

These Well-Wooded Towns: Supplying Fuel Wood to Central Canadian Urban Markets, 1867–1921

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In the late 1860s, Toronto subsidized two narrow gauge rail lines in an effort to meet rising energy demands, make use of its hinterland's ability to supply firewood, and utilize railway charters to enforce cheap transportation of firewood from the hinterland to the city. Several of the new Dominion's earliest railways were thus not the typical trunk lines for connecting distant population centres; rather, they were narrow gauge lines that ran into the forest for the purpose of supplying fuel to urban Canadians. Rising fuel prices, however, resulted in debates over what some considered "cordwood monopolies" and broken rail charters. An examination of the records of urban fuel merchants, statistics of locomotive fuel consumption, and Geographic Information System (GIS) maps of national railway freight reveal where firewood markets expanded and how urban firewood consumption intensified in southern Ontario cities. Wood remained an integral part of the modern urban energy system until at least the early 1920s, a period usually considered Canada's age of coal, because firewood and coal had much in common as solid fuels and railway expansion created new markets for firewood from the Canadian Shield.

À la fin des années 1860, Toronto a subventionné deux lignes de chemin de fer à voie étroite en vue de répondre à la demande croissante d'énergie, de mettre à profit la capacité de son arrière-pays à fournir du bois de chauffage, et d'utiliser les chartes des compagnies de chemin de fer pour assurer le transport bon marché du bois de chauffage de l'arrière-pays vers la ville. Ainsi, plusieurs des premiers chemins de fer du nouveau Dominion n'étaient pas de grandes lignes desservant des centres de population éloignés; il s'agissait plutôt de lignes à voie étroite qui s'enfonçaient dans la forêt afin de fournir du combustible aux citoyens. La hausse des prix du carburant a toutefois donné lieu à des débats sur ce que certains considéraient comme des « monopoles sur le bois de corde » et une infraction aux chartes des compagnies de chemin de fer. L'examen des registres des marchands de combustible

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urbains, des statistiques sur la consommation de carburant des locomotives ainsi que des cartes du système d'information géographique (SIG) sur le fret ferroviaire au pays révèle l'étendue des marchés du bois de chauffage et l'intensification de la consommation de bois de chauffage dans les villes du sud de l'Ontario. Le bois est demeuré une partie intégrante du système énergétique urbain moderne, du moins jusqu'au début des années 1920. Cette période est généralement considérée comme l'âge du charbon au Canada, car le bois de chauffage et le charbon avaient beaucoup en commun en tant que combustibles solides et l'expansion du réseau ferroviaire a créé de nouveaux marchés pour le bois de chauffage provenant du Bouclier canadien.

NINETEENTH-CENTURY URBAN CANADIANS burned large quantities of firewood, and in doing so relied on the biomass equivalent of modern-day utility companies and distribution networks.¹ Steamboat and railway companies consumed wood for fuel and construction material, and in the 1860s, several narrow gauge lines were specially built with central Canadian urban fuel supply markets in mind. Railway companies devised elaborate human and mechanical systems to keep their engines running and fuel markets satisfied. Supplying energy (whether for heat, light, food, feed, or manufacturing) to urban areas has always required extensive supply chains.² Firewood consumption required a relationship with a supplier, billing and payment systems, transportation grids and storage depots, and residential burning technologies, as well as the various people who operated and serviced them. Almost every central Canadian town had “coal and wood” dealers, and in the 1870s and 1880s, as Ontario began a second wave of railway expansion, some new lines were built, and partly subsidized, for the primary purpose of bringing firewood to urban markets.

An examination where firewood appears in the records of railways and urban fuel merchants demonstrates that the energy infrastructure of central Canadian cities remained designed for wood even in the middle of an urban transition to modern energy sources such as hydroelectricity and fossil fuels. Every city came to have a solid fuel market that integrated both wood and coal for residential and commercial customers. These solid fuels were stored in yards that occupied some of the largest, most valuable urban spaces.³ In the late nineteenth century, many cities used railways to supply firewood, and for cities in or near the Canadian Shield, firewood became more important as the railway network expanded. Evidence from

1 The terms “firewood,” “fuel wood,” and “cordwood” are used interchangeably herein, as they are in the primary sources. Generally, firewood is any chopped wood that has been dried to less than 25% moisture. Cordwood is usually stacked firewood that is sold in pieces three or four feet in length. A cord is a unit of measurement equivalent to 4x4x8 feet, or 128 cubic feet (3.62 cubic metres).

2 Paul Rutter and James Keirstead, “A Brief History and the Possible Future of Urban Energy Systems,” *Energy Policy*, vol. 50 (2012), pp. 72–80; Owen Temby and Joshua MacFadyen, “Urban Elites, Energy, and Smoke Policy in Montreal During the Interwar Period,” *Urban History Review*, vol. 45, no. 1 (2016), pp. 37–49.

3 Scott Prudham, Gunter Gad, and Richard Anderson, “Networks of Power: Toronto’s Waterfront Energy Systems from 1840 to 1970,” in Gene Desfor and Jennefer Laidley, eds., *Reshaping Toronto’s Waterfront* (Toronto: University of Toronto Press, 2011), pp. 180–181.

Toronto and other Ontario cities such as Kingston, Ottawa, and London, as well as of the fuel and the freight carried on railways that connected and radiated outward from them, shows that wood remained an integral part of the modern urban energy system until at least the early 1920s, and that, despite occasional fuel scares, central Canadians lived in relatively well-wooded towns.

As William Cronon and others have explained, early economists understood the centrality of urban energy and resource supply lines. Johann Heinrich von Thünen's model of concentric urban zones included an entire zone for biomass fuel supplies.⁴ Yet, strangely, the firewood supply lines and storage spaces so conspicuous to urbanites in the nineteenth century are somewhat out of view in recent histories. Historians of North American forest settlements and earlier transportation systems have examined the effects of wood energy, but the story of wood fuels tends to disappear in more modern industrial and urban settings.⁵ Robert Sweeny's study of the early nineteenth-century river linkages between Montréal and its cordwood suppliers is an important exception.⁶ Canadian historians have done much work on modern energy carriers in the twentieth century, but the general understanding is that more modern systems displaced traditional energy carriers quickly in Canada, and almost immediately in urban settings.⁷ Over the last decade, biomass energy has been the subject of detailed environmental histories in Europe and Latin America that consider its role in both agricultural societies and urban metabolism.⁸ Examining Britain, Iñaki Iriarte-Goñi and María-Isabel Ayuda found that, contrary to accepted theories of a transition from wood to coal, "the growth in GDP and in population has been the main drivers of the growth of biomass-material flows, including wood."⁹ The history of wood energy in the United States has not been

4 William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: W. W. Norton, 1991), pp. 48–54.

5 Thomas R. Cox et al., *This Well-Wooded Land: Americans and Their Forests from Colonial Times to the Present* (Lincoln: University of Nebraska Press, 1985); Joshua MacFadyen, "Hewers of Wood: Wood Energy in Canada," in R. W. Sandwell, ed., *Powering Up Canada: The History of Power, Fuel, and Energy from 1600* (Montréal and Kingston: McGill-Queen's University Press, 2016).

6 Robert Sweeny, Grace Laing Hogg, and Richard Rice, *Les relations ville/campagne : le cas du bois de chauffage* (Montréal, Groupe de recherche sur l'histoire des milieux d'affaires, 1988).

7 Richard W. Unger and John Thistle, *Energy Consumption in Canada in the 19th and 20th Centuries: A Statistical Outline* (Naples: Consiglio Nazionale delle Ricerche, Istituto di Studi sulle Società del Mediterraneo, 2013), p. 51; R. W. Sandwell, ed., *Powering Up Canada: The History of Power, Fuel, and Energy from 1600* (Montréal and Kingston: McGill-Queen's University Press, 2016); Prudham, Gad, and Anderson, "Networks of Power"; Christopher Armstrong and H. V. Nelles, *Wilderness and Waterpower: How Banff National Park Became a Hydroelectric Storage Reservoir* (Calgary: University of Calgary Press, 2013); Alan MacEachern, *The Institute of Man and Resources: An Environmental Fable* (Charlottetown: Island Studies Press, 2003); Richard W. Unger, "Shifting Energy Sources in Canada: An International Comparison, 1870–2000," *Canadian Journal of History*, vol. 53, no. 3 (2018), pp. 480–514.

8 See, for example, Paul Warde, "Firewood Consumption and Energy Transition: A Survey of Sources, Methods and Explanations in Europe and North America," *Historia Agraria*, vol. 77 (April 2019), pp. 1–26; Stefania Barca, "Energy, Property, and the Industrial Revolution Narrative," *Ecological Economics*, vol. 70, no. 7 (2011), pp. 1309–1315; Iñaki Iriarte-Goñi, "Forests, Fuelwood, Pulpwood, and Lumber in Spain, 1860–2000: A Non-Declensionist Story," *Environmental History*, vol. 18, no. 2 (2013), pp. 333–359; and Jan Kunnas, "Fire and Fuels: CO₂ and SO₂ Emissions in the Finnish Economy" (PhD dissertation, European University Institute, 2009).

9 Iñaki Iriarte-Goñi and María-Isabel Ayuda, "Not Only Subterranean Forests: Wood Consumption and Economic Development in Britain (1850–1938)," *Ecological Economics*, vol. 77 (2012), pp. 176–184, quote on p. 179.

examined since the mid-twentieth century, and in general firewood's role in North American cities is not well understood.¹⁰

Firewood Merchants: Fuel Markets, Dealers, and Railways

The urban fuel supply business grew enormously in scale in the late nineteenth century, and although historians have mainly thought of it in terms of coal and hydroelectric power, urban firewood had many of the characteristics of a modern energy system. The fuel supply industry was characterized by private enterprise and significant turnover. Spatially, it was in constant flux as yards expanded, moved, closed down, and were replaced by new start-ups. But generally, solid-fuel merchants were closely tied to railroad tracks and harbours. An inland city such as London piled its fuel supplies along railroad tracks, whereas Montréal did so along its riverfront and canals. In Toronto, the city centre's view of Lake Ontario and the waterfront was blocked in several places by solid-fuel merchants' warehouses and yards full of piles of coal and wood. Fill was added to the lakeshore regularly in part to create more room for yards and warehouses, including many fuel suppliers.¹¹

Canadian cities consumed firewood at a high rate in the nineteenth century—quite possibly the highest in the world. Consumption remains difficult to calculate precisely because city officials did not gather consistent data, wholesalers used a variety of water, rail, and road options for their supply, and the climate, burning technologies, and alternative fuel markets varied significantly between cities. The scale is best determined through newspaper accounts, city directories, and freight data from railway, canal, and harbour authorities.¹² Many demand-side consumption estimates came from experts promoting new transportation infrastructure and thus almost certainly exaggerated potential demand. By the late 1860s, some reports claimed Toronto was importing 70,000 cords per year, or 7.1 cords per household.¹³ Other sources suggest the city burned about 100,000 cords per year in the 1880s.¹⁴

10 Robert Van Rensselaer Reynolds and Albert Halsey Pierson, *Fuel Wood Used in the United States, 1630–1930*, circular no. 641 (Washington, DC: US Department of Agriculture, 1942); Sam H. Schurr et al., *Energy in the American Economy, 1850–1975: An Economic Study of Its History and Prospects* (Baltimore, MD: Johns Hopkins Press, 1960); Brooks C. Mendell and Amanda H. Lang, *Wood for Bioenergy: Forests as a Resource for Biomass and Biofuels* (Durham, NC: Forest History Society, 2012).

11 Jennifer Bonnell, *Reclaiming the Don: An Environmental History of Toronto's Don River Valley* (Toronto: University of Toronto Press, 2014), pp. xx–xxi, 20; Michael Moir, "Planning for Change: Harbour Commissions, Civil Engineers, and Large-Scale Manipulation of Nature," in Gene Desfor and Jennefer Laidley, eds., *Reshaping Toronto's Waterfront* (Toronto: University of Toronto Press, 2011), pp. 34–39.

12 Although they are not examined here, northern cities such as Québec and Winnipeg illustrate some of the higher consumption ranges possible across Canada. According to its own "very accurate estimate," the engineer's and secretary's reports for the proposed Québec and Saguenay Railway estimated that the City of Québec consumed 16.2 cords per household in 1854. Winnipeg boosters and railway promoters suggested local consumption ranging from 19.8 to 44 cords per household, and although a crown timber agent dismissed these in 1894, his revised rate was still 9.1 cords per household. Pierre-Joseph-Olivier Chauveau, *Report of the Chief Engineer, on the Survey of the Line for the Québec & Saguenay Railway* (Québec: J. T. Brousseau, 1854) pp. 22, 43; "Southeastern Figures: Statement from Dominion Blue Books, Which Prove the Earning Estimates Too High," *Winnipeg Daily Tribune*, August 9, 1894, p. 8; MacFadyen, "Hewers of Wood," pp. 150–154.

13 "Narrow-Gauge Railways: The Toronto, Grey and Bruce Line, Meeting at Mono Mills," *Globe* (Toronto), January 6, 1868, p. 2.

14 Estimated through the suppliers and merchants listed in Charles Pelham Mulvany and G. Mercer Adam, *History of Toronto and County of York, Ontario: Containing an Outline of the History of the Dominion of*

In 1891, Toronto's fuel yards appear to have supplied over 157,000 cords of wood, which, accounting for population growth, was 6.1 cords per household.¹⁵

Fuel merchants moved these vast volumes of wood through the city by horse and team (Figure 1). In Toronto, they typically carried about two cords of wood for every three tons of coal.¹⁶ The merchant Patrick Burns set up his operation on the north side of Front Street, with access to both the Grand Trunk and the Toronto, Grey and Bruce (TG&B) railways.¹⁷ A request from a law firm in September 1871 would have been typical of a large order received by Burns: "6 cords best quality 4-foot hardwood, exclusively oak, at \$6.50; 6 tons Brier Hill Coal at \$6.50; 4 tons Pittston Large Egg at \$6.75; 4 tons Pittston Small Egg coal at \$6.75."¹⁸ By 1881, Burns had five depots throughout the city, all connected by telephone.



Figure 1. Loading cordwood onto a horse-drawn cart owned by Toronto "Coal Merchant," Patrick Burns, ca. 1914.

Source: City of Toronto Archives, Globe and Mail fonds, fonds 1266, item 10744. Used with permission.

Canada; A History of the City of Toronto and the County of York, with the Townships, Towns, General and Local Statistics; Biographical Sketches, vol. 1 (Toronto: C. B. Robinson, 1885). This text described 15 of the city's coal and wood merchants and the wood on these yards alone was 70,000 cords. The amounts did not include the largest merchant, Elias Rogers, who, with three separate yards (and the amount of wood visible in a ca. 1894 bird's-eye photo, discussed below), must have carried at least 35,000 cords. Many other fuel merchants were not listed here, and neither were suburban suppliers. The lumber yards were also apparently large cordwood fuel suppliers in the 1860s (see *Globe* classifieds for example), and not listed as such in most directories. In 1890, there were 71 coal and wood dealers in Toronto according to ACME, *Illustrated Toronto: The Queen City of Canada: Its Past, Present and Future, Its Growth, Its Resources, Its Commerce, Its Manufactures, Its Financial Interests, Its Public Institutions, and Its Prospects* (Toronto: ACME Publishing and Engraving Company, 1890), p. 42.

15 Even John R. Bailey's Ontario Coal Company, whose 190,000 tons of coal amounted to 40% of the city's fossil fuel, imported 50,000 cords of wood. G. Mercer Adam, *Toronto, Old and New: A Memorial Volume, Historical, Descriptive and Pictorial, Designed to Mark the Hundredth Anniversary of the Passing of the Constitutional Act of 1791* (Toronto: Mail Print, 1891) pp. 168–169.

16 Adam, *Toronto, Old and New*, pp. 168–169.

17 There is no evidence that this Patrick Burns was related to Pat Burns, Canada's future "meat-packing king."

18 Archives of Ontario, A. N. Buell to P. Burns, September 9, 1871, F 62, B293864.

Elias Rogers was another major coal and wood dealer based on Toronto's waterfront. He was born in 1850 to a Quaker family in the aptly named Temperanceville, York County, and the following year his family farm was transected by the Northern Railway.¹⁹ Elias spent much of his youth hauling wood to the railway and watching it be loaded for transport south to Toronto. When he left the farm, he went into the lumber business and then started his own fuel company. By 1889, he owned two large yards along the north side of The Esplanade at Princess Street, where the Grand Trunk Railway (GTR) could shunt six trains at once. A summer 1894 overhead photograph shows cordwood taking up more space in Rogers's outdoor yards than coal did.²⁰ A rough measurement suggests that the stocks present in July, which marked the low season of the fuel wood market, represented less than 1,000 cords, but when full, the yards could hold up to 6,000 cords. This was far short of the amount these firms sold in one year. They had additional yards, and a steady supply of wood brought in by rail made it possible to supply the large quantities cited in business directories. Railways were in many ways crucial to central Canadian cities' energy infrastructure, and wood was one of their early principal fuels.

More than any other nineteenth-century technology or infrastructure, railways connected British North America's urban seats of power to their hinterlands in nearby farming districts, northern forests, and eventually the western grasslands. Historians have written extensively about their role in facilitating year-round trade, defence, and political support for Confederation itself.²¹ Canadian boosters argued that railways enhanced both the economy and living conditions for settlers. In 1856, an essayist writing for the Board of Agriculture declared that, after the railway came through a district, "[e]very tree and stone has an increased value. The unsightly grove of wood which has long been an eyesore to the farmer [has become] a lot of valuable property."²² However, most central Canadian groves of wood would remain relatively distant from any railway for the rest of the century. Railway companies had a strong start in the Canadas during the 1850s, but construction ground to a halt with the commercial crisis of 1857–1858.²³ Despite the rhetoric of politicians and railway boosters, most nineteenth-century Canadians transported their goods through a combination of other modes of transportation until the 1870s. Over 70% of the rail laid between 1867 and 1926 occurred after 1900; unlike the

19 Caroline Van Hasselt, *High Wire Act: Ted Rogers and the Empire That Debt Built* (Hoboken, NJ: John Wiley and Sons, 2010).

20 Toronto Public Library Baldwin Collection, 971-12 Cab I, "Toronto Harbour, looking east along Esplanade E., Princess St. in foreground" (1894), <http://www.torontopubliclibrary.ca/detail.jsp?Entt=RDMDC-971-12&R=DC-971-12>.

21 Rod Clarke, *Narrow Gauge Through the Bush: Ontario's Toronto Grey and Bruce Railway and Toronto and Nipissing Railway* (self-pub., 2007); A. L. Smaltz, "The Grand Trunk Railway: The Province of Canada's Political Football," *Canadian Rail*, vol. 374 (May/June 1983), pp. 95–107; Donald Grant Creighton, *The Road to Confederation: The Emergence of Canada, 1863–1867* (Toronto: Macmillan, 1965).

22 Quoted in A. W. Currie, *The Grand Trunk Railway of Canada* (Toronto: University of Toronto Press, 1957), p. 263.

23 Ged Martin, *Britain and the Origins of Canadian Confederation, 1837–67* (Vancouver: UBC Press, 1995), p. 23.

United States, Alan Green argues, “the railway era for Canada is clearly a twentieth century event.”²⁴

Several of the new medium and short lines that were built in the nineteenth century were intended to transport the most local of commodities—firewood—to growing fuel markets in Canadian cities and towns, and also in the region’s growing fleet of steam engines. Promoters framed this in the language of energy security after firewood shortages repeatedly drove up urban fuel prices, including in 1864 and 1872, which created dangerous winter living conditions.²⁵ For example, promoters of the Northern Railway argued in the 1850s that “half the price of firewood in Toronto went to pay for hauling it into the city by team,” and that a railway into the northern forests would provide wood for the city, reducing “Toronto’s fuel bill and allow[ing] steamships on Lake Ontario to ‘wood up’ there.” Samuel Keefer, the Northern’s lead engineer, argued that the railway’s northern terminus should be Collingwood in part because of the surrounding district’s abundant fuel supplies.²⁶ A significant proportion of the freight carried to market along it and other early railways was thus not a high value staple commodity or manufactured good but rather the lowly block of firewood. Railroads that reported hauling firewood in 1875 dedicated up to a quarter of their freight tonnage to the fuel. Between 1877 and 1883, that dropped to about 12% on average, and from 1901 to 1903, it would remain about 9%.²⁷

One of Toronto’s most prolific railway boosters was George Laidlaw, who was responsible for the construction of some 500 miles (805 km) of rail in southern Ontario.²⁸ He is best known for coaxing the TG&B and the Toronto and Nipissing (T&N) Railways into existence, both narrow gauge lines that were primarily designed for hauling firewood southward to the growing metropolis. An impetuous but articulate Scot who immigrated to Toronto in 1855, Laidlaw soon became well connected with the city’s manufacturers.²⁹ He worked as a grain dealer for Gooderham and Worts, and then in 1859 began a forwarding company as a “produce dealer and wharfinger” located on the Church Street Wharf. Like his friends William Gooderham and George Brown, Laidlaw opposed the GTR for its political affiliations, and, like most Torontonians, the Great Western for its commitment to Hamilton. Laidlaw’s connections to the grain trade and distaste for

24 Alan G. Green, “Growth and Productivity Change in the Canadian Railway Sector, 1871–1926,” in Stanley L. Engerman and Robert E. Gallman, eds., *Long-Term Factors in American Economic Growth* (Chicago: University of Chicago Press, 1986), pp. 779–818, quote on p. 790; Jay Young, Ben Bradley, and Colin M. Coates, “Moving Natures in Canadian History: An Introduction,” in Ben Bradley, Jay Young, and Colin M. Coates, eds., *Moving Natures: Mobility and the Environment in Canadian History* (Calgary: University of Calgary Press, 2016), p. 18.

25 “Editorial,” *La Minerve*, May 1, 1868, p. 2; “The Wood Famine,” *Canadian Illustrated News*, January 27, 1872.

26 Currie, *Grand Trunk*, p. 260.

27 Canada, Parliament, *Sessional Papers 1876*, paper no. 51, pp. 24–25; Canada, Parliament, *Sessional Papers 1884*, paper no. 10, pp. 30–31; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1903* (Ottawa: King’s Printer, 1904), p. 453.

28 Trent University Archives, “Fonds 74-011 - Colonel George E. Laidlaw,” fonds level description, accessed August 5, 2020, <https://www.trentu.ca/library/archives/74-011>.

29 Thomas McIlwraith, “Laidlaw, George,” in *Dictionary of Canadian Biography*, vol. 13, accessed August 5, 2020, http://www.biographi.ca/en/bio/laidlaw_george_11E.html.

trunk line shipping convinced him that Toronto needed better transportation links to other areas of southern Ontario. His battle cry was “the cheapest line to the best markets,” and his technical solution to the excessive spending of the trunk lines was the narrow gauge system, with rails spaced at three feet, six inches instead of the standard provincial gauge of five feet, six inches. Narrow gauge required lighter engines and rolling stock, as well as smaller ties, beds, and rails, and could be built for 60% of the cost of provincial gauge, or roughly \$15,000 per mile. Laidlaw also insisted that capital should be raised locally so as to avoid the “perceived evils of absentee ownership” experienced by the GTR.³⁰ His strategy for achieving this was to point out Toronto’s rising energy demands, its hinterland’s ability to supply firewood, and the railway charter’s ability to ensure cheap transportation between them. Thus, two of the new Dominion’s first railways were not typical trunk lines connecting distant centres of production and population. Instead, they were “long distance narrow gauge lines into the ‘bush.’”³¹

Laidlaw had many critics. In 1871, John and Edward Trout, editors of the *Monetary Times*, noted that the idea of building narrow gauge railways “excited a good deal of hostile criticism and not a little ridicule.”³² Opponents argued that if Torontonians listened to narrow gauge promoters they would end up with inferior lines that could not connect to regular lines, and all for no good reason. These critics overlooked the fact that Laidlaw’s proposed railways were designed for a limited, specialized purpose: supplying the energy market in Canada’s fastest-growing city. The idea appears to have originally come from John Boyd, a New Brunswick (and later Prince Edward Island Railway) civil engineer who met Laidlaw on a visit to Gooderham and Worts and the Toronto Board of Trade in early 1867. He explained that New Brunswick’s European and North American Railway was shipping an average of 6,660 cords of firewood to Saint John per year, in addition to 3,000 cords for its own requirements. The company made a profit from this trade, and “none of this wood,” he argued, “could have been brought to market without the railway.”³³

In the first of two promotional pamphlets he published in 1867, Laidlaw identified Toronto’s firewood market as a potential source of wealth for farmers in surrounding districts. He asserted that Toronto “consumed annually about 350,000 dollars’ worth of cordwood, and coals imported to the value of \$200,000,” and that “half these large amounts would find its way into the hands of the farmers, if the present and projected Railways were bound by law to afford the same facilities to the cordwood trade which is extended to the lumber business.”³⁴ The problem with Toronto’s “present” railways, as Laidlaw saw it, was that lines like the Northern Railway’s to Collingwood should have been buying and selling products that were

30 Clarke, *Narrow Gauge*, p. 32.

31 Clarke, *Narrow Gauge*, p. 18.

32 John Trout and Edward Trout, *The Railways of Canada for 1870–1: Shewing the Progress, Mileage, Cost of Construction* [...] (Toronto: Monetary Times, 1871), p. 150. See also George Laidlaw, *Reports and Letters on Light Narrow Gauge Railways by Sir Charles Fox and Son* (Toronto: Globe Publishing, 1867).

33 J. Edward Boyd writing to James G. Worts, and the Toronto Board of Trade on “Light Railways and the Cordwood question” in George Laidlaw, *Reports and Letters on Light Narrow Gauge Railways* (Toronto: Globe Publishing, 1867), p. 41.

34 Laidlaw, *Reports and Letters*.

needed in the local economy instead of focusing on exporting lumber from the province via trunk lines. In his second 1867 pamphlet, titled *Cheap Railways*, Laidlaw promoted the narrow gauge TG&B and T&N railways to farmers in the Ontario bush, pointing out that because of poor access to urban markets they ended up burning valuable timber with the result that “your summer sky is darkened with the smoke of burning money.”³⁵ While cash-starved farmers burned off cleared timber in remote corners of the province, he argued, Toronto residents had little choice but to pay extortionate rates for their firewood. Time and time again, Laidlaw urged that new railway charters should prohibit excessive charges for the transport of firewood.

In June of that summer, the *Trade Review* picked up on Laidlaw’s scheme. It argued that “Torontonians have been suddenly let into one of the secrets by which, for years past, they have been heartlessly fleeced [by] one or two unscrupulous heartless speculators.”³⁶ As evidence, it cited how the previous year’s fuel prices had hit \$8 per cord in parts of the city, or about double the usual cost. “The misery that these prohibitory rates entailed on the poor, may be better imagined than described,” the journal explained:

It was so great as to produce a public agitation. Then all at once railways became philanthropic corporations, became charitable, and a few hundred cords of wood were laid down in Toronto for the exclusive use of the poor at from \$4 to \$5 per cord. To get it at this rate, however, a series of applications and certificates were necessary; in fact, it had to be sued for *in forma pauperis*, so that the bulk of the middling classes had to buy at \$7 or \$8 or freeze to death.³⁷

Laidlaw pointed the finger of blame at Fred Cumberland, managing director of the Northern Railway, arguing that his railway restricted the number of people who could ship or store firewood at its northern stations. Cumberland retorted that if there was a fuel monopoly, the Northern Railway was not part of it, and that high prices resulted from mismanagement by wholesalers and retailers.³⁸ However, Laidlaw and the *Trade Review* contended that there should be a better system whereby a “citizen [could] buy his year’s fuel from a farmer delivered at a station on the Northern Railroad, and get it down like a car of lumber, timber or wheat.” Laidlaw presented a letter dated December 27, 1866, that he claimed had been intercepted at a wood merchant’s office and proved the problem in the fuel supply business. The Northern Railway was reportedly marketing a large supply (4,000 cords) of cordwood that it would carry for an average freight rate of \$2.56 per cord. The supplier was a single outfit, and the city’s buyers were being asked to bid on

35 George Laidlaw, *Cheap Railways: A Letter to the People of Bruce and Grey, Showing the Advantages, Practicability and Cost of a Cheap Railway from Toronto through These Counties: With an Appendix Addressed to the People of Ontario and Victoria* (Toronto: Globe Publishing, 1867), p. 4. In Montréal, Curé Labelle would use similar language to promote the Montreal Colonization Railway. “Notre bois pourrit sur le sol. Allons-nous périr au milieu de l’abondance?” *La Minerve*, January 19, 1872.

36 “The Cordwood Question,” *Trade Review and Intercolonial Journal of Commerce*, vol. 3, no. 24 (1867), p. 43.

37 “Cordwood Question.”

38 Quoted in “Cordwood Question.”

the lots. In other words, the railway gave lip service to direct sales, but in reality, the city's wood fuel supply was available on a wholesale basis only.

Laidlaw invoked both the natural environment and natural law in his proposed solution. In prose that would make historian Donald Creighton blush, he wrote, "Commerce has always, in every country, sought first the channels formed by nature, as the easiest and cheapest high-ways from the interior to the seaboard." The state's job, he argued, should be to encourage "the construction and extension of the means of communication which will *carry out the trees and carry in the people* to those places where their toil will reward their employers." Narrow gauge railways that were "*bound by law to carry cordwood*, would in many instances remove" socio-economic barriers to settlement.³⁹ Farmers would be able to clear land at a profit instead of a loss, and settlement of southern Ontario's northern bush would continue thanks to the new infrastructure. Partly what captivated nineteenth-century railway enthusiasts was the technology's ability to regulate and circumvent natural forces. Railways represented permanence in a temporal environment; constant communication in a world constrained by seasonality.⁴⁰

Laidlaw's efforts led to the TG&B and T&N receiving provincial charters on March 4, 1868. He established an efficient narrow gauge construction method, which he would use in the Credit River Valley and at other locations, although none of these projects made him particularly rich. His interest in the North increased in the 1870s, when he promoted more lines that would connect the T&N to the North and to Ottawa. All of his projects followed the cordwood model and all of them tabled legislation for reduced fees on firewood, with the wording of the cordwood clauses usually very similar: the railways would "at all times, receive and carry cordwood or any wood for fuel at a rate not to exceed for dry wood 2.5 c per mile per cord or 3 c for under 50 miles, in full car loads."⁴¹ Ultimately, these cordwood lines were quite different from the usual trunk lines that connected central Canada's major population centres. Reaching deep into the bush, they were designed less for shuttling passengers, mail, and other information than for powering the Dominion's growing metropolises.

Firewood Monopolies: Urban Fuel Protests

As essential as they were for supplying the city's energy needs, Torontonians were deeply suspicious that fuel merchants and railway companies fixed prices and fudged numbers. Toronto had so much difficulty with the accurate measurement of wood that the city hired officials to measure woodpiles. However, fuel merchants sold several loads per day from locations spread across the city, and the volume of trade proved too much for the under-resourced officials to regulate.⁴² Greater outrage arose over preferential use of railway stock to inflate cordwood prices.

39 Laidlaw, *Cheap Railways*, p. 4 (emphasis in original).

40 Young, Bradley, and Coates, "Moving Natures," pp. 13–14; Ken Cruikshank, "Forest, Stream and . . . Snowstorms? Seasonality, Nature, and Mobility on the Intercolonial Railway, 1876–1914," in Bradley, Young, and Coates, *Moving Natures*, pp. 56–58.

41 Canada, Office of the Minister of Agriculture, *The Year Book and Almanac of Canada for 1872* (Ottawa: James Bailiff, 1872), pp. 134–135.

42 Taxpayer, "Measure the Wood," *Globe*, January 13, 1866, p. 2.

The public accused Northern Railway manager Frederick Cumberland of this in 1867, and then in 1872 and 1873 similar accusations were directed at Laidlaw. Many Torontonians argued that since the railways were a public good, they should carry commodities that were of use to urban consumers, not only timber to be consumed by distant manufacturers. The Northern Railway responded to critiques that it was not doing enough to supply Toronto with cordwood by publishing its shipping reports, which indicated that it was delivering about 4,600 cords of wood per year. In 1872, a provincial order in council compelled the TG&B to publish a report listing its cordwood suppliers and customers. In February 1873, the T&N was obliged to do the same.⁴³

Toronto saw heated debate over an alleged “cordwood monopoly” in 1873 and 1874. Perhaps the most vicious part of the protest occurred in February of 1873 at a public meeting in St. Lawrence Hall. The catalyst was, of course, the high price of firewood in Toronto markets, and the crowd was agitated. The *Globe* reported that, depending on who was on stage, there was spontaneous applause, booing, hissing, cheers, and “uproar lasting several minutes.”⁴⁴ Protest was mainly directed against the railway companies. The biggest grievance related to the claim that William Somerville, a Markham wood dealer whose operation was located near the T&N line, held a virtual monopoly over that winter’s supply of wood, driving Toronto prices unreasonably high. The public felt their municipal government had invested in the T&N on the condition that it would supply the city’s cordwood requirements in an affordable manner. E. K. Dodd, a Toronto newspaper editor and the key agitator, had called the meeting and arranged for T&N director William Gooderham to address the crowd and explain Somerville’s relationship with the railway. Gooderham was practically booed off the stage. When George Laidlaw took his place, the crowd cheered and waited on his every word. Laidlaw explained that he disagreed with the railway’s management of this issue and believed professional buyers like Somerville should be limited or regulated in order to free up rolling stock for petty producers and other sellers. The company claimed that the problem was not preferential treatment of Somerville but limited capacity on its line and promised to publicly audit its freight operations.⁴⁵

Dodd agreed to be part of the audit, and so the meeting ended with some sense of resolution. Dodd was a fuel consumer, like most Torontonians, and it was common for Canadian social reformers to argue that the urban poor were most at risk from high energy costs.⁴⁶ Closer examination, however, suggests that Dodd was not entirely at arm’s length from the energy industry. In 1873, he ordered 12 cords of wood through the TG&B, which is enough to suggest that he planned to sell some.⁴⁷ Furthermore, his closest neighbour on Bathurst Street, as recorded

43 Ontario, *Sessional Papers 1874*, 4th session, paper no. 5, pp. 1–4.

44 “The Cordwood Question: Mass-Meeting in St. Lawrence Hall,” *Globe*, February 15, 1873, p. 4.

45 “Cordwood Question: Mass-Meeting.”

46 Sean Patrick Adams, “Warming the Poor and Growing Consumers: Fuel Philanthropy in the Early Republic’s Urban North,” *Journal of American History*, vol. 95, no. 1 (2008), pp. 69–94; Priscilla J. Brewer, *From Fireplace to Cookstove: Technology and the Domestic Ideal in America* (Syracuse: Syracuse University Press, 2000), p. 2.

47 Ontario, *Sessional Papers 1874*, 4th session, paper no. 5, pp. 1–4.

in the Toronto City Directory, was the newly established fuel merchant William McGill, who had ordered 817 cords for his own clients from the TG&B. Several business historians have observed that anti-monopolism advocated under the guise of social reform was sometimes actually a veiled form of competition from new players.⁴⁸ Dodd's close proximity to McGill strongly suggests that may well have been what happened in this case. Toronto's fuel price increases in the 1870s were not as dramatic as those in eighteenth-century Philadelphia, where Priscilla J. Brewer has shown that substantial increases in the pre-Revolutionary price of firewood caused considerable difficulty and distress for the poor, but a similar process was underway, as rapidly increasing demand occurred at the same time as a gradual reduction of supply.⁴⁹ Historical geographer Thomas F. McIlwraith concluded that it was the firewood supply issue most of all that made railways "a subject of concern to poorer people" in the city.⁵⁰

Toronto's narrow gauge cordwood railways found themselves in a difficult situation: bound by law to transport a bulky, low-value commodity in an increasingly competitive railway market, as other lines such as the Hamilton-based Wellington, Grey, and Bruce cut into their territory. One of the biggest problems during the narrow gauge companies' critical early years, when winters were harsh and prices were climbing, was simply getting trains through. The railways were still finishing sections of the line and still acquiring engines and cars, so there was both a limited supply and a difficult job of managing what they had. Additionally, the new lines encountered ice and extremely heavy snowfall along their northern sections. Harsh winters in the early 1870s drove up demand for fuel wood at the same time they complicated and increased the cost of moving it to market. As with many Canadian railways, the unpredictability caused by winter conditions was exactly, as Ken Cruickshank puts it, "what no railway manager wanted."⁵¹

For social historians, the protests of the early 1870s and the 1872 order in council had the useful effect of producing detailed data on cordwood location and suppliers.⁵² Figure 2 shows the routes followed by the TG&B and amounts of wood shipped from its stations in 1873. The largest firewood producers were in the Orangeville and Luther areas, but stations in and east of Orangeville were generally more active. This may suggest that those stations were getting more traffic, but it also complies with supplementary research in the 1871 census along this line that shows that the largest firewood producers were likely professional wood dealers with strong connections to the railway and Toronto merchants. The inset map shows the location of the Toronto merchants who purchased wood carried by the TG&B.

48 Robert MacDougall, *The People's Network: The Political Economy of the Telephone in the Gilded Age* (Philadelphia: University of Pennsylvania Press, 2014), p. 10; Richard R. John, "Robber Barons Redux: Antimonopoly Reconsidered," *Enterprise and Society*, vol. 13, no. 1 (2012), pp. 1–38; Michael Bliss, *A Living Profit: Studies in the Social History of Canadian Business, 1883–1911* (Toronto: McClelland and Stewart, 1974).

49 Brewer, *From Fireplace to Cookstove*, p. 32.

50 Thomas F. McIlwraith, "The Toronto, Grey, and Bruce Railway, 1863–1884," *Upper Canada Railway Society Bulletin*, vol. 56 (September 1963), p. 5.

51 J. J. Middleton, "The Cordwood Monopoly," *Globe*, April 7, 1875; Cruickshank, "Forest, Stream," p. 63.

52 It appears that every time the railways were asked for data showing cordwood they complied, although it is possible they estimated or even fabricated some numbers.

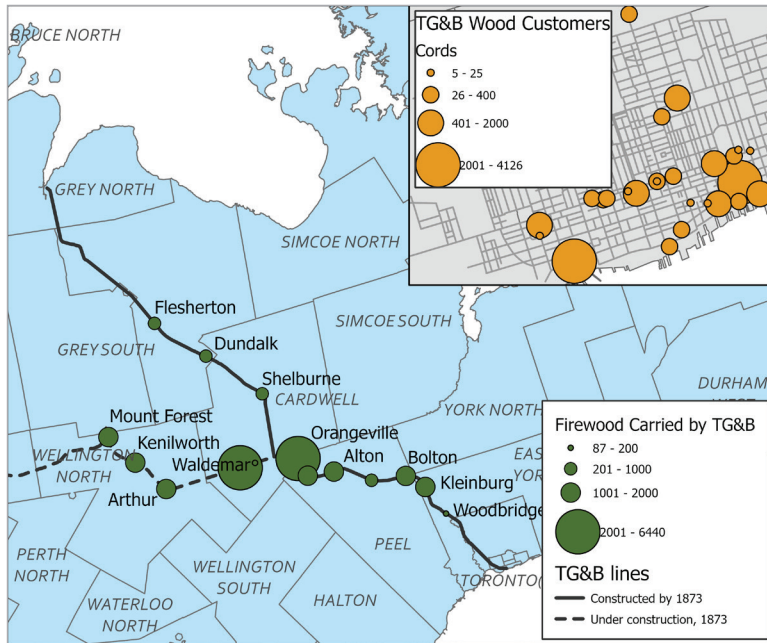


Figure 2. TG&B lines and firewood carried from each station (cords), 1873 (inset shows cords purchased by dealers and principal customers in Toronto).

Sources: Ontario, *Sessional Papers 1874*, 4th session, paper no. 5, pp. 1–4; GEORIA: Georeferenced Databases for Assessing the Historical Conditions of Health and the Environment, “Historical Railways_1836_1992,” http://mercator.geog.utoronto.ca/georia/dataset/dataset_rwys_ORIG.htm; Canadian Century research Infrastructure, “Reconstructed Census Geography GIS layers,” <https://ccri.library.ualberta.ca/endatabase/geography/gislayers/index.html>.

Several fuel dealers became influential in Ontario politics. Thanks to Fleming and Elias Rogers in Toronto, Charles F. Gildersleeve and W. G. Craig in Kingston, and John Heney in Ottawa, coal and wood merchants were strongly represented among mayoral candidates.⁵³ Elsewhere, mayors were known to stimulate the wood trade. In 1888, the mayor of Hamilton began “making inquiries” after the city council was informed “that the G. T. R. was not bringing cordwood into the city in sufficient quantities and that wood dealers and factories were suffering in consequence.”⁵⁴ Others, including J. M. Hughes of Kingston, called on citizens to ration firewood during wartime fuel shortages.⁵⁵ But more often, fuel merchants such as Fleming, Rogers, and Burns were among Toronto’s favourite whipping boys. When Rogers, a staunch Quaker, ran for mayor in 1887 on a temperance platform, he lost in disgrace after one of his political opponent’s supporters, Nathaniel Clarke

53 “They Are Off: Mayoralty Nominations in City Hall, Craig Speaks,” *Daily British Whig*, December 28, 1903, pp. 1–2; John J. Heney, *John Heney and Son, the Canadian Saga of an Ottawa Irish Family* (Ottawa: General Store Publishing House, 2010).

54 “Affairs in Hamilton: Complaints of Shortage in the Wood Supply,” *Globe*, November 2, 1888.

55 “Mayor Issues Notice Regarding Fuel Supply,” *Daily British Whig*, February 6, 1918, p. 1.

Wallace, implicated him in a coal price-fixing ring. Months later, in the middle of winter, Wallace was made chair of the “combines committee” of the House of Commons, and proceeded to interrogate Rogers, William Bell, William Bowman, Burns, and other members of what was known as the “coal trade branch” of the Toronto Board of Trade.⁵⁶ Wallace, who the *Globe* figured took “the position of an advocate rather than a chairman,” took care to ask coal dealers if they had been fixing prices for wood as well. While the legal results of the committee were mixed, Wallace made a name for himself as an anti-monopolist and champion of central Canadian urban fuel consumers. Public opinion was on his side: two years earlier, Patrick Burns, owner of one of Toronto’s oldest fuel supply companies, had been arrested as part of the sensational “Coal Conspiracy Case,” on charges of fraud for not delivering large shipments of coal paid for by the city.⁵⁷

Firewood Consumers: Railways and Locomotives

Canadian railways consumed large amounts of firewood, including in the process of hauling wood and other products to urban markets. Historians have written at length about the importance of Canadian timber to railway construction in Canada and Europe. Bridges, ties, and stations required enormous quantities of lumber.⁵⁸ Railways were also very large consumers of wood fuel. Wood fuelled almost every engine into the 1860s, but since the usual narrative is that railways switched to coal in the late 1870s, very little is known about their use of wood.⁵⁹ Many new lines built in the 1870s were outfitted directly for coal, but sunk costs and established fuel systems on older trunk lines kept many locomotives burning wood long after the forests immediately adjacent to the tracks they ran on had been cleared. Several new lines are known to have burned wood from the beginning, their engines carrying it in a separate tender car.⁶⁰ Northern railways and lines that ran into the Canadian Shield continued using wood fuel longer than their mainline counterparts.⁶¹

56 Jamie Bradburn, “An Illustrated Business Quartet,” *Torontoist*, January 12, 2010; “The Combines Committee,” *Globe*, March 19, 1888, p. 1; “From the Capital,” *Globe*, April 26, 1888, p. 4; Canada, Parliament, House of Commons Journals, 6th Parl., 2nd sess., vol. 1 (1888), pp. 164–174.

57 “Toronto Has Its Scandal,” *New York Times*, August 13, 1886.

58 V. M. Ravi Kumar, “Green Colonialism and Forest Policies in South India, 1800–1900,” *Global Environment*, vol. 5 (2010), pp. 101–125, 109; Douglas Sobey, *Early Descriptions of the Forests of Prince Edward Island: II. The British and Post-Confederation Periods (1758–c. 1900). Part A: The Analyses* (Charlottetown: Prince Edward Island Department of Environment, Energy and Forestry, 2006), p. 96; Ken Drushka, *Canada’s Forests* (Montréal and Kingston: McGill-Queen’s University Press, 2003), pp. 34–36; Trout and Trout, *Railways of Canada*, p. 162; G. P. de T. Glazebrook, *A History of Transportation in Canada*, vol. 1, *Continental strategy to 1867* (Montréal and Kingston: McGill-Queen’s University Press, 1964), p. 162.

59 Norman Thompson and J. H. Edgar, “Canadian Locomotive Practice in Early Days: Adapted from the Ms. of ‘Canadian Railway Development from the Earliest Days,’” *Railway and Locomotive Historical Society Bulletin*, vol. 17 (1928), pp. 81–85, quote on p. 84; Currie, *Grand Trunk*, p. 122.

60 See, for example, GTR engines such as Locomotive No. 162 in James Marsh, “Grand Trunk Railway of Canada,” in *The Canadian Encyclopedia*, updated June 3, 2015, <http://www.thecanadianencyclopedia.ca/en/article/grand-trunk-railway-of-canada/>.

61 Most early Atlantic Canadian railways burned wood as well. For example, the New Brunswick Railway used 4-4-0 wood-burning steam engines, and the company continued to purchase “very large quantities” of cordwood as late as 1884. Charles Lugin, *Facts Concerning the Fertile Belt of the New Brunswick Land and Lumber Company* (Limited) *New Brunswick* (Canada) (Saint John, NB: J&A McMillan, 1884), p. 39.

Railways that used wood fuel relied on a dense network of stations and labour to supply it because wood was expensive to transport, difficult to process, and low in energy content relative to coal. The declared intent of promoters like Laidlaw had been to encourage farmers to sell firewood on and to the railways, but rail access to the central Canadian bush appears to have encouraged many urban merchants like Rogers and Fleming to look north for new cordwood supplies and to go cut it themselves.⁶² This work was often managed by contractors or “jobbers,” and workers, sometimes called “woodhawks.”⁶³ In many cases, this was racialized labour. Robin Winks estimated that 2,500 African Canadians worked on construction of the Great Western Railway (GWR) in the early 1850s, and many of them settled in station towns such as Ingersoll where they found work cutting wood for locomotive fuel depots.⁶⁴ Initially, firewood was readily available near most Canadian lines, and fuel-hungry steam engines created work for local residents and itinerant train workers alike. George Adam, a Midland Railway brakeman based in Lindsay, recalled the central importance of wood fuel supply. Locomotives could only run 10 or 15 miles on a load of wood, so a train southbound to Port Hope would stop at Omemee, Franklin, Millbrook, and Garden Hill stations to “wood up.” Adam described hundreds of cords of firewood at each station, with a station man in charge of having preloaded one-cord racks at the ready.⁶⁵ Locomotive crews would load the rack in their tender and compete with each other to see whose engines ran at best fuel efficiency. Adam recalled seeing particularly competitive crews pause alongside farms and skim a little off a farmer’s woodpile in order to win these competitions.⁶⁶ However, Norman Thompson and J. H. Edgar’s reference to wood trains that brought in a “complement of a hundred coloured men and Indians” to process company wood piles was a more common labour scenario.⁶⁷ From settler guides in 1826 to the 1871 census manuscripts and Thompson and Edgar’s reference to wood trains, numerous accounts indicate that Indigenous people and people of colour were important suppliers and labourers in Canadian steam engine firewood markets.⁶⁸

Central Canadian railways gradually came to prefer working with coal for a variety of reasons. It had much lower labour costs per distance travelled, a higher

62 “Wanted,” *Globe*, February 26, 1887.

63 David E. Schob, “Woodhawks and Cordwood: Steamboat Fuel on the Ohio and Mississippi Rivers, 1820–1860,” *Journal of Forest History*, vol. 21, no. 3 (1977), pp. 124–132.

64 Robin W. Winks, *The Blacks in Canada: A History* (Montréal and Kingston: McGill-Queen’s University Press, 1997), pp. 245; “Canada Railroad,” *Voice of the Fugitive*, July 2, 1851, p. 4. See also Fred Landon, “The Work of the American Missionary Association Among the Negro Refugees in Canada West, 1848–64,” in Karolyn Smardz Frost et al., eds., *Ontario’s African-Canadian Heritage: Collected Writings by Fred Landon, 1918–1967* (Toronto: Dundurn, 2009), p. 338n25; “There is Plenty of Work for Fugitives Here on the Canada Railroad,” *Voice of the Fugitive*, April 8, 1852, p. 2; “To the Editor of the Voice of the Fugitive,” *Voice of the Fugitive*, February 26, 1852, p. 3.

65 “Early Railroad Days – George H Adam [*Evening Guide* (reprinted from the *Lindsay Post*) 1932],” Port Hope History (website), accessed August 5, 2020, <http://www.porthopehistory.com/woodburntrains/>.

66 “Early Railroad Days – George H Adam.”

67 Thompson and Edgar, “Canadian Locomotive Practice.”

68 Anon., *Information to Emigrants: Some Account of the Island of Prince Edward, with Practical Advice to those Intending to Emigrate [...] by a Late Resident of that Colony* (London: J. M. Richardson, 1826), p. 19; Andrew Parnaby, “The Cultural Economy of Survival: The Mi’kmaq of Cape Breton in the mid-19th Century,” *Labour/Le Travail*, vol. 61 (Spring 2008), p. 86.

energy density than wood, and was easier to load into cars and feed into fireboxes (many coal tenders contained a sloped floor in the fuel bunker to facilitate this). One of the most significant reasons was that fuel wood for powering railways was found at the wrong end of the line. Coal arrived from a variety of sources to a single point of sale in cities—that is, the place from whence trains tended to depart mainly empty. Wood could be supplied at many points of sale, all of which were rural, so while it could be transported between stations in principle, railways usually had more valuable cargo to haul from these sites. Logistically, coal was much easier to manage from central urban stations. Coal was also considered safer, as the sparks emitted from wood-burning engines posed a major threat to the forests they relied on.⁶⁹ For example, in July 1881, sparks from T&N locomotive ignited the railway's own fuel supply, destroying over 2,000 cords piled at a company depot on its line between Goodwood and Uxbridge.⁷⁰ More often, sparks ignited private property, as in late August 1884, when a wood-burning Canada Atlantic Railway engine caused a blaze near Gloucester Station on the farm of James Templeton Moxley (which is today part of the Ottawa Airport), destroying his “growing wood timber, cordwood, fences, meadow, pasture and surface soil” and embroiling the railway in a protracted lawsuit that went to the Supreme Court.⁷¹

Logistical and safety problems with wood fuel could perhaps be overcome, but economics posed the greatest incentive to convert locomotives and rail lines to coal. Wood was initially a cheap, abundant fuel source for Ontario's railways, but coal quickly approached its price as demonstrated in the records of the GWR.⁷² In 1866, it consumed over 30,000 cords per year, and as it doubled its mileage in the seven years after Confederation, its traffic and fuel consumption increased quickly. From 1867 to 1872, firewood represented 61% of the GWR's total fuel expenditures, but this fell to 21% by 1879, as coal began to supply the railway's voracious appetite for energy. Initially, the GWR paid dearly for the fossil fuel. Each ton of coal cost the railway an average of \$6.71 in 1873–1875. By contrast, it acquired firewood for a relatively stable cost of around \$4 per cord. In 1868, firewood jumped briefly to \$5.10 per cord, but otherwise the company was insulated from the prize squeezes faced by many urban Canadians, and the price of firewood trended slowly downward.⁷³ The GWR's reports show that the company sought to replace firewood not because of wood scarcity or rising firewood prices but because coal was a more convenient fuel available at increasingly competitive prices.

69 “Main Street Comments,” *Lindsay Daily Post*, July 29, 1964; W. M. Spriggs, “Great Western Railway of Canada,” *Railway and Locomotive Historical Society Bulletin*, vol. 51 (1940), p. 25; Thompson and Edgar, “Canadian Locomotive Practice,” p. 84; Colin Churcher, “Fuelled by Wood,” *Branchline* (May 2007), 6–9, p. 6. See also Colin Churcher, “Fuelled by Wood,” https://churcher.crcml.org/Articles/Article2007_04.html, accessed March 26, 2021.

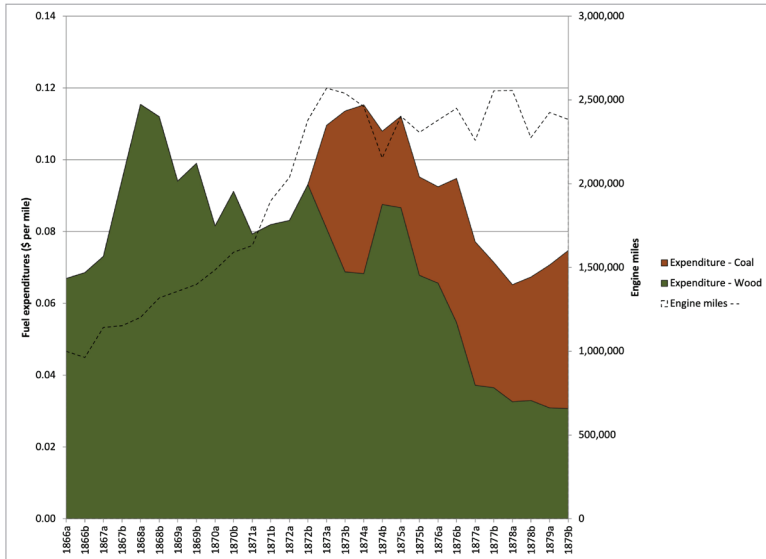
70 J. Peter Hvidsten, *Uxbridge: The First 100 Years* (Port Perry, ON: Observer Publishing, 2005), p. 71.

71 *Canadian Atlantic Railway Co. v. Moxley*, [1888] 15 S.C.R. 145.

72 The regular fuel costs of the interurban trunk line are visible in its biannual reports, which are available until 1880, at which time it began a merger with the GTR. University of Western Ontario Archives and Special Collections (UWOASC), “Report of the Directors of the Great Western Railway of Canada,” vol. 3 1871–76 and vol. 4 1876–80, HE2810.G8A2.

73 UWOASC, “Report of the Directors of the Great Western Railway of Canada,” vol. 3 1871–76.

Graph 1. Great Western Railway Mileage and Fuel Costs (biannual), 1866–1879



Source: UWOASC, “Report of the Directors of the Great Western Railway of Canada,” vol. 3 and vol. 4.

Graph 2. Great Western Railway Fuel Consumption and Prices (biannual), 1866–1879



Source: UWOASC, “Report of the Directors of the Great Western Railway of Canada,” vol. 3 and vol. 4.

Most Canadian railways followed the GWR into predominately coal-based fuel systems in the 1870s. As with the GWR, however, the transition was not immediate, and although only rough estimates are possible, the total amount of firewood consumed by locomotives during this period clearly remained substantial. The GWR consumed an average of 161 cords for every mile of its track from 1866 to 1871, and if this rate was applied to every mile of rail in Canada, it suggests Canadian railways consumed up to 434,434 cords per year in 1871. These rates dropped quickly with the introduction of coal engines, but in 1875, the GWR and GTR lines still burned 107 and 108 cords per mile, respectively.⁷⁴ As coal consumption rose, firewood consumption stabilized briefly and then began to decline. The GWR continued to burn around 60,000 cords per year prior to its merger with the GTR in 1882. According to tenders for firewood to be delivered to its stations in the winter of 1877–1878, the GTR anticipated demand for 149,400 cords in 1878.⁷⁵ However, in 1881 president Henry W. Tyler told shareholders that new investments would focus on increasing the railway's access to coal.⁷⁶ By the early twentieth century, coal had almost completely replaced wood as a locomotive fuel. In 1908, Canadian railways consumed only 677 cords of hardwood and 44,067 cords of softwood, which compared to almost 6 million tons of coal represented less than 1% of total fuel consumption by Canadian locomotives.⁷⁷

Firewood Consumers: Urban Homes and Industry

Central Canada's transition to fossil fuels began in transportation and industry, and then continued among residential consumers, particularly in cities. Mapping railway freight data helps to explain the transition and reveal the nature of these well-wooded towns. Toronto's two narrow gauge railways brought in between 20,000 and 30,000 cords each in the early 1870s to supply the city's largely residential fuel market. As railways gradually stopped consuming fuel wood in quantities that rivalled small cities, we might expect to see cordwood railways like the T&N and TG&B reduce their focus on transporting this fuel. Indeed, in 1880, Edmund Wragge, general manager of the TG&B, explained to Toronto City Council that only 5,000 cords could be procured along his line, where five years earlier it had delivered over five times that amount. At the same meeting, James Ross of the Credit Valley Railway pledged to do everything in his power to continue supplying the city, but that line was only hauling between 3,000 and 6,000 cords per year in the early 1880s, less than 6% of its total tonnage.⁷⁸

74 The Grand Trunk's rate dropped 203 cords per mile to 108 cords per mile in 1875 and 60 in 1878. Canada, Parliament, *Sessional Papers 1876*, paper no. 51, pp. 24–25.

75 "Grand Trunk Railway: Firewood Required to be Delivered on Western District during the Winter of 1877–8" [S.I.: s.n. 1878?], p. 1, CIHM/ICMH microfiche series, no. 56102, accessed March 26, 2021, <https://www.canadiana.ca/view/oocihm.56102/>; "Grand Trunk Railway: Wood to be Delivered on Eastern District During the Winter of 1877–8" [S.I.: s.n., 1878?], p. 1, CIHM/ICMH microfiche series, no. 58976, accessed March 26, 2021, <https://www.canadiana.ca/view/oocihm.58976/>.

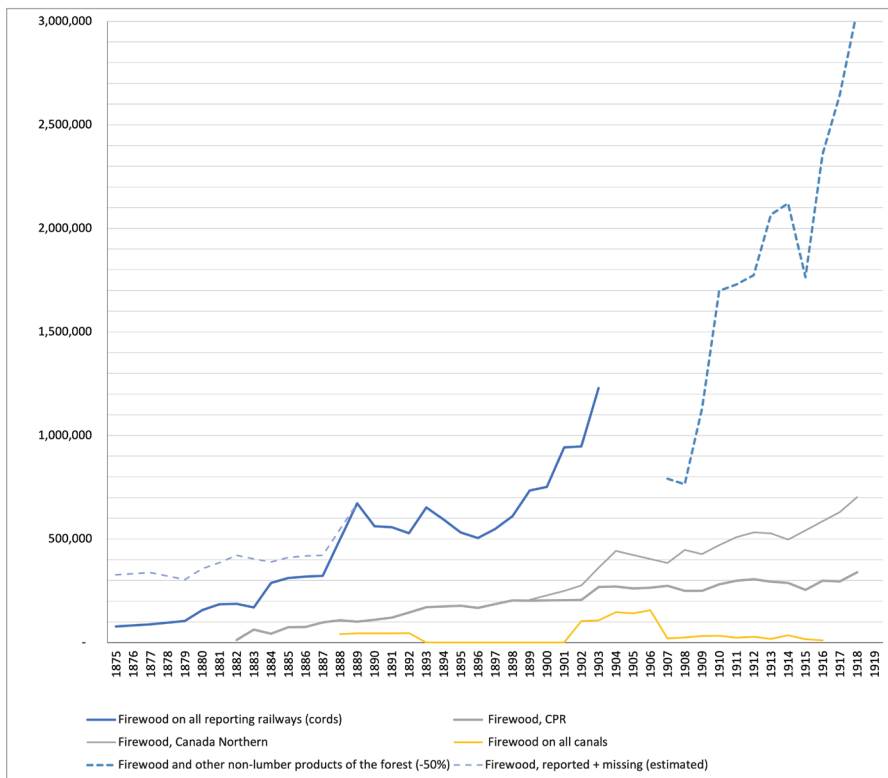
76 Currie, *Grand Trunk*, pp. 122, 157; "Meetings of Shareholders: Grand Trunk Railway of Canada," *Railway News*, April 30, 1881, p. 649.

77 Canada, Parliament, *Sessional Papers 1908*, paper no. 20b, p.29.

78 "City Council: Several Important Matters Brought Before Last Night's Meeting," *Globe*, December 21, 1880, p. 10.

The overall movement of cordwood on Canadian railways, however, actually increased during the late nineteenth century, even when we take into account estimates for those railways that did not report their freight in the 1870s and 1880s (Graph 3). In the early 1870s, the federal government began requesting regular haulage data from all Canadian railways, and the amount of firewood was singled out from the other general categories; the legal cordwood commitment on certain railway charters (coupled with public mistrust) was significant enough to justify regular reporting.⁷⁹ Extensive amounts of wood were hauled by certain railways, including Toronto’s narrow gauge lines, and at certain times on others like the GWR and the GTR (which, for most years prior to 1885, did not report any of the freight they hauled). Railways shipped much greater quantities than did canals.

Graph 3. Firewood Hauled on Canadian Railways, 1875–1919, and Canals, 1888–1892, 1902–1916 (cords)



Sources: Canada, Parliament, *Sessional Papers 1876*, paper no. 51, pp. 24–25; Canada, Parliament, *Sessional Papers 1878*, paper no. 96, pp. 20–21; Canada, Parliament, *Sessional Papers 1880*, paper no. 42, pp. 14–15; Canada, Parliament, *Sessional Papers 1882*, paper no. 8, pp. 26–27; Canada, Parliament,

⁷⁹ For more on railway statistics, see David A. Worton, *The Dominion Bureau of Statistics: A History of Canada’s Central Statistical Office and Its Antecedents, 1841–1972* (Montréal and Kingston: McGill-Queen’s University Press, 1998), p. 73.

Sessional Papers 1884, paper no. 10, pp. 30–31; Canada, Parliament, *Sessional Papers 1886*, paper no. 13, pp. 28–29; Canada, Parliament, *Sessional Papers 1888*, paper no. 8B, pp. 30–31; Canada, Department of Railways and Canals, *Annual Report of the Minister of Railways and Canals for the Fiscal Year from 1st July 1888, to 30th June, 1889* (Ottawa: Brown Chamberlin, 1890), pp. 232–233; Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 56–61, 80–81, 122–127, 398–403, 458–463; Canada, Parliament, *Sessional Papers 1897*, paper no. 10, pp. 40–45; Canada, Parliament, *Sessional Papers 1902*, paper no. 20, pp. 126–131; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1901* (Ottawa: Government Printing Bureau, 1902), p. 384; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1902* (Ottawa: Government Printing Bureau, 1903), p. 357; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1903* (Ottawa: King’s Printer, 1904), p. 453; Canada, Parliament, *Sessional Papers 1905*, paper no. 20, pp. 48–55, 146–147; Canada, Department of Agriculture, *Canada Year Book, 1908* (Ottawa: King’s Printer, 1909), pp. 100, 111, 126–127, 130–131, 466; “Canadian Northern Railway Report,” *The Railway and Marine World*, No. 154 (December 1910), p. 1005; Canada, Department of Agriculture, *Canada Year Book, 1910* (Ottawa: King’s Printer, 1911), p. 389; “Canadian Northern Railway Earnings,” *Canadian Railway and Marine World* (October 1912), p. 499; Canada, Department of Agriculture, *Canada Year Book, 1911* (Ottawa: King’s Printer, 1913), pp. 355, 373; Canada, Department of Trade and Commerce, *Canada Year Book, 1914* (Ottawa: King’s Printer, 1915), p. 496; Canada, Department of Trade and Commerce, *Canada Year Book, 1916–17* (Ottawa: King’s Printer, 1917), p. 439; Canada, Department of Trade and Commerce, *Canada Year Book, 1921* (Ottawa: King’s Printer, 1922), p. 594; Harold Innis, *A History of the Canadian Pacific Railway* (London: P. S. King and Son, 1923), pp. 146–147, 164–165 and nn. 550, 611, 667, <https://gutenberg.ca/ebooks/innis-historyofthecpr/innis-historyofthecpr-00-h.html>.

Note: From 1904 to 1906, firewood was grouped within “coal and other fuel,” and from 1907 to 1919 with non-lumber “products of the forest.” Presumably, the largest product within this series was pulpwood, particularly by the late 1910s, although wartime coal shortages also drove up firewood shipments by an unknown amount. Therefore, the quantity of the combined wood products are shown but converted from tons to cords and reduced by 50%.

The maps (Figures 3A and 3B) of firewood transported on central Canadian railways show the amounts of firewood hauled on railways that could be matched from the annual reports of the Department of Railways and Canals (in the *Sessional Papers* of Canada) to the historical railway dataset in a Geographic Information System (GIS). The symbols on these maps show the firewood freight data in terms of cords per total length of each railway in that year rather than the total cords hauled. This helps draw the attention away from longer lines and instead reveals which railways hauled the highest rates per kilometre—that is to say, which lines were used most intensively to transport fuel wood. This visualization is a proxy for the geographic precision of the data. It is a map of where we are most confident that wood was hauled in large amounts. The lower intensity lines often hauled much larger quantities of cordwood, but it is impossible to specify the locations or direction from this source. However, because wood was relatively low value per ton, it was more likely carried over shorter distances or to cities with strong market demand—unfortunately, it is not possible to confirm which centres collected that fuel on longer lines. Most of the railways with no data displayed almost certainly hauled some firewood, but their freight was either “not reported,” as was the case for the GTR and several other lines before 1884, or omitted from the total freight hauled for some other reason. This was the case on some lines known to haul wood between 1884 and 1888. By the 1890s, the data on firewood hauled were relatively

complete, and provides the best record of railways' role in the wood energy system until 1904, at which point the data were aggregated with other commodities.⁸⁰

The result shows that firewood had a higher density (in cords per kilometre) on many of the shorter lines, especially those linking the Canadian Shield with major cities and transportation hubs (Figure 3A). In the first data point (1875), the density of wood hauled per kilometre was highest on specialized, Toronto-oriented lines. The T&N, which hauled 571 cords per kilometre, and the TG&B, which hauled 236, both appear in this view as bright veins connecting Toronto to its hinterlands. Comparing firewood to other commodities hauled on each line, these two narrow gauge railways dedicated up to 50% of their freight to firewood. Other railways such as the Whitby and Port Perry were not known as fuel trains, but still stand out on the relative map. This railway hauled 125 cords per kilometre in 1875, down from 250 cords in 1870.⁸¹ Firewood's share of the line's total freight oscillated between 8% and 12% per year between 1870 and 1881.⁸² Even as railway managers like Wragge and Ross explained the difficulty of procuring firewood west of Toronto, their railways continued to provide relatively large amounts of firewood throughout the 1880s. The TG&B reported carrying 21,484 cords in 1883, which still represented over a quarter of its tonnage.⁸³ Cities in southwestern Ontario consumed wood from suppliers such as the London, Huron, and Bruce Railway, which delivered up to 10,000 cords to London in some years and allocated 24% of its freight to firewood in 1881. But most of these railways were either interurban trunk lines or reached into heavily settled agricultural districts. Their firewood shipments usually paled in comparison to more specialized lines servicing Toronto, Kingston, and Ottawa.

The narrow gauge lines that started the rail-based urban energy supply chain in Ontario were soon joined and eclipsed by other railways. As agricultural settlement and timber clearing advanced in southwestern Ontario, it became more common to source urban firewood from the Canadian Shield. By the late 1880s, cordwood hauled to eastern Ontario cities such as Kingston and Ottawa grew denser on several lines, and also on local canals. Narrow gauge promoters argued that timber railways detracted from petty producers, but some like John R. Booth's Canada Atlantic actually created firewood markets. The Ottawa Valley lumber baron is best known for building one of the world's largest lumber companies, but Booth's railway also hauled thousands of cords of firewood from the Canadian Shield to Ottawa and other cities from the beginning. In autumn 1882, the *Ottawa Citizen* noted the railway had delivered 200 cords in a single day from Cambridge Township, proving

80 An additional category for railways with "no data" indicates that some railways were mapped in certain locations by Christopher Andreae and the Historical Atlas of Canada, but they could not be matched to railway companies in the *Sessional Papers*. Christopher Andreae, *Lines of Country: An Atlas of Railway and Waterway History in Canada* (Erin, ON: Boston Mills Press, 1997).

81 Canada, Parliament, *Sessional Papers 1876*, paper no. 51, pp. 24–25.

82 Trout and Trout, *Railways of Canada*, p. 139.

83 The T&N likely continued hauling similar amounts of wood in this period, but its incorporation with the Midland Railway in 1882 meant that its records went missing from the Report of the Department of Railways. Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463.

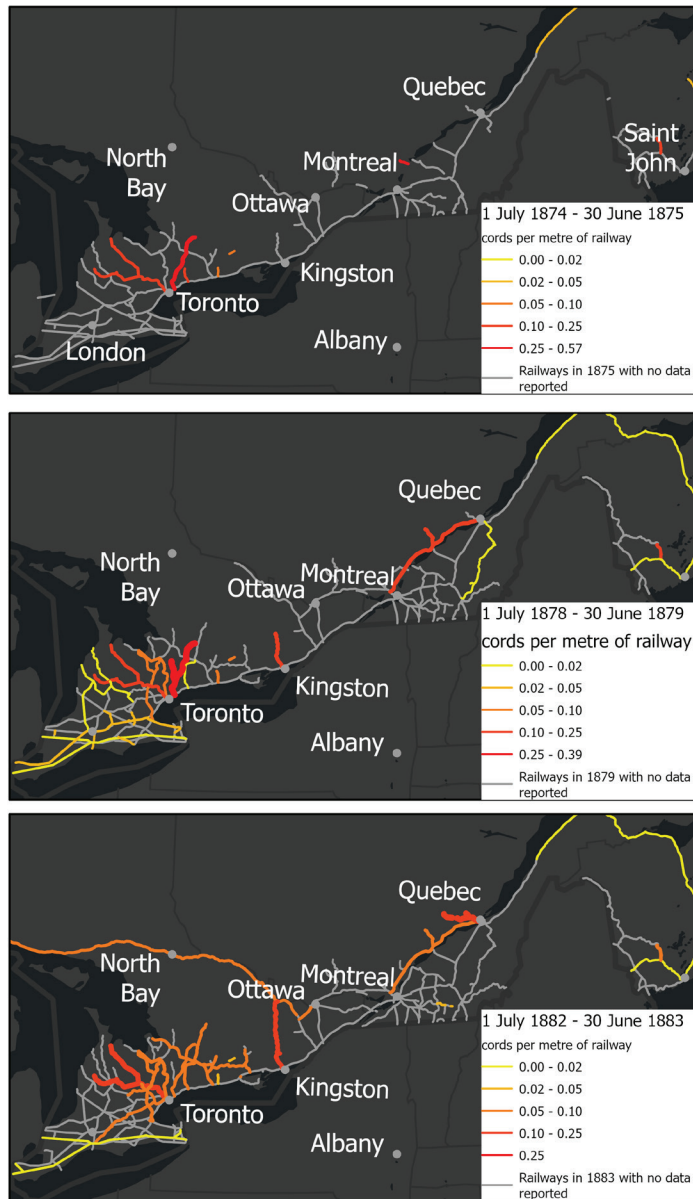


Figure 3a. Firewood hauled on central Canadian railways, 1875, 1879, 1883.

Sources: Canada, Parliament, *Sessional Papers 1876*, paper no. 51, pp. 24–25; Canada, Parliament, *Sessional Papers 1880*, paper no. 42, pp. 14–15; Canada, Parliament, *Sessional Papers 1884*, paper no. 10, pp. 30–31; GEORIA: Georeferenced Databases for Assessing the Historical Conditions of Health and the Environment, “Historical_Railways_1836_1992,” http://mercator.geog.utoronto.ca/georia/datum/dataset_rwys_ORIG.htm; ESRI Canada, “Canadian Historical Railways,” <https://www.arcgis.com/home/item.html?id=89044dbd4e7a4ec288d18b2b477237d4>.

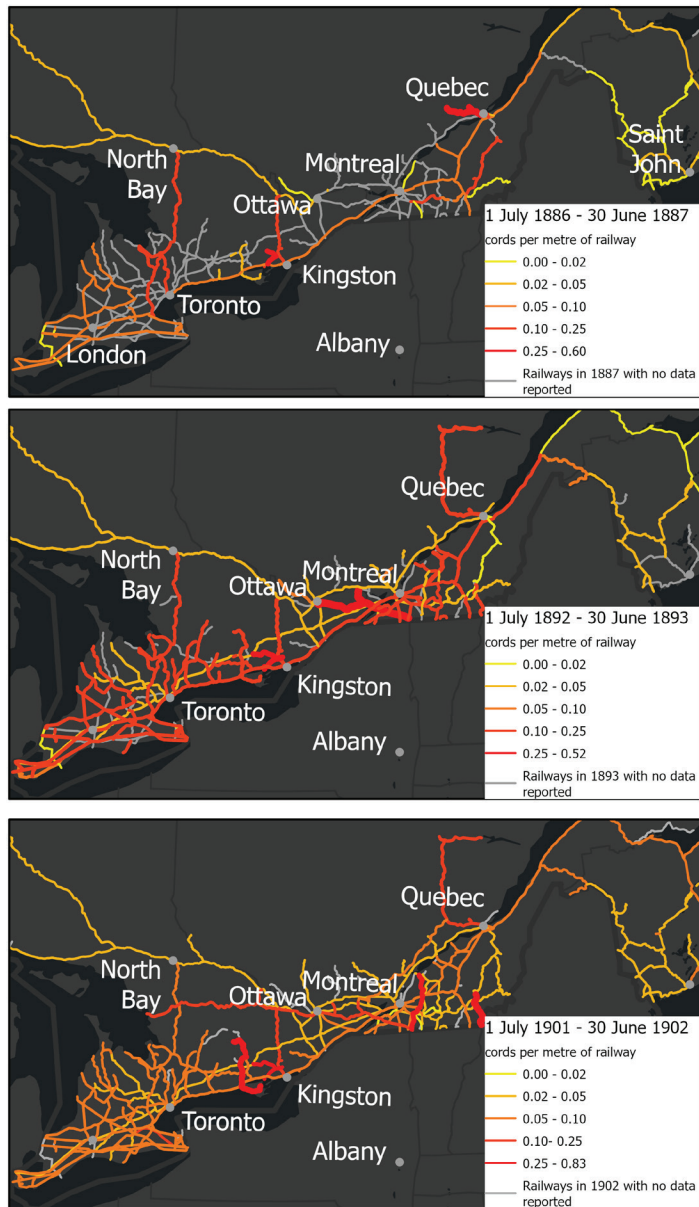


Figure 3b. Firewood hauled on central Canadian Railways, 1887, 1893, 1902.

Sources: Canada, Parliament, *Sessional Papers 1888*, paper no. 8B, pp. 30–31; Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1902* (Ottawa: Government Printing Bureau), p. 357; GEORIA: Georeferenced Databases for Assessing the Historical Conditions of Health and the Environment, “Historical_Railways_1836_1992,” http://mercator.geog.utoronto.ca/georia/datasum/dataset_rwys_ORIG.htm; ESRI Canada, “Canadian Historical Railways,” <https://www.arcgis.com/home/item.html?id=89044dbd4e7a4ec288d18b2b477237d4>.

that rail transport offered “a prospect of cheaper fuel for the city for some time to come.”⁸⁴ By 1889, the *Ottawa Free Press* noted that the railway was bringing “a large number of carloads of cordwood daily from the vicinity of Eastman’s [Carlsbad] Springs and South Indian for consumption at Ottawa.”⁸⁵ Indeed, the annual reports show that the Canada Atlantic hauled 42,957 cords that year (occupying 18% of its freight) and 74,898 cords (24% of its freight) in 1890. By 1893, its firewood freight stabilized at about 45,000 cords, and with over 520 cords per kilometre of track its density surpassed the Toronto narrow gauge lines (Figure 3b).⁸⁶ Other medium and short line railways in eastern Ontario grew in importance as firewood carriers in the 1880s. Among those reporting high concentrations of firewood transport in this decade were the Kingston and Pembroke (for which firewood constituted 36% of its total freight in 1879 and 25% in 1893), the Napanee, Tamworth and Quebec (which in 1887 carried 7,684 cords for 45% of its freight), and the Central Ontario Railway.⁸⁷ Wood was an important commodity for practically all of the medium and short line railways in eastern Ontario, and most saw wood freight increase in the 1890s. For example, Edward Rathbun’s short line Bay of Quinte Railway and Navigation Company hauled 24,484 cords in 1893, which represented about 12% of its total freight and worked out to 652 cords per kilometre.⁸⁸ By 1903, its firewood business had increased to 35,607 cords, or about 10% of its freight. The Kingston and Pembroke Railway hauled 11,887 cords of firewood in 1893, dropped briefly to 7,646 cords in 1896, and it then rose steadily to around 13,000 cords in the early 1900s.⁸⁹ The Central Ontario Railway carried around 100,000 cords per year in the early 1900s, fully half of its freight. With up to 136,000 cords delivered by rail to the Bay of Quinte, the fuel wood market there appears to have met residential, industrial, and transportation demand. This included the towns of Belleville, Napanee, Trenton, and Picton, plus Rathbun’s own vertically integrated “multi-product wood manufacturing plant” at Deseronto, which had charcoal, alcohol, and sash and door factories.⁹⁰ In addition to selling processed wood fuels, Rathbun designed his mills, locomotives, and steamboats to run on firewood and wood waste, prompting one visitor to exclaim: “Waste! Nothing is

84 “Wood,” *Ottawa Free Press*, September 8, 1882; “Elgin Street Water,” *Ottawa Citizen*, September 9, 1882.

85 “News,” *Ottawa Free Press*, February 19, 1889.

86 The Canada Atlantic’s firewood freight increased again in the twentieth century, averaging 67,000 cords per year between 1901–1903, but since by then the line stretched to Parry Sound, its firewood density had dropped to around 235 cords per kilometre. Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1901*, p. 384; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1902*, p. 357; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1903*, p. 453.

87 Canada, Parliament, *Sessional Papers 1880*, paper no. 42, pp. 14–15; Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463; Canada, Parliament, *Sessional Papers 1888*, paper no. 8B, pp. 30–31.

88 Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463.

89 Canada, Parliament, *Sessional Papers 1894*, paper no. 10, pp. 458–463; Canada, Parliament, *Sessional Papers 1897*, paper no. 10, pp. 40–45; Canada, Department of Agriculture, *Statistical Year-Book of Canada for 1903*, p. 453.

90 H. V. Nelles, *The Politics of Development: Forests, Mines, and Hydro-Electric Power in Ontario, 1849–1941*, 2nd ed. (1974; Montréal and Kingston: McGill-Queen’s University Press, 2005), p. 69; M. D. Leduc, “Bay of Quinte Railway,” *Canadian Rail*, vol. 172 (December 1965), pp. 213–214.

waste here—something is made of everything.”⁹¹ Other firewood brought to that district appears to have been loaded onto schooners as part of a long-distance lake trade.⁹²

To the northwest, railway expansion into the Canadian Shield continued to supply urban fuel markets. Firewood hauled by the Northern Railway increased from 19,746 cords in 1883 to 48,186 cords in 1887, and even as the company extended its line to North Bay it maintained a shipping rate of around 150 cords per kilometre of track.⁹³ Not all of this wood was bound for Toronto. After the railway’s northern expansion in 1886, the *Globe* reported that in northern towns such as Powassin, merchants such as T. Gorman had recently harvested “a large amount of cordwood and ties” for use on the Canadian Pacific Railway at North Bay, while in North Bay itself, larger merchants such as T&W Murray contracted the harvest of over 30,000 cords for the CPR in 1886 alone.⁹⁴ Large amounts were sent south as well. Robert Fleming, best known as a well-respected mayor of Toronto and general manager of the Toronto Street Railway Company, was in his first career a wood and coal merchant in partnership with T. W. Elliott. In 1887, his Toronto wood and coal yard advertised for 100 men to cut cordwood at Wyeland, on Georgian Bay near Penetanguishene and Midland.⁹⁵ A crew this size could have produced well over 1,500 cords in three weeks, and more if the trees had already been cut.

Toronto remained a significant consumer of rail-based firewood well into the 1890s. Rather than negotiate with farmers in southern agricultural districts, fuel merchants established new supplies in regions of the Shield such as the Kawartha Lakes. In some cases, they contracted with petty producers. In 1889, Toronto-based fuel wood buyer Samuel Swanton advertised to farmers as far away as Fenelon Falls. Swanton had been born and raised in Fenelon Falls, and took care to thank “his numerous customers for their liberal patronage” over the previous ten years.⁹⁶ (His son, William Bruce, would eventually become the “woods expert” for Fleming’s firm Standard Chemical Company, discussed below.) In 1893, a Haliburton newspaper spoke of demand so great in Toronto that “not a stick can be found along the line of railway unsold. Every pile of wood in the district will be entirely removed before another month has passed away. It nearly all goes to Toronto.”⁹⁷ Four years later in

91 Quoted in James A. Eadie, “Rathbun, Edward Wilkes,” in *Dictionary of Canadian Biography*, vol. 13, accessed January 8, 2021, http://www.biographi.ca/en/bio/rathbun_edward_wilkes_13E.html.

92 For example, on November 11, 1880, the schooner *Mary Everett* delivered cordwood from Brighton to John Bailey’s Toronto wharf. Built in Shannonville, the *Mary Everett* belonged to the Trenton and Bay of Quinte Navigation Company and was part of a regular cordwood and charcoal shipping fleet. “Navigation,” *Globe*, November 12, 1880, p. 8; R. L. Polk, *Directory of the Marine Interests of the Great Lakes* (Detroit: R. L. Polk, 1884), pp. 100–101; “Gunboat Times of the Great Lakes: Schooner Days,” *Toronto Telegram*, December 1, 1934. The Toronto Board of Trade’s harbour commissioner’s reports show that lake shipping became an insignificant source of the city’s firewood in the 1880s and 1890s, so the Bay of Quinte fuel was likely shipped to customers further east. See for example, Canada, Parliament, *Sessional Papers 1901*, paper no. 23, p. 13.

93 Canada, Parliament, *Sessional Papers 1884*, paper no. 10, pp. 30–31; Canada, Parliament, *Sessional Papers 1888*, paper no. 8B, pp. 30–31.

94 “Callander Extension: Description of the Principal Points on The Road, Gravenhurst to North Bay,” *Globe*, January 29, 1887, p. 11.

95 “Wanted,” *Globe*, February 26, 1887.

96 “Business Notice,” *Fenelon Falls Gazette*, November 15, 1889, p. 1.

97 “Shipping Wood,” *Watchman* (Lindsay, ON), August 10, 1893, p. 2.

Bancroft, the Irondale, Bancroft, and Ottawa Railway committed to bring over 1,000 carloads of cordwood and other forest products to market.⁹⁸ Local jottings often mentioned commercial firewood operations like these companies, although most were much smaller. For example, in autumn 1898, J. M. Knowlson purchased two limits of hardwood in the Kawartha Lakes region, one in Verulum Township and the other at Deer Bay near Buckhorn. He operated two camps of 25 men each, cutting and piling cordwood and saw logs along the banks of the Kawartha Lakes during the fall and early winter for water transport to Lindsay in the spring.⁹⁹ Knowlson was a self-employed “counter agent” who lived in Lindsay, according to the 1901 *Census*.¹⁰⁰ Other companies produced significant amounts of fuel wood as part of larger commercial forest operations. Timber merchant Joseph Bigelow operated sawmills on Pigeon Lake in the 1880s, and in addition to producing lumber and millions of shingles, he harvested about 8,000 cords of firewood annually and sent them to market in Port Perry.¹⁰¹

By 1920, several of Ontario’s oldest wood fuel companies had grown in scale and changed in scope but could still attract forms of protest occasionally. Robert Fleming’s wood business had become the Standard Chemical Company, directed in 1923 by David Gilmour, M. L. Davies, L. M. Wood, Hon. Wallace Nesbitt, W. H. Oliver, B. Tudhope, William Thomson, and Fleming himself. The company’s ten cordwood operations spanned most of the southeastern Canadian Shield, from Sault Ste. Marie in the west to Cookshire, Quebec, in the east, and during the First World War, like Rathbun before them, they had diversified to include wood alcohol and other wood-based chemicals. In 1923, the company’s “woods expert” William Bruce Swanton attracted the attention of company officials and Toronto police after moving his family to the tony Parkdale neighbourhood and being observed wearing expensive furs around the city. In March, police issued arrest warrants for Swanton and two other longtime associates of the Standard Chemical Company. They were charged with an elaborate wholesale theft of about \$250,000 from the company over several years in the form of cash and grafted purchases of cordwood and lands. Their ability to get as far as they did, with a former mayor and a Supreme Court Justice as employers, speaks to their sophistication and determination, not to mention Swanton’s willingness to challenge and damage a company that had employed multiple generations of Swantons. William Bruce and his wife fled to western Canada, then to the USA and Mexico, only returning in the summer to surrender themselves to the authorities after \$10,000 in cash had been “found buried under a tree, specially marked.”¹⁰² Surely this must have completed an adage uttered by senior Swanton to his son, along the lines that there’s always money in the forest.

98 “Bancroft, Present Terminus of IB & O Railway,” *Canadian Post* (Lindsay, ON), April 2, 1897, p. 9.

99 “Little Local Lines,” *Watchman*, October 27, 1898, p. 3.

100 Library and Archives Canada, Statistics Canada fonds, RG31-C-1, microfilm reels T-6428 to T-6556, *Census of Canada, 1901*, Lindsay (Town/Ville), Victoria (South/Sud), Ontario, p. 19.

101 “Historical Sketch of a Thriving Community on the Shores of Lake Scugog,” *Toronto Mail*, October 2, 1886, quoted in J. Peter Hvidsten, *Scugog: The Early Years* (Port Perry, ON: Observer Publishing, 2000), p. 146.

102 “Wholesale Thefts Are Firm’s Charges Against Employees,” *Globe*, March 16, 1923, p. 11; “Police in Search Find \$10,000 in Cash Under Marked Tree: Already \$70,000 Recovered Following Alleged

Conclusion

As central Canadian cities grew and industrialized and experienced some of the largest energy demands per capita in the world, firewood supplies from nearby farms were soon dwarfed by what writer George Perkins Marsh called an “annual crop of firewood and timber.”¹⁰³ This energy supply was a critical resource that had to be managed like any other crop, and in the mid-nineteenth century, a number of municipal bylaws and railway charters attempted to protect city residents and ensure a steady supply of wood. By the 1880s, the proliferation of railways (often built for other purposes entirely) reaching into the Shield, combined with a growing use of coal, meant that further management of the wood business was unnecessary. Urban residential and steam engine firewood consumption, therefore, went largely unrecorded, and it was typically marketed by private fuel merchants and jobbers. Small commercial jobbers such as Knowlson and large urban companies such as Fleming and Rogers together accounted for significant proportions of the cordwood trade that have gone largely unrecorded. Urban and small town fuel consumption in southern Ontario required an extensive system of labour, small business, and big railway.

Although historians commonly think of Ontario and Quebec cities as the driving force in Canadian industrialization and the transition to fossil fuels, that transition did not occur overnight; they also continued consuming large amounts of wood. Many urban homes, businesses, and the transportation lines that supplied them were fuelled at least partly with wood well into the industrial period in Canada. This scarcity narrative claiming that all action was prompted by rising prices and fuel shortages is problematic when we see that cordwood production increased in this period.¹⁰⁴ Many historians would agree with Scott Prudham, Gunter Gad, and Richard Anderson, who argue that “Toronto’s first significant energy transition, that from wood to coal” was hastened by firewood shortages in the 1840s and 1860s, as well as access to American coal.¹⁰⁵ However, the transition was more likely precipitated by a narrowing wood-coal price margin, as well as the logistical challenges and changing priorities of the railways.

Conspiracy by Employees,” *Globe*, July 25, 1923, p. 1; “Company’s Official Makes Restitution: Wearing of Costly Fur Garments Leads to Discovery of Wholesale Defrauding,” *Globe*, August 13, 1923, p. 11.

103 George Perkins Marsh, *Man and Nature: Or, Physical Geography as Modified by Human Action* (New York: Charles Scribner, 1867), p. 321.

104 For recent versions of the scarcity narrative, see Erin Blakemore, “The Firewood Shortage That Helped Give Birth to America,” *History*, November 14, 2017, <https://www.history.com/news/the-firewood-shortage-that-helped-give-birth-to-america>.

105 Prudham, Gad, and Anderson, “Networks of Power,” p. 180.

