

# The 'Grass Fire Era' on the southeastern Canadian Prairies

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**Abstract:** Fire, of both lightning and human origin, was a normal component of the prairie ecosystem which maintained the productivity of the grasslands and defended them against invasion by woody species from the Parkland Belt. Throughout the 19<sup>th</sup> Century, however, 'scientific' opinion was unanimous that woodlands had been formerly more extensive and that because of fire the grasslands had replaced forest over large areas of the Prairies. It is proposed here that an 'Era' of substantially greater fire frequency and extent occurred from the late 18<sup>th</sup> to the late 19<sup>th</sup> Century. The increase was initially related to an increase in bison hunting to supply the burgeoning food requirements of the fur trade, and later to carelessness in burning of hay meadows near settlements and to the growing traffic on the Carlton and Red River Trails. With the demise of the bison in the 1870's and the spread of agriculture from the 1880's onward, fires gradually became less frequent and smaller in extent.

## Introduction

Perhaps no other aspect of grassland ecology has ignited as much debate as has the role of fire. Indeed, the heat of these debates has rivalled that of the fires themselves. That fires should occur in grasslands is not surprising, given the annual production of abundant combustible material, the relative dryness of the climate, and the uniformity of the topography. The disagreements have arisen over the effects of fire on the ecosystem (now broadly accepted as generally beneficial), the role of lightning versus human ignition (still controversial), and the importance of fire in maintaining

grasslands against the persistent encroachment of woodlands on the humid margins. The latter has not been settled to the general satisfaction of grassland ecologists - the extreme position, taken by ecologists and anthropologists such as Sauer and Stewart, asserted that grasslands are anthropogenic features, maintained and perhaps even created by fires of human origin.

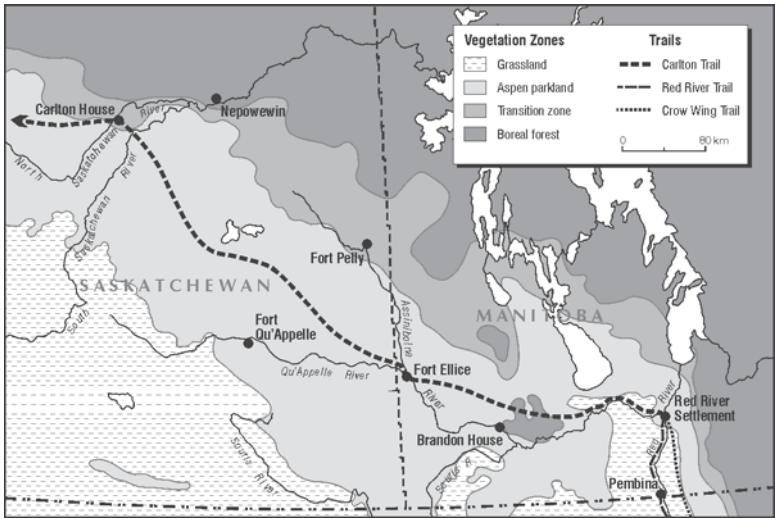
In this paper, observations of grass fires in historical materials from the southeastern Canadian prairies are used to argue that an 'Era' of much enhanced grass fires of human origin occurred from the latter 18<sup>th</sup> Century to the latter 19<sup>th</sup> Century.

## **The Historical Record of Fire**

More than 200 observations of fire from 1796 to 1870 were compiled from documents in the Hudson's Bay and Manitoba Archives and other published historical sources, mostly from the vicinities of Red River Settlement, Pembina, Brandon House, and Fort Pelly (Figure 1). A small sample of these accounts is given in Table 1 to provide an appreciation of the nature of the observations and of the fires themselves.

A detailed discussion of the historic record, with extensive quotation, is given in Rannie (2001) and the interested reader is referred to that paper. Some of its principal conclusions which are relevant here can be summarized as follows.

- Grass fires were predominantly a fall (September-November) phenomenon, both in number and extent. A much smaller secondary spring peak occurred in April-May and few fires occurred in winter and summer.
- The common portrayal of fire as a nearly annual phenomenon by many commentators was not greatly exaggerated.
- The duration of individual fires ranged from days to a week or even longer. In an extreme example, Alexander Henry reported fire in the vicinity of Pembina for 26 consecutive days in October-November, 1807.
- The limited perspective of most observers makes it difficult to determine the spatial extent of the fires but many comments



**Figure 1:** General location map.

suggest that fires covered broad areas in the vicinity of the posts, at least, and in some years there is evidence for burning of quite vast areas.

The question of the extent of fires merits further commentary. In a region with few topographic or hydrographic barriers and a continuous uniform fuel supply, individual fires had the potential to spread rapidly over a large area. In 1910, a fire advanced across 200 km of central Nebraska in a single day (Wells, 1970) and in 1893 and 1894, fires in southern Saskatchewan burned 13,000 and 15,500 km<sup>2</sup> respectively (Raby, 1966). In October, 1901, a fire near Queenstown, Alberta, “travelled at the rate of some forty or even sixty miles an hour” (Canada, Sessional Papers, quoted in Raby, 1966, p. 88). Many historical descriptions referred to fire “in every direction”, or “in every point of the compass”, or to the plains “being all on fire”, suggesting extensive burning, at least within the region of the observer. Other comments provide more detail about the size of the burned area.

The country between Pembina and the Scratching [Morris] River is burnt literally black. Scarcely a blade has escaped the devouring element. (Nor' Wester, October 29, 1860).

The following journal entry by Alexander Henry at Pembina on December 1, 1800, provides both a graphic description of a large fire and an indication of its minimum extent:

At sunset I saw a thick smoke rising at the foot of the Mountain toward the Indians Camp and soon after perceived the plains on fire...the wind blew strong from the North. This caused the flames to make a rapid progress, and at 10 O'clock it had extended as far as the Salt River to the South West. The weather was now obscure and dark, which gave the fire a most dismal and gloomy appearance. We could very plainly distinguish the flames, which at intervals rose to an extraordinary height, as the fire passed through low spots of long grass or marshes and reeds. They then would cease their ravages for a few moments, and soon after rise again with redoubled fury, and again die away to their usual height. The sight was awful indeed, but as the wind was in a contrary direction from us, we had nothing to dread for the present, and the fire was on the S. side of Park river. This fire was a disagreeable affair for us at this season on the year, for should it continue its progress all over the Country we shall be hard put to for provisions as there will be no Buffalo and nothing can stop its fury but Snow or Rain. Next morning we had a slight fall of snow, but it had no effect on the fire. It still appeared to rage to the Southward...the Crows came in...and informed us the fire was lighted at their Tents by accident. (Alexander Henry, in Gough, 1988, p. 100).

In some years, extensive burning was reported simultaneously at locations several hundred kilometers apart, as in 1804 when large fires occurred in October-November at Pembina (reported by Alexander Henry), along the Souris River south of Brandon (reported by both Charles Mackenzie and F.A.Larocque), and on the Missouri (reported by William Clark). The fire near Pembina in 1804 produced the best-known description of the disastrous effect fire could have on bison (a description of a similar bison disaster observed by Mackenzie along the Souris in the same season is given in Table 1).

Plains burnt in every direction. Blind Buffalo to be seen wandering about every moment. The poor beasts have all their hair singed off to the Skin, and even the skin in many places is shrivelled up and burnt in many places

in a most terrible manner, their Eyes swollen and closed fast. It was really pitiful to see them walking about, sometimes running foul of a large stone, at other times tumbling down hill and falling into Creeks that were not yet frozen over. In one spot we found a whole herd laying all dead near each other, the Fire having passed here only yesterday. Those animals were all still good and fresh and many of them exceedingly fat...At sunset we arrived at the Indian Camp after having performed an extraordinary days ride and seen an uncredable number of Roasted, Dead and Dying, Blind, Lame and Singed Buffalo the whole day. Saw the fire still raging all night towards the South West. (Henry, in Gough, 1988, p. 166-167)

The two largest conflagrations appear to have occurred in 1822 and 1857. In 1822, large fires were observed at the Red River Settlement and at Fort Ellice and both sources stated that virtually the entire area between the Red and Saskatchewan Rivers had been burned.

**Red River Settlement Vicinity: Sept. 23, 1822:** The plains have caught fire on the south side of the river, and the flames are spreading in every direction; **Sept. 25:** fire still raging in the plains; **Sept. 26:** The fire still running in the plains; **Sept. 27:** ...the sky is so obscured by smoke that day is changed almost into night; **Sept. 28:** The fire still raging in the Plains (Red River Journal, HBCA B.235/a/5, 1822/23 ); **Nov. 29:** The season has been so dry that the prairies are burned almost completely, a condition which will probably cause us to experience famine, at least as far as meat is concerned... The fire not only traversed the Red River area, but also all the prairies as far as Fort des Prairies [on the North Saskatchewan River], whence the company gets its supplies. (Bishop Provencher to Bishop Plessis, in Nute, 1942, p. 379)

**Western Manitoba: Sept. 25, 1822:** The Plains are all on fire...which has run almost thro the whole Country hereabouts; **Oct. 9:** Here [at Rapid River north of Brandon] we are happy to find the plains not burnt. Nearly the whole way between this and the Forks has presented a black dismal prospect and we have scarcely found wherewith for our horses; **Oct. 31:** Fire still raging in the plains, and the Country burnt in every direction; **Nov. 1:** [some Stone Indians] inform us that the whole way between this and the Saskatchewan River is burnt (Fort Ellice Journal, HBCA B.63/a/3 1822/23).

In 1857, Dawson and Palliser encountered great areas of burned ground in south-central Saskatchewan; when Hind visited the same region a year later, he reported that

*Table 1: Selected accounts of grass fires from archival sources.*

<p><b>1797, Brandon House Vicinity:</b>  <b>May 23:</b> The plains has been on fire these 8 days &amp; is now approaching the House, a gale of wind at South; <b>May 24:</b> The fire very near the House; <b>May 25:</b> the Woods on fire all round the House. (HBCA, Brandon House Journal, B.22.a.4 1796/97)</p>
<p><b>1801, Pembina Vicinity :</b>  <b>Oct. 17:</b> The Plains on fire in every direction; <b>Oct. 22:</b> Terrible fires all over the Plains. (Alexander Henry, in Gough, 1988)</p>
<p><b>1803, Pembina Vicinity:</b>  <b>Oct. 1:</b> Fire in the Plains in every direction; <b>Oct. 4:</b> Fire raging in every point of the Compass, and the thick clouds of smoke, nearly deprive us of the sight of the sun, and at night the view from the top of my house is awful indeed. In every direction flames are to be seen, some running to prodigious height as the fire rushed through low dried willows and long grass or long places covered with Reeds and Rushes. We apprehended no danger, as the fire had already passed near the Fort; <b>Oct. 24:</b> The Plains are burnt almost every where, only a few small spots have escaped the fury of the flames; <b>Nov. 15:</b> A great fire to the South West although the ground covered with snow. (Alexander Henry, in Gough, 1988)</p>
<p><b>1804, South of Brandon House:</b>  <b>Oct. 11-24:</b> [We travelled] through many extensive plains, most of which were in flames, as is generally the case at this season of the year. In the course of a few days, we observed whole herds of buffaloes with their hair singed; some were blind, and half roasted carcasses strewed our way. (Charles Mackenzie, in Masson, 1960)</p>
<p><b>1821, Red River Settlement Vicinity:</b>  <b>May 10:</b> The plains have been on fire to a considerable extent for several days past, and the awful spectacle is seen this evening through the whole of the northern, and western horizon. (West, 1966)</p>
<p><b>1828, Brandon House Vicinity:</b>  <b>Oct. 8:</b> Plains burning in all directions... Smoke suffocating; <b>Oct. 10:</b> Dry windy Weather by which the conflagration of the Plains is increased to a furious degree; <b>Oct. 11:</b> ...fires as yesterday; <b>Oct. 21:</b> Plains and woods blazing and smoking tremendously in all directions; <b>Oct. 29:</b> Smoke abating, every thing having been burned, in the neighbourhood; <b>Nov. 6:</b> The first snow of the season fell last night, by which the surrounding fires have been entirely extinguished. (New Brandon House Journal, HBCA B.22/a/22)</p>
<p><b>1829, Fort Pelly Vicinity:</b>  <b>Apr. 27:</b> The Country all in a blaze around us and from the dry state of the grass threatens our Establishment; <b>Apr. 29:</b> fire still raging in the woods at no great distance; <b>May 1:</b> The fire Still raging round us; <b>May 2:</b> The Fire this morning wore an alarming appearance and threatened the destruction of the Establishment; <b>May 4:</b> The Country all in a blaze. (Fort Pelly Journal, HBCA B.159/a/10 1828-29)</p>
<p><b>1832, Fort Pelly Vicinity:</b>  <b>Oct. 5:</b> plains on fire in all directions; <b>Oct. 23:</b> disagreeable weather with snow which I hope will extinguish the fire in the plains that has been raging for some time past; <b>Oct. 26:</b> plains still on fire; <b>Oct. 28:</b> enveloped in smoke from the plains which still continues to burn; <b>Nov. 2:</b> Snowing the whole of the day which will no doubt put an end to the fires. (Fort Pelly Journal, HBCA B.159/a/14 1832-33)</p>

Table 1: continued

<b>1836, West of Red River Settlement:</b>	Fall: The country traversed was studded with a few copses of poplar and dwarf oak; but a great part of it having been swept by the running fires, so frequent and terrible in the prairies, presented a blackened and dismal aspect. (Simpson, 1970)
<b>1848, Red River Settlement Vicinity:</b>	Oct. 13: Our neighbourhood was thrown into a state of great excitement this Evg. By the approach of a terrible fire to the hay grounds. The ground was very dry. (Journal of Robert James, MA MG7 B2 CMS A92)
<b>1853, Red River Settlement Vicinity:</b>	Oct. 12: hazy all around from the smoke of fires in the plains; Oct. 15: From the quantity of smoke all around there must be large fires in the prairie; Oct. 30: extensive fires in the Plains; Oct. 31: it appears that the fires have done a great deal of damage. (Winnipeg Journal, HBCA B.235/a/15 1851-54)
<b>1859, Pembina Vicinity:</b>	Fall: ... we passed over miles of blackened prairie which had been burnt in the course of the autumn by some numerous fires which are so constantly raging on the plains when the grass is dry. Once or twice we were in such disagreeable proximity to these conflagrations that driving through them became a necessity, and on other occasions we camped for the night on prairies, where we were encircled by the flames- taking care, however, that a wide stretch of burnt plain lay between us and them. The smoke of these fires frequently darkened the heavens for days together. (Anonymous traveller, Nor' Wester newspaper, Mar. 14, 1860)
<b>1865, Pembina Vicinity:</b>	November: The prairie fires were raging in the country through which we travelled. At first we caught sight of a fiery line faintly illuminating the far horizon on our front. Gradually as we advanced, the line expanded into a crescent, extending to the right and left, and instead of one line, a vast number of blazing arcs broke on the sight. As we reached the heart of the conflagration the entire horizon about us was luminous with low burning zones, whence the dark smoke curled aloft into the night. After some time our track passed away from the fires which had been burning in some spots quite close to the wayside, and after a few more miles had been got over, the whole country again assumed the appearance of one crescent and long line of fire which ultimately disappeared in our rear. (Hargrave, 1871)
<b>1866-67, Southern Saskatchewan:</b>	Fall: In this region [south of Fort Qu'Appelle] prairie fires have burned off the grass to such an extent that it was necessary to travel one hundred and sixty miles to the more distant hills before we sighted the first band of buffalo. Usually three days travel is enough to get all the meat that is needed... In two days we rode one hundred and sixty miles over a burned prairie [between Fort Ellice and Fort Pelly] without seeing a track until we came to the Old Fort...This has been a very hard winter [1866-67] for food owing to the great fires on the Plains last summer and fall [1866]...The buffalo remained scarce and far off. (Walter Traill, in Atwood, 1970).
<b>1867, Brandon House Vicinity:</b>	Oct. 16: ... no notable sight was seen until the 16 <sup>th</sup> when big prairie fires rose ahead, in which we were soon enveloped... That night the grandeur and magnificence of the display of fireworks extending on every side over the rolling prairies far exceeded the conception formed from the printed descriptions which I had so often devoured. (Cowie, 1913)
<b>1870, Red River Settlement Vicinity:</b>	October: ... the horizon glowed at night with the red light of moving prairie fires. (Butler, 1923)

From beyond the South Branch of the Saskatchewan to Red River all the prairies were burned last autumn [1857], a vast conflagration extended for one thousand miles in length and several hundreds in breadth. The dry season had so withered the grass that the whole country of the Saskatchewan was in flames. The Rev. Henry Budd, a native Missionary at the Nepowewin, on the North Branch of the Saskatchewan, told me that in whatever direction he turned in September last the country seemed to be in blaze; we traced the fire from the 49<sup>th</sup> parallel to the 53<sup>rd</sup>, and from the 98<sup>th</sup> to the 107<sup>th</sup> degree of longitude. It extended, no doubt, to the Rocky Mountains. (Hind, 1860, Vol. 1, p. 292)

## **Destruction of Forest**

Much of the commentary on fire by scientific parties was directed to its effects on the extent of woodland on the prairies. Although this was noted by early travellers such as David Thompson in 1798 and William Keating in 1823, the greatest concerns were expressed by Henry Youle Hind and John Palliser in 1857-58 (in the immediate aftermath of the great fires of 1857), and by John Macoun and others in the 1870's. These observers were unanimously of the opinion that extensive tracts of grassland, particularly in central Saskatchewan, had formerly been wooded and thus had been part of the "parkland" belt. The following extracts are representative of this large body of commentary.

The northern forests, which in former times descended more nearly to the frontier of this central desert [the "Palliser Triangle"], have been greatly encroached upon and, as it were, pushed backwards to the north through the effect of frequent fires ... Thus large tracts of country now prairie lands have at one time grown valuable forests, and their present absence is the result of the repeated ravages of fire. Where a scattered and stunted growth of willows is found, as a general rule, was ancient forest land ... The northern part of Saskatchewan is a partially wooded country, having at one time been covered by an extension of the great pine forests of the north, which have been removed by successive fires. (Palliser, in Spry, 1968).

An old Indian...born in this part of the country [region of the Qu'Appelle River], told us that he remembered the time when the whole of the prairie through which we had passed since leaving Fort Ellice was one continuous forest, broken only by two or three narrow intervals of barren ground...A portion of the old forest alluded to by the Indian still exists [on the edge of



the Qu'Appelle Valley]. It consists of aspen of large growth and very thickly set... The annual extension of the prairie from [fire] is very remarkable. The limits of the wooded country are becoming less year by year, and from the almost universal prevalence of small aspen woods it appears that in former times the wooded country extended beyond the Qu'Appelle, or three or four degrees of latitude south of its present limit. (Hind, 1860, Vol. I)

The rapidity with which some tracts between Portage la Prairie and Fort Ellice were stated to me to have been converted from forest to prairie is almost incredible. (Bell, 1876, quoted in Nelson and England, 1971)

The real cause of the absence of wood on every part of the region under consideration is undoubtedly prairie fires which sweep over almost every part of it year after year, destroying the seedling trees as long as there are any seeds left to germinate, and year by year killing the bushes until the capacity of the root to send up shoots dies out, and then even willows cease to grow. (Macoun, 1882)

## **Aboriginal Use of Fire**

The members of the Palliser and Hind Expeditions attributed virtually all fires (and the consequent destruction of woodland) to aboriginals whom they portrayed as “congenital arsonists” (Rowe, 1969). Their writing was laden with condemnation - the fires were “deplorable”, “wonton” and “lamentable”, the aboriginals’ reasons for setting them were “trivial” and “mischievous”, and the fires’ effects were “disastrous” and “deplorable”. Perhaps the most blunt expressions of this calumny were those of John Sullivan (of the Palliser Expedition) and Henry Youle Hind.

It is most lamentable to see so often such masses of valuable timber destroyed, almost invariably by wonton carelessness and mischief. The most trivial signal of one Indian to another has often lost hundreds of acres of forest trees which might have brought wealth and comfort to the future settler, while it has brought starvation and misery to the Indian tribes themselves by spoiling their hunting grounds. The Indians, however, never taught by experience, still use “signal fires” to the same extent as in former years, driving the animals from their retreats and marring the fair face of nature for the future colonist...Unfortunately the Indians have a most disastrous habit of setting the prairie on fire for the most trivial and worse than useless reasons. (Sullivan, in Spry, 1968)

It appears to be beyond human power to arrest the annual conflagrations as long as the Indians hold the prairies and plains as their hunting grounds. Their pretexts for “putting out [setting] fire” are so numerous, and their characteristic indifference to the results which may follow a conflagration in driving away or destroying the wild animals, so thoroughly a part of their nature, that the annual burning of the prairie may be looked for as a matter of course as long as wild Indians live in the country. (Hind, 1860, Vol. I)

Of course, these expeditions were assessing the suitability of the region for agricultural settlement and from their narrow viewpoint, the “lamentable destruction of forests” may have been “a great drawback to the country, and a serious obstacle to progress” (Hind, 1860, vol. I, 405). In fact, however, the aboriginals’ reasons for deliberately setting these fires were usually far from trivial or capricious. Furthermore, they had little reason to be concerned about the “destruction” of wooded areas, or to be especially careful, other than for their own safety.

Certainly some aboriginal fires (including the large one described by Henry in 1800 cited above) were accidental or caused by the carelessness decried by Hind and others. Aboriginal people, however, had a great many rational uses for deliberately setting fire to the prairies, including signalling, control of insects, as defensive or offensive tactics during warfare, etc. The largest category of uses involved the bison. Fire was used to drive bison to predetermined hunting locations, to encircle them during hunting, to direct migrations, and particularly as a range management technique to improve forage in subsequent growing seasons. Modern studies have demonstrated that post-burn growth is normally more productive, more tender, more nutritious, and thus more attractive to grazing animals such as bison, a feature of grassland ecology that was well-understood by aboriginal people. By burning a region of prairie (normally in the fall but occasionally in the spring), they were able to attract bison to pre-determined locations (Arthur, 1975). Far from being “trivial” or “obstacles to progress”, then, aboriginal use of fire was a sound range management technique by which they could exercise some control over their most important resource.

## The 'Great Fire Era'

The equilibrium which must have existed between the human use of fire and the grassland/parkland ecosystem was permanently disrupted late in the 18<sup>th</sup> Century by the formation of the North West Company and the advent of the fur trade as an organized force on the prairies. With its large fur brigades, long supply lines, and the establishment of permanent posts, the fur trade food requirements escalated rapidly. As local resources were depleted or proved insufficient, bison became the staple food of the trade-Colpitts (1997) noted the increased prominence of bison in the provisions of Cumberland House after 1780. So important was provisioning to the fur trade that it determined the location of the posts on the prairies, as Governor Dallas clearly stated much later in 1862.

The [Hudson Bay] Company's posts between Red River and Edmonton are placed on the dividing line between the wooded country and the prairies, as close to the latter as good positions for wood and water can be found...The main business of the Saskatchewan posts lies in procuring food for the other districts. (Governor Dallas to E. Ellice, Fort Garry, October 18, 1862, in Gordon, 1979, p. 48)

Aboriginal people were quick to take advantage of this economic opportunity by increasing their exploitation of bison in the grasslands and parklands, as Ray (1972, 1974) has described in detail.

... as the number of posts multiplied (there were 21 in operation on the Assiniboine River alone in 1795) and the lines of communication lengthened, the provision requirements of the fur trade mushroomed... [This favoured] an increasing dependence on the resources of the plains environment. This shift in emphasis took place most rapidly among certain bands of Assiniboine...[who] were quick to recognize the growing importance of food supplies for the fur traders and attempted to capitalize on it at a very early date...It was this...economic flexibility that these groups possessed which enabled them to move out of the forests into the grasslands at a relatively rapid pace during the [late] eighteenth and early nineteenth centuries (Ray, 1972 p. 115-116)

As the importance of bison increased, it is reasonable to assume that fire would have continued to be employed but with greater intensity. To these traditional uses was added the tactic of burning the forage in the vicinity of the posts to keep the bison at a distance and thereby increase the traders' dependence on aboriginal supplies (Ray, 1974; Pyne, 1983). According to Ray (1974),

... fire was the chief weapon which the tribes used to apply economic pressure. Numerous references showed that it became common practice for the Indians to burn the prairies around the post in late autumn to prevent the bison from approaching them during the winter season. (Ray, 1974, p. 134).

Early accounts of this strategy include the following from Hudson House (1780) and Fort George (1794) on the North Saskatchewan River and Carlton House (1797) on the upper Assiniboine River:

...we are very like to be in a very bad situation for provisions [in the coming months]...the Ground is all burnt, and no Buffalo, the Natives burnt it as they [the buffalo] was nigh [at] hand in the fall and far from the Beaver Country, [they did this on] purpose that they might get a great price for provisions, but great part of them has payed for it since, by Hunger and [being] obliged to go far off. (R. Longmoor at Hudson House to W. Tomison, Jan. 17, 1781, in Rich, 1952, p. 175)

The Plains around us are all on fire. We hear that the animals fly away in every direction to save themselves from the flames, an attempt which is often rendered abortive when the fire is cherished by a breeze of wind, which drives it along with such fury that the fleetest horse can scarcely outrun it. The Indians often make use of this method to frighten away the animals in order to enhance the value of their own provisions. (Duncan M'Gillivray, in Morton, A.S., 1929. *The Journal of Duncan M'Gillivray of the North West Company at Fort George on the Saskatchewan, 1794-5*, The Macmillian Company of Canada, Toronto, p. 33)

The Indians has set the Ground on fire all around us to keep the Buffaloes far off. (Carlton House [Assiniboine] Journal, October 9, 1797, HBCA B.28/a/4)

In 1822, the year of the vast fire noted above, George Simpson saw a further, more vindictive, motive - the adoption of an aboriginal 'scorched earth policy' in revenge for the amalgamation of the North West and Hudson's Bay Companies.

The Company's establishment from [Fort Garry] to the source of the Assiniboine have even been at times in a state of Famine...The failure of the buffalo may be attributed to two causes, one is that the plain Indians finding the coalition had taken place conceived that the sole object was as they express it "to render them pitiful", and by way of having revenge determined on Starving the Traders by keeping the Buffalo off in the Summer and Fall, which was easily effected by obstructing them at their usual passes to the Northward, setting fire to the Plains, etc. (Simpson to A. Colville, in Merk, 1931, p. 180)

When the Métis entered the provisioning business with their large organized brigades of Red River carts moving into the grasslands from rendezvous points, the scale of the enterprise escalated again. The number of carts in these brigades grew from 540 in 1820 to 820 in 1830 (Ray, 1974). According to Ross (1856), 1210 carts and 1630 people gathered at Pembina for the summer hunt in 1840, and Woods (1850) reported that 1200 carts "went in a body south of Devil's Lake" in 1849. With this much hunting activity on the grasslands, the possibility for deliberate or inadvertent fire must have increased greatly.

As the posts evolved into settlement loci, with agricultural experimentation, fire was used to improve the growth of hay, frequently with undesirable consequences for adjacent woodlots when the fires ran out of control as they apparently often did. (Ironically, this use had much the same purpose as the aboriginal use of fire in range management so criticised by Hind and Palliser). In the Red River Settlement, the problem of careless use of fire in the nearby hay meadows was the very first issue addressed at the very first meeting of the Council of Assiniboia in 1832 which decreed that deliberate fires be banned between March 1 and December 1 and established heavy fines for offenders and rewards for informers (Oliver, 1914). The reiteration of this ordinance in 1841, 1851, and 1862, appears to have done little to arrest the problem. The *Nor' Wester* newspaper, which began publication in

the Red River Settlement in 1859, annually documented and railed against the losses from fires started by the local settlers.

As we write, there is a magnificent line of flame sweeping over the arid plains behind. It is a grand sight on a dark and windy night. The flames roll on with surprising speed and brilliancy, and the heavens overhead are brightly red. These fires are, in many cases set off in order to consume the decaying grasses of the year, and leave the surface of the ground clear for next year's growth. In other instances, however, they are accidental - the grass being so dry that it is scarcely safe even to fire off a gun...[Stacked] hay runs a great risk if left out till the 1<sup>st</sup> October, and not unfrequently we hear of such misfortunes as a person losing in one hour the results of a month's hard labour. Whatever may be the advantage of prairie fires, they have one very palpable disadvantage - they destroy an immense quantity of wood. This is a serious matter, for the country is naturally poor enough in this respect. One feels sorry to see our few forests disappearing year by year in this way. (Nor' Wester, October 29, 1860).

During the past fortnight, fires have been running on both sides of the river. Who let them off, and whether designedly or accidentally, are questions as yet unresolved. In any case, mischief is being done, and the guilty parties ought, if possible, to be brought to justice. (Nor' Wester, August 6, 1862)

The losses by prairie fires this year have been very great. Hardly a day has passed but conflagrations have been seen sweeping over the plains on either side of the river, and the farmer who has not lost some hay in this way counts himself very fortunate, indeed. It is said that some of these fires were let go on Sundays, designedly; but we would hope this is not the case. The person who would do such a dastardly act merits the severest punishment. If one or two such were informed against, and put in jail to await trial for the offence, there would be less of this wonton destruction of property by prairie fires. (Nor' Wester, September 30, 1863).

Can no remedy be devised to lessen the evils annually caused by letting fires run in the plains? There is, undoubtedly, a vast amount of property destroyed every year in this way; and the law as it stands at present does not seem to abate the evil in the least. It is much easier however to deplore the prevalence of the evil than to propose a remedy. According to the existing law any person convicted of setting fire to the plains with the intent of causing a fire to run, at this time, is liable to a heavy fine; and in order still further to ensure conviction for the offence a portion of the fine is, we believe, offered to any one who will inform on the person by whom it is committed. It is strange that with numerous fires raging around us, and so many people in the plains, the offenders cannot, except once in

every three or four years be brought to justice. It is the interest of every settler not only to be careful that he lets no fires run in the plains during the Fall, but to endeavor to find out those guilty of this offence and bring them to justice; and we hope that in this and other ways which may, probably, suggest themselves to the Council, some effective steps will be taken to prevent the frequent recurrence of these destructive conflagrations. (Nor' Wester, August 18, 1864).

After about 1830, as the supply lines for the settlements increasingly shifted from the rivers to overland routes such as the Carlton and Red River/Crow Wing Trails (Figure 1), the traffic in carts and people through the region became quite prodigious. Hargrave (1871) estimated that by the early 1860's about 1500 Red River carts were employed on the Red River Trail. With multiple trips, as many as 2500 carts passed over the route in a single season (Green, 1974) and a return cart trip from St. Paul to Carlton House took 70-80 days (Hargrave, 1871). In addition to the cart trains and fur trade traffic, the number of other travellers- military expeditions, scientific parties, missionaries and church officials, adventurers, migrants and tourists- grew dramatically by mid-Century, all following these same routes through the grassland/ parkland transition zone. Even with the greatest care, the opportunities for accidental ignition of the dry accumulation of grass from so many cooking and campfires, pipes, cigars, and gunshots were enormous but the travellers were anything but a careful lot. For example, in 1851 near Pembina, Wesley Bond and a military party, travelling independently, each touched off fires while cooking a few kilometers apart.

To-day we have set fire to the prairies by accident in getting dinner. The dragoons ahead have done the same, and the strong wind bears it back on us with astonishing rapidity; we are enveloped in immense clouds of smoke, through which we travelled all the afternoon- the fire roaring all around and under our feet. (Bond, 1857, p. 298)

Another adventurer, James Southesk, started a large fire near Pembina in May, 1859, while lighting his pipe.

Later in the day we...traversed another considerable prairie, covered all over with long withered herbage of the bygone season. Taking no heed of this

store of inflammable stuff, I carelessly threw away a match with which I had been lighting my meerschaum; in an instant the prairie was in a blaze. The wind speedily bore the flames away from us, and ere long the conflagration raged far and wide. I never heard to what extent it spread, but for hours afterwards we could see its lurid glow illuminating the darkness of the distant horizon. (Southesk, 1875, p. 19)

Even James Hector of the Palliser Expedition (whose members were otherwise outraged by what they saw as aboriginal carelessness) described an accidental fire caused by his own inattention.

During the night the great pine tree by which our tent was pitched caught, from a roaring fire we had lighted against its root, and neglected to put out when we turned into our blankets, trusting to its being green. But the fire caught the dry grey lichens which drooped in festoons from the branches, and which, being highly charged with turpentine, gave out a magnificent blaze, the roar of which luckily wakened me up. (Hector, in Spry, 1968, p. 315)

The problem posed by these travellers eventually drew the attention of the *Nor' Wester* which hitherto had focussed its editorial ire on carelessness by local agriculturalists.

We are convinced, and it is very generally believed, that a large number of those fires originate from the various camp-fires left alit on the prairies. Parties camp everywhere in the plains, cook and eat their meals, and then march off; and we venture to say that in ninety-nine cases out of a hundred they never put their fires out before leaving. The consequence is that the smouldering flames, fanned by wind, soon spread themselves, and catching the dry grass or twigs in the vicinity, light up such conflagrations as even the far-famed Red River of the North itself would fail to extinguish, could its water be available for such a purpose. This is, we imagine, one great source of an evil from which nearly every settler suffers more or less heavily, and through the prevalence of which the community at large is impoverished in the items of wood and hay alone, to the extent of thousands of pounds annually. Every remedy which can commend itself as likely to abate this great evil ought, we think, to be adopted... (*Nor' Wester*, September 1, 1864).

The shift in the cause of grass fires from aboriginals to settlers and travellers was noted by a telegraph line contractor.



I do not think that the Indians set fire to the prairies as much as has been represented. The Half-Breeds, who travel in [cart] trains and the white men, are very reckless; they think that it is the last time they will be over the route and that it does not matter. (quoted in Raby, 1966)

Whatever the cause, much of the burden of these fires fell in the sensitive grassland/parkland transition zone where the posts and trails were concentrated and where the “disappearance of forests” made such a forceful impression on visitors, particularly from mid-Century onward. The apparently incendiary state of the region during this period lends support to the oft-expressed claim that fires were not only maintaining the grasslands against encroachment by woodland, but were in fact extending them during most of the 19<sup>th</sup> Century.

The end of the “Grass Fire Era” came gradually. The virtual disappearance of the bison during the 1870’s eliminated a primary source of fire. From 1880 onward, the spread of agriculture reduced the annual production of combustible material and provided artificial fire breaks with its patterns of ploughed fields, fences, farmsteads and roads. Where fires continued to present a hazard into the early 20<sup>th</sup> Century, they were countered by organized fire suppression and legislation against carelessness (Raby, 1966). Gradually the grass fires diminished in frequency and extent until the descriptions of the conflagrations of the previous century were but a dim, barely credible, memory.

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