LEGACY

New Perspectives on the Battle of the Little Bighorn

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The Great Contraction

Bison and Indians in Northern Plains Environmental History

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Sometime in the early 1830s (the year is variously given as 1830 and 1832), a band of the Yanktonai division of the Lakota that was encamped on the east side of the Missouri River opposite Fort Pierre destroyed with in a few minutes' time a buffalo herd of about fifteen hundred animals.[1] At first glance this event would hardly seem to be noteworthy or particularly important. Indians had been hunting bison in that country for eleven thousand years, often killing far greater numbers of animals using the technique of the buffalo jump. Nor was the stratagem these Sioux employed—a mounted version of the communal "surround"—in any way unusual or startling. Highly sophisticated and organized communal hunt strategies had been worked out on the northern plains millennia before.

What was unusual about this hunt, and the reason it became reported and widely known, was what the Yanktonais did with the slain animals. Rather than carefully butchering the carcasses and skinning the animals out, they are reported to have done no more than cut out the tongues, with which they then crossed the river and offered in trade to the engagés of the American Fur Company.

Looking back on this disturbing scene two decades later, Edwin T. Denig, bourgeois at the American Fur Company's Fort Union,

thought this may have been a turning point in the long history of the relationship between bison and Indians on the northern plains. "Since that time buffalo have gradually retired from the eastern territory," he wrote, and as their range contracted to the west the Plains tribes were naturally compelled to follow.[2]

Denig's inference that the Yanktonai hunt over the river from Fort Pierre had acted as a catalyst to the retreat of the bison herds was almost certainly in error, but the event nonetheless can stand as a kind of watershed in the environmental history of the northern plains. Certainly, as Denig and other observers on the nineteenth-century northern plains noticed, *something* was happening to the bison herds by midcentury. Accustomed as we are to thinking of forty million or sixty million or one hundred million bison thriving on the Great Plains until the arrival of white hide hunters with their Sharps rifles in the 1870s, it is a bit disturbing to think that the bison may have been disappearing earlier, and under a different and far more complex set of circumstances. But in fact, that is almost certainly what happened.

My search to try to unravel the ecological mysteries of the wilderness plains came from a discovery of several enigmas in the traditional historical story of what happened to the buffalo. What puzzled me most were the following contradictions in the primary sources. First were the widespread stories by Indian agents and other sources, including calendar histories kept by some of the tribes themselves, of lengthening spans of time on the plains by the 1840s and 1850s when bison were becoming harder to find and the tribes were increasingly compelled to compete for the animals. The second puzzler was that documented records existed for only about ten million bison hides shipped east by hide hunters in the 1870s and 1880s. If the pre–hide hunter plains had presented a harmonious cycle of sunlight and grass, bison and Indians, why were so many groups complaining of starvation and consciously shifting their ranges to the high plains decades before the end? And what had happened to the other thirty million or fifty million or ninety million bison by the time the hide hunters got around to wiping them out?

Until recently, environmental history had yet to tackle this set piece in western history. Existing secondary literature took no

cognizance of the riddles in the story, so that attempting a systematic analysis of the circumstances of buffalo ecology—determining how many bison there *really* were, what their population dynamics had been on the wilderness plains, how the herds were affected by natural mortality, predation, and climate change, and piecing together the long span of Native American interaction with the bison—essentially required a new cookbook. On the southern plains, the story has turned out to be far more complex than anyone could have imagined.[3] This preliminary article indicates no less for the northern plains, and demonstrates that in the years leading up to that fateful encounter on the slopes above the Greasy Grass River, bison, Plains Indians, and the entity called the United States were joint captives in a spiraling whirlwind that demanded release, and got it.

Among some of the issues requiring investigation for a reinterpretation of the bison and Indians in northern plains environmental history are these:

1. How many bison were there, really, and how does one estimate their numbers?

2. How many Indians hunted bison, and what factors affected their bison kill?

3. What other factors, both long-term and short-term, might have affected bison populations?

4. Did Plains Indian world views function, as we have often been told, to give native peoples special insights into how nature *worked*, and to keep Indians in harmonious balance with the natural world? Or were there other forces afoot in the West by the nineteenth century that influenced the Indian relationship to nature in even more compelling ways?

In researching these questions, one of the things I discovered was that understanding the bison story requires a perspective on history that bites off chunks of time much larger than the ones we are used to dealing with, and acknowledges forces that traditional history often has been too myopic to see. Understanding nineteenth-century northern plains environmental history, then, is impossible without addressing *la longue durée*.

To begin with, the core homeland of the American bison and of the peoples who over nine thousand years have linked their

lives to this great animal has always been the vast dry pastures of the interior continent. The Great Plains, however, is not a singular landscape, but is recognizably three different physiographic provinces: the hot, desert-influenced southern plains, extending from the Blackland prairies of Texas and Oklahoma across the Llano Estacado to the Sangre de Cristo Mountains in New Mexico, and reaching from the Concho River in southwestern Texas north to the Arkansas River; the grassland empire of the central plains, lying northward from the Arkansas River to the North Platte and Niobrara Rivers, and bounded irregularly on the west as the Front Range of the Rockies falls off into island mountains in a sagebrush sea in Wyoming; and the broken and diverse northern plains, stretching northward from central Wyoming across Montana to the aspen parklands of Saskatchewan and Alberta, and westward from the Missouri River to the Rocky Mountain Front.

The topography of the northern plains is dominated by the Missouri Plateau, capped by a Tertiary tableland that has been bisected by the Missouri and major tributaries like the Yellowstone, and otherwise scored into canyonlike coulees that finger down from the grassy divides and, where conditions are right, lay open brilliant stretches of striped badlands. The Little Missouri Badlands of North Dakota were formed when that drainage was diverted by the advance of glaciers, but both the upper Missouri and the lower Yellowstone surge through badlands terrain, while the most extensive badlands of the northern plains are the Big or White River Badlands southeast of the Black Hills. Other river drainages that have scored deep topography along the boundaries of the northern plains are the North Platte River and its tributaries as it arcs across present-day Wyoming, and the Saskatchewan River drainage of the northern border. Along most all these rivers are green-ribbon corridors of silt-loving cottonwoods and willows and limber pine. In such a dry, cold, and open world, that has made the rivers both ancient arteries of travel and protected and fertile oases for Great Plains life of both the four-legged and two-legged varieties.[4]

The Anglo-American perception of the western plains as a flat, desert waste was formed in the early nineteenth century by travelers such as Zebulon Pike and Stephen Long, who in Long's case were

exposed to the southern high plains in the heat mirages of August during a drought year.[5] Both "flat" and "desert" are far more appropriate to the Great Plains south of the thirty-fifth parallel than north of it. Not only are the badlands of the northern plains far more extensive in area than the dissected country (such as the canyons and breaks of the Llano Estacado) farther south, the face of the northern uplands generally is choppier and more broken, streams are more reliable in their flows, and annual evaporation is far less.

With the exception of the Wichita Mountains and a few scattered volcanic peaks and remnant mesas, moreover, the southern plains generally lack mountain ranges until the wall of the Front Range looms on the west. But in the north, the plains are mountainous, and the mountains are important additions to the ecological landscape. The Black Hills, the Bighorns, the Absarokas and Winds and Tetons, the Big Belts and Little Belts and Highwood and Bears Paw, even smaller ranges like the Sweetgrass and Cypress Hills and the Killdeer Mountains, add a biotic and ecological diversity to the northern plains and make the region less a monotonous plain than a mosiac of ecotones.

The northern plains, then, for at least the last nine thousand years has been the most topographically diverse and ecologically rich province on the American Great Plains. For a very long string of human cultures here, the movements of bison were determinative. The yearly cycle for both four-legged and two-legged was summering and overwintering, the latter essentially lasting from October to May. During that season a majority of the herds was on the western and northern edges of the northern plains, sheltered in the aspen parklands, the more broken country to the west, down in the woodlands along the river trenches, and sometimes in the Cypress and Sweetgrass Hills and the Black Hills. In summer, especially late summer, water became the critical resource, and the same pattern held true—the great beasts and their human predators crowded into the valleys of the more dependable river courses.

There ought, then, to be no surprise in the historical circumstances that made the northern plains the scene of the nineteenth-century endgame for both bison and Plains Indians.

In the scheme of unfolding western environmental history, it seems to me almost inevitable that the country just north of the Little Bighorn, along the Yellowstone on the Montana plains, should feature the final acts of almost ninety centuries of Indian/bison interactions in western America. When circumstances both internal and external to this world brought it crashing, like the shorelines of a pothole shrinking under the summer sun, it imploded to its final essence in this kernel of country.

The animal that came to dominate this world of sunlight and grass and wind was a creature whose origins lay elsewhere. In an evolutionary sense, bison, like humans, are not true natives of North America. The giant species of bison from which our modern animal springs were Eurasian in origin and arrived in North America via the Bering Land Bridge during the Pleistocene glaciations. But North America shaped the evolution of the modern animal, for between nine and twelve thousand years ago, the giant species *Bison latifrons*, *B. antiquus*, and other ancestors of modern bison disappeared in a wave of large fauna extinctions that swept some parts of the world, including North and South America. Exactly why thirty-two genera of large mammals and birds (including mammoths, mastodons, horses, camels, sloths, and most of their predators) became extinct in Pleistocene North America is a hotly debated topic in paleontological circles. A warming, drying climate seems certain to have played a role, but some of the most respected paleobiologists believe that the arrival of the Indian big-game hunters we call the Clovis people was critical. Possessed of a remarkable flint tool kit, the Clovis people were specialist hunters whose concentration on female and juvenile animals perhaps pushed animals with long gestation periods and few defenses against human predation into extinction.[6]

That great extinction crash of one hundred centuries ago set in motion ecological ripples that enormously affected later centuries. Nature's response to all those vacant grazing niches and to the new ecological pressure of human hunting was to set in motion a dwarfing within the genus *Bison*, producing by about seven thousand years ago a far smaller species (our modern animal) that possessed a much faster reproductive turnover time than its progenitors. In the absence of grazing competition, *Bison bison*

multiplied into the vast herds that the earliest European explorers recorded seeing thousands of years later. In an evolutionary sense, then, the modern bison was a "weed species" that proliferated as a result of a major ecological disturbance. Subsequent Indian societies that hunted bison thus were exploiting a situation that has had few parallels in world history.

That bison were still here when the Europeans arrived is obvious evidence that a nine-thousand-year-old ecology had achieved, in a broad-scale sense, a dynamic ecological equilibrium. Bison populations, grassland carrying capacity, and predation—including Indian hunting—had achieved a working balance that, to the Indian mind, seemed to operate at the same level as forces that governed the heavens and the seasons.

In many Indian religions, bison joined the winds and the stars as supernatural in origin. According to the mythologies of many Plains Indian groups, bison had their origins in the earth itself. Every spring immense herds of new animals swarmed like bees from a hive out of specific landforms that were sacred to particular tribes, and which, in fact, constituted part of the transferable cosmologies of the tribes when they migrated across the plains. The canyons of the Llano Estacado on the southern plains, for example, were often singled out to nineteenth-century observers as the wellspring of the bison herds, but once the tribes there were removed to Oklahoma, the sacred point of emergence was transferred to Hiding Mountain in the Wichita range.[7] Given such a belief system, the reemergence and return of the bison long had stood at the center of Plains Indian religious ceremony. Like the sun, the stars, and the winds, bison could never be made to disappear.

The metaphors were not only poetic, but insofar as the long sweeps of time were concerned, this imagery was (and is) substantially realistic. Across the long spans of time that native peoples had inhabited the Great Plains, however, we now know that there had been times when the bison actually had diminished significantly in number, and probably disappeared regionally altogether. For one thing, bison obviously were influenced by climate, and the Great Plains for as long as humans have lived here and before have been notorious for climatic swings, the effects

of which are noticeably pronounced in such a semiarid landscape. So, responding to droughts particularly and probably to Indian land-use practices as well, the Great Plains bison herds sometimes moved out of their core range to wetter regions against the Rockies and farther east.[8]

Droughty episodes that undoubtedly curtailed bison populations on the northern plains and produced demonstrable effects on human adaptations include:

- The Atlantic episode 8,500 to 4,730 years ago, otherwise known as the Altithermal because it was a Great Plains drought that lasted almost 4,000 years. This climate swing was so severe that across extensive expanses of the plains, particularly the southern high plains, there was virtual human abandonment.
- The 400-year Scandic episode from A.D. 280 to A.D. 870.
- The 300-year Pacific episode from A.D. 1250 to A.D. 1525, the drought that led to the famous abandonment of the Four Corners area by the Anasazi.

Conversely, there exists in the pollen and dendrochronological records episodes of moist, cool climate swings that evidently produced bumper crops of bison, including:

- The two-century Sub-Atlantic episode before the time of Christ, during which grasslands and bison spread far to the south of the present Great Plains, as evidenced by use of the most southerly buffalo jump so far discovered in the West—the Bonfire Shelter jump site on the Pecos River near the present-day Mexican border—about 500 B.C.[9]
- The 400-year Neo-Atlantic episode from 850 to 1250, producing favorable weather that not only grew the herds but extended the range over which corn grew far up the river corridors of the Great Plains.
- The Neo-Boreal, or Little Ice Age, which happened to commence at the time of first contact with Europeans in the early 1550s and came to an end, ominously for nineteenth-century Plains Indians, around the year 1850.

At one time in Native American studies, such scholars as Alfred Kroeber asserted that until the reintroduction of the horse to the Americas, the Great Plains had been a thinly occupied hinterland. While this view may capture the southern plains during certain

environmental episodes, it does not square with the evidence we have from the northern plains, where a continuous sequence of bison-hunting cultures stretches back to the Folsom and Cody cultures of Paleolithic times, and gathers momentum 3,500 years ago with the Pelican Lake and (1,000 years later) the Besant peoples, the latter regarded by some scholars as the most sophisticated communal bison hunters on the plains prior to horse days. The momentum of bison hunting further accelerated with the bow-wielding Avonlea hunters, perhaps Athabaskans, who arrived on the scene about 700 years before the first European intrusions, and specifically sought out badlands topography for impounding bison.[10]

Yet even within this pattern of accelerating cultural momentum, climate always intruded. During the wet intervals, larger herds meant the possibility for more organized, complex, hierarchical societies that made possible—or perhaps were made necessary by—*communal* bison hunts. The Besant hunters were the last northern plains peoples to rely on the atlatl, but evidence shows their hunt to have been highly ritualized and communal, a type of hunt that in Wyoming, at least, came to an end around A.D. 400 and did not resume until the 1500s. Similarly, there is actually a gap in the jump record, from A.D. 305 to A.D. 760, at Head-Smashed-In jump in Alberta. Both these cultural intervals correspond neatly with the Scandic Episode droughts.[11]

As was true in southern plains bison/Indian interactions, it was not only the peoples living directly amongst the herds that influenced them, and were shaped by them. Along the tall-grass prairie perimeter of the northern plains, the evolution towards the fairly dense settlements of historic times began with the Neo-Atlantic climate of about A.D. 800. It was at this time and in the southernmost reaches of the northern plains that Plains Villager culture began, with storage pits, ceramics, the bow, and sedentary lifestyles. Over the years from A.D. 800 to A.D. 1250, conditions were wetter than now, and the spread of corn-growing made possible the chief adaptive strategy of the peoples of the prairie, the laying up of surplus dried corn. Yet village sites were chosen in woodlands along rivers in part because bison liked to winter there, and bison remained the dietary mainstay of these prairie groups.

It was during these years that the ancestors of the Siouan-speaking Mandans, Hidatsas, and River Crows emerged as horticultural hunters of the northern plains.[12]

The great western droughts that commenced around 1250 produced a measurable effect on these people. After 1250 their village sites were almost always fortified, and the supposition is that human carrying capacity had been achieved under the previous wetter conditions, and that the droughts now led to food shortages, malnutrition, and warfare. Arrival of groups (like the Caddoan Arikaras) from the central plains into the Missouri River trench around A.D. 1300 are probably related to the widespread drought.[13]

At the onset of the period of European contact, yet another major weather sequence set in on the northern plains and indeed across the entire Northern Hemisphere. By 1500 the much cooler and probably moister climate of the Little Ice Age was devastating agriculture in Europe and advancing glaciers in the Alps and Rockies. But for buffalo hunters on the Great Plains of the American West an efflorescence began. In the villages of the middle Missouri, trade networks were being linked up with other cultures across the continent, and many kinds of native technologies and art forms were reaching their highest expression. Recovering from centuries of drought, human population in these villages is estimated to have been no more than about fourteen thousand in 1500. In the face of arriving European diseases and the colder, corn-nipping climate of the Little Ice Age, these villages would not reach their previous population levels again. But they did launch some of their divisions onto the plains to become full-time bison hunters.[14]

The patterns thus were set in motion for what has to be judged the most extraordinary period in the long span of northern plains history. First, the three centuries that preceded the fateful encounter at the Little Bighorn were marked by two converging patterns that functioned to grow an enormous biomass of bison—herds so large that they spilled over into the Rocky Mountain valleys and followed the prairies created by Indian burning practices virtually to the Atlantic seaboard. The first was the grazing-beneficent onset of the weather of the Little Ice Age, the second an easing of hunting pressure across much of the continent traceable directly to the

impact of European disease on the continental Indian population. During these years, organized, communal bison hunting reached its absolute zenith on the northern plains; hundreds of jumps and corrals are known for the period from 1500 to 1850.[15] Reflecting the bison boom and other factors whose origins lay with the European presence, Indians were in flux, with many groups moving to the plains, many others converging and coalescing there. The stage was being set not only for the intense and glorious heyday of the great buffalo hunt, but for the great contraction as well, a collapse so sudden that the shock waves of it are palpable on the plains into our own time.

In 1500, at the time of first European contact, there were probably in excess of 30 million bison in North America. Extrapolations from later (1900 and 1910) United States agricultural censuses have indicated that the average bison carrying capacity of the Great Plains below the Arkansas River was somewhere around 8.2 million animals at the end of the nineteenth-century. The entire Great Plains in those years probably had a carrying capacity of about 22 to 25 million buffalo, and although I have not yet made a systematic estimate of bison on the northern plains, my supposition is that during much of the Little Ice Age this stretch of the Great Plains likely held as many as 5 to 6 million animals.[16]

But changes resulting from contact between Europeans and Indians quickly began to shrink both the bison's range and its numbers. Although those changes had their origins with the arrival of Europeans, they were very much implemented by the native peoples. Horses, reintroduced to the Americas after an absence of more than eight thousand years, through intertribal trade became widely distributed after the Pueblo Indians successfully revolted against Spanish rule in New Mexico in 1680. Feral horses reestablished themselves in their old grazing niche in a fraction of ecological time; by 1800 an estimated two million horses roamed wild below the Arkansas River and an undetermined number farther north, competing directly with the bison for grass.[17] And horses had transformed the life of Indians in the West. Some groups, like the Flatheads and other Rocky Mountain tribes, used horses to intensify their central adaptation—seasonal movement between salmon and buffalo—eradicating local bison herds in

valleys like the Bitterroot and Flathead in the process.[18] Although the women and entrenched upper classes often resisted, across the plains, among the horticultural tribes, some three dozen groups ended up flocking to the buffalo herds as mounted hunters.[19]

After 1700 a new ecological situation began to emerge. Reflecting the shrinkage in the northern plains bison range, the Sioux not only were pressing westward towards the bison core on the Montana plains, they were engaging in wars over hunting territories with the Blackfeet, Crows, and other groups. And beginning in the Missouri River villages in 1738, the northern plains were opened to direct trade with Europeans.[20] Trade between plains buffalo-hunting peoples and groups on the periphery of the prairies, such as the village tribes of the middle Missouri, had been going on certainly since A.D. 1000 and probably much longer. The exchange of villager garden products for plains dried meat and leather was a symbiotic gift exchange, cementing alliances and establishing new contacts. But when the Euramerican agents of organizations such as the Missouri and American fur companies began probing the plains with the metalwares of the Industrial Revolution, they acquired from the buffalo Indians items specifically geared to flow through the network of the global market economy.

What the Plains Indians got in return in this entrée into the Euramerican market economy—particularly from the French and American traders—were guns and ammunition to prosecute their increasing wars over access to the plains. But the observant among the Plains tribes also saw their cultures altered in subtle ways as they grew increasingly dependent on the products of the Industrial Revolution. And when tribal cultures were saturated with metalware, there was always alcohol as an inducement to continued trade.[21]

By the 1820s the buffalo-hunting tribes were learning that there was one other item the Euramericans found desirable in trade. Indian women worked long hours to produce beautifully tanned bison robes, different from later dried hides in that they were softly pliable and finished with the hair on. Traded at posts like Fort Benton or Fort Union or the Hudson's Bay Company posts across the border, robes met an insatiable demand in the eastern United States and eastern Canada as cold-weather covering. They became

a major hunting motive for Plains Indians at least as early as 1825, when 25,000 robes a year were going down the Missouri. By the 1840s, 85,000 to 100,000 Indian-produced bison robes were arriving in St. Louis yearly. The Hudson's Bay Company trade also reached its zenith of 73,278 robes between 1841 and 1845.[22]

Bison had been built by the evolutionary pressures of climate and predation to be prolific. Maintaining the herds in dynamic equilibrium with the grasslands required that their 18 percent annual natural increase be harvested by some means. On the wilderness plains natural mortality from disease, weather, and fire, took care of about half that 18 percent. The Pawnees noticed that wolves got three to four out of every ten bison calves, and wolf predation does seem to have accounted for a third or more of the bison's natural increase.[23] The remaining 20 percent of the yearly increase (almost 200,000 animals a year would have been available given the probable size of the historic northern plains herd) long had been harvested for subsistence by the Plains, village, and Rocky Mountain tribes of the region. Careful calculations have indicated that the subsistence requirements of buffalo specialists on the southern plains were roughly 6.5 bison per person per year.[24] This probably varied only slightly, if at all, in the north. With approximately 42,000 souls amongst the northern plains bison tribes in the 1850s—a figure that omits entirely the village and Rocky Mountain tribes that were seriously working the bison herds in those years—the *subsistence* harvest alone would have been nearly 275,000 animals a year.[25]

So it is not surprising to find observers like Edwin Thompson Denig and George Catlin and John James Audubon and Father Pierre-Jean de Smet aware of and disturbed by the fact that at midcentury the bison herds were dwindling rapidly. Farther south, the Kiowa Calendars (historical records painted on bison robes) record a year of "many bison" only once after 1841. The Texas Comanches were reduced in the late 1840s to consuming some 20,000 animals out of their own horse herds. Denig reports that the Assiniboines ate many of their horses, too, in 1846.[26]

In the long history of the bison, what was happening was an unprecedented confluence of historical forces. Not only were bison now competing with horses for grass and water, it seems very clear

that they were being reduced by the onset of a major drought on the plains that began in 1846, briefly abated, then set in for more than a decade, and now is seen as the start of the endgame for the Little Ice Age.[27] By the mid-nineteenth century the herd's ancient drought refuges in the tall-grass prairies and the Rockies were beginning to fill in with homesteaders. Another threat, although the details of its timing are not clear, is presently understood to have arrived with the domestic cattle brought by American emigrants on the overland trails. However they were exposed, most of the bison remaining alive at the end of the century were infected with the exotic bovine diseases brucellosis (*Brucella abortus*), bovine tuberculosis (*Mycobacterium bovis*), and anthrax. The impact of these diseases on the viability of the herds is unknown, but easily could have acted in concert with other factors to produce a major dimunition.[28] Like the long-term oscillations of the climate, these new diseases—including the human scourges that had seemed the only dark cloud across the Little Ice Age in the West—were changes in the circumstances of the Plains tribes that were beyond their abilities to influence.

Finally, and very likely the *pièce de résistance*, the consumer goods of the worldwide market economy had by the 1840s lured the northern plains tribes heavily into the robe business. Unlike wolves, who killed calves and sick and injured animals, Indian market hunters focused on prime, breeding-age cows. There is an upper limit for cow selectivity in a healthy bovine herd, beyond which a population decline will set in.[29] And perhaps it is in that relationship that the Yanktonai buffalo hunt at Fort Pierre in the 1830s constitutes a watershed. Prior to 1825, many of the buffalo tribes had practiced a kind of Zen affluence: except for horses, they eschewed the accumulation of goods.[30] But the persistent wooing of the traders—and the attraction of alcohol—eventually wore down their resistance, so that it is hard to escape the conclusion that the native hunters willingly and even enthusiastically pursued their sacred beast literally to the point of its extinction.

All these factors produced a stressed and a seriously depleted northern plains bison herd fully a quarter century before the arrival of the white hide hunters. Observing the result as nearly fifteen thousand Lakotas pressed relentlessly westward and twelve

thousand Métis hunters rolled their cart *caravanes* onto the northern plains in the 1860s, many of the white inhabitants of the northern plains worried about the trend. In 1856 the agent for the Blackfeet would write of them that "They annually destroy much more game than they require to subsist and clothe themselves, but as yet there is no sensible decrease in the number of buffalo in their country, it is impossible, at present, to induce them to be more economical." Beginning in the year 1858, agents Alexander Redfield at Fort Union and Alfred Vaughan at Fort Benton began to call on the government to ban the robe trade. But the government hewed to its traditional policy of *laissez-faire* in the fur trade.[31]

As for the Indians, it may be—as on the southern plains—that their belief that bison had supernatural origins and were governed by supernatural sanctions did not sufficiently alert them to the danger of the new situation. Plains buffalo hunters, in reality, were probably not conservationists in the modern sense. In quest of optimal efficiency, some of their hunting strategies probably did have the *inadvertent* effect of conserving animals or even increasing their numbers. But to practice conservation, a culture has to possess the idea that concrete actions towards elements of nature (like buffalo herds) in the *present* will influence their prospects for the *future*. While Plains Indians possessed this idea in the spiritual sense, they did not appear to translate it into practical game management. And finally, since bison were a commons for which there was an extraordinary and mounting competition, to cut back the harvest was only to disadvantage one's own people.[32]

By the time Sitting Bull (p. 114) and Custer were circling one another in 1876, the white hide hunt was essentially over in Kansas and on the southern plains. The year before in New York and Boston, robe supply had surpassed demand, saturating the market and plunging prices. But the result on the northern plains was classic Keynesianism. The drop in the value of their skins prompted groups like the Métis to *increase* the harvest.[33] The result was that in spring 1879, Canadian hunters found no bison at all, and surged into Montana, where a final hunt—this time in competition with white hide hunters—took place in the core area between the Yellowstone and the Sweetgrass Hills. At the beginning of the 1880s the remnant of the northern plains herd is estimated at only about

1.5 million animals, from which white commercial hunters produced about 320,000 hides. The Blackfeet had their last great hunts in 1881, taking some 100,000–150,000 animals—two to three times the number their bands needed for subsistence. By the spring of 1883, when Blackfeet hunters netted their last *six* animals, it was all over.[34]

The bison ecology of the American Great Plains was a natural system, and like all natural systems it was capable of considerable variation, considerable resiliency, within its normal equilibrium. Such systems can continue operating within their established parameters so long as no agglomerate of forces pushes them beyond their boundaries.[35] Weather, new technologies, the coming and going of cultures over the millennia—these factors had disrupted but never *erased* Great Plains bison ecology. But I submit that a quarter century before the hide hunters and the Battle of the Little Bighorn counted final coup on the northern plains, that agglomeration of forces had been assembled on the northern plains. The twenty-five-year shift to a new paradigm was a remarkably swift contraction for a system that had been in place for ninety centuries.

Notes

1. Both George Catlin and Edwin Denig reported this incident. I follow Denig. See Edwin Thompson Denig, *Five Indian Tribes of the Upper Missouri: Sioux, Arickaras, Assiniboines, Crees, Crows*, ed. John C. Ewers (Norman: University of Oklahoma Press, 1961), 30. Also, George Catlin, *Letters and Notes on the North American Indians* (2 vols.; New York: Dover edition, 1973), 1:216-17.

2. Denig, *Five Indian Tribes*, 30.

3. Dan Flores, "Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850," *Journal of American History*, 78 (September 1991), 465-83.

4. See L. Adrien Hannus, "Cultures of the Heartland: Beyond the Black Hills," in *Plains Indians, A.D. 500–1500: The Archaeological Past of Historic Groups*, ed. Karl Schlesier (Norman: University of Oklahoma Press, 1994), 176-98; Walter Prescott Webb, *The Great Plains* (Boston: Ginn and Co., 1931), chap. 1; Sven Froiland, *Natural History of the Black Hills and Badlands* (Sioux Falls, S. Dak.: Center for Western Studies, 1990).

5. Merlin Lawson and Charles Stockton, "Desert Myth and Climatic Reality," *Annals of the Association of American Geographers,* 71 (December 1981), 527-35. See especially their discussion of conditions on the plains at the time of the Long Expedition.

6. Paul Martin and Richard Klein, eds., *Quaternary Extinctions* (Tucson: University of Arizona Press, 1985); Jerry McDonald, *North American Bison: Their Classification and Evolution* (Berkeley: University of California Press, 1981), 150-63; Michael Wilson, "Bison in Alberta: Paleontology, Evolution, and Relations with Humans," *Alberta,* 3 (1992), 1-17.

7. See Richard I. Dodge, *Our Wild Indians* (Hartford, Conn., 1882), 286, for a description of this belief. Peter Powell, in *Sweet Medicine* (2 vols.; Norman: University of Oklahoma Press, 1969), 2:281-82, describes the Kiowas' Hiding Mountain in Oklahoma, identified in other Kiowa accounts as Mount Scott.

8. Unless otherwise noted, the paragraphs on climate come from: Sally Greiser, "Late Prehistoric Cultures on the Montana Plains," 34-55; Michael Gregg, "Archaeological Complexes of the Northeastern Plains and Prairie-Woodland Border, A.D. 500–1500," 71-95; R. Peter Winham and Edward Lueck, "Cultures of the Middle Missouri," 149-75, all in Schlesier, *Plains Indians, A.D. 500–1500.* Greiser notes that two sources refer to dental and other skeletal anomalies in bison during the dry episodes, an indication of considerable nutritional stress. On the southern plains the key sources are Timothy Baugh, "Holocene Adaptations in the Southern High Plains," ibid., 264-89; Tom Dillehay, "Late Quaternary Bison Population Changes on the Southern Plains," *Plains Anthropologist,* 19 (August 1974), 180-96.

9. Solveig Turpin, "Bonfire Shelter: An Ancient Slaughterhouse," 88-91; and Vaughn Bryant, "Pollen: Nature's Tiny Capsules of Information," 53, 78; both in Harry Shafer, ed., *Ancient Texans: Rock Art and Lifeways along the Lower Pecos* (Austin: Texas Monthly Press, 1986).

10. George Frison, "The Changing Western Environment," lecture presented at the University of Wyoming, Laramie, October 8, 1993; George Frison, "The Foothills-Mountains and the Open Plains: The Dichotomy in Paleoindian Subsistence Strategies Between Two Ecosystems," in *Ice Age Hunters of the Rockies,* ed. Dennis Stanford and Jane Day (Niwot: University of Colorado Press, 1992), 323-42; Hannus, "Cultures of the Heartland," 184-90.

11. Greiser, "Late-Prehistoric Cultures on the Montana Plains," 42.

12. Gregg, "Archaeological Complexes of the Northeastern Plains and Prairie-Woodland Border," 83-95; Winham and Lueck, "Cultures of the Middle Missouri," 159-72.

13. Winham and Lueck, "Cultures of the Middle Missouri," 159-72.

14. Gregg, "Archaeological Complexes of the Northeastern Plains and Prairie-Woodland Border," 95; Stanley Ahler et al., *People of the Willows: The Prehistory and Early History of the Hidatsa Indians* (Grand Forks: University of North Dakota Press, 1991).

15. Greiser, "Late Pre-Historic Cultures on the Montana Plains," 51.

16. My methodology was worked out in Flores, "Bison Ecology and Bison Diplomacy." This involved compiling the horse, mule, and cattle grazing totals from the counties of the southern plains using Bureau of the Census, *Thirteenth Census of the United States, Taken in the Year 1910*, vols. VI and VII, *Agriculture, 1909 and 1910* (Washington, D.C.: Government Printing Office, 1913).

17. L. J. Krysyl et al., "Horses and Cattle Grazing in the Wyoming Red Desert, I. Food Habits and Dietary Overlap," *Journal of Range Management*, 37 (January 1984), 72-76; Frank Roe, *The Indian and the Horse* (Norman: University of Oklahoma Press, 1955); J. Frank Dobie, *The Mustangs* (New York: Bramhall House, 1934), 108-9.

18. Philip Duke and Michael Wilson, "Cultures of the Mountains and Plains: From the Selkirk Mountains to the Bitterroot Range," in Schlesier, *Plains Indians, A.D. 500–1500*, 59.

19. For a discussion, see Preston Holder, *The Hoe and the Horse on the Plains* (Lincoln: University of Nebraska Press, 1970).

20. W. Raymond Wood and Thomas Thiessen, eds., *Early Fur Trade on the Northern Plains: Canadian Traders among the Mandan and Hidatsa Indians, 1738–1818* (Norman: University of Oklahoma Press, 1985), 3-5.

21. What is known as "dependency" was the result, and is the particular topic of Richard White, *Roots of Dependency: Subsistent, Environment, and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983).

22. David Wishart, *The Fur Trade of the American West, 1807–1840: A Geographical Synthesis* (Lincoln: University of Nebraska Press, 1979), 109; William Dobak, "Driving the Buffalo Out of Canada" (unpublished paper in possession of Dan Flores).

23. See Flores, "Bison Ecology and Bison Diplomacy," 481-82; L. N. Carbyn, "Wolves and Bison: Wood Buffalo National Park—Past, Present and Future," *Alberta*, 3 (1992), 167-78.

24. Bill Brown, "Comancheria Demography, 1805–1830," *Panhandle-Plains Historical Review*, 59 (1986), 8-12; H. Paul Thompson, "A Technique Using Anthropological and Biological Data," *Current Anthropology*, 7 (October 1966), 417-24.

25. My 1850s population figures for the Sioux divisions and bands (11,835), Crows (2,250), Assiniboines (3,200), and Plains Crees (11,500) are averages from Denig and the sources, primarily Indian agents, which editor John C. Ewers cites in his footnoting of Denig. See Denig, *Five Indian Tribes of the Upper Missouri*, along with Ewers's notes. For estimates of the Blackfeet (7,630, down from 16,000 to 20,000 in the early 1830s) I rely on John C. Ewers, *The Blackfeet: Raiders on the Northwestern Plains* (Norman: University of Oklahoma Press, 1958), 60, 212; and for the Métis (12,000), Dobak, "Driving the Buffalo Out of Canada."

26. James Mooney, *Calendar History of the Kiowa Indians* (Washington, D.C.: Government Printing Office, 1979), 287-95; Jerold Levy, "The Ecology of the South Plains," in *Symposium: Patterns of Land Utilization and Other Papers, American Ethnological Society Proceedings, 1961*, ed. Viola Garfield (Seattle: University of Washington Press, 1961). The description of widespread Comanche horse eating is in William Bollaert, *William Bollaert's Texas*, ed. W. Eugene Hollon (Norman: University of Oklahoma Press, 1989), 361. On Assiniboine starvation and horse eating, see Denig, *Five Indian Tribes of the Upper Missouri*, 96.

27. See Edmund Schulman, *Dendroclimatic Data from Arid America* (Tucson: University of Arizona Press, 1956), 86-88; Harry Weakley, "A Tree-Ring Record of Precipitation in Western Nebraska," *Journal of Forestry*, 41 (November 1943), 816-19; Lawrence Loendorf, "The Chilling Effect of the Little Ice Age on North Dakota," *North Dakota Quarterly*, 59 (Fall 1991), 192-99; David Stahle and Malcolm Cleaveland, "Texas Drought History Reconstructed and Analyzed from 1698 to 1980," *Journal of Climate*, 1 (January 1988), 59-74. The latter article points out that the years 1856–1864 rank with the 1780s and 1950s as one of the three driest decades on record on the southern plains.

28. See Stacy Tessaro, "Bovine Tuberculosis and Brucellosis in Animals, Including Man," *Alberta*, 3 (1992), 207-24. Brucellosis was discovered in 1897 by Bernhard Bang, hence "Bang's Disease." In humans it is known as undulant fever. It may well have been an occupational hazard for Indians butchering infected buffalo. The disease causes spontaneous abortions in both cattle and bison, but rarely does in humans, although the symptoms include a general malaise.

29. See Flores, "Bison Ecology and Bison Diplomacy," 480 and n. 38 for a discussion of how cow selectivity worked on the southern plains.

30. The argument over the motives for Indian hunting, much debated by scholars like Calvin Martin and Shepard Krech III, can benefit from these two Canadian sources: J. E. Foster, "The Metis and the End of the Plains Buffalo in Alberta," *Alberta*, 3 (1992), 61-62; Paul Thistle, *Indian-European Trade Relations in the Lower Saskatchewan River Region to 1840* (Winnipeg: University of Manitoba Press, 1986). In 1877 the Council of

the North-West Territories in Canada passed regulations outlawing pounds and prohibiting the killing of buffalo under two years of age. But it was too late. See Ewers, *The Blackfeet*, 278.

31. On the Sioux advance I rely on Richard White, "The Winning of the West: The Expansion of the Western Sioux in the Eighteenth and Nineteenth Centuries," *Journal of American History*, 65 (September 1978), 319-43. The Blackfeet agent reports are cited in Dobak, "Driving the Buffalo Out of Canada." The Blackfeet, for one, were not easy to convince that the herds were disappearing. See James Willard Schultz, *Blackfeet and Buffalo: Memories of Life among the Indians*, ed. Keith Seele (Norman: University of Oklahoma Press, 1962), 41. However, their agent wrote in 1877 that "They admit the time approaches fast when buffalo will disappear, but until then the excitement of the chase . . ." Cited in Ewers, *The Blackfeet*, p. 281.

32. Raymond Hames, "Game Conservation or Efficient Hunting," 92-120, and Robert Brightman, "Conservation and Resource Depletion: The Case of the Boreal Forest Algonquians," 121-41, both in *The Question of the Commons: The Culture and Ecology of Communal Resources*, ed. Bonnie McKay and James Acheson (Tucson: University of Arizona Press, 1987).

33. Foster, "The Metis and the End of the Plains Buffalo in Alberta," 73.

34. Ewers argues that a prairie fire pushed the Canadian herd into Montana, and it never returned. Ewers, *The Blackfeet*, 279. Estimates on the last herd on the plains and the 1881 Blackfeet hunt are discussed in Rudolph Koucky, "The Buffalo Disaster of 1882," *North Dakota History*, 50 (Winter 1983), 23-30. In 1874 G. C. Doan had estimated the northern herd at 4 million.

35. See Daniel Botkin, *Discordant Harmonies: A New Ecology for the Twenty-First Century* (New York: Oxford University Press, 1990); Donald Worster, *The Wealth of Nature: Environmental History and the Ecological Imagination* (New York: Oxford University Press, 1993), 152, 165, 169.

Indian Policy and the Battle of the Little Bighorn

Alvin M. Josephy, Jr.

Amid the accelerated interest in westward expansion that followed the Civil War, the editor of the *Army and Navy Journal* in New York City was moved to contemplate the status of the government's policy in dealing with the still unconquered western Indian tribes. To say the least, he found the situation messy and confusing—certainly not reassuring to those who hoped that, like the end of slavery, the long conflict with Indians would also become a thing of the past. "We go to [the Indians] Janus-faced," the disheartened editor wrote. "One of our hands holds the rifle and the other the peace-pipe, and we blaze away with both instruments at the same time. The chief consequences is a great smoke—and there it ends."[1]

If anything, this was not only an understatement of a situation that would continue to produce grave conflicts and tragedies, but the reflection of a continuation of a legacy that doomed Indians, as well as whites, to policies—or a lack of them—that inexorably and inevitably led to the tragedies. At the heart of Indian-white relations since the earliest colonial days lay the most simple of facts—often unrecognized or unacknowledged by whites, but always recognized by the Indians: the whites wanted the Indians' lands and resources, and most Indians did not want to give them up.

LEGACY

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Edited by
Charles E. Rankin

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