

Chapter 2

Historians and the North American Bison

George Colpitts

Just what happened to the North American bison, one of the dominant animal species of the Great Plains, is a question of pressing importance to historians. The first history dates back to the 19th century and attributes the decline of the bison simply to the western expansion of Euro–North Americans. Today’s historians understand the reasons for the near disappearance of the plains bison differently than their predecessors did. The bison was not simply hunted to its destruction in the narrative arc of westward expansion and a constantly moving frontier. Rather, the demand for bison to meet the needs of humanity, whether for subsistence or market trading, within the narrow margins of available water sources, seasonal refuge areas, and wintering grazing grounds, all figure in explanations of its decline.

While plains bison were widespread from the Eastern Slopes of the Rockies across the Great Plains as far as the Eastern Piedmont (and there is also a race or subspecies known as the wood bison), it is the decline of the massive bison herds of the Great Plains that have understandably drawn the most attention. Daniel Licht, writing an ecology of the Great Plains, believed that the sheer biomass of bison in North America before European settlement could have surpassed 55 billion pounds—“heavier than the current human populations

of the United States and Canada combined.”¹ The factors conspiring to move such a preponderant plains species into an extinction gradient have to be accounted for, if only to better understand humans and their historical relationships with the natural world around them. Fortunately, new historical, scientific, and social scientific research has transformed the bison’s history in our modern day. Historians now account for a broad range of historical forces, both short and long term, that sent the bison to the brink of its annihilation in the 19th century.

Extinction was a potent word in the 1870s, when one of the first histories of the bison was written. As the grim commercial robe and skin hunt in the American West reached its climax, Harvard zoologist Joel Asaph

Allen wrote a comprehensive study of the bison in 1877, examining both its prehistoric and historic presence in North America. His *History of the American Bison: Bison Americanus* was not written as popular fare. Allen offered a dry, scientific, and fatalistic interpretation of the animal’s history. He discussed the bison’s ever-shrinking historical ranges, the appearance and disappearance of

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¹ Daniel S. Licht, *Ecology and Economics of the Great Plains* (Norman: University of Nebraska Press, 1997), 5.

bison in the fossil record, and the extinction of earlier megafauna species of bison, notably the big-horned *Bison latifrons* that roamed the plains just after the great Ice Age and then disappeared in what are now understood as the Pleistocene extinctions occurring some 10,000 years ago.

In what can only be attributed to Allen's supreme scientific detachment, he remarked that of all the fates of doomed large mammals none was "so interesting" as that of the bison. Though "at once the largest and most important animal of the aboriginal tribes of this continent," it "has become so circumscribed in its habitat, and is so constantly persecuted by professional hunters, that its total extermination seems to be fast approaching."² As Andrew Isenberg pointed out, Allen was likely influenced by the Darwinism infusing popular and academic writings in his time. The attributes he ascribed to the animal's nature (sluggish and stupid) likely made him pessimistic about the bison's fitness for survival.³ While the bison's "ultimate extinction [had been] so rapidly hastened by improvident and wanton slaughter," Allen found it more regrettable that so few serious attempts had been made to domesticate the animal in the new American farmsteads and ranches now settling the West. Through their ingenuity, farmers could raise the animal and use new railway systems to market its beef, hides, and skins.⁴ But this was not saving the animal. It was only domesticating remnant survivors of a mass kill-off. Few lawmakers, congressmen, territorial leaders, or even Aboriginal humanitarians who might have seen that it was worth saving bison for indigenous subsistence reasons were about to tamper with the West's "improvement" as a ranching and agricultural bonanza region. Similarly, Allen offered no alternative ending for the bison's story in this, one of the first histories devoted to the animal.

2 Joseph Asaph Allen, *History of the American Bison: Bison Americanus* (Washington: Government Printing Office, 1877), 473.

3 Andrew Isenberg, *The Destruction of the Bison: An Environmental History* (Cambridge, UK: Cambridge University Press, 2000), 153.

4 Allen, *History of the American Bison*, 582–583.

Writers began to ask new questions about the bison's history by the late 19th century in the context of the conservation movement gaining pace in the United States and Canada. "Progressive conservation," as it has been termed, looked to the state to play a role in providing expertise to industry and resource developers, to help them conserve resources and avoid unnecessary waste in harvesting, processing, or manufacturing. The historian Samuel Hays saw this form of conservation following the "gospel of efficiency": through wise management all manner of resources could be used over the long term.⁵ Better planning could certainly forestall the further loss of fish, bird, and animal species, especially in the United States, which were quickly disappearing by the end of the 19th century. Progressive conservation tended to ascribe economic value to nature's "resources." In the United States, one of the leaders of the movement, Gifford Pinchot, saw conservation as a patriotic duty of Americans, who had to harness nature's wealth wisely in order to ensure the nation's continual progress. For that reason, he might have been keenly interested in the fate of the bison preserved in the first refuges being set aside for them, but he did not support sentimental attachments to the animal's longer history. "It was not a bad thing, in one sense, that the buffalo should have been partly destroyed because the economic development of the Western country could never have taken place if the grasses upon which the buffalo lived had not been made available for domestic cattle."⁶

Progressivists might have seen nature in economic terms, but some of their contemporaries, such as John Muir, recognized intrinsic value in nature itself. Countering Pinchot's economic philosophy of resource conservation, Muir argued that nature needed preservation because of its uplifting spiritual and psychological qualities of significant value to modern, industrializing

5 Samuel P. Hays, *Conservation and the Gospel of Efficiency: the Progressive Conservation Movement, 1890–1920* (Cambridge: Harvard University Press, 1959).

6 Michael B. Smith, "The Value of a Tree: Public Debates of John Muir and Gifford Pinchot," *Historian* 60, no. 4 (1998): 773.

c. 1906

An Appeal for The Buffalo.



AN APPEAL FOR THE BUFFALO.

The American Bison or Buffalo, our grandest native animal, is in grave danger of becoming extinct; and it is the duty of the people of today to preserve, for future generations, this picturesque wild creature which has played so conspicuous a part in the history of America. We owe it to our descendants, that all possible effort shall now be made, looking to the perpetual increase and preservation of this noble animal, whose passing must otherwise soon be a matter of universal and lasting regret.

It is conceded, practically by all authorities, that, owing to the uncertainties of human life, and the changes in fortune and in policy among private individuals and private corporations, the Buffalo cannot be perpetuated for centuries and preserved from ultimate extinction, save under government auspices. At present nearly all the Buffaloes in the United States are in private hands, and with few exceptions are for sale to anyone offering a reasonable price. Many are sold every year, some for propagating purposes, and others to the butcher and the taxidermist. Moreover, most of them are in a few comparatively large herds, and should contagious disease at any time strike one of these, so great a percentage of the now remaining Buffaloes might be wiped out at one blow, as to make the perpetuation of the remainder practically an impossibility.

In the belief that Americans generally will be found in sympathy with a carefully planned movement to save what might well be termed their national animal, and in order that all who desire may take part in the work of preservation, there was recently organized, in New York City, The American Bison Society, which, in accordance with its constitution, has for its object, "the permanent preservation and increase of the American Bison."

This society will seek to have established in widely separated localities, under government auspices, several herds of Buffalo, on suitable ranges (preferably government land), such ranges to be chosen from a large number that have been recommended by competent persons. These herds, under proper management, should increase until the race was no longer in danger of extinction.

With this end in view, The American Bison Society is now beginning an active campaign. A bill calling for national aid in the establishing of several Buffalo herds is already under consideration. In the meantime, the society purposes to make a determined effort to organize the interest of the public in the fate of the American Buffalo, and presently bring it to bear in such a manner that it will result in the governments of both the United States and Canada taking active measures to insure that animal's preservation and increase. The officers of the society are prepared to do the work incidental to this campaign, but in order that this work may be carried on promptly and vigorously, they must have the support of those whom they believe to be in sympathy with them. This support can best be given by joining The American Bison Society, and by urging others to join it. The work to be done requires money, and for this the society depends entirely upon membership fees and dues, and occasional private subscriptions.

The American Bison Society was started in New York with the object of "The Permanent Preservation and Increase of the American Bison." CREDIT: AMERICAN BISON SOCIETY.

Several forms of membership have been created, and the fees and dues have been arranged with a view to enabling each person to contribute whatever he or she can afford. All members will be kept in touch with the society's work and informed of its progress. If those who love our native animals will stand together now, the Buffalo can be saved; in a few years it may be too late.

We do not think it necessary to ask Americans to perpetuate the Buffalo because of its commercial value. To be sure its flesh very closely resembles domestic beef, and its hide is much more valuable than that of any domestic animal we have. Moreover, the results of the few experiments which have been made in cross-breeding seem to indicate that by crossing the Buffalo with certain breeds of cattle, it may be possible to produce a new and valuable farm animal, with a thick coat of fine soft hair. But we believe that the famous old Buffalo has a far better and far stronger hold on the American people than can be estimated in dollars and cents. We know that he is a typical American animal,—the most conspicuous that ever trod the soil of this continent, and all things considered, perhaps the grandest bovine animal of our time. Americans will remember that his history is interwoven with their own,—with the development of the great West, and with the history of our Indians and of the pioneers. They must never forget the part played by the Buffalo in those rough times when the comfort, and even the very existence, of thousands of men depended on the presence of this huge and shaggy beast.

The extinction of the Buffalo would be an irreparable loss to American fauna; more than that, it would be a disgrace to our country. The passing of any great and noble animal is a calamity which all thoughtful persons should seek to avert. But the Buffalo has a special claim upon us, inasmuch as the great services he rendered the country in early times were repaid with indescribable brutality and persecution. By a series of cold-blooded massacres never equalled by any other nation calling itself civilized, a great race of animals numbering countless millions was reduced to numbers so pitifully small that for a time it was regarded as practically extinct. The least we can do now to partly atone for this ruthless slaughter, is to join in measures to prevent what otherwise be the final result of perhaps the greatest wrong ever inflicted by man upon a valuable wild animal.

Respectfully submitted,

THE AMERICAN BISON SOCIETY.

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Hon. Vice-President, His Excellency Earl GREY, Governor-General of Canada
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societies.⁷ The adherents of what was retrospectively identified as an “aesthetic conservation” movement advocated preserving nature, not extracting resources from it, and promoting nature recreation, sightseeing, and visits to wilderness being preserved in parks. They also saw the value of viewing wildlife where it was preserved, popularizing among nature recreationists a belief that seeing, photographing, and experiencing wildlife offered humanity as many benefits as did hunting it for sport and subsistence.⁸ Significantly changing perceptions of wildlife in other respects was animal psychology’s becoming a discipline in the 1880s. Drawing on Darwin’s assertion that animals had thinking abilities, animal psychologists carefully observed animals to reveal their complex mental processes. Animals made choices, acted independently, and often ingeniously overcame challenges in nature. Animal psychology, in turn, centrally framed the hugely popular realistic wild-animal narrative stories written by such writers as Charles G. D. Roberts and Ernest Thompson Seton. Their stories described animals as thinking and emotional beings struggling to survive in nature, which, in turn, allowed readers to sympathize with their fates.⁹

In such circumstances the story of the bison and its near extermination was important for economic but also moral reasons, a conviction held by American conservationist William T. Hornaday, who set about writing a history of the bison for the conservation age. Written for the Smithsonian Institution, *The Extermination of the American Bison* (1889) drew extensively on Allen’s data—including Allen’s notes on bison habits and intelligence, which Hornaday called its “mental capacity and disposition”—and insights to provide, in the first part, a natural history of the animal. Hornaday then arranged the second half of his book around the bison’s extermination. He cited the various ways that humans had slaughtered the animal with ancient

and modern technology. He traced the animal’s extermination geographically, from the southern and middle plains, to the last, straggling animals found in herds north of the Missouri River. It had weaknesses. Hornaday had not exhaustively consulted the extant record of the bison in traveller, army, fur trader, and pioneer accounts, and his history therefore had inaccuracies; for instance, he identified 1880 as the beginning of the intensive slaughter of the northern herds, when they were in fact already disappearing long before this.

Nevertheless, Hornaday’s work was significant in making the bison’s story relevant to his times. He attributed the bison’s overkilling and near extermination to “the descent of civilization” moving like a shadow across the bison’s ranges, “from the great Slave Lake to the Rio Grande.” Here was a moving and epic story of “man’s reckless greed, his wanton destructiveness, and improvidence in not husbanding such resources as come to him from the hand of nature.” Added to such deep-seated human failings were factors leading to the bison’s annihilation: western states and territories not regulating the hunt, Aboriginal people targeting female over male animals for their better robes and flesh, the animal’s defenselessness against human predation due to its “rather low order of intelligence, and ... dullness of intellect,” and the impact of technology, particularly modern breech-loading rifles and other firearms that figured so importantly in the last macabre spectacle of the commercial skin and robe hunt.¹⁰

Of course, Hornaday’s chief concern was that history should not repeat itself. He wrote that his historical account of the bison’s near extermination “may serve to cause the public to fully realize the folly of allowing all our most valuable and interesting American mammals to be wantonly destroyed in the same manner.” He even underlined the importance of that history: if Americans cannot learn from the bison’s fate and change their ways in respect

7 Ibid., 757–778.

8 Alice Wondrak Biel, *Do (Not) Feed the Bears: The Fitful History of Wildlife and Tourists in Yellowstone* (Lawrence: University Press of Kansas, 2006), 12–14.

9 Thomas R. Dunlap, “The realistic animal story: Ernest Thompson Seton, Charles Roberts, and Darwinism,” *Forest & Conservation History* 36, no. 2 (1992): 56–62.

10 William T. Hornaday, *The Extermination of the American Bison* (Washington: Smithsonian Institution, 1887), 117; 430.

to “the surviving species of mammals *which are now being slaughtered in like manner*, it will be sad indeed.”¹¹

By the 1950s, the bison’s history changed again when scholars took new interest in plains indigenous history and cultural survival and the impact of adopted technologies and material goods on traditional societies. In a monumental work, Frederic Gilbert Roe published *The North American Buffalo: A Critical Study of the Species in its Wild State* in 1951. Roe’s keen interest in plains cultures and changes that occurred with introduced goods and, especially, the adoption of the horse, clearly influenced the book’s writing. To Roe, the bison “deeply affected the civilization of the North American continent—perhaps more vitally than has ever been the case with any other single species in its indigenous environment in any portion of the globe.”¹² Roe was fascinated by the way bison in its wild state had such an impact on people. The history was massive in scale. Roe drew from any eyewitness written account he could lay his hands on to prove or disprove myths and popular understandings about the animal’s nature, its historical ranges and movements, and the periodization of its overhunting. He analyzed written accounts as though he were cross-examining them in a court of law. In the process, he established the falsity of much pioneer lore about bison, the myth of great continent-wide migrations, and the sheer unreliability of individuals as witnesses who, even on the spot, had no means of judging accurately bison numbers or ranges. It was unfortunate that Roe’s use of numerous sources led him to believe that that bison were unpredictable in their movement, their passages across the plains “irregular and erratic.” This observation, now overturned, had terrific implications for understanding nomadic plains people, who depended on bison for their very survival. In a separate chapter devoted to the “influence of the buffalo environment on Indian mentality,”

Roe suggested that plains people lived chancy lives hunting an animal so unpredictable in its movements and that even after adopting the horse as a solution to their vulnerability, plains nomads were still affected by the highly erratic and unpredictable nature of the bison.¹³

Roe demonstrated the importance of triangulating multiple sources to verify aspects of the bison’s history. Importantly, he established the problem of eyewitness accounts. That laid the foundation for a surging interest in the 1970s in using new evidence to write bison histories. Ethnohistory, indigenous history, fur trade studies, geography, and environmental history all offered new ways and often new evidence to study bison in the past. Arthur J. Ray, an historical geographer, then offered new perspectives on plains people in present-day Canada by carefully reading fur trade sources that revealed highly predictable seasonal bison migration that, in turn, shaped plains people’s own societal organizations and strategies.¹⁴ In his study of the British plains (now Western Canada) in the 18th and 19th centuries, he pieced together how plains Cree and woodland Assiniboine people typically met and joined together in fall and winter to hunt bison herds converging in the shelter offered in valley complexes and mixed forest groves, especially in the parkland ecotone bordering the Canadian Prairies. Following up, R. Grace Morgan carefully studied grassland plant species to reveal the ways that bison most likely moved across the plains in search of seasonally curing grasses: in spring, bison left the fescue belts in forest and valley complexes to graze the early curing cool-season mesic grasses in the uplands and foothills. Then they followed the warm-season mesic grasses coming into full growth. By summer these herds were dispersing across the hot open plains in pursuit of xeric buffalo grasses. Cooling temperatures in fall reversed the movement. As fur traders termed it,

11 Ibid., 23.

12 F. G. Roe, *The North American Buffalo: A Critical Study of the Species in Its Wild State* (Toronto: University of Toronto Press, 1951), 4.

13 Roe, *The North American Buffalo*, 608–13.

14 Arthur J. Ray, *Indians in the Fur Trade: Their Role as Trappers, Hunters, and Middlemen in the Lands Southwest of Hudson Bay, 1660–1870* (Toronto: University of Toronto Press, [1974] 1991), 31–35.



Plains bison horn the ground, thereby creating habitat for a variety of other species. Yellowstone National Park, May 1997. CREDIT: HARVEY LOCKE.

bison “rose” back into shelter areas in September or October to reach the rich fescue grasses there that stayed nutritious long into the winter months.

Indigenous people were well aware of these bison population movements. They anticipated the return of bison to shelter areas and hunted them more efficiently with this knowledge.¹⁵ This scholarship completely upended Roe’s views of a precarious nomadic life. Indeed, historians now recognize the ways that well into the horse era, plains people maintained a viable and often abundantly rich life around bison whose movements they understood so well. Moreover, these people were experts in burning grasslands to make bison movements even more predictable and raise hunting success. As Theodore

15 R. Grace Morgan, “Bison Ecology/ Beaver Mythology” (PhD dissertation, Department of Anthropology, University of Alberta, 1991), 20–33; 37–45.

Binnema has pointed out, bison hunters burned mesic grasslands in fall in order to make them sprout earlier and more nutritiously in the spring. These burned areas then served to attract herds leaving shelter areas to where hunters wanted them; the same hunters in spring would burn other grassland areas to discourage bison from moving into them.¹⁶

Whether the bison’s seasonal movement included the entirety of populations on the plains is still open to debate. Important work in archaeology has suggested that only a portion of the bison actually followed the seasons into fringe areas in winter. Well adapted to winter conditions on the open plains and able to hoof through windswept and thinly covered snowy prairie to grasses below, superherds of bison might well have stayed year-round on the plains, with perhaps only comparatively small portions of them making movements to shelter.¹⁷ All the same, for humans dependent on bison and needing to predict their movement to hunt them, seasonal migrators, especially those “rising” in fall, were the focus in Aboriginal seasonal rounds. Their lives depended on them. Moreover, for the Blackfoot people who followed the bison from the Eastern Slopes of the Rockies out into xeric areas seasonally, their pursuit was part of a larger well-timed ritual movement that came to its penultimate point in the sun dance in midsummer. The Blackfoot moved over their territories with respect to the bison’s movement in the landscape, which was given meaning through rituals, prayers, songs, and ribstone observances.¹⁸

16 Theodore Binnema, *Common and Contested Ground: A Human and Environmental History of the Northwestern Plains* (Toronto: University of Toronto Press, 2001), 39–45.

17 Mary E. Malaney and Barbara L. Sherriff, “Adjusting our Perceptions: Historical and Archaeological Evidence of Winter on the Plains of Western Canada,” *Plains Anthropologist* 41, no. 158 (1996): 333–357; David Meyer and Henry T. Epp, “North-South Interaction in the Late Prehistory of Central Saskatchewan,” *Plains Anthropologist* 35, no. 132 (1995): 321–340.

18 Gerald A. Oetelaar and D. Joy Oetelaar, “The Structured World of the *Niitsitapi*: The Landscape as Historical Archive Among Hunter-Gathers of the Northern Plains,” in Aubrey Cannon, ed., *Structured Worlds: The Archaeology of Hunter-Gatherer Thought and Action* (New York: Routledge, 2011), 70.

We are arriving then, at a fundamentally different view of hunting and gathering in the bison landscape. Although indigenous people faced periods of climatic change that adversely affected bison herds, the Great Plains is now viewed as the great “refuge” that constantly attracted woodland and agriculturalist newcomers because of the dietary wealth offered in bison. Pre-Columbian rates of tuberculosis (TB) signalled in human bone from archaeological digs are highest in woodlands areas where starvation was more frequent. The TB record on the plains is remarkably low, suggesting the humans tended to eat well and their well-nourished bodies warded off the spread of TB into the plains accordingly. The clearest evidence of bison food security is found in the very statures of plains people. Height measurements taken in the late 19th century now reveal that plains bison hunters were some of the tallest humans on the planet at that time.¹⁹ The pedestrian hunt, requiring long-distance chasing of animals on foot, and the great payoffs in meat and fats, whether fresh or preserved, made the plains bison lifeway a good life, indeed. Moreover, studies of the differences in height of plains people suggest that it was the richness of the grasses bison were eating that affected stature. The Assiniboine males, then, in the northern grasslands averaged 169.6 centimetres (still tall in comparison with Western and other indigenous Native populations at the time); the male Blackfoot on the northwestern ranges, however, attained 172.0 centimetres. Meanwhile, it was the Crow, Sioux, and Arapaho, hunting bison that grazed on the most nutritious middle plains grasses, who seem to have attained the greatest stature: Cheyenne males averaged 176.7 centimetres.²⁰

Bison ecology figures centrally in new histories. Since the 1970s, too, environmental historians have been integrating the long-time horizon of

geological and climatic forces into the bison’s story—its *longue durée*, as French annales writers proposed. Climate, in particular, is seen as a major force in bison history. The pollen and archaeological record shows how quickly bison populations could collapse in very naturally occurring drought cycles on the plains. In the case of the southern plains, bison became almost completely absent in the record during prolonged drought conditions stretching from 5000 to 2500 BC; the same occurred from AD 500 and 1300, when extreme dryness limited the carrying capacity of grasslands and bison populations collapsed accordingly. In the 19th century, droughts of more than five years’ duration occurred four times; ironically, they coincided with periods when human hunting intensified. Conversely, bison could rapidly recruit in moist and warm periods, when grasses were supercharged with energy.²¹

Attention to other forces of long duration has also affected how historians understand critical watersheds in bison history. It was commonplace for early writers to focus on the decades after the American Civil War as the period of the bison’s annihilation. However, historians looking at long-term changes have seen the history of overkill extending far back in the record. Dan Flores did in his groundbreaking 1991 article in the *Journal of American History*. He began by making far more realistic bison population estimates, based on range carrying capacity. Then he carefully estimated the numbers of human hunters in the southern plains. Upending Roe’s assertion that plains horse cultures had attained a sustainable relationship with bison, he suggested the contrary for the period from 1680 to 1880, when some three-dozen indigenous societies adopted the horse and many switched to full equestrianism.²²

As mounted cultures emerged in the record, most notably the Comanche, plains people organized themselves around the horse and, in turn, dominated the southern hunting space. Joining the Comanche were mounted Apache

19 On TB and height, see James Daschuk, *Clearing the Plains: Disease, Politics of Starvation and the Loss of Aboriginal Life* (Regina: University of Regina Press, 2013), 8

20 Richard H. Steckel and Joseph M. Prince, “Tallest in the World: Native Americans of the Great Plains in the Nineteenth Century,” *American Economic Review* 91, no. 1 (2001): 287–294.

21 Flores, “Bison Ecology and Bison Diplomacy,” 469–470.

22 Dan Flores, “Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850,” *Journal of American History* 78, no. 2 (1991): 466–467.

and Kiowa. Bison hunting was further intensified when northern mounted cultures such as the Arapaho and Cheyenne moved south, likely drawn there by the ready availability of larger numbers of horses, which they now depended upon. Competing for bison range, warfare among these nations increased around 1825. Bison herds declined when subsistence and market hunting intensified; in areas being contested in warfare, bison herds recovered. Very quickly, then, the bison landscape was being cut up in the rapid movement and more intensive hunting of mounted plains people. By the time American explorers moved west through the plains, they were often viewing abundant or significantly thinned bison populations, depending on whether they were in a war buffer zone or in a territory where hunters had established peaceful relations and bison were being hunted intensively. Paul Martin and Christine Szuter called attention to these “war zones” and “game sinks” to make sense of a thoroughly patchy plains environment already evident in the early 19th century.²³

The other factor was the sheer numbers of horses on these ranges. By the second quarter of the 19th century, southern equestrian cultures might have possessed as many as 10 to 15 animals per person. Flores estimated some 2 million feral animals were spread over the country between south Texas and the Arkansas River in the same period. With about an 80 percent dietary overlap with bison, horses were a major competitor for grazing land. They also needed the same water sources bison did.²⁴ In other words, horses crowded out bison in many areas where forage and water were scarce.

Introduced by the Spanish, colonial Barbary (Barb) horses were accustomed to the dry climates of northern Africa. These animals had difficulty acclimatizing themselves to many of the Spanish colonial settlements located in humid and semi-humid areas of the New World. However, they had no

problem proliferating in the dry, hot conditions of the southern plains of Texas and New Mexico. Moreover, Spanish horse herds multiplied when they were traded to or stolen by indigenous people, who, in turn, mastered equestrian skills and harnessed them to the bison hunt. These were animals that were first adopted by the Apache and the Pueblo—who traded with the Spanish colonists, or stole from them. But it was the Comanche and other southern plains tribes who organized larger herds and then integrated horses as commodities in the large intertribal trading networks and rendezvous that helped rapidly expand horse culture northward on the plains. From the Comanche horse and mule trading centre, middlemen tribes moved mounts north to the Shoshone and Flathead rendezvous for further distribution; in the east, they moved through various hands northward to the great mart of the plains: the Mandan/Hidatsa trading fairs. From these northern sources, horses eventually arrived to Blackfoot territory in the west and to Assiniboine (Nakoda) and Plains Cree populations on the northeastern plains.²⁵

For Flores, the greatest event on the southern plains occurred with periods of peace among First Nations in the 1840s. Now freed to hunt more intensively for their subsistence, as well as trade robes to American buyers at key posts, mounted bison hunters now tilted their activity into unsustainable overkill. Flores argued that the equestrian plains life—so iconic in American history—was inherently at odds with the needs of people adopting it. The great robe and skin hunts of the 1870s, then, “only delivered the *coup de grace* to the free Indian life on the Great Plains.” The meteoric development of a mounted bison hunt, “was already fading in the sky a quarter century before the Big Fifties began to boom.”²⁶

For Pekka Hämäläinen, the horse dynamic not only touched off ecological changes—it established new Aboriginal power relations. One of the key horse people—the Comanche—traded and raided with horse power. They completely

23 Paul. S. Martin and Christine R. Szuter, “War Zones and Game Sinks in Lewis and Clark’s West,” *Conservation Biology* 13, no. 1 (1999): 36–45.

24 Flores, “Bison Ecology and Bison Diplomacy,” 481.

25 Binnema, *Common and Contested Ground*, 60–61; 88–90.

26 Flores, “Bison Ecology and Bison Diplomacy,” 485.

adapted their culture around a more mobile way of life. Fearsome in battle and using horse power to obtain more mounts through raiding, or through slaves they traded, the Comanche's social organization changed. It tilted into greater hierarchy and became more centralized. The Comanche established not only a new order on the plains, but also an encroaching empire in the West that rivalled in power the military and trading hegemony of American or Spanish colonizers. Initially, horses offered the Comanche significant leverage: they developed an effective dual economy around these animals, on the one hand pursuing pastoralism and frequently moving horse stock to grazing areas, on the other, maintaining wide-sweeping bison hunting missions for meat and robes. However, as their horse power increased, the Comanche found themselves in perilous circumstances. Comanche hunting increased in intensity; their ever-larger horse herds needed fantastic amounts of grazing space, to the point that Comanche had to increasingly make decisions about whether to pursue bison or find more grazing for their mounts; moreover, their horse herds crowded out bison from winter forage and shelter areas; they choked off key river headwaters to thirsty animals; and, with drought striking Comanche territory by the 1840s, bison were interrupted from reaching refuge areas now claimed by massive Comanche horse herds. The collapse of bison herds in the southern part of their range in the 1850s spelled doom for the Comanche empire's military, trading, and hunting power.²⁷ By the 1860s, Comanche were forced to find a substitute for bison, often turning to horse flesh for their very survival.²⁸

Horses figure as competitors in the bison's ecological history. But this view of competition also speaks to a larger reality of the West now appreciated in bison histories: the bison range was dominated by Liebig's law of the minimum. That frames Elliot West's work on the American West, one revealing the

plains as a space of limited forage and water resources where competitors could easily crowd out bison. On the high plains, and in entranceways to the herds along the Platte River, there were clear limits to how many people and grazers could occupy the same space. Focusing on the people who became Cheyenne, once a predominantly sedentary agricultural society on the Mississippi River, West suggests these people saw terrific advantages in adopting the horse and applying it to new ways of hunting and trading. However, moving into an equestrian way of life, the Cheyenne and other new horse cultures assumed the high risks of mounted bison hunting in the Missouri region and the Black Hills, to the dry, shortgrass territories of the high plains. Along the way, they adapted themselves to the seasonal forage, wintering shelter areas, and, especially, limited water resources in a bison hunt that availed them of trade goods and subsistence. For West, the plains stretched out as a limited circuitry of river valleys and seasonal forage spots for horses and bison.²⁹ The tipping point was reached decisively in the great gold rushes to Colorado in the 1840s. American newcomers migrating across the plains used Cheyenne and other groups' traditional paths and travel corridors. In about two decades, more than 300,000 newcomers travelled across this space, with some 1.5 million oxen, cattle, horses, and sheep. These new animals voraciously consumed grasses along river bottoms and travel routes. Newcomers stripped river valleys of wood, eliminating their value as winter shelter. Coinciding with a period of extended drought that reduced grass, much of this overland trailing by Euro-Americans left a ruinous mark on bison and Cheyenne horse forage areas. Not surprisingly, this competition for forage brought Aboriginal people into violent confrontation with newcomers. And when mountain gold camps were established, they continued to require the support of nascent towns and transshipment points on the plains: there, cattle herds grew to provide beef for travellers or mountain camps.

27 Pekka Hämäläinen, *The Comanche Empire* (New Haven: Yale University Press, 2008), 246; 287–299.

28 *Ibid.*, 315.

29 Elliot West, *The Contested Plains: Indians, Goldseekers, and the Rush to Colorado* (Lawrence: University Press of Kansas, 1998), 85–89.

This domestic livestock brought disease to bison. Just when domesticated cattle herds became significant in that respect is not known. It is quite possible that even the small first herds might have passed bovine tuberculosis to northerly herds. Introduced diseases likely became a significant factor for bison after the American Civil War, when the great cattle drives delivered between 6 to 10 million cattle and 1 million horses from Texas to the middle and northern plains. These animals not only competed for bison range, they likely spread anthrax, Texas tick fever, brucellosis, and bovine tuberculosis.³⁰

Hämäläinen not only drew attention to the power of horses and their competition with bison for grass and water sources. He also redrew the West's history. It did not unfold from east to west as American historians tended to suggest in the theme of Western development and the frontier thesis. Instead, bison history likely played out more significantly in respect to a north and south axis. The Missouri figures as the great ecological fault line of the plains. Horses thrived in the southern plains. That prompted true equestrianism, increased mobility and trade, sparked warfare, and intensified hunting. Above the Missouri, however, winters became colder and killed off horses regularly to keep northern plains people perpetually "horse poor."³¹ There would be, then, none of the crowding out of bison north of the Missouri. Indigenous seasonal hunting traditions, too, would endure when horses complemented traditional ways of hunting bison in fall pounds or in jumps.

For Theodore Binnema, this climatic dynamic gives greater sense to the history of the northern plains. North of the Missouri, horse numbers fell to killing Canadian winters. Horse-rich Shoshone, then, initially had a military advantage when they expanded northward in raiding and bison hunting. The Blackfoot nations, especially the Piikani with the best and most accommodating winter shelter in the mountains, gained good numbers of

horses—but even these people still did not enjoy the truly large herds that marked southern equestrian cultures. The Blackfoot continued to use dogs for transport long after they gained access to horses. Some families owned no horses, or they had to borrow them for warfare or hunting. Farther east on the Canadian plains, the situation worsened. Winter climate in present-day Saskatchewan and Manitoba perpetually killed off the horses of Cree, Assiniboine, and Plains Ojibwa. Eventually, it was the Métis, a culture of mixed European and indigenous heritage, who maintained larger herds for long-distance bison hunting in summer. Binnema proposed that in such circumstances, a "northern coalition" of interests joined horse-poor nations together. Drawing on John Milloy's work, Binnema argued that Blackfoot entered into trade with Cree and Assiniboine to offer mounts as they could, as well as furs. In exchange, Cree and Assiniboine gave guns, powder, and metal to the Blackfoot nations, having access to these goods from their Hudson's Bay Company (HBC) and Montreal trading partners.³² Although comparatively horse poor, the Blackfoot used their trading connections to great effect. Having better access to guns than southern plains horse-rich nations did, and enough horses for long-range trading and warfare, the Blackfoot became the great power in the northwestern plains—the "northern raiders" feared by many plains nations, and even their mountain rivals.³³

However, by the 1790s, HBC and Montreal traders moved west and established direct trade with the Blackfoot. Trading alliances faltered. Cree and Assiniboine no longer carried goods to the Blackfoot in exchange for horses, and they now had to raid to replenish their stock. They did so from the Mandan on the Missouri, or the Gros Ventres (Atsina) on the south branch of the Saskatchewan; eventually they raided their former allies, the Blackfoot, stealing their horses. By 1806, the "northern coalition" broke

30 Daschuk, *Clearing the Plains*, 102.

31 Pekka Hämäläinen, "The Rise and Fall of Plains Indian Horse Cultures," *The Journal of American History* 90:3 (December 2003): 833–862.

32 John Milloy, *The Plains Cree: Trade, Diplomacy and War, 1790–1870* (Winnipeg: University of Manitoba Press, 1988), 18–20.

33 Binnema, *Common and Contested Ground*, 161–194.

down. The period is remarkable for its deadly and incessant “horse warfare,” which erupted as young men went on horse-raiding sorties; violence followed and cycles of revenge killing between bands resulted.³⁴ It is in the backdrop of these changing trading alliances where the bison hunt intensified around spates of warfare. As bison shrank back in their ranges in the 1840s, plains hunters focused their efforts on more concentrated and intensively hunted spaces in the western plains. The “buffalo wars” erupted as eastern plains people using horse herds expensively maintained through raiding travelled long distances to hunt in the last bison territories in the West.

If the Missouri constituted a climatic fault line dividing horse wealth and poverty south and north, it also divided the history of the bison’s near extermination. American popular culture, books, and movies tell the quite-familiar story of bison overkill occurring in conjunction with the expansion of the European commercial market. In the American West, steamships moving farther up the Missouri between the 1820s and 1830s eventually reached the confluence of the Yellowstone. There they offered the transport technology to expand the market for otherwise heavy buffalo robes. As plains societies adopted the horse and could more widely hunt bison and carry these commodities to traders, the robe trade began tipping hunting into overkill by the 1840s. Plains societies in such circumstances organized themselves differently than they had in agriculture, especially in dividing labour between male hunters and female robe manufactures. The flow of robe wealth within families possibly developed new property relations and widened “artificial” needs for trade goods.³⁵ Clashing with enemies, these horse cultures also clashed with westward expansionists taking lands for ranching and farming. It also so happened that many of these violent confrontations took place in periods of drought, when bison populations were reduced due to poor grass forage. The Indian Wars erupted in the midst of such rapid change and saw

the US Army taking what was likely a major role in either destroying actively or encouraging the destruction of the bison in order to undermine Aboriginal powers of resistance to Western colonization.³⁶

All the same, while *longue-durée* historians have seen the bison’s fate being connected to the larger cultural changes occurring in plains societies, there was still the commercializing hunt occurring after the American Civil War that stands out in American history. Andrew Isenberg sees a combination of factors occurring in the 1870s and “particularly the unprecedented, large-scale onslaught by Euroamerican commercial hide hunters” becoming the key force in the destruction of the bison in the aftermath of the Civil War.³⁷ New demands for leather in the US, new ways to tan buffalo hide, and a larger expansion of the American state westward meant that this new type of hunt was without historical parallel. Squads of Euro-American hunters, including still-hunting marksmen, worked with low profit margins to kill staggering numbers of animals. Since they wanted bison leather and not robes, they hunted year-round. Railroads offered industrialized transport from key transshipment points. The army of hunters in the southern plains effectively wiped out the reduced herds there by the end of the 1870s. With that, hunters moved northward, as railways were built, to hunt out the middle plains herds by the mid-1880s. Isenberg pointed out not only the forces of destruction—the sheer numbers of skin hunters—but also the mentality of the age. In general, lawmakers, territorial and federal authorities, saw the bison as part of an older era, when they saw the West’s future as a ranching and farming frontier.³⁸ Not even the animal protection groups alarmed by the extermination occurring in the 1870s, as well as Aboriginal humanitarians, who feared for the survival of Aboriginal people should bison disappear, could offer a coherent alternative to progressive forces and ideas coming to bear on the western killing fields.

34 Milloy, *The Plains Cree*, 110–111.

35 Isenberg, *The Destruction of the Bison*, 93–110.

36 David D. Smits, “The Frontier Army and the Destruction of the Buffalo: 1865–1883,” *The Western Historical Quarterly* 25, no. 3 (1994): 312–338.

37 Isenberg, *The Destruction of the Bison*, 129.

38 *Ibid.*, 132–140



The coats of plains bison are in their prime in winter.
Young bull, Yellowstone National Park. CREDIT: HARVEY LOCKE.

But as William Dobak has suggested, this was an American history of the bison's destruction. Commercialized bison hunting played out very differently in the northern latitudes of the plains, again in respect to the Missouri constituting the great dividing line. Many of the factors that hastened the post-Civil War destruction of the herds in the US—railways, breech-loading rifles, the leather market, and squads of Euro-American hunters—were completely absent in the British territories where the northern “Canadian” bison ranged. Dobak pointed out that, unlike in the US, these northern spaces were significantly horse poor, meaning that horses never competed with bison for range. There was no rail transport in the Canadian West until well after the end of the bison era. This dampened from the start a large-scale robe or skin hunt. Breech-loading rifles were also almost unheard of in these northern areas. The indigenous people in British territory continued to use the bow and

arrow or, if they were summer hunting on horseback, the musket in close-range contests.

In the Canadian plains, a steadily growing demand for bison meats and fats for pemmican to fuel the British fur trade became one of the significant factors in the bison's destruction. Since pemmican required fat, hunters trading pemmican to Europeans tended to target females, which were fatter than males. Although robe hunting was far smaller in scale because of the lack of transport infrastructure, a winter robe hunt did develop in the British territories, especially among the Métis. This, too, disproportionately hit females since they produced a more valuable and fuller winter robe for the market. For Dobak, it was the market for pemmican and robes, in addition to a growing overall Aboriginal population using bison for subsistence and trade, that sealed the fate of the northern herds by 1879.³⁹ Arthur Ray, too, focused on the need for pemmican in the British fur trade that grew steadily after 1821. The HBC looked to the plains as a “pantry of the northwest” to feed its traders and York boat brigades across the subarctic and mountain cordillera. For Ray, it was the waste in production of pemmican, the waste of robe hunting in winter, and then the short development of the hide market that helped tilt the hunt into overkill.⁴⁰

There were numerous, complex dimensions to the overkill occurring in British territory. In my own work, I found that the demand for indigenous-produced pemmican to support the fur companies, did, indeed, become consequential for the bison herds in the northern plains. But it was likely the form of market in British territory that was significant. Unlike in the highly competitive American West, in British territory, fur companies joined with the HBC after 1821 into a single business concern. It then became the sole purchaser from the indigenous people. Enjoying its monopsony power in British

³⁹ William Dobak, “Killing the Canadian Buffalo, 1821–1881,” *The Western Historical Quarterly* 27, no. 1 (1996): 33–52.

⁴⁰ Arthur J. Ray, “The Northern Great Plains: Pantry of the Northwestern Fur Trade, 1774–1855,” *Prairie Forum* 9:2 (1984): 263–280.

territory, the HBC could then set low prices on bison products purchased from Aboriginal hunters. Since plains hunters had an increasing need for European trade goods, especially firearms, they had no recourse except to produce more pemmican, dried meats, and fat for sale to the company. Moreover, with the HBC pricing so cheaply Aboriginal bison products, it tended to purchase far more than it needed, both for its transport system and to have on hand at posts to support Aboriginal people who were trapping furs in territories increasingly bereft of game.⁴¹

In their own pricing bind, the Métis began organizing large summer pemmican hunts in the 1820s that expanded progressively in size. Their horses pulled Red River carts that could carry heavy loads of bison meats, fats, and pemmican. By 1840, Alexander Ross recorded some 1,210 carts leaving Red River in June for the hunt. There were 620 hunters, along with wives and children, bringing the total to about 1,630 people.⁴² These summer hunts were significant in the bison's history. Summer hunting took animals not at their prime. Males were fairly skinny during much of the summer, except when they gained weight for the rut in mid to late summer. Barren females retained good weight. But females having given birth in spring were very underweight until after the rut, when they gained fat quickly. Pregnant females only reached their prime in time for the traditional fall hunt.⁴³ The summer hunt for the pemmican market, then, often took animals at their leanest, a problem since pemmican required almost half its weight in fat. The other problem was wastage. On the plains, summer heat could easily ruin fats taken from animals. It went rancid before hunters, women, and children could render and store it in sacks or pemmican bags. After a large-scale hunt,

the Métis raced time, often in hot summer temperatures, to do the massive work required to preserve the fats harvested from bison carcasses. Although their summer hunting was organized in the northern latitudes of the Great Plains, notable for relatively cooler summer temperatures, hot spells in July and August would sometimes doom the product of an entire hunt.

The Métis developed their hunt not only to cater to the HBC. A curious historical trajectory occurred in British plains settlements and particularly at the Red River colony, itself growing rapidly as a largely mixed-blood and Métis community centred upon agriculture. At Red River, crops frequently failed in its high latitude location on the Great Plains. That forced Red River citizens to continue to eat and keep on hand enormous amounts of bison meats and fats. Right to the end of the bison era, the community of Red River continued to support a market for bison meats. The Métis catered to this demand by



Lean Plains bison cow and calf with shaggy spring coats. Yellowstone National Park.

CREDIT: HARVEY LOCKE.

41 George Colpitts, *Pemmican Empire: Food, Trade and the Last Bison Hunts in the North American Plains, 1780–1882* (Cambridge, UK: Cambridge University Press, 2015).

42 Alexander Ross, *The Red River Settlement: Its Rise, Progress, and Present State* (London: Smith, Elder, 1856), 244.

43 Jack W. Brink, *Imagining Head-Smashed-In: Aboriginal Buffalo Hunting on the Northern Plains* (Edmonton: Athabasca University Press, 2008), 45–49.

organizing summer pemmican hunts for the HBC as well as fall “green” hunts to supply fresh meat to the settlement. Indeed, across the British territory, both among newcomers and the growing number of indigenous Aboriginal people, bison remained a key staple of diet.

The HBC’s monopsony power placed Métis in a particularly bad position. They, like all indigenous people in the 19th century, had increasing needs for trade goods. In the 1830s and 1840s, the Métis began to add to their pemmican hunt intensive tallow production, targeting males, in order to supply the demand in Great Britain for candle tallow. Their frustration in finding better prices on pemmican and, finally, tallow likely explains why the Métis began hunting bison robes. At first they did so illegally, skirting the HBC’s monopoly and exporting robes over the line to American traders via St. Paul, Minnesota. After 1849, they gained the right to independently trade robes. This meant that many Red River hunters continued to hunt bison in summer to produce pemmican, organizing massive brigades of carts to move men, women, and children deep into the summer ranges of bison. In winter, however, they also established semi-permanent wintering settlements in parkland areas and river complexes to hunt bison for robes. The best robes were taken from females at their prime in the coldest periods of the winter. In order to supply their camps with the necessary meat for the winter months, they often organized a fall hunt as well to kill fatty females. From their wintering camps, Métis sold their product either to visiting American traders, or hauled them back to Red River or St. Paul, Minnesota, or to traders on the Missouri.

The effects of intensive hunting in British territory, the pemmican and robe trades, and the ongoing subsistence needs within a growing indigenous and settler population saw bison populations decline and herds recede farther west perhaps as early as the 1830s. Métis, Assiniboine, Cree, and Ojibwa by the 1860s had to travel from present-day Manitoba as well-armed and large war parties to hunt the last herds in Blackfoot territory. The last years of bison hunting took place in a highly competitive and small space in southwestern Saskatchewan and southeastern Alberta. Many contemporary accounts attest

to their presence in vast numbers in this region in the 1870s, but that was not to last.

In the 1870s, American skin hunters joined the fray. In these years, bovine tuberculosis seems to have been introduced to these herds from cattle herds growing in number elsewhere. A strong El Niño in 1877 and 1878 brought two unseasonably warm winters that accelerated prairie fires over much of present-day Alberta and Saskatchewan, destroying pasture. In 1879, the last bison in Canadian territory migrated south of the 49th parallel never to return. These animals would remain within the remnants of the northern herd that was, in turn, hunted to its destruction in the early 1880s.⁴⁴

The history of the decline of the plains bison has been told differently over time. As we have seen, the first history was written to chronicle the animal’s destruction in the 1870s. Later, conservationists in the 1890s and scholars interested in cultural survival in the 1950s told different stories of the bison. Presently, historians draw from many disciplines to give new meaning to the bison and understand how humans lived in bison landscapes. Histories now appreciate long-term forces of change affecting bison in the past. The adoption of the horse, climatic change, disease, and other factors now figure centrally in the story of the bison in North America. Perhaps reflecting our current understandings of the natural world, the bison’s history is now situated in a natural space guided by the law of the minimum.

We now understand that within the bison landscape, resources such as grass, wood shelter, and water were limited. The bison did not cover the West as a whole. Its distribution was seasonally patchy on the ground. Its populations grew and shrank in climatic shifts that either boosted or reduced grass nutrition. The great historical dynamics of Western history are also reconceived in respect to these great ecological and climatic forces. The bison was not simply hunted to its destruction in the narrative arc of westward expansion and a constantly moving frontier. Rather, the demand for it to meet

44 Daschuk, *Clearing the Plains*, 103.

the needs of humanity, whether for subsistence or market trading, within the narrow circuitry of available water sources, seasonal refuge areas, and wintering grazing grounds led to its decline.

The bison's story is probably best told in respect to a north-south axis. The Great Plains offered a myriad of environments and microclimates, whether in cooler summer hill outliers like the Black Hills, which offered abundant fescue grasses, or in the warmer shelter offered in valley complexes during bone-chilling plains winters. However, there was a decisive contrast between the southern horse-rich plains and the harsh horse-killing winters of the northern latitudes. Steamboat and railway technology bisected bison range on an east-west axis, but often in specific ways. In the northern latitudes, industrial developments were slower to develop and the arc of market hunting unfolded differently, especially in British territory.

The bison always gave generously to humanity. The Great Plains served for millennia as a refuge on the continent in large measure because of the amazing bison biomass available there. But the bison itself lived within an ecological niche. Its environment imposed constraints and limits. This is likely the awful and amazing aspect of the Great Plains itself as one of the most dynamic ecological regions in North America. Whether histories attribute the destruction of the bison to the commercial robe and skin hunt, or in the north, to the robe and pemmican markets, or whether they look to the fundamental cultural changes occurring in Plains life with the adoption of the horse, the bison's story continues to be one significant to continental history. The bison's history still offers insights into humanity and its changing relationship with the natural world to the present day.



A buffalo ribstone and the tipis erected for the first signing of the Buffalo Treaty, Browning, Montana, September 23, 2014. CREDIT: HARVEY LOCKE.