPP," from which the final citation is taken.

simply dried out and the nascent trees died. Rotten logs, old stumps and hammocks of sphagnum moss provided good seedbeds for spruce, but these sites were all too rare.[25] Finally, Spruce Falls tried altering the company's logging practices to protect the "advance growth" spruce that existed at the time of the harvest, hoping that its presence could sufficiently re-stock the cutovers. The test data demonstrated, however, that a "very low proportion" of the advance growth survived the cutting.[26]

Spruce Falls' foresters thus concluded that the company's most productive sites would require some sort of "artificial" treatment to regenerate them, and they soon agreed on what it would be. Initially, the firm tried casting spruce seed in cutovers, burned tracts, and uncut stands to see if it could produce a new crop, but it did not. Attempts to improve the sites by scarifying them with a piece of heavy equipment to expose the mineral soil failed to rectify the situation. Although the Second World War depleted the ranks of Spruce Falls' staff and consequently slowed down the company's silvicultural work, by the time of the disastrous raid on Dieppe in 1942 the firm's senior foresters had concluded that they would have to begin treeplanting in a major way.[27]

The end of the war provided the foresters in Kapuskasing with the flood of returning manpower that they needed to move forward with their forestry work, but they had to wage a continuous struggle to lay the groundwork for it. This meant compiling more data to justify their silvicultural effort, a need that became more pressing than ever now that they had determined that they required a costly reforestation program.[28] Cosens made this abundantly clear in early 1949. At that time, R.H. Candy, a leading silvicultural forester with the Canadian government who had surveyed all the previous studies that had investigated how harvesting was affecting forests across eastern Canada, presented a draft report of his findings to a national conference on the subject. Candy declared that the cutovers were "well to fully stocked for all species and all conifers. This is considered a most encouraging situation." Cosens

[25] In addition to the sources cited in the previous endnote, see: *ibid*., no file, E. Bonner, "Forestry Report—Season 1937-1938 to 1941-1942;" *ibid*., 1930-1980, R.C. Hosie, September 1945, "Report of Regeneration Studies of the Limits of SFPP, Kapuskasing, Ontario;" St. Marys Paper Archives [SMPA], N-3, unlabelled file, March 1947, R.C. Hosie, "Report on Regeneration Studies on the Limits of SFPP... , 21 July to 7 September, 1946."

[26] In addition to the sources cited in the preceding endnote, see SFIA, Regeneration, April 1939, E. Bonner, "Silvicultural Effects of Cutting to Various Log Lengths... ."

[27] In addition to the sources cited in the preceding two endnotes, see SFIA, History, ca. late 1930s, G.G. Cosens, "The Cultivation of Nursery Stock for Pulpwood Planting;" *ibid*., no file, 4 July 1942, "Forestry;" *ibid*., 1930-1980, 19 January 1946, J.B. Millar to E.Bonner, enclosing J.B. Millar, "Observations made in July, 1945, at Kapusaksing;" *ibid*., Regeneration, E. Bonner, "SFPP, Woodlands Department—Working Plan—Section I—Shanly Township, February 1938;" *ibid*., E. Bonner, 13 April 1943, "Regeneration Survey of Cutover—1941."

[28] UTA, A2004-0017/4, E. Bonner, 28 October 1942, G.G. Cosens to E. Bonner.

immediately challenged Candy's conclusion, arguing that Candy was incorrect with regard to the upland areas on Spruce Falls' timber limits. These sites had reproduction but much of it was balsam fir and not spruce, Cosens explained, "and, so far as industry is concerned, balsam fir is of little merchantable value and subjected to budworm attack." Cosens then hit upon the crux of the matter. If Candy's sanguine conclusion went uncontested, "management of industry would become complacent when faced with such an optimistic statement." The upshot saw Candy amend his report in a way that incorporated Cosens' feedback.[29]

The foresters at Spruce Falls adroitly took a few other steps to boost their case for adopting their reforestation program. In 1945, they formally linked arms with Ontario's Department of Lands and Forests (DLF) in investigating silvicultural issues on the company's limits. This was hardly unusual for the time—many companies began cooperating with the DLF in conducting this type of work after the war, but no other firm either had as much historical data on the subject or was as willing to share it as openly as Spruce Falls.[30] Far more importantly, Bob Lyons, now KC's vice-president, had made certain that part of this new partnership included sharing the cost of hiring the Faculty of Forestry's silvicultural professor, Bob Hosie, during the summer of 1945. Hosie was charged with surveying the state of the upland sites on Spruce Falls' woodlands to determine whether they were restocking to spruce after being harvested, and "if not, what steps should be taken to assure a future spruce cut on these lands." Spruce Falls already knew what Hosie would both find and conclude, and that was the point. J.B. Millar, KC's Chief Forester back in Wisconsin, candidly admitted after reviewing Hosie's first report that "there is very little difference between the findings of Professor Hosie and previous studies conducted by the company." Nevertheless, the value of the professor's observations and recommendations lay in his stature as an independent, well-respected academic, one whose views would carry weight at the firm's American headquarters. When Hosie drew one overarching conclusion—that "the only safe and economical way of increasing the present stocking of the young spruce crop seems to be to plant spruce immediately after logging," he provided an authoritative endorsement for a course of action that was already a fait accompli in the minds of Spruce Falls' foresters. The fact that they had already drafted plans for their reforestation program even before Hosie submitted his final report on the matter leaves no doubt that they were carefully choreographing

[29] *Ibid*., A1972-0025/2, Holt Long, March 1949, R.H. Candy, *Reproduction Survey* (PPRIC); *ibid*., A2004-0017/20, E. Bonner, 22 August 1949, E. Bonner to R.C. Hosie, enclosing 29 July 1949, Candy, "Report on Inspection of Cutover Mixed Wood Stands at Kapuskasing, Ontario [Report on Inspection]," from which the citations are taken.

[30] AO, RG1-305, Box 1, F.M. Plan for the Kapuskasing District, 1946, Vol. 1, Q. Hess, "Forest Management Plan for the Kapuskasing District, 1946;" UTA, A1972/0025, Box 25, all files.

Image 2: Spruce Falls' Tree Nursery in Moonbeam. The nursery's infrastructure included a water tower, numerous buildings, and seeding and transplant beds. The former were the sites in which the tree seeds were first planted. To help the seedlings grow and their soil remain moist, they were protected by rolls of snow fencing that were unraveled and suspended on simple wooden braces that were spaced along the beds. The fences are coiled up and run through the centre of this photo, and their wooden supports are visible over most of the beds (Courtesy of Ron Morel Memorial Museum, Kapuskasing, Walter Baczynski Collection).

Image 3: Working the Seed Beds. Growing the seedlings for the treeplanting program was extremely taxing, and women performed several important functions in this process. Tree seeds were sown in beds, where they grew for two years. During that time, they would be culled to eliminate the dead and languishing ones and respace the healthy ones. The photo illustrates Lorenzo Tremblay carrying boxes of seedling for Mary Tousignant and Adrienne Girard, who are sorting them. After two years, the young trees would be established in transplant beds, in which they would grow for another two years before they were ready for the reforestation work (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

these events to achieve their ends.[31]

After being demobilized, Edward Bonner, Spruce Falls's regeneration specialist, began establishing Spruce Falls' tree nursery, the most northerly facility of its kind in Canada. The company found a suitable site for it just east of Kapuskasing and north of the whistle-stop community of Moonbeam. Beginning in 1947, Spruce Falls' workers prepared the nursery's first beds and planted them with black and white spruce seed, which

[31] SFIA, 1930-1980, R.C. Hosie, September 1945, "Report of Regeneration Studies of the Limits of SFPP, Kapuskasing, Ontario," from which the first citation is taken; *ibid*., 19 January 1946, J.B. Millar to E. Bonner, enclosing J.B. Millar, "Observations made in July, 1945, at Kapuskasing," from which the second citation is taken; SMPA, Box—N-3, unlabelled file, March 1947, R.C. Hosie, "Report on Regeneration Studies on the Limits of SFPP... 21 July to 7 September, 1946," from which the last citation is taken.

had been extracted from the cones of local trees. Crews also constructed the necessary infrastructure to support the operation of the facility (Images 2&3).[32]

In the meantime, Spruce Falls' foresters publicly proclaimed the company's commitment to reaching the gold standard for prudent woodland stewardship. Under the Crown Timber Act (1947), the company was required to submit a forest management plan that laid out the measures it would implement in administering its timberlands. In doing so, the document declared that "the objective of this working plan must be to arrange the cutting budget to fulfil present requirements without prejudicing the future yield of the forest. The attainment of this objective is only possible by placing the limits on a sustained yield basis."[33]

A few years later Spruce Falls launched its comprehensive treeplanting program. The effort took a few years to hit full stride, but by the early 1950s the firm was annually planting between 1.1 and 1.5 million seedlings (nearly all black and white spruce) on forestland it both owned and leased from the Ontario government. The company's bush workers did the planting, and initially they focused only on the already cleared patches of ground in the cutovers (e.g., skid trails). When this approach led to only 250 seedlings being established per acre, the company began using scarifying equipment to prepare more and better planting sites. The upshot was that planting density increased by well over 50%[34] (Image 4).

Predictably, Spruce Falls' trailblazing reforestation operation encountered many obstacles, and most of them still confront treeplanting contractors today (Images 5-7). One observer noted how productivity was hindered by the workers' inexperience, the difficulty of supervising them because they were so spread out, and "their natural dislike for the work."[35] Moreover, Spruce Falls had initially paid its planters a day rate, but their productivity—an average of 550 trees per day—was considered too low. Spruce Falls thus began experimenting, in the late 1950s, with paying its employees on a piece-work basis at the princely rate of 2.1¢ per tree. Although productivity roughly doubled, Ed Bonner realized that achieving that goal came at a

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[32] *Ibid*., Forestry Branch, 24 September 1946, E. Bonner, "Forest Nursery;" *ibid*., 1930-1980, Bonner, "Forest Nursery," SFPP, Kapuskasing, Ontario, February 1949; *ibid*., Regeneration, R.C. Hosie, "Diary of Trips Made by R.C. Hosie on the Limits of SFPP... 21 July to 7 September, 1946;" *ibid*., Forest Nursery, April 18 1947, Bonner to G.W. Phipps; *ibid*., 6 August 1947, Bonner to OAC; *ibid*., 1 October 1947, Bonner to R.S. Carman; *ibid*., 3 November 1947, G.G. Cosens to A.F. Buell; *ibid*., 6 November 1947, Bonner to Buell; *ibid*., Forestry Branch (MacDougall), 1947-48, 7 August 1947 and 23 January 1948, Phipps to F.A. MacDougall.

[33] *Ibid*., 1930-1980, "Management Plan for the Ontario Limits and Freehold of the SFPP," 1949.

[34] SFIA, Forest Nursery, "Plantation Records of SFPP—Woodlands" and various annual records, 1948-1961; *ibid*. SFPP Timber Licence, R.C. Hosie, "Report of 1958 Summer Work on the Timber Limits of SFPP... ."

[35] *Ibid*., R.C. Hosie, "Report of 1956 Summer Work on the Timber Limits of SFPP... ."

Image 4: Reforesting a Burned Area. In general, it was extremely difficult to establish new seedlings in cutovers and areas that had been burned. Here, Joe Lagacé is planting four-year old black spruce (they are in the bucket) in a burn in Teetzel Township in May 1952. In the background from left to right are Marko Kirins, Lucien Mongraine and Mac Haadiezyu. To get their seedlings into the ground, the planters had to maneuver around downed trees branches and competing regeneration such as poplar and aspen whips that had sprung up as suckers after a disturbance, and cut through the thick mat of grass and sedges that now covered the ground. Scarifying sites using heavy equipment made treeplanting more efficient and increased the density at which seedlings could be planted (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

Image 5: Searching for a Spot to Plant. This scene exemplifies many of the cutovers and "skid rows" (i.e., the paths along which timber would have been dragged to central locations where it was cut) that treeplanters would have faced. In this shot, N. or W. Trudeau is forced to navigate around debris and slash from the logging operations, stumps, and still standing timber in order to plant his bucket of seedlings (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

Image 6: The Challenges of Planting Bareroot Trees on the Clay Belt. Nearly all the forests that Spruce Falls managed grew on heavy soils, most of which were clay, and tree nurseries at the time grew seedlings that were large "bareroot" stock. This meant that they were planted with no soil on their extensive root systems, and although the latter had been trimmed at the nursery, they were still unruly to plant. These conditions forced planters to use their shovels to cut triangular "wedges" out of the forest floor (note the clump of earth on the shovel of Ken Francis, the planter), place the seedling into the right angle of the hold they had created and fan the seedling's roots along the edges of the cut, and then replace the clump of earth. Finally they used their heel to seal the hole (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

Image 7: Treeplanting Was Back-breaking Work. Frank Koster plants his bucket of spruce seedlings in a burn in Teetzel Township in May 1952. The photo was probably taken immediately after the frost had left the ground and the land was dry enough to plant; the black flies and mosquitoes were not out yet. Otherwise, it is unlikely that any treeplanter would have been toiling in the woods without a shirt! (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

Image 8: The Proof Was in the Woods. This small stand of black spruce was planted in 1952. The trees were taller than Walter Baczynski, who is reaching up to one of them, by the time that this photo was taken in December 1959 (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

worrisome price. "After 3 days of planting," he reported, "the production was so high that it was feared the trees were being thrown away or improperly planted... One man was found to have thrown away a bundle of 50 but it could not be proved that it was his bundle although the trees were hidden in his planting chance."[36]

By the early 1960s, evidence of Spruce Falls' sustained yield forestry program was visible throughout the firm's woodlands. Perhaps most importantly, it was limiting the volume of wood it harvested to the level dictated by its annual allowable cut. Its nursery was producing roughly three million seedlings yearly; Spruce Falls planted a little more than half this total and the rest were used in the reforestation campaign by KC's new mill in nearby Terrace Bay (it had been built by the mid-1940s). Moreover, these trees had a survival rate of 75% after five years, (Image 8) and many of them were growing at an astounding foot and a half a year. Spruce Falls' officials thus projected that they would be

[36] *Ibid*., Forest Nursery, "Plantation Records of SFPP—Woodlands," from which the citation is taken, and various annual records, 1948-1961.

Image 9: Conifer Seedlings Faced Huge Challenges When Planted on the Clay Belt. This spruce seedling was planted in May 1952 and photographed two years later. It illustrates the minimal growth that often occurred as a result of competition from surrounding vegetation (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

able to harvest at least the same cordage from the planted forest as they did from the pre-industrial one in seventy instead of a hundred years. Furthermore, Spruce Falls continued to push its forestry research and development work as aggressively as ever, and it launched one particularly noteworthy initiative in 1956. This effort addressed the problem presented by fast-growing grasses, bushes and deciduous trees that were smothering the slower-growing spruce seedlings that the company was planting (Image 9). As a remedy, the firm began using aircraft to apply herbicides to "release" the struggling spruce seedlings by knocking back their broad-leaved competition for a few years. Although the initial chemical sprays proved ineffective in some situations, overall the treatments dramatically improved the health and growth of the planted stock (Image 10).[37]

Not surprisingly, Spruce Falls' exceptional silvicultural program attracted significant national attention. The country's major dailies ran stories about it, as did the industry's trade magazines.[38] Similarly, R.H. Candy, the Canadian government's silvicultural researcher whose work Cosens had aggressively criticized, was floored by the work that Spruce Falls was doing. After touring its woodlands and speaking with its senior officials, Candy remarked that "here is a company which puts the silvicultural fact into practice."[39] Understandably, Spruce Falls also became *the* source of information about industrial silviculture in the decades after the Second World War, one that government and industry officials repeatedly tapped.

[37] *Ibid*., Forestry & Engineering: Forest Nursery Moonbeam, 12 November 1959, C. McIntyre to F.N. Wiley; *ibid*., SFPP Timber Licence, R.C. Hosie, "Report of 1958 Summer Work on the Timber Limits of SFPP ... ;" *ibid*., 1930-1980, 14 April 1961, G.W. Bell, "Planting Policy Review—SFPP—Woodlands;" *ibid*., Regeneration, "Planting Surveys Before Planting," 1950s; *ibid*., Miscellaneous, 14 September 1959, G.W. Bell, "Conifer Release by Aerial Spraying—1959;" AO, RG1-335, TB-3, SFPP, "Revision of April 1959 - Management Plan for the Ontario Limits and Freehold of the SFPP—Woodlands."

[38] 18 July 1949, *Toronto Telegram*, "SFPP's 100 Year Reforestation Paper;" *ibid*., Forest Nursery, 21 July 1949, P. Glanzer to G.W. Phipps.

[39] UTA, A1972-0025/20, E. Bonner, 22 August 1949, E. Bonner to R.C. Hosie, enclosing 29 July 1949, R.H. Candy, "Report on Inspection," from which the citation is taken; Library and Archives Canada, RG39, Box 64, 45907-1, 13 December 1938, G.G. Cosens to D.R. Cameron; *ibid*., 4 January 1939, Cameron to Cosens.

Image 10: The Impact of Aerial Tending. This photo graphically illustrates the impact aerial tending had on the growth of the seedlings. The gauge indicates that the trees were planted in 1951 and grew an average of 2½ inches annually until 1956; during this period they were competing for sunlight, moisture and nutrients with the surrounding vegetation. Within a few years of being "released" by the aerial application of a herbicide in 1956, the spruce began growing an average of roughly 1½ feet per year. (Courtesy of Ron Morel Memorial Museum, Walter Baczynski Collection).

One of them aptly captured the unparalleled work that was going on in the woodlands around Kapuskasing as representing "a forestry programme that cannot be equalled... in Canada."[40] By 1960, leading industry and government forestry experts from northern Ontario were openly acknowledging that their best cutover sites were generally not regenerating to spruce and that KC was the only firm across the province's hinterland that was taking effective steps to address this problem.[41]

But Spruce Falls had could not afford to bask in this praise, for at this very time it was grappling with an issue that threatened the very foundation—secure tenure to its Crown woodlands—upon which it had built its silvicultural program. The company's pulpwood lease with the government was set to expire in 1962. In preparation for renegotiating it, KC's senior officials began reviewing the agreement's terms and comparing them to those enjoyed by Ontario's other large pulp and paper makers. In doing so, KC's executives were stupefied to learn that Spruce Falls was the province's only newsprint maker to which the government had given a pulpwood lease that included perpetual tenure.[42]

G.H. Rosborough, Assistant to the President of KC Canada, recognized that this was potentially the existential pandora's box for Spruce Falls, and he was emphatic that the company open it in a most calculated way. He cautioned KC Canada's president that, if Spruce Falls

[40] SFIA, Forest Nursery, inquiries to SFPP from 1949 to 1950; *ibid*., 1969-1970: Correspondence and Reports, 24 February 1960, F.R. Hayward to F.N. Wiley; *ibid*., 4 March 1960, Wiley to Hayward; *ibid*., Management Meetings—Speeches, etc., 24 March 1958, R.C. Hosie, "Recent Improvements in Nursery Practices," from which the citation is taken.

[41] *Ibid*., Regeneration, 29 February 1960, "National Regeneration Resolution Committee Report—Northern Ontario Section—Canadian Institute of Forestry."

[42] *Ibid*., Timber Limits, 10 January 1961, to G.H. Rosborough to F.S. Seaborne.

made "any attempt to alter or change this agreement, the Crown will immediately request elimination of the unlimited renewal clause to make it conform to those in the agreements of other companies." Rosborough thus reasoned that it would be safest if the firm simply requested that its agreement be renewed with only minor changes to the description of its timber limits, which had been altered since the previous agreement had been signed in 1941. Furthermore, the firm should take an "informal approach" to dealing with this subject by arranging to have Gordon Cosens broach it with the Ontario government. Rosborough was adamant that a "formal approach with legal counsel" would prove to be disastrous because it "would immediately invite participation by the [government's] legal advisors. This could result in a complete analysis of the agreement, and probably lengthy negotiations.... In all probability, the new agreement would be much less favourable to Spruce Falls than the present one."[43]

Resolving this issue was delayed, however, because it became subsumed by another one. Foresters within Ontario's Department of Lands and Forests (DLF) had been lobbying—unsuccessfully—for over half a century for the government to reinvest at least some of the revenues that it derived annually from its forests into renewing them. After the Second World War, these calls had grown much louder. The DLF's own minister publicly declared in 1949 that a major reforestation effort was needed in the Crown woodlands and the government was obliged to pay for it. A few years later, the DLF dramatically increased the stumpage dues the timber companies paid to cut wood explicitly to fund just such a project, but then the elected officials balked at doing so. They argued instead that the public treasury depended on the additional "income charges as a source of revenue to help pay for social services and some of the costs of the non-revenue producing departments."[44] The DLF's foresters stubbornly soldiered on. They succeeded in pushing the provincial government to announce in 1958 a plan to begin entering into regeneration agreements with Ontario's largest forest companies, and they were convinced that the first contract should be made with the province's "most progressive" firm, namely Spruce Falls.[45] The company's veteran foresters had their own special reason for being at the head of this particular line. Gordon Cosens, now Vice-president of KC Canada, asserted that this would be appropriate given the fact that his firm had "done more regeneration work than other companies," but he attached a far greater political value to KC inking the first contract. "It would

[43] *Ibid*.

[44] Kuhlberg, *One Hundred Rings*, 144; AO, RG1-A-I-10, 1, Adv. Comm. Minutes: Jan. 5 1955 - Dec. 13 1957, 16 December 1955, Minutes of Meeting of the Whole Committee, from which the citation is taken.

[45] AO, RG1-E-10, 74, T.M.-Regeneration Policy—Vol. 3, 28 April 1958, C.E. Mapledoram, In the Matter of providing... , from which the citation is taken.

help sell his forestry policy to the board of directors," Cosens admitted.[46]

Once again, however, the Ontario government eschewed its duty by refusing to finance a meaningful forestry program. Over the course of the late 1950s and early 1960s, the provincial government delayed renewing Spruce Falls' lease to its pulpwood limits until the firm had agreed to the terms of the regeneration clause that would be included in the contract. Spruce Falls negotiated in good faith, and even offered to continue paying a portion of its silvicultural costs, which totalled roughly $70,000 each year. Senior staff at the DLF verified the firm's reforestation expenses and urged the government to cover them; this was prima facie a reasonable request considering that Spruce Falls was paying over $900,000 annually in Crown dues to cut its timber! But the politicians simply refused to authorize spending a significant sum of public money on the project.[47] Fred Seaborne, President of KC Canada, provided his colleagues with a précis of the frustrating situation in early 1962. The impasse, Seaborne underscored, was that, even though the minister and his deputies were "most anxious to execute the whole contract," the "Treasury Department is loathe to grant any refunds, or make any concessions which would reduce their total revenue from natural resources."[48]

Curiously, the Ontario government demonstrated that it would support forestry measures when it made political sense. Since the early 1900s, the provincial politicians had approved spending thousands of dollars each year in southern Ontario to assist property owners in reforesting their lands. In this part of the province, where tellingly most of Ontario's voters lived, the government funded a program that rendered readily available free seedlings, planting services, and advice, and tax breaks to boot, to land owners who made long-term commitments to keeping their properties under forest cover. The upshot was one of the country's most effective and longest-running treeplanting programs.[49]

Although the Ontario government had very different priorities in terms of managing its commercial woodlands—it was fundamentally averse to funding reforesting them—it realized at this time that it had a huge incentive to take over this activity. The discussions at this time surrounding regeneration and pulpwood concession agreements had raised a new issue, namely that the party that paid for the seedlings and/or planting them acquired a proprietary interest in them go-

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[46] AO, RG1-E-10, 167, 7-11-2 T.M.-KC Corp.-Vol 1, 11 March 1958, Memorandum to Minister Mapledoram.

[47] This battle can be traced through the sources listed in the two preceding endnotes.

[48] SFIA, Timber Limits, 16 February 1962, F.S. Seaborne, "Status of Spruce Falls Crown Timber Concession."

[49] M. Kuhlberg, "Ontario's Nascent Environmentalists: Seeing the Foresters for the Trees in Southern Ontario, 1919-1929", *Ontario History*, 88:2 (June 1996); J. Bacher, *Two Billion Trees and Counting: The Legacy of Edmund Zavitz* (Toronto: Dundurn Press, 2011).

ing forward. Gordon Cosens recognized the crucial importance of this legal question, arguing that Spruce Falls should always pay a portion of its treeplanting costs because doing so would "protect the Company equity in the limits." The Ontario government also came to share this understanding of the matter, and feared losing ownership over prospective timber on Crown lands if private parties paid to replant them.[50]

This concern was the impetus behind the government's decision to implement legislation in 1962, and the new law dealt a major blow to hopes for improving forestry in the province. The amendment to the Crown Timber Act made the government solely responsible for regenerating its forests, thereby protecting the government's control over the next crop of trees. The problem, however, was that the statute had now formally separated harvesting the woodlands (which was under industry control) from regenerating them (under government control).[51] This approach was anathema to practising effective silviculture.

Nevertheless, this legislation and Ottawa's benevolence soon broke the logjam between Spruce Falls and the Ontario government. In 1949, the federal government had implemented the Canada Forestry Act that had offered the provinces—for the first time—financial assistance with their forestry work. In 1962, Ottawa expanded the program to allow the provinces to tap federal funding to pay for part of the cost of reforesting Crown timberlands, and two years later Ontario signed an agreement to access this money. This was just the stimulus needed to convince the provincial government to execute with Spruce Falls both the company's pulpwood lease—it included the provision for perpetual tenure that the firm held so dear—and the regeneration agreement, which was the province's first. Under the latter arrangement, which was to run for seven years, Spruce Falls would continue planting four seedlings for every cord of wood it harvested, and the Ontario government would pay the company a flat rate for performing this work.[52]

Although the advent of the Regeneration Agreements boded well for proponents of industrial forestry in Ontario, political considerations determined that they would not realize their aspirations, at least not for a while. The federal government decided in 1966 to withdraw from the shared-cost forestry program in an effort to channel more funding into its rapidly expanding network of

[50] Spruce Falls tried to reinforce its proprietary interest to the trees it planted by marking the perimeter of its plantations with Scotch pine seedlings, a species that was not native to Ontario: conversation with Paul Krabbe, 26 October 1995; SFIA, Timber Limit, 24 October 1962, Regeneration Agreement with DLF, from which the citation is taken; AO, RG1-E-10, 74 , T.M.-Regeneration Policy—Vol. 5, 4 December 1962, ODLF Memo From Timber Branch to Minister.

[51] R.S. Lambert and P. Pross, *Renewing Nature's Wealth* (Toronto: DLF, 1967), 418.

[52] Armson et al., "History of Reforestation in Ontario," 10-14; SFIA, Timber Limits, Licence D-2069 (25 October 1962); *ibid*., Regeneration Agreement, 5 February 1962 and 3 April 1967, Regeneration Agreements between DLF and SFPP.

social welfare initiatives.[53] The Ontario government's commitment to improving forestry in the province was undermined by similar financial concerns. Over the course of 1970-71, provincial and industry officials had been engaged in discussions over how to improve silviculture in Ontario. A.J. "Art" Herridge, chief of the DLF's Timber Branch, outlined the government's major concerns in a letter to the industry's lobby group. The cost of the work was rising so quickly that less area was being planted each year, and the quality of the planting was wildly inconsistent across the province. What really irked the provincial politicians, however, was their "feeling that the Companies in their P.R. projects do not give fair credit to the part played by the government."[54]

Soon enough, Ontario's elected officials demonstrated yet again that they were far less interested in regenerating the Crown forest than Spruce Falls. In the early 1970s, the company was negotiating its next Regeneration Agreement (RA) with the government, and it was also increasing the volume of wood that it was harvesting from its pulpwood limit. Spruce Falls thus sought a commitment from the government to expand the size of area that the latter would replant each year under the firm's new RA. The provincial officials refused to provide it, however, because doing so would simply be too expensive; they also terminated Spruce Falls' RA in 1973. Thereafter, the government and not Spruce Falls would both fund and direct the reforestation effort on the company's Crown woodlands. Whereas Spruce Falls had traditionally replanted all the areas that required this treatment (it had reforested an average of roughly 3,700 acres annually), henceforth the government would determine the scope of the reforestation effort. Significantly, even though Spruce Falls significantly expanded the area it cut over the next five years, the provincial government provided funding to replant an average of fewer than 2,000 acres annually during this period.[55]

Although the mid-1970s saw a pall of uncertainty hanging over forestry in Ontario, the trying times were ripe for the province to make transformative progress in terms of managing its woodlands. A strong and vibrant environmental movement in Ontario had sprouted in the previous decade, and part of its message was a call for the politicians to become prudent stewards of the province's Crown forests. The elected officials were finally willing to fulfil their fiduciary responsibilities in this regard because the public would no longer countenance its forests being harvested without them being renewed. To assist in achieving this

[53] Kuhlberg, *One Hundred Rings*, 168.

[54] SMPA, F-4-3—Forestry—Silviculture... Current, 8 January 1971, A.J. Herridge to R.B. Loughlan.

[55] SFIA, Regeneration Agreement, 6 May 1971 and 11 April 1973, Agreements between Minister of Lands and Forests and SFPP; *ibid*., SFIA, 1973-1974—MNR, 18 September 1972, A.J. Herridge to M.S.M. Hamilton, from which the citation is taken; *ibid*., 1930-1980, 28 September 1977, "Comparison of Areas Cut with Areas Planted."

aim, the Ontario government seconded Professor Ken Armson from the Faculty of Forestry to conduct a major investigation into the state of silviculture across the province and recommend measures for improving it. Armson's principal achievement was re-uniting harvesting and regenerating the forest by returning to industry responsibility for carrying out the latter activity. By the early 1980s, Armson had set Ontario on a path toward better forest management from which it has not looked back.[56]

Remarkably, several forces had compelled one pulp and paper company to begin blazing this trail a half-century earlier. During the late 1920s, Spruce Falls had launched and funded its own comprehensive silvicultural program. In terms of explaining its motivation, KC, its parent company, was renowned for investing in avant-garde policies. Furthermore, the firm had hired highly enlightened and savvy foresters to design and implement its silvicultural strategy, and they were able to retain management's support for their work. Spruce Falls also enjoyed a very favourable relationship with the Ontario government.

Of all the factors that explain Spruce Falls' behaviour, however, the security of tenure it enjoyed to its timberlands was paramount. From at least the turn of the twentieth century, forest companies in Canada had argued that long-term, guaranteed tenure to their timberlands under reasonable conditions was the sine que non for operating their businesses successfully and investing in silviculture. It was definitely not the sole precondition needed for sound forest management; there are countless examples of landlords in Ontario—from large corporations to small woodlot owners—razing their forest holdings over the years without considering the tracts' future health. Nevertheless, during the period in question secure tenure was an essential prerequisite for firms spending money on improving their silvicultural activities.

Skeptics could argue that industry staked this position during the early to mid-twentieth century simply as a red herring to defend its refusal to invest in forestry, but the evidence shows that this cynicism is misplaced. A handful of companies *a mari usque ad mare* initiated major reforestation programs like the one Spruce Falls carried out, and all of them enjoyed secure tenure to the lands they managed.[57]

Spruce Falls' outstanding silvicultural program is noteworthy because it counters so many misconceptions about our country's forest history. For starters, many authors have argued that capitalism was the culprit in terms of convincing industry to invest in activities such as treeplanting that held no hope of generating a return for over half a century. But

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[56] G. Warecki, *Protecting Ontario's Wilderness: A History of Changing Ideas and Preservation Politics, 1927-1973* (New York: Peter Lang, 2000); K. Armson, *Forest Management in Ontario, 1976*.

[57] Mackay, *Heritage Lost,* 102, 119 and 133-40; R. Bott and P. Murphy, *Living Legacy: Sustainable Forest Management at Hinton, Alberta* (Alberta: Speedfast Color Press Ltd, 1983); June-July 2019, correspondence with Bruce Mayer.

Spruce Falls—more specifically, its parent firm, Kimberly Clark—epitomized American capitalism. KC was vehemently anti-union, for example, and remained the last major pulp and paper firm in the United States that organized labour penetrated. Moreover, as much as Spruce Falls' sought to foster loyalty among its employees, its management team valued them based strictly upon their contributions to the company's bottom line.[58]

There has also been a strong inclination to take issue with foreign companies—especially American ones—controlling large parts of our natural resource industries, but again, the tale of Spruce Falls illustrates that this should not necessarily be cause for alarm. From the time that the company began its forestry program in 1928 until it closed its nursery in Moonbeam roughly fifty years later, firms based in the United States had acquired significant stakes in many areas of Canada's economy, particularly the pulp and paper sector. A few voices decried this trend at the time, and they grew much louder and more numerous after the Second World War; KC buying the enterprise in Kapuskasing epitomized precisely the behaviour that Canadian economic nationalists found so unsettling. Yet KC was an exemplary forest manager for the better part of a half century. In contrast, during the period in question iconic Canadian firms such as Abitibi Power and Paper, which operated inter alia six sizeable mills in Ontario, and the provincial government, which owned the timberland upon which all these mills depended, were anything but.[59]

Furthermore, the story of Spruce Falls' silvicultural program in Kapuskasing presents a challenge to one long-held myth about industrial forestry in Canada. Groups that have battled the country's timber companies over the years have long criticized them for gearing their reforestation projects toward establishing massive monoculture tree farms. Spruce Falls' foresters had a very different goal, however. While they undeniably strove to regenerate the species—spruce—that they most valued, from the outset all their studies were designed to gain an understanding of the ecology of the preindustrial forest and how best to recreate it. When their data indicated that they were harvesting stands that supported an average of 200 spruce trees per acre, for instance, they reasoned that they should aim to plant roughly three times as many spruce seedlings per acre because "the shrinkage... [would] represent mortality" during the life of the trees.[60]

The evidence of this holistic approach to forest management pervaded the company's silvicultural project. For example, balsam fir regeneration was preponderant on Spruce Falls' most productive cutovers (i.e., well-drained uplands) but the tree was ill-suited to its industrial needs and vulnerable to attack by the

[58] Heinrich, *Kotex,* 104-110; SFIA, Forest Nursery, 21 February 1952, G.W. Phipps to R.W. Lyons.

[59] K. Norrie et al., *A History of the Canadian Economy* (Toronto: Harcourt, Brace Jovanovich: 1991), 446-52.

[60] SFIA, 1930-1980, 8 February and 7 March 1950, E. Bonner to J.B. Millar; *ibid*., 28 February 1950, Millar to Bonner, from which the citation is taken; *ibid*., 6 June 1950, Millar to Bonner.

spruce budworm. In spite of these major drawbacks, however, officials with Spruce Falls recognized that this species had a critical ecological role to play in the forest, and that monoculture forestry was not the bull's eye for which they were aiming. "The growth of any tree in pure or nearly pure stands greatly increases the danger of serious outbreaks of disease or insects," Ed Bonner's dissection of the issue explained in 1941, adding that spruce would gradually re-establish itself anyway as the balsam fir died back. For these reasons, Bonner was emphatic that "it is advisable that such mixtures be maintained."[61] Likewise, he had learned very early in his reforestation program that it would be best not to plant straight rows of evenly dispersed seedlings. As Bonner reported to the government's local research forester, "in the natural forest, the trees are irregularly spaced and often in clumps. We should attempt to duplicate this in the cutover. Only by doing so, will we establish successful stands at a reasonable cost."[62]

Ultimately, the story of KC's forestry program in Kapuskasing between 1928 and 1976 has a particular resonance in our contemporary world as we confront unprecedented environmental problems. It demonstrates that, in a free market economy, corporations can and will implement the "right" environmental policies when given the proper incentives to do so. With specific reference to Crown forests in Ontario, the provincial government had a fiduciary duty to manage them sustainably and had the resources to do so. And yet, for the first three quarters of the twentieth century, the provincial government largely shirked this responsibility and did so with practical political impunity because the electorate did not consider realizing this goal to be a high priority. If it is true that, in a democracy, the people get the government they deserve, then during this period we, in Ontario, got the level of forest management that we deserved. As Howard Kennedy, who led Ontario's royal commission into forestry in the mid-1940s, sagely predicted at the time, "unless the public is willing to spend large sums of money on forestry in the next quarter-century, efforts towards improvement, or even maintenance, of the present forest conditions, will continue to be little better than a gesture."[63] Governments will act in an environmentally irresponsible manner if doing so is popular, with the reversal of the carbon tax in Ontario in 2018 being a classic example. If our governments are going to implement truly effective policies to mitigate climate change, the public must both demand them and be willing to pay for them, a stage we have yet to reach.[64] Let us hope that the length of time it took for Ontario's electorate to demand sustained yield forestry is not an inauspicious omen of things to come in this province.

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[61] SFIA, 11 June 1941, "Forestry Report."
[62] SFIA, Miscellaneous, 22 October 1959, E. Bonner to W. Stanek.
[63] *Report of the Royal Commission on Forestry,* 1947 (Toronto: Baptist John, 1947), 179.
[64] <https://www.cbc.ca/news/politics/election-poll-climate-change-1.5178514>