

4. **The Northern Great Plains: Pantry of the Northwestern Fur Trade, 1774–1885 (1984)**

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Famous for their large-scale buffalo hunts and their ingenious Red River carts the Métis, indebted to their Indian lineage for their adaptation to local terrain and climate, played a crucial role in the provision of the fur trade. Taking advantage of the buffalo's reproduction rates, which were sufficient to allow for a constant supply in spite of the inevitable wastage, Métis economy also came to rely on an involvement in the buffalo robe and hide trade.

The expansion of the fur trade into the Athabasca and Mackenzie River drainage basins in the late 18th century had major implications for the trading system that had already been established in the northern Great Plains. Operating a burgeoning network of posts posed serious logistical problems for the competing Hudson's Bay and North West companies. The boreal forests could not provide sufficient food to feed men stationed at the growing number of posts and those who manned the canoe and boat brigades plying the routes between them. European food was too costly to import in large quantities. Even more important, cargo space in canoes and York boats was limited. The proportion of that space devoted to provisions had to be kept to a minimum. Complicating this problem, the transportation season was too short to permit crews to hunt and fish along the way. For these reasons, food had to be obtained in the country and stockpiled at strategic locations along the transportation routes.

The European traders quickly realized that the parkland and prairie areas could serve as the pantry for the western fur trade. This region could produce large food surpluses and it was strategically located beside the main supply line of the northwestern fur trade (Figure 1). In order to collect

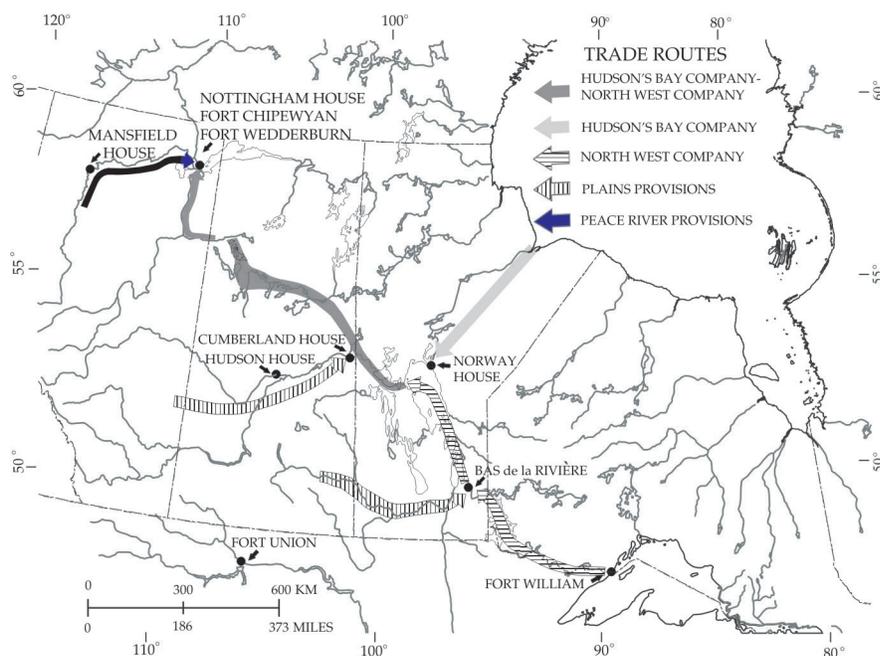


Figure 1. Trade routes.

plains provisions, the Hudson's Bay Company and the North West Company built posts along the North Saskatchewan as well as the Red and Assiniboine rivers between 1779 and 1821. The provisions obtained from the Saskatchewan area were forwarded to Cumberland Lake for use by the Athabasca-bound brigades of the two companies. In the southern Manitoba area, the North West Company sent its foodstuffs to Fort Bas de la Rivière on the lower Winnipeg River for use by its canoe brigades as they travelled between Cumberland Lake and the Rainy Lake-Fort William area. The Hudson's Bay Company forwarded its provisions from southern Manitoba to Norway House, at the head of Lake Winnipeg, where they were picked up by inland brigades travelling to and from York Factory. Even with these new logistical arrangements a large proportion of cargo space continued to be taken up with provisions (Table 1).

Indians were quick to appreciate the opportunities the new provision market offered to them. For instance, in 1779 the Hudson's Bay Company built Hudson House on the North Saskatchewan River to obtain provisions for Cumberland House. Within a year, the local Indians were burning the surrounding prairies in the autumn to prevent the buffalo (*Bison bison*) herds from approaching the post. By making it impossible for the traders to hunt

Destination from Fort William	% Provisions
Athabasca	34
Athabasca River	39
English River	38
Rat River	42
Upper Fort des Prairies	48
Lower Fort des Prairies	38
Upper Red River	25
Lower Red River	24
Fort Dauphin	28
Lake Winnipeg	37

Based on data in Williams S. Wallace, *Documents Relating to the North West Company* (Toronto: n.p., 1934), 277–79.

buffalo themselves, the Indians hoped to increase the prices that they could demand for the provisions they brought to barter. This Native practice became commonplace in the parklands.¹

The foodstuffs that the Indians supplied consisted almost entirely of dried buffalo meat (jerk meat), pounded (powdered) meat, grease and pemmican. The butchering and processing was done by Native women. Drying meat involved cutting it into long strips about 0.6 cm (0.25") thick. The strips were then hung on wooden slats supported by tripods of sticks. It took two or three days for the meat to dry. The better quality dried meat was packed into bundles. The remainder was dried further over a hot fire until brittle. It was then laid out on a buffalo hide and pounded into a powder. This powdered meat was dumped into a kettle containing boiling fat or marrow. As it cooked the mixture turned into a paste. Crushed berries were often added at this time. While still boiling hot, the paste was poured into leather bags which were sealed as tightly as possible. The mixture was then allowed to cool until it was hard. This very nutritious food concentrate was known as pemmican.² It was highly stable and could be stored for long periods of time. For these reasons, pemmican was an ideal food for people on the move. It could be eaten right from the bag without any further preparation, roasted in its own fat, or boiled.³

The expanded market for buffalo meat products after 1780 had significant implications for the Native suppliers. For example, it is reasonable to suppose that the prehistoric demand for dried provisions by parkland/grassland groups was limited because these groups hunted buffalo to some extent

at all seasons of the year. Therefore, a large portion of their food consumption would have consisted of fresh or previously frozen (in winter) meat.⁴ Dried provisions were used in emergencies when herds were not present locally, when travelling, or when engaged in raiding expeditions. Pemmican was especially important in the latter circumstances since it did not have to be cooked. Being able to avoid using fires while on the warpath was an important consideration in the open grasslands, where smoke was visible for miles.

Besides domestic use, nomadic hunters probably also traded dried meat and pemmican with horticultural Indians who lived in the Missouri valley during the late prehistoric period.⁵ In addition, some exchange undoubtedly took place when local food shortages were common in the forests. However, there is no reason to suppose that this trade was extensive.

In light of these considerations, it is clear that the fur trade provision market would have served to increase the importance of pemmican as an article of commerce. Whether or not this market stimulated the initial commercialization of the hunt is uncertain at this time because there is some archaeological evidence that suggests there may have been an increased output of dried provisions in the late prehistoric era.⁶ On the basis of this evidence the archaeologist Thomas Kehoe has argued that the commercialization of the hunt began before European contact.⁷ If Kehoe is correct, the development of a fur trade provision market may have simply served as a catalyst which accelerated a trend that had begun earlier. It is unclear why the process would have begun in the prehistoric/protohistoric periods. Possibly the incentive for increased pemmican production in the late pre-contact period was related to the increase in warfare that was associated with the northward spread of the horse. Acquisition of this animal may also have served to increase intertribal trade. Whatever the causes for the increased output may have been, it is clear that in the historic period the expanded output of provisions was aimed at serving a new external market.

While a changing economic climate provided the incentive, technological changes resulting from European contact made it easier for Native groups to expand their production of traditional meat products and to transport them. For instance, historical accounts of pemmican-making indicate that buffalo fat was melted in copper or brass kettles.⁸ It is uncertain how fat would have been melted down on a large scale in prehistoric times given the relatively poor quality ceramics that Indians possessed (judged by modern technical standards) and the fact that plains Indians used the buffalo paunch extensively as a cooking container. Being limited to this domestic equipment meant that most foods had to be either stone-boiled or roasted over an open fire. Indeed, when writing about the Métis (descendants of Indians and

Europeans) buffalo hunts in the middle of the 19th century, Red River settler Alexander Ross noted that a great deal of meat, fat, and bone marrow was wasted because the Métis hunters lacked a sufficient number of kettles to process it.⁹ Ross's observation is of particular interest given the fact that the Métis undoubtedly were better equipped with kettles than their Plains Indian cousins. Thus, although kettles would have offered the prospect of improved efficiency of meat processing, the limited quantity of kettles available as late as the middle of the 19th century was a factor that set limits on the amount of pemmican that groups could make from their kill. In other words, food wastage may have been partly a function of the per capita distribution of kettles. It may be that prehistoric pemmican production occurred only on a relatively small scale owing to technological constraints.

Hunting efficiency and transportation capability were affected by the introduction northward of horses from the southern plains where they had been brought by the Spaniards. By the early 1700s horses were found in the southern Alberta region, and by the 1740s they were being adopted by Indians in southern Manitoba. Horses altered summer hunting practices in that the animals enabled Indians, and later Métis, to "run" the herds. This involved having a group of men approach a herd as closely as possible before it took flight. Once the buffalo stampeded, the Indian hunters chased after them on their horses. Being faster than the fleeing buffalo (a buffalo was said to run at two-thirds the pace of a horse), a good buffalo pony enabled Indian hunters to ride up alongside of their prey and kill them at close range with arrows, lances or muskets. The chase usually continued until the horses were tired. As in the past, the Indian women and children followed, often on foot, to butcher the fallen prey. Although not without its hazards, this method of hunting was less risky and probably more efficient than the older walking surround or fire drive. Ross witnessed a Métis "buffalo run" that lasted two hours and yielded 137 animals. This is a kill rate of slightly more than 11 per minute. In terms of the 40 men involved, however, it is less impressive, giving each hunter an average of 3.5 animals.¹⁰ Perhaps of greater importance, horses gave the plains hunters the potential of carrying larger loads at a faster pace than when dogs were the sole beasts of burden.¹¹ However, the potential was not fully realized because of limited availability. Many Indian groups in southern Manitoba and eastern Saskatchewan were "horse-poor." They did not have enough mounts for everyone. Therefore, the speed of these groups was limited to their slowest pedestrian members. In contrast, the Métis had a relative abundance of horses. They often travelled with riding horses, buffalo-running ponies (which were used solely for that purpose), cart horses and pack horses.

As the fur traders pushed into the Athabasca and Mackenzie River country, they quickly realized it was necessary to have an advance food supply base to augment meat products obtained in the prairie region. The mainline of the fur trade skirted the edge of the Canadian Shield, where many large lakes (Great Bear Lake, Great Slave Lake, Lake Athabasca, Lake Winnipegosis and Lake Winnipeg) teemed with fish. The fisheries developed on these lakes supported a number of trading posts. However, even though fish could be smoked, dried or, in the case of sturgeon, processed into pemmican, it did not become an important voyaging food.¹² It is unclear why. Perhaps it was related to food preferences. It is also likely that fish pemmican would have had a shorter "shelf life" than buffalo pemmican. The failure to exploit the great inland fisheries meant that alternative sources had to be developed. The Nor'Westers were the first to confront this problem and in the late 1870s they turned to the Beaver Indians living in the Peace River valley to supply them with the additional food. By the turn of the century the North West Company was relying on the Peace River area for all of its dried provisions in the region. This meat was sent from the Peace River valley to Fort Chipewyan where the Nor'Westers used it to outfit their canoes bound for Cumberland House from Peace River, Great Slave Lake, and Lake Athabasca.

In 1802 the Hudson's Bay Company moved into this area and built Nottingham House on Lake Athabasca, near Fort Chipewyan. It was hoped that the men at this post would be able to feed themselves on fish. Like the Nor'Westers, the Hudson's Bay Company men also realized that they would need to tap the Peace River country for more food. They launched this effort with the construction of Mansfield House on the Peace River in 1802. Realizing the strategic importance of the Peace River supply base and wanting to block the Hudson's Bay Company's push into Athabasca and Mackenzie river country, the Nor'Westers quickly moved to intimidate the Hudson's Bay Company on the Peace River. This venture was successful and the Hudson's Bay Company was forced to withdraw. Having failed to secure a supply base in the Peace River area, the Hudson's Bay Company also found it was necessary to close Nottingham House in 1809 and temporarily abandon the Athabasca country. They did not return again until 1815 when they built a new post, Fort Wedderburn, on Lake Athabasca. Once again the Hudson's Bay Company battled with the Nor'Westers for access to the provision trade of the Peace River country. This time they were successful and secured a toehold in the region by 1819.¹³

The battle for control of the provision trade at this time was not limited to the Peace River country. It erupted in the Red River area also. In 1812 the

Hudson's Bay Company established the Selkirk agricultural colony on the banks of the Red River. This posed a strategic threat to the North West Company since the colony lay astride its provision supply line in that quarter. The seriousness of the danger was manifest in the winter of 1814. The colony was seriously short of provisions. In an effort to deal with the problem Miles Macdonell, the autocratic colonial governor, issued his "Pemmican Proclamation" on January 8, 1814, forbidding the export from the area of any provisions that had been secured or grown there. All provisions were to be reserved for the colony's consumption.¹⁴ Macdonell's action provoked the so-called "Pemmican War" in which the Nor'Westers, using the Métis as pawns, sought to destroy the colony.

The struggle for control of shares of the vital Plains provision trade continued in all quarters until the union of the two rival companies in 1821. Although this union temporarily reduced the overall labour force of the fur trade by as much as one-third, thereby temporarily diminishing the size of the provision market, this market rebounded a short while later. But after 1821 a new group emerged as one of the major suppliers—this group was comprised of French (the Métis) and English mixed-blood men. Most of these men were laid off by the Hudson's Bay Company in the early 1820s. Some simply quit. Previously most of them had been stationed at the parkland posts and had Native wives of Parkland Indian ancestry. The mixed-bloods congregated near the Red River colony and around the present town of Pembina, North Dakota, until they abandoned the latter location in 1823. These men and their families combined the older Indian ways with the newer ones of the settlers. They established small farms, but between sowing and harvest they hunted buffalo for dried provisions and hides. From late August until early November many of them left for the plains a second time to secure fresh meat and buffalo robes for the winter. Their hunts were like those of their Plains Indian relatives, but there were also some differences. One was in the mode of transportation that the mixed-bloods used. The Métis employed two-wheeled carts fashioned of local materials (wood, leather and sinew) instead of the travois. These were the famed Red River carts. They were pulled by one horse, or an ox, and carried some 900 pounds of cargo—nearly double that of the travois. The carts gave the mixed-bloods great mobility, enabling them to extend their foraging range as far westward as was necessary to pursue the buffalo herds. Further, Indians tended to follow the herds, hunting them at all seasons. Since the mixed-bloods, who lived in fixed settlements, worked for the Hudson's Bay Company on a seasonal basis, and farmed on a part-time basis they could not hunt all year round. Therefore, their buffalo hunting was confined largely to two hunts

annually. These hunts were much like those organized by the Indians, except that Métis hunters skinned the slain buffalo and brought the carcasses back to camp rather than having their women and children follow in their wake. For both groups, the women did the butchering and meat processing.¹⁵

Recently it has been argued that the mixed economy of the Métis was better suited to the regional economic situation between 1821 and 1870 than was the way of life chosen by settlers who attempted farming on a full-time basis.¹⁶ The farmers were frequently devastated by natural disasters. Colonial observer James Hargrave noted in 1870 that the Red River settlement had been completely flooded in 1808, 1826, 1852, and 1861, and had been plagued with locusts in 1818, 1819, 1857, 1858, and 1864 through 1868.¹⁷ Besides these 13 major calamities in 60 years, droughts and early frosts were also a frequent problem. These recurring misfortunes kept the colony from producing a steady agricultural output sufficient to meet its own provision requirements. Poor storage and handling procedures frequently reduced the size of any surpluses produced.¹⁸ Therefore, the developing colony remained partially dependent on the buffalo hunt to survive. This dependency extended the size of the provision market beyond that provided by the Hudson's Bay Company.

The Métis, as competitors of the Parkland Indians for the provision market, were most successful in southern Manitoba. One can assume that they satisfied nearly all of the colony's needs and a significant portion of the Hudson's Bay Company's requirements in that quarter. Posts situated along the middle and upper reaches of the Assiniboine River and North and South Saskatchewan Rivers and their tributaries supplemented the provisions that the mixed-bloods brought to Red River. Most of these western posts conducted the bulk of their provision trade with Indian groups. As in earlier years, these provisions were transported to Cumberland House and Norway House.

The dimensions of the provision market created by the fur trade can be pieced together by employing scattered bits of information that are available. For example, in the first decade of the 19th century the North West Company was obtaining an average of 12,600 lb. of pemmican from its Red River department and 27,000 to 45,000 lb. from the Saskatchewan area.¹⁹ This gives an average annual total of between 39,600 and 57,600 lb. of pemmican for the North West Company from the prairie/ parkland area. Historical accounts provide somewhat contradictory statements about the amounts of fresh meat that were needed to produce a bag of pemmican. James Hargrave stated that the meat of one bull made a 100-lb. bag of pemmican, while Father G.A. Belcourt claimed it took two buffalo cows to produce a 90-lb.

bag of pemmican (one cow yielded 45 lb. of pemmican). But he added that experienced hunters reckoned it took eight to 10 cows' meat to fill one cart with pemmican (one cow = 90 to 112.5 lb. of pemmican).²⁰ There is a discrepancy in these figures of over 100%. Guillaume Charette, a Métis, observed that it took 4,000 cows to fill 500 carts with pemmican, or eight per cart.²¹ This suggests that Belcourt's second figure is the more accurate estimate. Data obtained from the North West Company post of Fort Pembina reveal that the mean dressed weight of 35 bulls killed during the winter was 514 lb. while that of 112 cows was 402 lb.²² In light of these various sets of figures, it would have taken approximately 350-440 lb. of fresh meat to produce 90-100 lb. of pemmican. This represents a weight loss of between 72% and 80% using cows and bulls. Using cows exclusively the range is 72-77.5%.

All historical sources agree that cow's meat was preferable for all types of consumption. F.G. Roe concluded that this preference was on the order of 10 to one.²³ More bulls would be taken only if there were not enough cows. Given the very strong historical preference for cows, and assuming a 75% weight loss in processing, it is possible to estimate the number of buffalo required to meet the pemmican demands of the fur trade as well as Métis and Indian subsistence requirements. For this reason, the estimates for slaughter will be expressed in "cow equivalents." On this basis it would have taken between 158,400 and 230,000 lb. of fresh meat to yield the quantity of pemmican the North West Company needed annually in the early 19th century. This represented roughly 400 to 575 buffalo cows. If we assume that the Hudson's Bay Company's requirements were the same during this period, the combined demand could have been met by killing fewer than 1,200 animals.

Table 2 gives the provision demand of the Hudson's Bay Company at 10-year intervals between 1830 and 1870. These figures have been translated into equivalents. These data reveal that the size of the company's pemmican and dried meat market increased over two and one-half times between 1840 and 1870. But the numbers of animals needed for slaughter remained relatively low, suggesting that the provision market accounted for only a small percentage of the total output of provisions in the northern plains region.

This conclusion is based on an estimation of the magnitude of the demand for buffalo meat products by the Red River Colony and the Native population. This estimation takes into account census figures for the colony, approximations of the Native population in the mid-19th century, scattered data dealing with food consumption at the beginning of that century, the ration rates employed by the Hudson's Bay Company, and transportation capabilities of the mixed-blood population. During the winter of 1807-08, 41

Commodity	1840	1850	1860	1870
Pemmican (lb.)*	90,900	120,375	137,610	202,680
Dried Meat (lb.)**	20,000	16,600	11,000	9,000
Total	110,000	136,975	148,610	211,680
Price (sterling)/lb.****	£ s.d	£ s.d	£ s.d	£ s.d
Pemmican	3d	3d	4d	6d
Dried Meat	2d	2d	3d	4d
Inventory Value**** (sterling)				
Pemmican	£1,136 5s	£1,504 14s	£2,293 10s	£5,067
Dried Meat	£166 13s	£138 7s	£137 10s	£150
Total	£1,302 18s	£1,643 1s	£2,431	£5,217
Equivalent in Red River Cart Loads ***	122	152	165	315
Equivalent in fresh meat (lb.)	482,000	579,870	615,625	864,053
Equivalent number of buffalo cows	1,205	1,450	1,539	2,160
* Ray, <i>Indians in the Fur Trade, 200–10.</i>				
** According to Belcourt, 1 cow = 67.50 lb. dried meat.				
*** Cart load = 900 lb.				
**** British Columbia Provincial Archives, Add MS, 220, "Standing Rules and Regulations, Northern Department, Rupert's Land, 1847–67."				

men stationed at the North West Company post of Fort Pembina consumed 63,000 lb. of fresh buffalo meat over a 213-day period (September 1–March 31). This represents an average of 7.2 lb./man/day or about 5,360 calories. In addition, during the same period the men consumed three red deer (*Cervus elaphus*), five black bear (*Ursus americanus*), four beaver (*Castor canadensis*), three swans (*Cygnus* sp.), one white crane (*Grus americana*), 12 outards, 36 ducks, and 1,150 fish of various kinds.²⁴ This level of consumption was only slightly below the rations that the Hudson's Bay Company provided for its boat brigades. Company boatmen were given eight lb. of fresh meat per day, their wives four, and their children two. Allowances for employees and their families stationed at trading posts were one-half that of the brigades. A variety of other foods was consumed also. Applying the Hudson's Bay Company rates to the population censuses of Red River suggests that the buffalo meat consumption of the colony would have ranged between approximately 2,200,000 lb. and 4,400,000 lb./year in 1831, potentially rising to between 7,500,000 lb. and 15,000,000 lb./year in 1870.²⁵

This simple prediction must be modified, however, to account for additional factors besides human population growth. The colony was making

slow, if erratic, progress in its agricultural output. Also, transportation capacity did not expand sufficiently to carry the quantity of meat projected by the 1870 estimate. In 1870 Hargrave wrote that an average of 1,200 carts took part in the two annual hunts—roughly the same number as in the late 1840s despite the population increase. This indicates that the Métis hunters could have supplied a maximum of 1,080,000 lb. of pemmican (the equivalent of 4,320,000 lb. of fresh meat) from the August hunt and 1,080,000 lb. of fresh meat in the autumn if all of their cargo space was devoted to provision supplies. Of course, this was not the case given that they also carried hides and robes. Thus, the annual buffalo consumption by the Red River colony in 1870 would have had to be less than the equivalent of 5,400,000 lb. of fresh buffalo meat per year. This indicates a daily ration of meat of less than three pounds of fresh buffalo meat per adult male, or one-quarter less than the post allowance rate of the Hudson's Bay Company.

These calculations indicate that provision demands of the colony in 1831 would have generated a slaughter on the order of between 5,500 and 11,000 buffalo cows, while that of 1870 would have been under 13,500. This suggests that the maximum probable increase would have been less than two and one-half times between 1831 and 1870.

In 1856 Governor George Simpson of the Hudson's Bay Company calculated that the Plains Indians numbered just under 30,000.²⁶ Using this figure and applying the ration rates of the trading companies, the potential buffalo meat requirements of the Indians would have necessitated the slaughter of between 54,000 and almost 110,000 cows/year. In this case, the mean figure of about 82,000 is more likely, given that this number would closely approximate the size of slaughter that would be generated by a population of nearly 30,000 having a diet very similar to that of the men stationed at Fort Pembina in 1807–08.

As large as it appears, it should be pointed out that a projected kill rate of 82,000 animals per year is probably a conservative estimate bearing in mind that hunts were wasteful. During the summer season Indians sometimes slaughtered herds just to obtain the tongues and bosses for feasts. The rest of the carcass was left to spoil. Even without such profligate behaviour the hunt was wasteful by its very nature. The buffalo being a herd animal that was easily spooked to stampede, it was difficult for the Indians or Métis to kill only those that were needed. The most obvious example would be a cliff drive where it would have been impossible to control the number of animals that stampeded over a precipice. When running buffalo, hunters could not predict how many animals they could successfully skin and butcher. A number of problems could arise that would abbreviate the butchering.

These included raiding parties of hostile Native groups, rainstorms which rendered exposed meat useless, and nightfall. Predators, most notably wolves (*Canis lupus*), were effective scavengers after dark and took a heavy toll. According to one Métis hunter, besides these problems, the blinding dust of a run often made it impossible to carefully pick out the choice fat cows and many undesirable quarry were killed.²⁷ For all these reasons a significant allowance has to be made for wastage. Alexander Ross claimed that 2,500 animals were slain in one hunt by Métis, but the meat of only 750 buffalo was processed—scarcely one-third.²⁸ Given all of the factors that could influence the ability of a party to process the meat of its hunt, wastage rates would not have been constant. If we assume that Ross's experience represented extreme conditions, then presumably they ranged up to as much as 66%.

Taken together, it is clear that the combined food needs of the Hudson's Bay Company, the Red River Colony and the Indians would have necessitated a slaughter that amounted to the equivalent of just under 100,000 cows (2,160 + 13,500 + 82,000) per year. Considering wastage, a range of 100,000 to 300,000 is a possibility. Of this, just over 2% of the kill would have been generated by the fur trade.

Although a slaughter of this magnitude might appear to represent a serious threat to the survival of the wild buffalo herds, this apparently was not the case if Roe's estimation of the natural rate of increase of the species is correct. Based on data obtained from the captive animals in Wainwright Buffalo Park, Roe concluded the population increased 18%/year.²⁹ At that rate the combined provision hunt could have been sustained by a herd of between 555,555 (if 100,000 were killed) and 1,666,666 animals (if the slaughter equalled 300,000). Most calculations of the size of the northern herds exceed these figures by a wide margin. Therefore, it seems likely that other economic developments in the 19th century served to accelerate the slaughter beyond the level of a sustainable harvest and eventually destroyed this vital food resource. The first of these developments was the emergence of a strong market for robes. A few robes had been traded ever since the beginning of the fur trade in the area in the late 17th century. However, the volume of this traffic was limited since there were no sizeable markets in eastern North America or Europe. Also, these articles were bulky and heavy and, therefore, it was difficult to transport large quantities of them by canoe. But by the early 19th century the picture began to change. American traders pushed up the Missouri River and established Fort Union at the confluence of the Yellowstone and Missouri rivers. This post became an important hub of trade, drawing Indians from a large surrounding area including the prairies south of the Saskatchewan and Assiniboine rivers. Using bateaux

and steamboats the American traders' transportation costs were substantially less than those of the Hudson's Bay Company which continued to depend heavily on the less efficient York boat and canoe. The Americans' cheaper transportation costs enabled them to cater to the growing market for buffalo robes in eastern North America. This market developed to the point where it triggered off a virtual flood of robes down the Missouri River toward St. Louis. It has been estimated that between 1815 and the early 1860s the trade of the Missouri River area fluctuated between 20,000 and 200,000 robes/year.³⁰ Probably 50% of this trade came from the Canadian prairies north of the upper Missouri.

In the early 1820s Governor George Simpson of the Hudson's Bay Company made a few exploratory efforts to see if the company could take part in this new market, either by making overland shipments to Montreal or by exporting robes via York Factory to London for reshipment from that city to New York. These initial efforts were failures.³¹ Somewhat later the company became involved in the robe trade, but its share of the enterprise remained very small (Figure 2). The Company's annual trade never reached 20,000. The Métis also became involved, and in 1844 they began carting robes overland to the St. Paul area of Minnesota. Few data exist concerning the volume of traffic. However, in 1856 it amounted to more than 7,500 robes.³² That year the Hudson's Bay Company traded almost 16,000 robes, suggesting that Métis trade comprised about 50% of that of the company's volume.

These sketchy data (in the case of the Métis) suggest that the combined robe trade of the Métis and the Hudson's Bay Company ranged between 10,000 and 40,000/year between 1840 and 1879. Added to the 10,000 to 100,000 robes that probably flowed southward from the Canadian prairies to the Missouri River posts, an annual winter slaughter of 20,000 to 140,000 animals is indicated.

The robe hunt must be considered in relation to the provision hunt to understand the combined impact that it had on the Native economy (Indian and Métis) and on the buffalo resource. Recall that the fur trade provision market consisted entirely of dried produce obtained from the summer hunts; therefore, no robes would have been taken as by-products of the 2,160 cows needed. Almost 11,000 of the 13,500 animals slaughtered for the colony's consumption were killed to produce dried meat products. Therefore, only about 2,500 (perhaps 7,500 if we allow for waste at the maximum rate) would have been killed for food during the robe season. There were about 6,000 Métis in Red River in 1870.³³ Allowing one robe for every man, woman and child per year for personal use, it is clear there would not

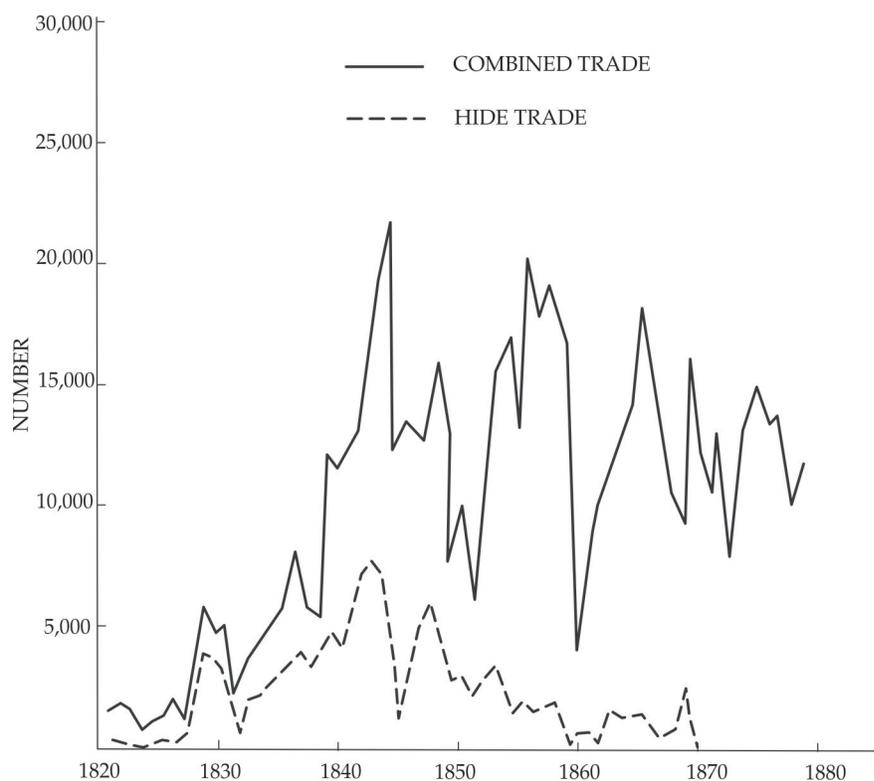


Figure 2. Hudson's Bay Company Northern Department hide and robe trade, 1821–1879.

have been any surplus left for trade. If, for the sake of discussion, we assume that the provision hunts of the Indians were spread out over the entire year, then 66% of the approximately 82,000 buffalo needed would have been slain at a time when robes could have been obtained as a by-product. This amounts to some 54,120 robes (perhaps 135,000 with a maximum wastage allowance). If we allocate two robes per Indian per year for clothing and bedding purposes (probably a conservative figure), it is necessary to subtract some 50,000 robes from the above figure to determine the number available for trading purposes. The result suggests that no by-product robes would have been available if Indian hunts were highly efficient and aimed primarily at meeting their food needs.

Adding together the median values of the estimated ranges of the volume of Canadian Indian robe trade to the Missouri River posts, the Hudson's Bay Company's robe trade, and the Métis traffic to Minnesota territory, it appears that the magnitude of the robe market for the region at

mid-century was something on the order of 60,000 robes (40,000 + 13,000 + 6,000 = 59,000). This suggests that the development of the robe market could have had the effect of almost doubling the winter slaughter of buffalo (e.g., increasing it from just under some 56,600 to nearly 110,000). The problem is that we do not know if the Indians were able to take and process robes more efficiently than meat. If this was the case, then the robe trade may not have increased the Indians' winter kill at all if provision wastage was as high as 66%. If this was so, and all of the robes of the wasted animals were collected, then perhaps as many as 85,000 were available for trade. This seems unlikely, however, as robe processing, like meat preparation, was time-consuming although the rapid spoilage of the raw material was less critical.³⁴ Added to the summer hunt, conservatively estimated at just over 40,000 (27,060 + 2,160 + 11,000), the annual provision and robe slaughter probably ranged between 150,000 (assuming little wastage in the provision hunts), as much as 354,000 (if two-thirds of the provision kill were wasted and no robes were obtained from the carcasses). The latter scenario is unlikely.

The magnitude of the difference in the economic importance of the provision and robe markets is not easy to gauge since we have good data only for the Hudson's Bay Company markets and, as noted earlier, the company took part in only a fraction of the robe trade. As Table 2 shows, the dried meat and pemmican that the Hudson's Bay Company purchased was valued in Sterling at £1,302 18s. in 1840, increasing to £5,217. Considering the number of Métis and Indians involved in the trade, these are very small figures. In contrast, the Company bought between 4,000 and 22,000 robes/year during this period (Figure 2). In 1843, at the height of the company's trade, it valued prime robes at 5s. and common ones at 2s.6d. Using an average price of 2s.9d. (the returns did not specify the quantities of prime and common) the 1843 trade was worth about £3,025 or nearly two and one-half times more than the provision market. In 1870 prime robes fetched 10s. and common 5s. for an average price of 7s.6d. At these prices the approximately 11,500 robes bought by the company were worth about £4,312 10s. to the Indians and Métis. In other words, the Hudson's Bay Company's robe market was of roughly the same value as its provision market. Since the company's prices for provisions and robes had doubled between 1840 and 1870, the shift in relative value of the markets represented the growing volume of the provision trade (it almost doubled between 1840 and 1870), whereas the volume of the robe trade showed an irregular decline. Thus, for Indians and Métis who traded solely with the Hudson's Bay Company, it would appear that the provision trade was of increasing relative importance. However, few traded exclusively with the company. Given the very large market for

robes in the United States until the 1870s, one can speculate that before 1870 most Indian and Métis hunters derived the bulk of their hunting income from selling robes.

In the 1870s technological developments in the tanning industry made it possible to process buffalo hides. This had the effect of creating an extremely large market. Attention very quickly shifted from robes to hides to take advantage of this new economic opportunity. The development of this new trade served to accelerate the buffalo slaughter for a number of reasons. Hides could be prepared more quickly than robes and required less skilled labour. This meant that Euro-Canadians could enter the field on a much larger scale than previously. The hide market was larger than that for robes, although the Hudson's Bay Company played a smaller role (Figure 2). Unlike the robe hunts, the kill was concentrated in a relatively short period. The dried provision needs of the Indians, Métis and the Hudson's Bay Company could have yielded something on the order of 40,560 hides. If the Indian and Métis population used two hides/year, probably a conservative number given the many uses hides served in their cultures, 60,000 hides would have been required for the Native population annually. In short, there was no surplus. Indeed, the need for hides likely led the Native population to slaughter more animals than their provision needs would have dictated, hence the "waste" noted earlier. If the estimates of food and hide needs are in the "ball park," one-third of the meat of the summer hunt could have been wasted as a result of the Native demand for hides which necessitated a higher slaughter rate. In any event, it is clear that the hide trade probably increased the Indian and Métis level of hunting much more sharply simply because there was virtually no surplus available as a by-product of provision hunting. Thus, the robe and hide trade greatly increased the attack on the herds, hastening the day when they would vanish forever.

The tell-tale effects of overkill were manifest as early as the 1820s. By that time buffalo ceased to frequent the Red River valley near the colony. In the late 1850s their appearance in the southern Manitoba area was becoming irregular and this caused Alexander Ross to comment that the combined attack on the herds, from the north by Canadian groups and from the south by Americans, was forcing the herds to retreat westward.³⁵ He foresaw the day when they would be totally destroyed. By the 1860s the buffalo were in sharp decline north of the Qu'Appelle and South Saskatchewan rivers. By the late 1870s, the herds were largely confined to southwestern Saskatchewan and southern Alberta areas.

In the early 1880s the buffalo had declined to the point where Native groups could no longer depend upon them for subsistence, much less

produce a surplus of provisions, hides and robes for a commercial market. Thus, pemmican, once a staple of the fur trade, became very expensive (Table 2), rising from 3¢/pound in the 1830s to between 9.5 and 10¢/pound in the late 1870s. Also, the quality deteriorated. For these reasons, in 1880 the Hudson's Bay Company's chief factor at York Factory stated he was looking forward to the day when the company's dependence on this commodity would end entirely.³⁶ This came to pass a very short time later, and brought a great deal of hardship and suffering to the Indians and many of the Métis. Alternative game supplies could not meet their subsistence needs and provide them with a sufficient quantity of marketable products to maintain their former lifestyle. The blow was severe. In the 19th century these groups had become the most economically independent and powerful groups in the west. But their economy and society had a fatal flaw: it was based on the exploitation of a single renewable resource, at a rate that exceeded the level required for a sustained yield harvest. Thus the once-proud Grassland Indians and many Métis were reduced to poverty levels by the 1880s, and found themselves in a much worse socio-economic situation than their cousins in the wooded areas of the plains. The latter had never reached the same economic heights, but were spared reaching the same lows. The local provision market in the Peace River country led to the serious depletion of the wood buffalo population. But the market was organized very differently. Most of the meat was obtained by a relatively few Indians who were hired as post hunters. Therefore, income from this activity was not spread as broadly through the population. Also, since moose (*Alces alces*) was the preferred food animal for most of the local Indians, the assault on the buffalo in this area had very different implications for the Native inhabitants.³⁷ As this resource declined, the Woodland Indian bands were able to continue to support themselves by hunting, fishing and trapping. Meanwhile their grassland counterparts were reduced to subsisting on ground squirrels ("gophers") (*Spermophilus* sp.), and prairie dogs (*Cynomys ludovicianus*), and to relying increasingly on government assistance. The pantry of the prairie plains was bare and could never be stocked with natural surpluses again. There and then the era of the hunter yielded to that of the farmer and rancher.

