

The Destruction of the Bison

An Environmental History, 1750–1920

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Introduction

Before Europeans brought the horse to the New World, Native Americans in the Great Plains hunted bison from foot. Their technique was ingenious: by making a fire or creating a ruckus near a herd of bison, they stampeded the skittish animals toward a bluff. The Indians lined the route to the bison “jump” with fallen trees or thicket and waved robes to shoo the beasts toward their destination. If the hunters dared to risk a general conflagration, they set more fires to direct the herd. Once they had stampeded the bison over the precipice, they peppered the crippled animals with arrows. For the bison, the stampede to the bluff was probably a disorienting experience. As they hurried toward their deaths, the more perceptive among them might have wondered, “Where is all this commotion leading me?” As readers of this book consider – among other things – grassland ecology, horses, smallpox, the fur trade, and gender roles in Indian and Euroamerican societies, they may find themselves pondering the same question. Nonetheless, just as pedestrian hunters herded their prey to their deaths, this book eventually leads to the destruction of the bison.

Why consider so many seemingly disparate subjects? Because, a host of economic, cultural, and ecological factors herded the bison toward their near-extinction. That diverse assembly of factors first emerged in the middle of the eighteenth century from ongoing encounters among Indians, Euroamericans, and the Great Plains environment. Those encounters were both a *process* of intercultural and ecological exchange and an interaction between people and a *place*, the nonhuman natural environment.¹

¹ For the American West as a place, see Donald Worster, “New West, True West,” *Western Historical Quarterly*, 18 (April 1987), 141–156; for process, see William Cronon, “Revisiting the Vanishing Frontier: The Legacy of Frederick Jackson Turner,” *Ibid.*, 157–176. For the interaction of ecology, economy, and culture, see Arthur F. McEvoy, *The Fisherman’s Problem: Ecology and Law in the California Fisheries, 1850–1980* (New York: Cambridge University Press, 1986), 3–16; McEvoy, “Toward an Interactive Theory of Nature and Culture: Ecology, Production, and Cognition in the California Fishing Industry,” in *The Ends of the Earth: Perspectives in Modern Environmental History*, ed. Worster (New York: Cambridge University Press, 1988), 211–229. Also see Carolyn Merchant, *Ecological Revolutions: Nature, Gender, and Science in New England* (Chapel Hill: University of North Carolina Press, 1989), 1–26. My understanding of environmental history has been profoundly influenced by the work of Richard White, particularly *The Roots of Dependency: Subsistence, Environment, and Social Change among the Choctaws, Pawnees, and Navajos* (Lincoln: University of Nebraska Press, 1983).

On its surface, the encounter between the Old and New Worlds that led to the destruction of the bison appears to be a simple matter: Indian and Euroamerican hunters pushed the species to the brink of extinction for commercial profit. In the nineteenth century, they slaughtered millions of bison and brought to market the animals' hides, meat, tongues, and bones. Like other environmental catastrophes in the American West – the depletion of the California fisheries, the deforestation of the Great Lakes region and Pacific Northwest, and the “dust bowl” of the southern plains in the 1930s – the destruction of the bison was, in part, the result of the unsustainable exploitation of natural resources.² Yet, as in the California fisheries, the wheat fields of the dust bowl, and elsewhere, more than a capitalist economy's demand for natural resources caused the near-extinction of the bison. The volatile grassland environment itself was a factor; drought, cold, predators, and the competition of other grazing animals accounted for much of the decline.

The Great Plains environment influenced the fate of not only the bison but the human inhabitants of the region, particularly mounted, bison-hunting Indian societies. In the eighteenth and nineteenth centuries, the hunters adjusted their social structures and resource strategies to the ecology of the grasslands. Just as important, the Indians adapted to the ecological and economic changes that resulted from the arrival of Euroamericans in the West. Largely in reaction to the Europeans' introduction of the horse (which facilitated bison hunting), Old World diseases (which discouraged a sedentary life), and the fur trade (which encouraged specialization as hunters), some Indian groups reinvented themselves as equestrian nomads in the high plains.³ These adaptations

² For the California fisheries, see McEvoy, *Fisherman's Problem*; for deforestation, see Richard White, “The Altered Landscape: Social Change and the Land in the Pacific Northwest,” in William G. Robbins, Robert J. Frank, and Richard E. Ross, eds., *Regionalism and the Pacific Northwest* (Corvallis: Oregon State University Press, 1983), 109–127; for a masterful treatment of the transformation of the Western environment in the nineteenth century, see William Cronon, *Nature's Metropolis: Chicago and the Great West* (New York: Norton, 1991); for an equally insightful history of environmental change in the twentieth-century West, see Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979). The degradation of the environment is an important theme of recent works in Western history. See Wilbur Jacobs, “The Great Despoliation: Environmental Themes in American Frontier History,” *Pacific Historical Review*, 47 (February 1978), 1–26; Worster, “Beyond the Agrarian Myth,” and White, “Trashing the Trails,” in Patricia Nelson Limerick, Clyde A. Milner II, and Charles E. Rankin, eds., *Trails: Toward a New Western History* (Lawrence: University Press of Kansas, 1991), 18–21, 26–39.

³ The first important study of the impact of imported biota on a previously isolated community was Charles S. Elton, *The Ecology of Invasions by Plants and Animals* (London: Chapman and Hall, 1958). The historian Alfred W. Crosby has integrated the science of ecological invasions with the history of European exploration and colonialism in several major books and essays. See Crosby, *Ecological Imperialism: The Biological Expansion of Europe, 900–1900* (New York: Cambridge University Press, 1986); Crosby, *Germes, Seeds, & Animals: Studies in Ecological History* (Armonk, N.Y.: M. E. Sharpe, 1994); Crosby, *The Columbian Exchange: Biological and Cultural Consequences of 1492* (Westport: Greenwood Press, 1972). Indian history has been revitalized in recent years by studies that have analyzed Indian societies that reinvented themselves in response to European colonialism. According to this perspective, the changes attendant on the arrival of Europeans were so extensive that not just the colonists, but Indians as well, found themselves in a “new

left the newly nomadic societies dependent on the bison, a species vulnerable to depletion by overhunting and drought. In the mid-nineteenth century, the combination of Indian predation and environmental change decimated the bison.

Cultural and ecological encounters also shaped the Euroamerican destruction and, later, preservation of the bison. Beginning in the 1840s, the presence of increasing numbers of Euroamericans in the plains displaced the bison from their customary habitats. Livestock belonging to Euroamerican emigrants on the Oregon-California and Santa Fe trails degraded the valleys of the Platte and Arkansas rivers.⁴ More important, between 1870 and 1883, Euroamerican hunters slaughtered millions of bison. Federal authorities supported the hunt because they saw the extermination of the bison as a means to force Indians to submit to the reservation system.⁵ The hunters, aided by drought, blizzards, and other environmental factors, nearly destroyed the Indians' primary resource. Although Eastern preservationists at the turn of the century decried the wastefulness of the hide hunters, they nonetheless yearned for the bygone era that the hide hunters had epitomized. Their desire to preserve the bison as a living memorial to a romanticized frontier of Euroamerican conquest animated their mission to save the species from extinction.

So many subjects are considered in the following pages that it is necessary briefly to define the confines of this study. Although this book analyzes the changing apprehensions of the bison in American culture, it is not an exhaustive history of the bison as an artifact of American folklore. Readers interested in the cultural mythology of the bison can consult other studies.⁶ This book relies heavily on environmental science, but it is neither a natural history nor a biological study of the bison. Such studies of the species already exist.⁷ This book is not

world." See James H. Merrell, *The Indians' New World: Catawbas and Their Neighbors from European Contact through the Era of Removal* (New York: Norton, 1989).

⁴ See Elliott West, *The Way to the West: Essays on the Central Plains* (Albuquerque: University of New Mexico Press, 1995), 51–83.

⁵ See Andrew C. Isenberg, "Toward a Policy of Destruction: Buffaloes, Law, and the Market, 1803–1883," *Great Plains Quarterly*, 12 (Fall 1992), 227–241. For a recent summary of writings on the bison, see Isenberg's introduction to the new edition of E. Douglas Branch, *The Hunting of the Buffalo* (Lincoln: University of Nebraska Press, 1997), ix–xvi.

⁶ See Valerius Geist, *Buffalo Nation: History and Legend of the North American Bison* (Stillwater, Minn.: Voyageur Press, 1996); David A. Dary, *The Buffalo Book: The Saga of an American Symbol* (New York: Avon, 1974). See also Larry Barsness, *The Bison in Art: A Graphic Chronicle of the American Bison* (Flagstaff, Ariz.: Northland, 1977); Barsness, *Heads, Hides & Horns: The Compleat Buffalo Book* (Fort Worth, Tex.: Texas Christian University Press, 1985); Mari Sandoz, *The Buffalo Hunters: The Story of the Hide Men* (New York: Hastings, 1954).

⁷ Joel A. Allen, *The American Bisons, Living and Extinct* (Cambridge: Harvard University Press, 1876); Frank Gilbert Roe, *The North American Buffalo: A Critical Study of the Species in Its Wild State* (Toronto: University of Toronto Press, 1951); Jerry N. McDonald, *North American Bison: Their Classification and Evolution* (Berkeley: University of California Press, 1981); Joel Berger and Carol Cunningham, *Bison: Mating and Conservation in Small Populations* (New York: Columbia University Press, 1994); Tom McHugh, *The Time of the Buffalo* (Lincoln: University of Nebraska Press, 1972); Margaret Mary Meagher, *The Bison of Yellowstone National Park*.

an environmental history of the grasslands. Like the bison, it occasionally strays from the American Great Plains to Canada, Mexico, and the eastern United States. Moreover, a comprehensive environmental history of the plains would necessarily include species other than the bison – among them the antelope and the prairie dog – and resource uses other than bison hunting – including ranching, farming, and oil exploitation.⁸ This book is a history of the interactions among ecology, economy, and culture that led to the near-extirpation of the bison, the dominant species of the historic Great Plains. As such, it approaches the destruction of the bison as a social and ecological problem.

Most historical studies of the bison, since they first appeared in the late nineteenth century, have been of two types. One emerged from the late nineteenth- and early twentieth-century movement to preserve the species from extinction. Written by officers of the American Bison Society, a private philanthropic organization devoted to the preservation of the bison, these studies deplored the wastefulness of late nineteenth-century Euroamerican bison hunters and concluded with a hopeful and self-congratulatory assessment of their own efforts at preservation. They presented the salvation of the species as a salutary example of elitist philanthropy and Progressive-era good government.⁹

Concurrently, another type of study integrated the near-extinction of the bison into the prevailing understanding of the history of the American West. That interpretation, epitomized by the late nineteenth-century historians Frederick Jackson Turner and Theodore Roosevelt, viewed the West as, in Turner's words, "the meeting point between savagery and civilization." The conquest of the Indians and the wilderness shaped not only the American character – hardy, individualistic, and pragmatic – but American institutions and ideologies as well – democracy, ruralism, and nationalism.¹⁰ Although Turner's frontier thesis

National Park Service Scientific Monographs Series, 1 (Washington, D.C.: Government Printing Office, 1973).

⁸ See Cronon, *Nature's Metropolis*, 97–147, 207–259; Worster, *Dust Bowl*; Walter Prescott Webb, *The Great Plains* (Boston: Ginn and Company, 1931); James Malin, *The Grassland of North America: Prolegomena to its History* (Lawrence, Kansas, 1948); Rodman Paul, *The Far West and Great Plains in Transition, 1859–1900* (New York: Harper and Row, 1988); Terry G. Jordan, *North American Cattle-Ranching Frontiers: Origins, Diffusion, Differentiation* (Albuquerque: University of New Mexico Press, 1993), 208–240, 267–307.

⁹ For an early example, see William T. Hornaday, "The Extirpation of the American Bison, with a Sketch of its Discovery and Life History," *Annual Report of the Smithsonian Institution, 1887*, vol. II (Washington, Government Printing Office, 1889), 367–548. See also Martin S. Garretson, *The American Bison: The Story of its Extirpation as a Wild Species and its Restoration under Federal Protection* (New York: New York Zoological Society, 1938). See also American Bison Society, *Annual Report*. 13 vols. (New York, 1907–31). A historian who followed in this tradition was Branch, *Hunting of the Buffalo*.

¹⁰ See Frederick Jackson Turner, "The Significance of the Frontier in American History," *American Historical Association Annual Report* (1893), 199–227; Theodore Roosevelt, *The Winning of the West*, 7 vol. (New York: G. P. Putnam's Sons, 1907); Richard Slotkin, *Gunfighter Nation: The Myth of the Frontier in Twentieth-Century America* (New York: HarperCollins, 1992), 29–62; James R. Grossman, ed., *The Frontier in American Culture: Essays by Richard White and Patricia Nelson Limerick* (Berkeley: University of California Press, 1994), 7–65.

went out of fashion in the first half of the twentieth century, it returned, infused by Cold War nationalism, in the 1950s. During this renaissance of the frontier thesis a number of histories of the destruction of the bison appeared. They were followed in succeeding decades by a handful of studies that, without abandoning the perspectives of frontier history, were somewhat more sympathetic to the Indians of the western plains. These studies presented Indians not as savage impediments to progress but as colorful primitives doomed to defeat by their clash with civilization. All the frontier histories viewed the near-extirpation of the herds as a sanguine example of the Euroamerican conquest.¹¹

Both the preservationist and the frontier historians of the bison analyzed the near-extinction and preservation of the species from the perspective of dynamic Euroamericans who shaped a passive nature and overwhelmed culturally static Indians. Both interpretations also saw in the near-extinction of the bison the inevitable triumph of Euroamerican society. Many frontier historians applauded the destruction of the bison as the removal of an obstacle to Euroamerican expansion. The preservationists denounced the slaughter of the bison but celebrated their rescue as an example of Progressive-era benevolence. Both interpretations steered their narratives toward happy endings: the triumph of either Euroamerican settlement or preservationism.

Most studies of the decline and return of the bison preceded the development in recent decades of the fields of social, cultural, labor, and gender history. Insights from those fields suggest far greater complexities in the relationships of Indians and Euroamericans to the bison than historians formerly supposed. They suggest, for instance, the significance of cultural constructions of gender in Indian and Euroamerican societies. The Indians of the western plains who produced bison robes for the market relied on a gendered division of labor; men hunted while women dressed skins. The acceleration of the robe trade in the mid-nineteenth century resulted in the impressment of greater numbers of women into the dressing of robes. Cultural constructions of gender were no less significant in Euroamericans' relationship to the bison. In the 1870s and early 1880s, the effort by the newly founded Society for the Prevention of Cruelty to Animals to halt Euroamerican hide hunters' destruction of the bison reflected the emergence of a feminized rhetoric of moral reform. The installation of bison in managed preserves in the early twentieth century by the American Bison Society emerged from a concern by the officers of that organization that masculine virtues were on the wane in urban America. To reverse that decline, the Society resolved to preserve the bison as a reminder of frontier manliness. Altogether, the collapse and revival of the bison population were entangled in social

¹¹ For such histories, see Carl Coke Rister, "The Significance of the Destruction of the Buffalo in the Southwest," *Southwestern Historical Quarterly*, 33 (July 1929), 34–49; Wayne Gard, *The Great Buffalo Hunt* (Lincoln: University of Nebraska Press, 1959). Studies more sympathetic to the Indians were Francis Haines, *The Buffalo* (New York: Crowell, 1975); Sandoz, *Buffalo Hunters*; and Dary, *Buffalo Book*.

and cultural changes – particularly changes in cultural constructions of gender – in complex and important ways.

Many histories of the bison also appeared before the emergence of the field of environmental history. The destruction of the bison was part of a global decline of mammalian diversity in the nineteenth century. The combination of European ecological expansion and European and American economic expansion in this period extinguished or marginalized dozens of species of feral megafauna. European colonists afterward replaced these wild animals with domesticated species. Certainly nineteenth-century hunters and ranchers epitomized this trend. But this meta-narrative of the decline of feral species and the rise of domesticates both preceded and followed the late nineteenth century. Indians in the plains initiated the decline of the bison when they adopted that most useful of Old World domesticated species, the horse. In the plains, horses not only facilitated hunting, but they competed with the bison for scarce water and forage. In the late nineteenth and early twentieth centuries, bison preservationists saw their work as a repudiation of the commercial slaughter of the herds. Yet in important ways they were complicit in the transformation of plains fauna from feral to domesticated. The enclosed, managed preserves they established made semi-domesticates of the remnant bison who had survived the nineteenth century.

In recent years, a number of excellent essays have argued that the decline of the bison was a consequence of environmental factors in the plains.¹² This is an important and previously overlooked factor. However, the influence of the environment was not by any means the sole or even primary cause of the near-extinction of the herds. Environmental factors such as overgrazing and diseases brought by domestic livestock certainly contributed to the destruction of the bison, but they were inextricably connected to the human economies that introduced domesticated species to the plains. Human societies were so bound to the plains environment in the nineteenth century that there were few purely environmental or anthropogenic causes of the bison's destruction.

As the foregoing indicates, Indians are an important part of this history, and it is therefore necessary to define how they are delimited and understood. Much of this study concerns the equestrian, bison-hunting, Indian societies of the western shortgrass and mixed-grass plains: the Arapahos, Assiniboines, Atsinas, Blackfeet, Cheyennes, Comanches, Crows, Kiowas, and Sioux. This study does not analyze all Indian bison hunters, however, only those who both inhabited the western plains year-round and subsisted primarily on the bison. Although the

¹² For the environmental factors that contributed to the diminution of the bison, see Rudolph W. Koucky, "The Buffalo Disaster of 1882," *North Dakota History*, 50 (Winter 1982), 23–30. The best such studies are Dan Flores, "Bison Ecology and Bison Diplomacy: The Southern Plains from 1800 to 1850," *Journal of American History*, 78 (September 1991), 482; White, "Animals and Enterprise," in *The Oxford History of the American West* ed. Clyde A. Milner, et al. (New York: Oxford University Press, 1994), 249; and West, *Way to the West*, 72–83.

Shoshones and Flatheads of the northern Rockies periodically hunted bison in the grassland, they did not primarily inhabit the plains. Neither did the occasional bison hunters of the Southwest, except for the small group of Jicarilla Apaches who confederated with the Kiowas in the early eighteenth century and thereafter remained in the plains. Although the Indians of the Missouri River watershed such as the Arikaras, Caddos, Hidatsas, Mandans, Omahas, Osages, Pawnees, Poncas, and Wichitas regularly left their cornfields in the river valleys to hunt bison in the high plains, they were primarily agriculturalists who combined seasonal bison hunting with farming. The historian Richard White has written an excellent analysis of the Pawnees; rather than duplicate White's study of the villagers this book complements it by focusing on those Plains Indians who were year-round bison hunters.¹³

Ethnically and culturally, the western plains bison hunters were diverse. The Assiniboines, Crows, and Sioux spoke Siouan languages; the Arapahos, Atsinas, Blackfeet, and Cheyennes were Algonquians; the Comanches spoke a Shoshonean language; the Kiowa language is related to Tanoan of the Southwestern Pueblos. Yet the bison hunters shared the western plains environment, from the Blackfeet in the north to the Comanches in the south. Although the western plains vary in climate and vegetation over this extent, they nonetheless offered similar opportunities and imposed similar constraints on all the societies that inhabited the region. The Indians of the western plains also shared the timing of their arrival in the region. Unlike the villagers whose habitation of the Missouri River valley was centuries old, most of the equestrian bison hunters of the western plains were relative newcomers to grassland; they converged upon the western plains after the diffusion of horses northward from the Spanish colonies in New Mexico. Only the Crows, who separated from the Hidatsas in the seventeenth century, were early inhabitants of the high plains. Other societies of the western plains migrated there in the eighteenth century from either the Rocky Mountains or the Eastern woodlands. Such movements of indigenous populations were common in North America, particularly after the coming of European colonists. Two recent works by Richard White and Stephen Aron have described similar migrations of Indian groups to the Great Lakes region and Kentucky in the seventeenth and eighteenth centuries.¹⁴ Like the migrants in the Trans-Appalachian West, the newcomers to the western plains, although culturally diverse, were united by time and space.

Although they maintained their separate cultural identities, shared experiences common to their environment and their era shaped the western plains

¹³ White, *Roots of Dependency*.

¹⁴ White, *The Middle Ground: Indians, Empires, and Republics in the Great Lakes Region, 1650–1815* (New York: Cambridge University Press, 1991); Stephen Aron, *How the West Was Lost: The Transformation of Kentucky from Daniel Boone to Henry Clay* (Baltimore: Johns Hopkins University Press, 1996).

bison-hunting societies. The emergence of such societies was not unlike the rapid development of pastoral nomadism in the Central Eurasian grasslands among former Chinese farmers, Siberian forest hunters, and others in the second half of the first millennium B.C.E. The bison hunters might also be compared to the mounted hunters of South America such as the Tehuelches, Puelches, and Querandí of the Argentine pampas. In the eighteenth century, responding to the same European ecological invasion that brought the horse to North America, they adopted the use of the horse to hunt the guanaco (*Lama guanicoe*) and feral cattle. Like the horse nomads of the North American plains, the nomads of Eurasia and South America eventually developed segmentary, patrilineal social organizations.¹⁵ Whether in the grasslands of Central Eurasia or the Americas, the exigencies of resource use transcended ethnicity.

Above all, the Indians of the western plains, like the nomadic herders of the Eurasian steppes and the guanaco hunters of the pampas, shared a similar land use strategy: hunting bison from horseback. Despite the cultural differences among nomadic groups in the western plains, the demands of the two grazing animals essential to the Indians' subsistence – the bison and the horse – imposed similar conditions on all. Mobility was the most important of those conditions. Bison migrated frequently in search of forage and water. Indians moved their camps not only to maintain access to the bison, but also when the pressure of their own hunting reduced the density of the herds. Moreover, they were forced to move often enough to provide forage and water for their horses. The hunters stored little game, except after their fall hunts to see them through the winter, because the demands of mobility kept their provisions limited. Anthropologists distinguish between this strategy of “immediate return” common to mobile foragers and the “delayed return” of agriculturalists and pure pastoralists.¹⁶ In sum, the interaction of the bison's migrations and the Indians' hunting strategies combined to keep the largest animals in the Great Plains – bison, horses, and humans – on the move.

Despite these similarities, generalizing about the land use of the Indians of the western plains is not easy. They are most often referred to as “Plains Indians,” a term that includes the farmers of the Missouri River valley whose resource strategy was notably unlike that of the mobile hunters of the high plains. Missouri River farmers, like many Indian groups of the Eastern woodlands, seasonally left their villages to hunt. The mounted hunters of the high plains, however, had no

¹⁵ For an overview of the horse in history, see Harold Barclay, *The Role of the Horse in Man's Culture* (London: J. A. Allen, 1980), 82–101, 164–188. For Eurasian nomads, see Owen Lattimore, *Inner Asian Frontiers of China* (New York: American Geographical Society, 1940), 58–66. For South American nomads, see Ronald E. Gregson, “The Importance of the Horse in Indian Cultures of Lowland South America,” *Ethnohistory*, 16 (Winter 1969), 33–50; Julian H. Steward and Louis C. Faron, *Native Peoples of South America* (New York: McGraw-Hill, 1959), 408–413; John M. Cooper, “The Patagonian and Pampean Hunters,” in Steward, ed., *Handbook of South American Indians, Vol. I: The Marginal Tribes* (Washington, D.C.: Government Printing Office, 1946), 127–164.

¹⁶ For a discussion of these strategies, see Robert Brightman, *Grateful Prey: Rock Cree Human-Animal Relationships* (Berkeley: University of California Press, 1993), 320, 354.

permanent village sites to which to return.¹⁷ One might call the western plains Indians “bison hunters,” but the Indians of the river valleys, the Rocky Mountains, and the Southwest, to say nothing of Euroamericans, also periodically hunted bison. For the same reason, the Indian groups of the western plains were not distinguished as mere “equestrian societies.” Scholars of Eurasian and African pastoralism and pastoral nomadism generally reserve the term “pastoralist” for societies that raised stock for food, not as a hunting tool.¹⁸ Though they maintained herds of horses, the bison provided the Indians’ subsistence; the horse was merely a means to that end. Indians invested considerable time and effort in maintaining their horses, but this activity was nonetheless secondary to the production of bison meat and hides.

The bison, above all, was mobile, indeed, quite unpredictably so. This mobility was the greatest challenge to the bison hunters’ subsistence. The inevitable consequence of the western plains Indians’ year-round reliance on the bison was nearly year-round mobility. The eighteenth- and nineteenth-century equestrian bison hunters of the western plains are therefore best described as *nomads*: groups with no fixed abodes who moved from place to place in search of food and grazing land. In the context of the Great Plains, the term “nomad” is illuminating, because it captures the centrality of the relationship among people, animals, and the land in the eighteenth and nineteenth centuries. It is also problematic, because social theorists once disparaged nomadism as a primitive stage in human development. The residue of that low esteem remains in popular culture. However, the century-old canard that described stages of civilization proceeding from primitive nomads to civilized agriculturalists is most dubious in the semi-arid Great Plains. The drought-prone western plains suffered one of the worst agricultural disasters in world history under putatively civilized management: the “dust bowl” of the 1930s.¹⁹ Many of the nomadic societies of the western plains – the Crows, Cheyennes, Arapahos, Atsinas, and Sioux – had once been agriculturalists. By the nineteenth century, however, they had come to understand that, although equestrian bison hunting was not problem-free, it was more reliable than farming in the semi-arid environment of the high plains. These nomads knew how to farm but knew better than to attempt it in the grasslands. (The few surviving nomadic hunting societies in the late twentieth century likewise inhabit marginal, arid, semi-arid, or Arctic environments ill-suited to agriculture.) Moreover, nomadic groups in the western plains can hardly be described as primitive. They had neither an indeterminate sense of their territory nor a haphazard strategy of exploiting resources. They did not

¹⁷ For the Eastern woodland Indians, see Cronon, *Changes in the Land: Indians, Colonists, and the Ecology of New England* (New York: Hill and Wang, 1983); Timothy Silver, *A New Face on the Countryside: Indians, Colonists, and Slaves in South Atlantic Forests, 1500–1800* (New York: Cambridge University Press, 1990); White, *Roots of Dependency*, 1–146.

¹⁸ See A.M. Khazanov, *Nomads and the Outside World* (New York: Cambridge University Press, 1984), 15–16; Philip Carl Salzman, “Is ‘Nomadism’ a Useful Concept?” *Nomadic Peoples*, 6 (June 1980), 2.

¹⁹ Worster, *Dust Bowl*.

wander. They knew their land well, defended it from outsiders, and made ingenious use of resources to maximize productivity: for example, firing grasses to attract game and anticipating the bison's seasonal movements between river valleys and high plains. Like nomads of Eurasia and Africa, they did not exist in isolation from sedentary societies; indeed, they relied on trade contacts with agriculturalists. They had no permanent homes, but they were not homeless; they made habitual use of their favorite sites for winter and summer camps. The Indians' mobility was not primitive but a creative use of the land.²⁰

If nomadic equestrian bison hunting in the Great Plains was not primitive, neither was it idyllic. Since the 1960s, certain writers, some strongly influenced by romantic elements of the environmental movement, have sought to depict Indian land use strategies as models of sustainability and harmony between people and nature.²¹ The nineteenth-century plains nomads, popularly regarded as the archetypal Native Americans, have been seen as particularly sensitive to their environment. Certainly, many Indian resource strategies were sensible and their beliefs about nature inspirational to modern environmentalists. Yet the apotheosis of the "aboriginal ecologist" has proceeded without regard to historical accuracy. Insofar as the nomads of the western plains are concerned, the notion of aboriginal environmentalism holds that the Indians hunted bison only when necessary and wasted no parts of their kills. Mounted bison hunting was not a time-honored practice, however, but rather an eighteenth-century improvisation that the western plains Indians continued to revise during the nineteenth century. Moreover, like other Native American groups that relied on the hunting of large mammals – whales, seals, and caribou, for instance – the nomadic bison hunters sometimes wasted large amounts of their kills.²²

Indeed, Indian hunters had a hand in the bison's decline, particularly during the height of the bison robe trade in the middle of the nineteenth century. The decline of the bison was not, however, the end of western plains Indian cultures.²³ Indians of the western plains accommodated themselves to the economic and ecological realities of the late nineteenth and early twentieth centuries – significant numbers of nomads became cowboys, for instance – just as they had adapted to the arrival of the horse in the eighteenth century.²⁴ After the destruction of

²⁰ For a brief, comparative overview of nomadism, see Thomas J. Barfield, *The Nomadic Alternative* (Englewood Cliffs, N.J.: Prentice-Hall, 1993).

²¹ See J. Donald Hughes, *American Indian Ecology* (El Paso: Texas Western Press, 1983), 42; Christopher Vecsey and Robert W. Venables, eds., *American Indian Environments: Ecological Issues in Native American History* (Syracuse: Syracuse University Press, 1980).

²² For wasteful hunting, see Tim Ingold, *Hunters, Pastoralists, and Ranchers: Reindeer Economies and their Transformations* (Cambridge: Cambridge University Press, 1980), 69–75.

²³ Peter Farb, *Man's Rise to Civilization As Shown by the Indians of North America from Primeval Times to the Coming of the Industrial State* (New York: E. P. Dutton, 1968), 112–132, notwithstanding.

²⁴ Peter Iverson, *When Indians Became Cowboys: Native Peoples and Cattle Ranching in the American West* (Norman: University of Oklahoma Press, 1994), 52–85. See also Frederick Hoxie, *Parading Through History: The Making of the Crow Nation in America, 1805–1935* (New York: Cambridge University Press, 1995), 266–296.

the bison, nomadism was untenable, but the Sioux, Cheyennes, and others persisted by adapting to new uses of animals and the land.

Just as change characterized Indian societies in the western plains, it characterized the western plains environment. Most environmental historians imagine nonhuman nature as a dynamic agent in human history, inherently prone to unpredictable changes in climate, vegetation, and animal populations, among other things. This conception of nature has significant implications; it means, in short, that the nonhuman natural world has its own history. It rejects the romantic dualism between cyclical nature and linear human history. If one believes that nature is essentially stable and orderly, then environmental change such as the near-extinction of the bison in the nineteenth century must emerge from human action, and environmental history becomes a story of a dynamic human society altering (usually for the worse) an otherwise stable and harmonious nonhuman natural world. Such a history would, in its broad outlines, argue that although periodically depleted by drought or other environmental factors, the bison was a resilient species that always returned to dominance in the western plains until Indians and Euroamericans nearly exterminated the species in the nineteenth century.

On its surface, the bison–shortgrass partnership in the western plains suggests permanence and stability. Adapted to each other and the semi-arid climate, the shortgrasses and the bison dominated the plains from the end of the last Ice Age until the nineteenth century, preventing the intrusion of other animal and vegetable species. The hardy shortgrasses endured despite low precipitation; the bison survived on the meager carbohydrates and the sparse water that the region offered. When Euroamericans first came to the Great Plains, the bison–shortgrass environment was well over 10,000 years old. Yet the semi-arid climate also periodically wreaked havoc on its dominant plant and animal species. In wet years tall grasses invaded the western plains. During droughts, both shortgrasses and considerable numbers of bison died. The western plains, from this perspective, were prone to frequent and pronounced ecological instability. Although one's impression of the western plains depends largely on the breadth of one's view – the last 10,000 years or the last 200 – such changes contradict the notion of self-regulating equilibrium inherent in early twentieth-century ecologists' concepts of "climax community" and "ecosystem." In recent years, particularly as "chaos theory" has become an important part of scientific study, ecologists have shifted away from the idea of self-regulating equilibrium in nature and toward a conception of nature as prone to unpredictable change.²⁵

²⁵ Worster, "The Ecology of Order and Chaos," in *The Wealth of Nature: Environmental History and the Ecological Imagination* (New York: Oxford University Press, 1993), 156–170; Daniel Botkin, *Our Natural History: The Lessons of Lewis and Clark* (New York: G. P. Putnam's Sons, 1995), 14; and Botkin, *Discordant Harmonies: A New Ecology for the Twenty-first Century* (New York: Oxford University Press, 1990), 9. For chaos theory, see James Gleick, *Chaos: Making a New Science* (New York: Viking, 1987).

The historic Great Plains environment was characterized by both stability and dramatic, frequent, and destructive change. The evidence of overexploitation of the bison by nineteenth-century hunters is irrefutable. Without human predators, the bison would not have become nearly extinct. Yet the notion of an orderly shortgrass–bison biome destroyed by humanity’s destabilizing influence posits an unconvincing disjuncture between nature and people. In the last 10,000 years, the Great Plains have never been without human influences; the very dominance of the bison in the eighteenth and nineteenth centuries owed itself, in part, to the hunters who, at the end of the last Ice Age, helped to kill off giant herbivores and thereby opened a niche for the bison. For as long as they have existed, people have inhabited, altered, and been affected by the nonhuman natural world. Even such precapitalist societies as the equestrian bison hunters of the Great Plains were sometimes given to waste and degradation of the resources upon which they depended. To assume an unchanging, harmonious relationship between Indians and the Great Plains environment classes both Indian culture and nature as static.

The concept of a stable plains environment also ignores persuasive evidence of dynamism and instability. Drought and other environmental factors doubtless contributed to the decline of the bison in the nineteenth century. Some students of environmental history may be loathe to abandon the notion of natural stability because a dynamic nature can be seen as exculpating human society for its degradation of the environment. If drought or bovine disease were even partly responsible for the destruction of the bison, so this argument goes, then Euroamerican hide hunters cannot alone be held accountable for the near-extinction of the species.²⁶ But there is no reason why environmental change and human agency should not both be taken into account. Environmental history properly understood is the story of the interaction of dynamic forces, with both nature and human society contributing to change.²⁷

The destruction of the bison is about such change. The central transformation that concerns the pages that follow is the decline of the bison population from as many as 30 million in the mid-eighteenth century to a few hundred by the early twentieth century. That transformation was a consequence of the encounter between Indians and Euroamericans in the Great Plains – an encounter in which the interactions of indigenous and Euroamerican ecologies were as significant as, and inextricably bound to, economic and cultural exchanges.

²⁶ Koucky, “Buffalo Disaster,” 28.

²⁷ McEvoy, *Fisherman’s Problem*, 14–15; Cronon, “The Uses of Environmental History,” *Environmental History Review*, 17 (Fall 1993), 14.