The agricultural settlement of the Canadian prairies 1870–1930: Using GIS to interpret a dynamic process

Brian McGregor
Department of Geography, University of Winnipeg

John C. Lehr
Department of Geography, University of Winnipeg

Mapping the spread of agricultural settlement across the western Canadian prairies using conventional data sources presents some serious difficulties. Land alienation data, other than records of homestead entry, does not always reflect actual occupation of the land and census data offers only snapshots of population density at widely spaced intervals. At the time of settlement, the establishment and location of schools was determined by demographic and spatial criteria enshrined in territorial and provincial legislation. It is argued that using the date of school formation offers the best available measure of land occupancy and the emergence of community institutions. Using this data, the spread of settlement across the Canadian prairies was mapped. The advance of the settlement frontier can be depicted on an annual basis and compared to the progress of railway construction. GIS offers an opportunity to overlay other socio-economic and physical data to enable evaluation of the principal factors bearing on the process and pattern of settlement.

Keywords: school districts, frontier, settlement, GIS, computer mapping

Introduction

In 1890, the United States Census Bureau declared the frontier of settlement closed in the United States. This, of course, did not mean that there were no more lands available for settlement but that there was no longer a clear line of settlement that marked the edge of European occupation. Some three years later Frederick Jackson Turner, clearly influenced by the ideology embodied in the Census Bureau’s statement, presented a paper in which he argued that the frontier was a dominant force shaping the nature of United States society and the characteristics of its people (Turner 1894, 79–112). Turner postulated the existence of several frontiers in American history that cumulatively shaped the nature of the nation. He was frustratingly vague on his definition of frontier but it is clear that both the Bureau and Turner saw the frontier as a wave of European occupation that, with the exception of the California frontier, rolled from east to west.

For years Turner’s hypothesis shaped American historiography and even influenced the way in which Canadians approached their own frontiers of settlement. Although the frontier thesis was never embraced as wholeheartedly in Canada, Turner’s ideas nevertheless resonated in Mackintosh and Joerg’s eight-volume Canadian Frontiers of Settlement series, published in the 1930s, which, among other issues, dealt with the mining, forestry, and agricultural frontiers. More recently, in a sweeping global study of European agricultural frontiers, Weaver (2003, 18) shied away from defining frontiers in quantitative terms, preferring to consider them as “areas where the colonizer’s re-
gime of property rights had not been firmly installed but where newcomers were already marking out places in anticipation of that condition.”

Just as Turner never actually mapped the movement of the US frontier, preferring to describe the process only in general terms, Canadian scholars were seemingly content to accept Turner’s and the Census Bureau’s rather crude notion of the frontier being a line that is “the outer edge of the wave [of settlement] the meeting point of savagery and civilization” (Turner 1894, 81). The question of what exactly constituted the frontier, whether it was a geographic area or a process, and how and when it moved was never addressed satisfactorily (Billington 1967, 3–24). The Census Bureau used a simplistic and arbitrary measure of population density to determine the position of the settlement frontier in the United States, marking its location as where the population density was at least two but less than six people per square mile. Higher densities lay behind the frontier, lower ones beyond it. This is a deceptively simple way to determine where the frontier lies and, by implication, when an area is deemed to be settled. It has numerous shortcomings. No rationale accompanies the choice of two or six persons per square mile. An administrative decision to move the parameters to, for example, at least four but less than 12 people per square mile could conceivably move the frontier some distance. Even 12 people in a square mile might constitute only one or two households with a tenuous tie to the land. Nevertheless, this measure was used 100 years later to determine the geographical spread of European settlement on the Canadian prairies (Carlyle et al. 1997, Plate 17).

Other approaches to determining the limits of agricultural settlement include using records of land alienation. In Canada’s Prairie provinces most of the land was vested in the Crown, which was anxious to see its resources exploited as quickly and efficiently as possible. To encourage the building of railways, vast tracts, more than 25,000,000 acres, were set aside to compensate railway companies for building lines in British Columbia, Ontario and across the prairies (Martin 1973, 46). Over one-twentieth of the land was reserved to compensate the Hudson’s Bay Company for ceding its rights over Rupert’sland to the British Government. Two sections of every 36 square mile township were retained to fund the building and operation of schools. Most of the remaining lands were opened to homestead settlement. Exceptions were made when lands were assigned as Indian Reserves or set aside to compensate the Métis. Later, forest reserves were created and some lands held for settlement by specific ethnic groups such as Mennonites, Icelanders, and Doukhobors. Much of the land selected by railway companies remained unsold and unsettled as they waited to put their land on the market until early homesteaders had improved surrounding lands and driven up prices. Land awarded to Métis families in scrip was often sold to speculators and remained unsettled for years afterwards (Martin 1973, 21). While records of homestead entries provide a wealth of information about the settlement history of homestead lands, including the date of first entry, date of patent or cancellation, date of re-entry and so forth, homestead lands only constituted a fraction of all lands open to settlement across the prairies. The sheer detail and scale of this information tends to swamp the researcher with a plethora of data which are unfortunately geographically incomplete. Clearly any attempt to use records of land alienation to determine settlement history is fraught with difficulty.

Perhaps the most reliable and complete set of quantitative data regarding the settlement of the Canadian prairies is provided by the Census of Canada, which conducted detailed population inventories in all the provinces and territories on a decennial basis and, beginning in 1906, at five-year intervals. Since the settlement of the Canadian prairies largely took place within a span of some 40 years (1880 to 1920), it was a rapid process with major changes occurring within the span of three or four years. While census records provide accurate and detailed information on population numbers in each area they only afford a series of snapshots, at best, at five-year intervals. Therefore, census data cannot capture the rapidity with which agricultural settlement advanced across the Canadian prairies, nor does it offer any way to assess the strength of community connections. The objectives of this paper are twofold: to demonstrate the application of GIS technology in mapping historical geography, and to provide a series of maps that shows the geographical progress of European land occupation in the Canadian prairies from 1870 through the first two decades of the twentieth century.

School district formation and the passing of the frontier

An issue that compounds the difficulty of mapping the location of the frontier is that there is no one agreed-upon definition of frontier, apart from the arbitrary one chosen by the US Census Bureau. We share Weaver’s (2003) view that the position of a settlement frontier cannot be determined by population density alone, although population densities are a contributory factor in creating frontier conditions. The frontier is best seen as an area where social processes are unfolding, where institutions are being formed (whether transplanted from outside the region or generated from within is immaterial), where social and economic ties with the heartland are present, no matter how tenuous, and where the rule of law is newly present. Frontier conditions no longer exist when a district boasts non-indigenous social and cultural institutions, and has effective links with the organs of regional and national government. Weaver (2008, 27) thought similarly, arguing the frontier was a place where the state had not yet installed its apparatus for allocating property rights. The presence of agricultural settlers is, of course, required to mark the limits of an agricultural frontier. A sparse population of more than two non-indigenous people per square mile seems appropriate to mark the limits of European settlement. This numeric value reflects the fact that the catchment area of a school district was at most 20 sections (20 square miles) not all of which would necessarily be open to settlement. With a minimum population of 10 pupils of school age (5 to 15 years) there would be an adult population of at least 20 people. Assuming a small number of children under five years and some above
school age, the presence of a school would suggest a minimum population of 35 to 40 in the catchment area, likely higher than two people per square mile.

An effective way to determine when these conditions are met is to track the formation of school districts which may be used as a surrogate to determine when the frontier of settlement has passed. In Manitoba and the then North-Western Territories (after 1905 Alberta and Saskatchewan), the formation of school districts was strictly governed by legislation that specified the size of school district catchment areas and the number of school-age children necessary for the creation of a new school district. Although there were some minor differences between the three Prairie Provinces, the legal conditions for the establishment of a school were basically the same. A community could petition for the creation of a new school district when there were ten children of school age living within a three-mile radius. Most did so, seeing a school as a symbol of progress and education as the pathway to social development (Kaye 1964, 319–347). No school district was supposed to serve more than 20 sections (20 square miles) although exceptions were made if natural barriers precluded some students attending schools that were geographically closer.

The formation of a school district signaled the emergence of an area from the disorganized conditions of frontier life, the attainment of a degree of social stability and the embrace of extra-regional governance. It also meant the area had been surveyed and officially declared open for settlement. Provincial and territorial boards of education exercised control over the education process, ensuring uniformity. In Manitoba, the process was administered from Winnipeg, in Alberta and Saskatchewan from Edmonton and Regina respectively. Provicially-appointed school inspectors ensured the approved curriculum was followed, school buildings met provincial codes, attendance was recorded, and teachers were competent. School trustees were elected from within the local community and their members were subject to provincial or territorial codes of conduct. School boards were empowered to issue debentures, raise taxes, and apply for grants from the Provincial and Territorial Governments for the maintenance of school grounds and buildings, and the payment of teachers. If a school district failed in its fiduciary responsibilities, it could be replaced by a provincial trustee who would manage its affairs until such time as the Province deemed the district ready to resume its responsibilities.

Some other common institutions whose presence in the landscape reflects the passing of the frontier include post offices, court houses, and community clubs (Alwin 1974, 183–186; Myers 1990, 218–227; Winsberg 1993, 189–199), while Warkentin (1965, 85–166) used gross postal revenues to create a picture of economic development in western Canada in 1866. Post offices were established when mail traffic was deemed sufficient to warrant the establishment of a position as postmaster—usually in a house or store. In Canada, as in the United States, these positions were often subject to political patronage so their presence and geographic placement did not always reflect true need. Furthermore, as political fortunes ebbed and flowed so could the location of post offices (Winsberg 1993, 191). The presence of a court house, while demonstrating the firm hold of government in an area, was likely to be only encountered in a longer-settled area where frontier conditions had long ceased to exist. Schools, on the other hand, were more than vehicles for education of children. They embodied social values and qualities. The various departments of education saw them as community centres, “around which community life revolves,” as one Manitoba school inspector put it (Herriot 1918, 85). In nascent prairie communities, teachers were expected to take a role in the development of cultural (and patriotic) community activities, organizing school concerts and generally elevating the cultural tastes of the people. Forming a school district, building a schoolhouse and the arrival of a new teacher was a signal of progress to settlers in pioneer communities. Teachers working in “foreign” non-English-speaking settlements were regarded by department of education officials as agents of enlightenment and assimilation, inculcating British Imperial values and the Protestant ethic into new Canadian communities (Lehr 2011, 135–137).

Schools had a transformative function as they were a vehicle whereby single young women were injected into communities where there was a serious gender imbalance. Star Mound School District in south-central Manitoba, for example, was formed in 1888. Until it closed in 1962 it had hired 44 teachers. Only two were male, the rest, with one exception, were unmarried females (Star Mound School n.d.). Few taught for more than one year, the majority resigning because they married a local bachelor and, until 1947, married women were not generally allowed to be teachers. A report to the Legislative Council of Alberta remarked that “any teacher could marry in almost any district, if she would [sic]” (Molenkamp 1998, 40). At a time when most teachers in rural schools were women, this was a real problem for school trustees: “The country being overrun with bachelors, no [school district] can hope to keep a girl [teacher] more than a few months, and in many cases, but a few weeks when she is married and away” (McIntosh 1992, 39). Bachelors in rural communities were often the most enthusiastic proponents of education, knowing a school would bring in a steady supply of educated brides. After marriage these former teachers served to establish and maintain cultural institutions within the district, thereby placing it firmly behind the frontier. No other institution had such a profound effect upon community development. The formation of a school district thus clearly signaled integration into the socio-economic fabric of the nation.

**GIS technology and mapping**

Geographical information systems (GIS) are technologically recent but conceptually old. Before the advent of computer technology geographers wishing to depict the diffusion of an innovation or spread of an idea had to depict data on a series of map overlays. Manually plotting data on a succession of overlays was time-consuming and tedious work. Changing time intervals at which data were depicted was a forbidding task while adding and subtracting various layers of data—such as vegetation zones, soil zones, drainage patterns, roads, railways, buildings,
and so forth—was labour-intensive and extremely time-consuming. In the 1980s, geographers first became able to digitize information and, using GIS software, could sort, rank, add or delete data at will. Not only did this accelerate the map production process but it afforded a degree of complexity and geo-spatial accuracy that was simply not attainable using conventional cartographic methodologies.

In a previous study, using the aid of GIS technology the authors constructed detailed maps showing land alienation in southeastern Manitoba by quarter section, year of entry, and/or year of patent, and show it at time intervals of their choice (Lehr and McGregor 2008). Here the spread of agricultural settlement was limited to a far smaller geographic area. As such it presented fewer problems in data acquisition, management and verification.

Mapping the frontier of settlement using the date of formation of school districts as a surrogate for a plethora of often inconsistent and otherwise immeasurable data is not without its problems. School district boundaries were seldom static but were adjusted as in-fill settlement continued and populations expanded. Occasionally schools changed their locations within the district. When a district was formed, classes may initially have been held in a room in a homesteader’s dwelling. Erecting a purpose-built schoolhouse might involve relocation to a different quarter or section. Nevertheless, such moves were always within the bounds of the school district, seldom more than a mile or two, and, like changes to school district boundaries, were essentially minor.

Of greater concern is the reliability of data about the dates of school district formation and the precise location of the school. School formation files in each province gave school locations by section, township and range, and in many instances, by quarter section. However, on occasion, the location given was quite vague, specifying only the township and range. In such cases, for the sake of uniformity, it was assumed the school was located on the SE quarter of Section 29, which was always reserved as school land. A small number of schools were located within the bounds of river lot surveys, particularly in Manitoba along the Red and Assiniboine Rivers. The precise position of the majority of these schools was determined by consulting Cummin’s Rural Directory maps of the period. In a few cases when these maps failed to reveal the location of a school within a lot and since the legal description of a school’s location gave no indication of the school’s position within a specific river lot, some assumptions had to be made. As river lots are long and narrow and run back from the river for a maximum of two miles, and since roads tended to parallel the river at some distance from the river frontage, schools were assumed to be one mile back from the river, in the centre of the narrow lot.

Until 1905, the area that now constitutes Saskatchewan and Alberta was a part of the North-Western Territories. After the creation of Saskatchewan and Alberta, school records were held in their respective provinces but records of school districts formed before 1905 often appeared in the records of both provinces. These duplicate records had to be identified and eliminated.

A further complication occurred when school districts, for various reasons, chose to rename themselves. This occurred often when, after submitting their district name for approval by the provincial department of education, it was discovered the name was already used by another school district. During the First World War many school districts, in areas populated by former citizens of the Central Powers, chose to change their names in order to demonstrate their patriotism and downplay their ties to Germany and Austria-Hungary (Lehr and McGregor 2015, 117–119). In Manitoba, for example, Bukowina School District became Lord Roberts School District, Slowo became Strand, and Svoboda became Beckett (Archives of Manitoba, School Formation Files G-6-4-8 School Districts).

School formation records in the Manitoba, Saskatchewan, and Alberta archives were used to create an Excel spreadsheet containing variables such as school district number, school name, opening date, closing date, and location. The vast majority of the schools were located on land surveyed with the township and range system. Both the Manitoba and Saskatchewan governments make ArcGIS shape files of quarter section centre points available on-line. The concatenate function in Excel was used to construct an identification code (id code) for each record (from the range, township, section, quarter section and meridian) that matched the format of the id code in the government files. This allowed the school information to be joined to the quarter section centre points in ArcGIS. As free quarter section shape files were not available for Alberta, an on-line application was used to convert the township, section, and range locations into geographic coordinates.

Using the protocols outlined above, the locations, names, dates of formation, and some dates of closure were obtained for 11,397 school districts established in the provinces of Manitoba, Saskatchewan, and Alberta from 1870 onwards. Locations were plotted on a detailed base map that depicted vegetation zones and topography. As railway lines were completed their routes were added showing the relationship between access to railway transportation, the formation of school districts, and by implication, the occupation of land. Changes in political boundaries were also recorded on the base maps.

### The geography of agricultural settlement 1870 to 1920

European agricultural settlement in western Canada began in 1812 with the arrival of the Selkirk Settlers near present-day Winnipeg. Europeans and their mixed blood progeny had been present on the prairies for decades but in one way or another all were tied to the fur trade. They were hunters, traders, or freighters. If they were involved in agriculture, it was in a peripheral way and essentially alien to their principal means of livelihood. Indeed, agriculture was seen as antithetical to the interests of the fur trade, and the Hudson’s Bay Company only accorded to Lord Selkirk’s request to establish an agricultural settlement at Red River in the belief that such a settlement would serve as a supply base for the Company thereby lessening the need to import food-
The agricultural settlement of the Canadian prairies

Brian McGregor and John C. Lehr

Evidence of European (and Métis) settlement was first seen in their dwellings that straggled along the Red and Assiniboine Rivers on the river lots surveyed by Miles MacDonnell. The social glue that held these nascent communities together was religion: Roman Catholic among the Francophone settlers and Anglican among the Scottish. The first schools in both societies were established by these churches. Their establishment revealed the progressive occupation of land along the Red and Assiniboine Rivers remaining entirely within the postage stamp incarnation of the Province of Manitoba until 1878. At Morley (in present-day Alberta) a solitary school was established by Methodist missionaries in 1871 to serve their proselytizing interests among the Aboriginal population (Figure 1). This outlier had little to do with European land occupation.

For several years after the prairies were open for European settlement the region saw little immigration. Its remoteness, intervening opportunities in the United States, lack of access to world markets, and a global depression deterred many agriculturalists from contemplating a move to the region. Even after the development of an all-Canadian route in 1883 the region did not see extensive immigration. Until the accession of a Liberal government in 1896, efforts to attract immigrants from Europe, the United States, and central and eastern Canada were largely unsuccessful.

Occupation of the prairies by European agriculturists was initially delayed by several issues that had to be resolved by the federal government. Indigenous peoples had lived on and used the land for millennia. Mostly hunting and gathering societies, their territories were established by patterns of use, which were denigrated by the Europeans who believed entitlement to land was effected through improvement, in this case arable farming (Weaver 2003, 27). A series of treaties between Indigenous peoples and the British Crown confined them to a series of relatively small reserves scattered across the prairies, altering their way of life, denying them the ability to provide for themselves, and eroding their social structures (Friesen 1999; Talbot 2009; Savage 2012).

The conclusion of treaties and the occupation of the land was achieved in a relatively orderly fashion, due in large measure to the catastrophe that had struck the Indigenous people of the US Great Plains following the building of the transcontinental railway lines in the 1860s and facilitation of the commercial slaughter of the buffalo for hides (Weaver 2003, 251). The extirpation of the buffalo, the principal food source of the plains tribes, forced them into reliance on governmental aid doled out on the reserves set aside for them by the treaties, creating a landscape that appeared empty to European eyes. The mechanistic Dominion Lands survey also facilitated the orderly occupation of land. Squatting beyond the limits of the survey was relatively rare on the Canadian prairies because the Dominion Lands Branch surveyed and opened land to settlement to forestall administrative chaos. Where squatting did occur, it was often by settlers attempting to remain near their kin or fellow countrymen. There was no equivalent of the “sooners” of the United States Oklahoma Territory in Canada.

Patterns of settlement across the prairies reveal the importance of environmental appraisal and various forms of communication. Pioneers chose their land carefully, using criteria that embraced their social and economic concerns and physical environmental needs (Lehr 1985, 207–219; 1996, 98–108; Lewis 2004, 105–134). In an era before the arrival of the railway, the invention of barbed wire, or the wind-powered water pump, access to wood, water, and meadow were crucial need. A river lot running back from the Red or Assiniboine gave a cross section through the resource base, while the watercourse itself provided an essential transportation route. Early settlement by Métis and Europeans who arrived prior to the railway thus followed the rivers in Manitoba (Figure 2). Later, in the mid-1880s, when the pressure of arriving European settlers caused the Métis to move west in an attempt to retain their distinctive way of life, they had the same needs and so replicated their pattern of riparian settlement in Saskatchewan and Alberta, along parts of the North Saskatchewan River.

Until the arrival of the railway in St. Boniface in 1878 and the completion of the Canadian Pacific Railway’s (CPR) transcontinental line across the prairies in 1883, land selection was driven by environmental considerations and, away from the rivers and the long lot surveys, by the geographical advance of the Dominion Lands Survey. Most settlers gravitated to the aspen parkland belt where the land was already surveyed and where wood, water, and meadow were most abundant (Figure 3). They were encouraged by the government’s belief that the lands most likely to be settled were the “Willow Prairie” of Palliser and Hind. The “true prairie” was considered unsuitable for colonization because of its light soils and lack of timber (Wier 1960–61, 58). Mennonites from the Russian steppes who settled on the open prairie west of the Red River in the late 1870s were a rare exception to this viewpoint. These settlers had the experience, social organization, and adaptive strategies that freed them from dependence on timber, permitting them to move out on to the treeless grasslands where some of the best land in western Canada was to be found. Even these settlers never moved too far from a ready supply of building timber along the Manitoba escarpment (Epp 1974, 218–223). Figure 3 shows that other settlers who ventured out on to the prairies remained closely tied to the timber found in the river valleys and the well-timbered high ground of the Brandon Hills and the Turtle Mountain areas (Tyman 1972, 37).

Railways came to exert a crucial influence on the progress of prairie settlement but the first track was not laid in western Canada until 1875 when construction commenced on a line from Emerson to St. Boniface. Completed in December 1878, it linked St. Boniface with US rail lines at St. Vincent, Minnesota, and gave all-rail access to Minneapolis (Nicholson 2000, 2). This became the principal route used by Anglo-Canadian settlers from Ontario who entered the West before the CPR completed its line to Winnipeg across Ontario in 1882 (Nicholson 2000, 2). It also meant the Canadian government was hamstrung in its attempts to recruit settlers to come to the prairies from Europe and even...
Figure 1
School districts in Manitoba and the North-Western Territories in 1871

Figure 2
School districts in Manitoba and the North-Western Territories in 1878
The agricultural settlement of the Canadian prairies

Ontario and eastern Canada because it lacked a viable all-Canadian route. Presented with intervening—and better—opportunities for settlement in the United States while en route to the Canadian prairies, many decided to settle in the United States where good land was still available and where access to markets was far better. By 1881, the CPR had completed its track from Winnipeg as far as Brandon. Late in the same year trains were running regularly to Regina and, by September 1883, to Calgary, although the first trans-Canada passenger train did not arrive in Winnipeg until July 2nd 1886 (Innis 1923, 140–141; Moore, 1975, 12; Butterfield 1984, 3).

The CPR was initially planned to proceed from Selkirk, north of Winnipeg, crossing the prairies following the aspen parkland belt and taking the Yellowhead Pass through the Rocky Mountains. This route changed when Winnipeg interests succeeded in persuading the railway to cross the Red River near the confluence of the Red and Assiniboine Rivers. At about the same time, broader political considerations, principally concern about US territorial ambitions, caused the railway to opt in favour of a more southerly route running far closer to the US border and crossing the Rockies through Kicking Horse Pass (Innis 1923, 19). This route passed through the drylands of Palliser’s Triangle, an area that held little appeal for most intending settlers, but served as a visible bulwark against encroachment of settlers from the US (Regehr 1976, 25). The process of settlement revealed by the formation of school divisions suggests railways led settlement in the dryland belt but followed settlement in the more humid aspen parkland (Figure 4).

From the outset the pattern of settlement was thus determined by environmental and transportation considerations. Settlers were not attracted to the dryland prairie and only ventured into that environmental zone when able to cling to the lifeline of the railway. Even though access to the aspen parkland belt was logistically more difficult, at least until the turn of the century, most settlers were prepared to trade off difficulty of access against the promise of a wider and more satisfactory resource base of wood, water, and meadow. Of course, access was not totally dependent on railways. Colonization trails facilitated access until the arrival of railways rendered them redundant (Regehr 1976, 25). For example, Ukrainian settlers arrived in both the Star area of Alberta and in Manitoba’s Interlake via colonization trails several years before the railway’s arrival (Kaye 1964, 348; Lehr and McDowell 2011, 18–23).

Until 1878, virtually all schools in the prairies lay within Manitoba’s “postage stamp” boundaries, suggesting the agricultural frontier had not proceeded beyond that point (Figure 2). Access to the CPR mainline slowly pulled settlement westwards in the 1880s. Branch lines were built north from Regina to Saskatoon and Prince Albert in 1889. Given the paucity of settlement in the northern reaches of the parkland belt at the time of their construction it is probable the railway company’s principal aim was to gain access to the timber resources in the Prince

Figure 3
School districts in Manitoba and the North-Western Territories in 1882
Albert vicinity and simultaneously attract agricultural settlers who could constitute the labour force necessary to extract the resource. However, the district was not then surveyed and it was not until some six years later, with some considerable effort, that the Dominion government managed to induce Ukrainian settlers to occupy the only recently-surveyed heavily timbered and swampy territory (Lamont, Speers). In contrast, the line built northwards from Calgary to Strathcona (Edmonton) in 1891 resulted in a rapid burst of settlement in the parkland where the survey preceded settlement (Figure 5).

Except for these lines, there were few branch lines built west of the Manitoba border before the turn of the century. In Manitoba, the picture was quite different (Warkentin and Ruggles 1970, 412). Branch lines radiated out from Winnipeg giving relatively easy access to available lands in the parkland and humid prairie, thereby encouraging settlement and creating a dense network of railways in southern Manitoba by the early 1900s (Figure 6). Easy access to homestead land and greater facility to ship grain helped to funnel settlement into Manitoba at the expense of more distant and difficult opportunities to the west.

As the Canadian west developed, US grain shipment companies sought to capture part of western Canada’s burgeoning grain shipments. Several lines were built northwards from the US to this end. Although it was not their intention to do so, these lines, most notably the Soo Line from Minneapolis to Moose Jaw, had a dramatic effect on prairie settlement. Within a few years of its completion in 1893, settlements developed along the Soo line, which for some years marked the edge of agricultural settlement bordering the drylands of southwestern Saskatchewan (Figure 7). In 1895, settlement on the southern prairies still clung to the lifeline of the CPR penetrating in a discontinuous fashion westwards only as far as Moose Jaw. In north-central Saskatchewan, settlers had pushed further west via colonization trails, always keeping to the security of the parkland belt. An apparent anomaly was the presence of a node of settlement in southwestern Alberta on land that was previously unable to support a dense agricultural population. This is explained by two factors: the railway’s demand for coal and the Mormon Church’s need for land for its land-hungry members (Magrath 1937, 53–57; Knight 1941, 56).

In most of North America railways and coal mining had a symbiotic relationship. By the latter half of the 19th century coal had become the principal domestic and industrial fuel over most of North America and mines relied on railways to transport their product. In western Canada, however, railways themselves were the biggest consumers of coal, so the railways founded the coal mines: coal did not create the railway (Den Otter 1984, 193–194). The CPR’s decision to pursue a southern route shifted the focus of economic development on the prairies to southern Alberta and resulted in a surge of settlement in southeast Alberta tied to resource extraction and agriculture based on irrigated sugar beet production (Figure 8).
The agricultural settlement of the Canadian prairies

Figure 5
School districts in Manitoba and the North-Western Territories in 1890

Figure 6
Railways in Manitoba in 1905
The agricultural settlement of the Canadian prairies

Figure 7
School districts in Manitoba and the North-Western Territories in 1895

Figure 8
School districts in Manitoba and the North-Western Territories in 1899
less semi-arid lands of southwestern Alberta was unappealing to almost all prospective immigrants, most of whom had little interest in the back-breaking and capital-intensive project of irrigated agriculture. The settlement of this area was facilitated by the coalescing of interests of two massive institutions: the Alberta Coal and Railway Company and the Utah-based Church of Jesus Christ of Latter-Day Saints. The church provided the labour by directing its members to participate as a fulfillment of their church mission. The capital was provided by the railway company (Knight 1941). The usual economics of prairie agricultural settlement were absent.

In the late 1890s, the line between Calgary and Edmonton facilitated the growth of settlements in the Red Deer area and around Edmonton. Figure 9 shows that by 1905 occupation of the aspen parkland was well underway with areas adjacent to Calgary, Edmonton, and Saskatoon being the principal centres. These all enjoyed the advantage of rail connections and an environment conducive to settlement by individuals without strong reserves of capital.

Even the drylands of southwestern Saskatchewan and southeastern Alberta, which had been mostly shunned by European settlers, began to be settled after 1907 (Jones 2000, 9–15). In the 1880s, the thinking of Sir John A. MacDonald’s government was the drylands were not suitable for arable farming and should be reserved for ranching. It introduced a “gilded grazing lease” policy that allowed leases of up to 100,000 acres for 21 years, enabling the creation of huge cattle conglomerates. Pressure from prospective homesteaders led the government to oblige ranchers to allow homesteading on their leased lands in 1892, which in turn led to conflict over water rights. Frank Oliver, Minister of the Interior, (1905–1911) championed homesteader’s rights and soon after taking office facilitated “the monumental blunder of western settlement: occupation of the dryland prairie” (Jones 2000, 21). By 1912, these areas were receiving increasing numbers of settlers (Figure 10). By 1919, the process of settlement of these marginal lands was virtually complete and shortly thereafter drought began to force a retreat (McManus 2011) (Figure 11).

Settlement continued along the northern margins where forest met the prairie and began to push into Alberta’s Peace River District. While this region was virtually unexploited in 1907, this changed rapidly within a few years and by 1913 the establishment of several schools attested to the emergence of settler communities. The Peace River District was clearly the new—and last frontier of settlement. In 1919, settlement was well advanced throughout the prairies, extending even into the marginal drylands of the short grass prairie (Figure 12) and had taken a tenuous hold in the Peace River District.

**Conclusion**

Settlement of the prairies did not cease in 1920; it sputtered onward across the northern margins. Settlers, many of them the off-spring of early pioneers, took homesteads within existing districts, while others headed for open land at higher latitudes. The Peace River District remained the last active frontier of agricultural settlement. By 1920, almost all of the remaining unsettled areas can be identified as too sandy, too rugged and wooded, or too poorly drained to successfully sustain an agriculture-based community. Figures 11 and 12 clearly show some of these areas. In Manitoba, the outline of the Dominion Timber Reserve that in 1930 became Riding Mountain National Park is clear, as is that of Turtle Mountain and Spruce Woods Provincial Parks (which were also former Timber Reserves). In the centre of Spruce Woods Provincial Park two schools in the valley of the Assiniboine River reveal the presence of agricultural settlement in an area otherwise too sandy for arable farming. Straddling the boundary of Alberta and Saskatchewan, the Cypress Hills also remained unsettled, too high and rugged to sustain settlement based on farming.

The late appearance of schools south of Winnipeg and west of the Red River brings attention to the impact of poor drainage on land settlement. Until the end of the first decade of the last century, poor drainage was perhaps a more significant deterrent to agricultural progress than indifferent soil quality. Many wet areas were first occupied during dry years so settlement was already established when their marshy qualities became apparent (Bower 2011, 19–26). In other instances, settlers chose to overlook the environmental drawbacks of settling wet areas when they could achieve their social objectives (Lehr 2011, 47). Consequently, wet areas are generally more difficult to identify from the distribution of schools. The more extensive wet lands of the open prairie were brought under the plough only when drained, which required massive injections of capital that lay beyond the grasp of most prospective settlers, so some parts of what is now regarded as Manitoba’s most productive land, such as Lowe Farm, were settled comparatively late.

After 1920, the process of settlement continued, although it was less an expansion of the frontier than adjustment to changing environmental conditions. During the “dirty thirties,” for example, an estimated 45,000 people from the drought-stricken areas of Saskatchewan migrated to the northern margins eking out a living by cutting cordwood, hunting, and subsistence farming, as had Ukrainian settlers in Manitoba’s bush country some decades earlier (Massie 2010, 178–181; Massie 2012, 32).

The pattern and process of formation of school districts mirrored that of agricultural settlement, providing a clear indication of the rapidity by which the prairies were settled by European immigrants. Patterns otherwise not clearly discernable become more evident when data are plotted at intervals of one year as opposed to five or ten years. The variation in the relationship between settlement, environment, and communications over both time and space cannot be determined through depiction of the movement of the agricultural frontier alone. When used in conjunction with other records and set within the pertinent social, political, and economic literature, maps such as those presented here can add another dimension to an understanding of a complex and dynamic process.
The agricultural settlement of the Canadian prairies

Figure 9
School districts in Manitoba, Saskatchewan and Alberta in 1905

Figure 10
School districts in Manitoba, Saskatchewan, and Alberta in 1909
Figure 11
School districts in Manitoba, Saskatchewan, and Alberta in 1912

Figure 12
School districts in Manitoba, Saskatchewan, and Alberta 1920
Acknowledgments

The authors wish to thank Laura Redpath, Beckey Hamilton, and Eva Himka for their assistance in archival research in Manitoba, Saskatchewan, and Alberta.

References


Archives of Manitoba. School Formation Files. School Districts, GR 1688, G-6-4-8.


Star Mound School. [n.d.]. List of Teachers, Star Mound, MB.


166.

