

Grassland

The History, Biology, Politics, and Promise
of the American Prairie

By
Richard Manning
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Grassland: The History, Biology, Politics, and Promise of the American Prairie is a book written by Richard Manning in 1995. This book has 306 pages and is divided into the following major chapters:

- (a) The Promise of Grass.
- (b) Forsaking the Sweet Grass Hills.
- (c) What the Wind Carries.
- (d) A Lasting Peace.
- (e) Gridlock.
- (f) The End of Grass.
- (g) Annihilation.
- (h) Aliens.
- (i) Roadside Attractions.
- (j) A Place's Assertion.
- (k) Seeds.
- (l) Agenda and Anti-Agenda.

The motivation of writing this book was, as Manning explained, American culture's disrespect for its grasslands, which resulted in an environmental catastrophe. Americans' goals must change from understanding nature as a separate part of humans to be part of it.

Chapter 1: The Promise of Grass

In the United States, the grasslands cover approximately 40% that makes America the largest nation of grasslands. The grasslands of the American West are created by the Rockies and the coastal mountain ranges of California and the Pacific Northwest. Manning provides a comparison between the tall-grass and the short-grass. Then, he explains that the short-grass region has two groups: 1) high plains and 2) short-grass steppe, which is dominated by a specific species in Colorado and Wyoming.

Manning explains that there are various species of grass in different habitats. Some of these species are distinct as seen in the Great Plains, east of the Rockies. Still, mixing of species exists in other grasslands. Species in the United States include species from Africa, Asia, and Europe. Such grass diversity is caused by human travel and various activities.

As far as the importance of grasslands, the environment became threatened and at risk. Understanding of wild places, such as grasslands, led to a new movement. This movement aimed to protect nature. Therefore, it is believed that there is nobody who would consider harvesting trees as a good action for any forest. However, the problem, as Manning put it, is that humans see a forest as not only trees whereas grassland only grass. Like any forest, grassland has numerous things other than grass. Grassland encompasses thousands of plant species that heavily serve insects, birds, predators, mammals, ...etc.

As a result, humans' inappropriate understanding of grassland was the starting damages point. Americans must comprehend that grassland is a real matter rather than symbol. The promise of grass is that there is a possibility of a richer bright future.

Chapter 2: Forsaking the Sweet Grass Hills:

Manning thoroughly provides an explanation of elk. Elk was named after the first arrival of colonists to the American continent. There are six American subspecies. They concentrated on mountains and are regarded as creatures of grass, eating leafy plants and shrubs. When the grasslands are destroyed, elks are compelled to feed on trees. Elks escaped almost all their favorite places because they were persecuted and killed, directly by hunting and indirectly by wiping their grassland habitats. They fled to places where it is very steep to plow and reach, such as the Black Hills of South Dakota, Canada's Cypress Hills, and the Sweet Grass Hills of Montana.

In addition, Manning describes beautifully the Rocky Mountain Front. He provides elaborated information about the Missouri River and the Great Falls. Then, he discusses the Sweet Grass Hills. These hills are a cluster of buttes, which are volcanic rocks. They are 6,400 feet tall and 3,000 feet above their adjacent plains. These hills also were not inhabited until the Montanans people brought in the plows. Therefore, raising cattle on Sweet Grass Hills' grass took place, as well as more grassland fall to the plows.

Elk routinely show up a few hundred miles east of the Sweet Grass Hills. Due to the increasing of marginal and erodable sites in 1970s, soil conservation officials realized the danger caused by soil erosion. Therefore, under the 1985 bill, a new program was initiated in which farmers plant a grass portion in their own lands. These farmers would be paid an average of \$35/acre/year. As a result, by the end of the 1980s, there were 2.5 million acres of grass. Even though farmers planted idle part of grass in their subside lands, this program's result turned out to be good and beneficial for elk.

Chapter 3: What the Wind Carries:

Wind is every thing on the Great Divide. Indisputably, wind strips vegetation, which leaves soil to be exposed to air, creating dust. Later, such dust forms the foundation of grassland soils.

Basically, Manning tells his journey in February, which started from the mountains of Montana and ended at the Black Hill town of Dead wood, South Dakota. During his journey, he talks about the Colombian mammoth at the Hot Spring, South Dakota. Two million years ago, the Colombian mammoth species migrated to the American continent coming from Siberia. Manning compares between the modern elephant and the Colombian mammoth. The later has a bigger size, a longer tusk, and a heavier body with a spare coat of hair. The Colombian mammoth eats 500 pounds of grass a day.

According to Manning, grasslands become arid every thirty years, known as a catastrophe, which is considered a normal natural phenomenon. In such a cycle, the wider between grass prairie and mixed grass shifts a few hundred miles toward the east, where plants become shorter and may completely disappear. As a result, Manning states that what endures on the grassland is motion.

In conclusion of this chapter, Manning says that wind carries "ghost" that Americans must know and understand.

Chapter 4: A Lasting Peace:

In ecology, a right is what remains and contributes to the endurance of the whole. Manning states that the living community exists within specific conditions, including climate, soils, topography, and heritage. Thus, changing any condition will produce a new consequence of adaptation.

Manning describes comprehensively the Nomadism. Nomadism is a condition that is directed by a land, where nomads trace animals that follow grassland. They are called nomads because they lack technology, skills, and/or intelligence. Manning illustrates the relationship between nomads and cities. Nomads need the city's tools and grain, whereas the cities need meat, hides, and markets. Such a relationship takes place when grassland exists.

The discussion then turns to describe the white settlement groups. Manning describes three nomadic tribes. First, a group is known as nomadic plain tribes. These tribes are known also as the meat culture. These tribes include e.g., Arapaho, Assinibion, Blackfeet, Kiowa, Sarsi, ... etc. Second, a group is known as semi-nomadic tribes. Members of these tribes hunt bison in particular times during the year. They rely heavily on some types of agriculture. These tribes include e.g., Arikara, Hidatsa, Iowa, Kansa, Mandan, ... etc. Third, a group of tribes hunts bison only occasionally. These tribes include e.g., the Plains Cree, Plains Ojibwa, Shoshones, Caddo, ... etc.

After that, Manning discusses an important point, which is bison verse trade. Ten years prior to the Civil War, Indians killed approximately 3.5 million bison a year. The kill and the trade were somehow sustainable. After the Civil War, however, the situation sharply and quickly changed. The bison population became virtually extinct in a space of half of humans lifetime. Manning states that there was no one satisfied justification of what had happened to the bison. Therefore, he says that all Americans need to know the running of wind, but it is not knowable and understandable due to the loss of literate and literal Western minds. Furthermore, it may be assumed that the plains people were not ethically capable of hunting the bison to extinction, but beyond that, there was no point in doing so, as is declared. As a result, Manning concludes this section by saying that barbarian killing of the bison is considered as an alarm of bringing the end of the bison as well as the end of people whom the bison is their food source.

Chapter 5: Gridlock:

Manning describes that politics are power, whereas agrarianism is an attempt to invoke such as power of the land, to translate it as property, and, therefore, to divide the power in an equal manner among many yeomen. As a result, this notion of power directed Thomas Jefferson's attention to focus on the American West. Advance democracy would be derived only from advance on the land. Jefferson wanted to explore the West for the mammoths that had left the East. Then, his ultimate goal was to create a uniform nation in a harmonic way with a democratic ideal. Also, he hoped to use the Louisiana Purchase for growing yeomen, and at the same time, as a place where Indians could be taught farming.

In the second part of this chapter, Manning thoroughly discusses a new born, National Science in the West. Such a science was not based on relationships among creatures. That was, puzzles were collected and counted, but there were almost no attempts to connect these puzzles to one another. By the mid-nineteenth century, the goal of the National Science was to draw the dominant abstractions of the day on the land and to complete Jefferson's theory of property, yeomen and democracy.

Chapter 6: The End of Grass:

The agrarian notion did not harmonize with the plains. Little wars among people ended up fighting against the life of the plains e.g., exterminating bison and literal shooting the cattlemen. In total, 841 million acres (44%) of the land are grazed by domestic livestock e.g., sheep and cattle.

Manning tells the story of Timothy, a grass species, and how it took its name after Timothy Hanson in 1700. Timothy was listed, in Jefferson's presidency, among the grasses of Virginia as a native species. Also, Manning talks about bluegrass, which was associated with Kentucky because it was thought that it was originally native there. However, Manning comments by saying that the bluegrass species is probably native to England and/or Canada.

Then, Manning describes longhorn species. They had long-legged Spanish cattle. These species were ideal for open-range farming in Texas. They migrated from Texas north into Nebraska, Wyoming, Montana, Colorado, and Kansas. Therefore, the settlers blamed people from Texas and gunfire erupted. Longhorn species lived approximately three centuries in the grasslands. Moreover, another type of cattle species was known as shorthorn. These species were associated with a wet climate, so they developed soft and flashy bodies grazing to plants, which

were called forbs, leafy plants. Shorthorn species fed on grass on the West because of the abundance of grass.

Yet, the West was not well known. It was “a broad, tawny sea of grass, of bison and elk.” However, it was slowly divided, fenced, and squared. By the 1930’s, the degradation of grass range became widespread. As a result, landmark legislation was formed, which was known as the Taylor Grazing Act of 1934. This act aims to reduce competitions with livestock for food, regulate hunting, manage and protect habitat, and reintroduce cattle. Moreover, Manning provides a great deal of explanation regarding the act system.

Basically, a farmer is given the right to graze a specific part of public land. Range managers decide the number of cattle and/or sheep to the selected land portion. Then, the farmer pays the rent on the allotment, which is equal to \$ 1.86 per Animal Unite Month, whereas the rent is \$ 10 per Animal Unite Month in private lands. Consequently, abuse of grasslands would be prevented, or at least lessened.

Chapter 7: Annihilation:

People who followed Jefferson’s theory thought that real power could be derived from the power of a place to the benefit of its inhabitants. However, ignorance of natural community could strip the land of its power. Manning explains that each plant, including grass, has its own niche and depends on one another under the ground. He describes how plants can make their nutrients using the soil and the sun. As far as photosynthesis process, plants form carbohydrates. That is, plants build energy, which is power. Such energy is broken and turned to nutrients, which help the soil get its organic to keep water. The basis of many prairie soils is loess. Grasslands are considered as soil builders. However, while settlers were leaving the grasslands, their plows, corn, and wheat were moving, too. In 1909, therefore, the land under wheat rose from 250,000 acres to 3.5 million acres in 1919. Then, the industrial agriculture arose. Three domesticated native grasses became the initial foundation of three culture traditions: *Corn*, New World’s cities in Mexico and South Central of America; *Rice*, the Orient Civilization; and *Wheat*, Western Civilization.

By the end of the end of WWI, the nation was farming 74 million acres of wheat. Between 1914 and 1919, several states, including Texas, Kansas, Colorado, Nebraska, and Oklahoma, expanded their wheat lands by 13.5 million acres. The attention was not for family farm. Rather, it was for growth of an industrial farm economy.

Manning talks about the Dust Bowl era, which labeled the greatest environmental catastrophe that had occurred in the nation, especially in those lands that had fallen under the Great Plains, which was a direct result of the plows. Thus, reseeding plowed up and marginal lands with grass would be the very immediate solution to stop such a problem, dust. However, plows and tractors became even larger and farms became factories. To take advantage of economies, farms tended to specialize in single crops. For instance, a study done in Illinois between 1960 and 1989 concluded that the state lost about 50% of its remaining grasslands. Losing grasslands led to an expected annihilation of prairie species e.g., grasshopper sparrows, field sparrows, savannah sparrows, and bobolink.

Domesticated grasses in the United States are seral species that thrive in only monoculture, where they store carbohydrates in their seeds. Because of plowing practices, nature is prevented from healing itself. Chemicals and traction are used to maintain succession because farmers cannot afford to buy a \$100,000 harvester. Using chemicals increases nitrogen in the soil. Unused nitrogen leaches as nitrates that go underground, which causes water contamination. For instance, Merick County, Nebraska found 70% of its wells were contaminated in 1977; Kansas found 28% of its wells were contaminated in 1986. Furthermore, weeds in monoculture are a serious problem. To stop weeds from growing, farmers increase land cultivation, which exposes the soil to erosion and chemical herbicides.

In conclusion of this chapter, Manning believes that farmers do not control the power that comes from their lands. He sees that the real power in agriculture is the knowledge of plants. Moreover, Manning poses several questions: Is agriculture for democracy as Jefferson supposed? Is agriculture for food? Do we need more food? American agriculture supports a population of 45.4 million cattle in the plains. That is, around 70% of the American grain goes to livestock, which replace bison that do not grain. Therefore, what is agriculture for?

Chapter 8: Aliens:

President Lincoln is the father of the industrial agriculture. He opened the Department of Agriculture, signed the Homestead Act, and signed the railroad land grants. As Manning states, President Roosevelt was the Americans' best president because his commitment to conservation was real and certain. Roosevelt's time brought the idea of sustainability in nature, "sustainable communities." The Department of Agriculture in Roosevelt's presidency was able to identify and thoroughly understand the problems that yeomen had encountered in the West.

Manning discusses the story of a Dutch immigrant whose name was Frank Meyer. Because of his love of plants, Meyer had a job at the Department of Agriculture. He earned Jefferson's praises as the nation's greatest servant because of his four expeditions in China, Europe, Siberia, and Manchuria. Meyer introduced 2,500 species to the United States. These species were merely trees that would survive the arid plains e.g. Russian olive, chestnut, hickory, lemon, persimmon, and willow.

Manning considers bringing new plant species to the United States as botanical bombs, exotic species. Such plants have evolved in their set conditions and have learned to survive in new habitats. However, species such as crested wheat grass cannot carry its nutrition into the winter, which means that some winter animals e.g., mule deer and elk will not be able to find enough food to survive the blizzards. Manning provides several examples of exotic species e.g., cheatgrass, orchard grass, Johnson grass, and spotted weed grass. He describes some aspects of each species in the grasslands. In North America, one-fifth to one-third of the number of species is exotic, where the grasslands suffer the most.

Chapter 9: Roadside Attractions:

The grasslands are a place of freedom. American grasslands are the same as the rest of the world's grasslands. Manning reveals that it would be erroneous to say that the American grasslands did not produce its own literature. Such a literature is a record of the crash of European culture against the hard face of the place. This crash was well played in *Greats in The Earth*, a novel written by O. E. Rølvaag in 1927.

Humans followed roads (trails) that were created by buffalo east of the Mississippi. Therefore, buffalo were the first guides of travel for Indians and settlers, respectively. For example, buffalo mapped the Platte River trail, which became the route of the Union Pacific Railroad. Buffalo had learned the best way to travel and the railroad's engineers to follow the same routes.

Manning tells the story of one example that perfectly wore the "Badlands" term as an appropriate name. The example is the strip along the Little Missouri River, which parallels the Montana-North Dakota boundary. First, this place, as Manning put it, looks as bad as a hell. "Hill with the fires put out" was a phrase used by cowboys at that time to describe it. It is formed by the deposition of harder materials over soft layers and subsequent under-cutting and erosion. Because of its rocky bone and brushy place, people left it alone.

Today, there are seventeen national grasslands in the United States. Most of them are spread through the West. Here, Manning starts talking about the two pieces of Roosevelt's namesake parks. He says that two islands of the national parks raise bison, bighorn sheep, elk, mule deer, and antelope. In an interview with Sam Redfern, Manning asks Sam about bison. Sam responds that bison are not allowed to wander anywhere outside the islands. Grass is only for cows but not for bison. Manning illustrates that some of the grass species are not native grasses. The government reseeded the lands to crested wheat grass, an exotic species, because the lands were plowed and cropped by yeomen farmers.

Finally, Manning lists some roadside attraction places and provides a brief description about each one, including Maltese Cross, Black Hill, and Wind Cave National Park. He closes this chapter by saying, "we found the American West a curious place, alien and bare to our eyes. Because of this, we failed to allow it to tell us its story, to give us its name ... we failed to regard the animals for what they were and wiped all of this out to replace it with a world of our own devising" (p. 216).

Chapter 10: A place's Assertion:

Manning opens this chapter by describing his five stalks of prairie sandreed grass. He considers them as a symbol of assertion against artifact. He talks about the Sandhills region, the largest set of sand in the Western Hemisphere, where the Sandhills cover most of Nebraska north of the Platte River. Moreover, Manning describes his visit to a Mari Sandoz museum, which is basically a house. In this museum, artifacts of Mari's life e.g., photos, clothes, manuscripts, and fan mails are exposed to visitors. Caroline, one of the Manning's interviewees and the responsible for the museum, has her farm that is surrounded by a little forest. She said that they did not have birds until they got trees in the farm. Her land extends beyond the acre of trees around the house. She leases her land to cattlemen.

Then, Manning moves to talk about another farm a few hours east of the Sandoz, which is owned by the Nature Conservancy, and it is a project for restoring ecology. This project aims to restore grassland to its original conditions before the European settlement. The manager of this land is a man whose name is Al Steuter. In this land, Al Steuter insists on only two things: fire and grazing.

In conclusion, Manning ends up by stating that the power of the Sandhills is lost to plows and fences. Therefore, how will America make it to a future that respects nature without learning

what the surviving farmers have learned? It is very hard, or even impossible, for someone to imagine how freedom can flow from a landscape unless he/she walks pure prairie.

Chapter 11: Seeds:

Manning tells about his meeting with Bud Griffith, the manager of Spanish Creek Ranch in 1961. Bud told Manning his story in this farm. Then, they had a tour around the adjacent areas such as a ranch's boundary with US Forest Service land. They saw hundreds of elk grazing the land. On another location, they saw several thousand bison. Bud told Manning that he had been observing bison for five years, and he came to the conclusion that bison were best managed if they managed themselves.

Manning comments that these animals have been in the landscape for at least four thousand years with no humans help. They are able to take care of their own. Therefore, it is very wise to stay out of their ways. He shows that bison have the ability, in contrast to cattle, to survive most the winters without feeding. They do not require many people to manage them e.g., Bud and two other people manage 3,000 bison, whereas the same number of cattle requires a dozen cowboys.

Then, Manning moves to discuss another issue. That is, all grasslands in the West are candidate for restoration ecology. To do so, the prairie between the Rockies and the Mississippi River was held by three main components: bison, fire, and grass. Therefore, to restore any grassland, these components must be presented. Furthermore, Manning provides some facts about bison. The population of bison was fifty millions, inhabiting the plains, but now it is 150,000 bison. Bison cost half as much to raise and sells for twice as much as cows. In all fifty states, there are bison, where the big herds inhabit the West.

The discussion turns to highlight the issue of animal rights. As Manning says, the animal rights movement is urban and derives from people who follow civilization's perspectives and ideas of progress. Animal rights and ethics for animals are very important issues in nature. Manning says, "Rights and ethics, like literature and law, are ideas derived from the plow. We need them to live successfully in civil human communities, but nature confers no rights. Nature confers life" (p. 245). He says also, "Why is it not ethical to kill and eat a single bison? A single bison does not stand-alone, is not an individual. It is, rather, a manifestation of a place, the net result, the capstone of fire, wind, and grass" (p. 245). Furthermore, "Why is it ethical, in the name of right, to save a few bison in parks and zoos and eat instead wheat, to turn loose the plow

that ensures, above all else, that nothing goes on? Why is the plowman not the barbarian simply because no one sees the blood on his hand? Where is the logic?" (p. 246).

Manning is not pointing his finger to certain people or organizations. Rather, he voices his sound to everyone. He says that Aldo Leopold called for several generations ago for a land ethic, which had been the impetus for conservation. Manning thinks that Leopold meant something deeper and beyond, which a derived ethic from the land. When power derives from the land, it is a land ethic. At the end, Manning claims that botanists see and interpret things in ways that differ from other people. He says, "Botanists are our shamans" (p. 260).

Chapter 12: Agenda and Anti-Agenda:

It is very important to think carefully of the past with prescriptions for the future. The real problem is the industrial man. Industrialism is rational and progressive. That is, it is dangerous not only to all landscape, but also particularly dangerous to the grasslands in the West. Americans are still adolescents and their "society ran through the landscape like a hot rod full of teenagers full of beer" (p. 263). Therefore, as long as Americans think in naïve manners, they will either remain forever stuck in the naiveté of their childhood or use some wisdom. However, they may use both ways, doing one in some places and the other in others.

Then, Manning talks about the idea of Rutgers University, Frank and Deborah Popper. The idea is known as the Buffalo Commons. This idea would apply much to the open grassland states west, from Montana and North Dakota and South into Texas. Opponents see the Buffalo Commons idea as "another playground for the rich." Manning comments on this idea by saying that it is not an agenda. Rather, it is a description, where people can say "when the grassland returns" instead of saying "if the grassland returns."

Manning discusses an important point. That is, Americans must always respect and preserve the grass. It is true that grazing damages the grasslands' health. Nevertheless, grasslands, as any grasses elsewhere, are moisture. The more rainfall the grassland gets, the more it can tolerate grazing. However, Manning claims that it is the government that is wiping out ecosystem on public lands in the name of economies.

Almost all public and private lands in the West have been severely overgrazed by cattle and their owners. Those owners fence their cattle e.g., cows to certain areas, which makes cows' destructions more concentrated. In contrast, bison improve areas on which they graze because when they graze a certain area, they leave it and give sufficient time (months or years) for grass

to recover. As a result, a reasonable and responsible agenda is needed to ask the government to stop such damage. Grazing practices in the West should be changed. Manning suggests some ideas to stop, or even at least lessen, such an impact. First, grazing by bison should be given a huge portion of open range. Second, grazing by cattle should be reduced by further use of the Old Spanish bloodlines, dryland cattle bred to the requirements of the West. Third and foremost, grassland must avoid the plows.

Manning seals this chapter with great golden words. He says, “Freedom is a holy word of our [Americans] culture and as such has lost its meaning. We no longer mean we want freedom, we want security, and they [freedom and security] are very different goals” (p. 281). He says, “Given this, what choice do we have in the grassland but to journey and to live in fear? How else can one see its fine and crushing beauty?” (p. 282).

Brief Summary:

As mentioned earlier that more than 40% of the America lands was prairie, grassland that extended from Missouri to Montana. Grasslands are not only America’s last connection to the natural world, but they are a vital link to history and culture. Manning ideally shows the history of the prairie since the Ice Age, around 12,000 years ago. Explicitly, he discusses the use of this land through history, its current status, and possible tactics for its restoration and conservation. Also, he broaches the present and future story of the Western and Midwestern grasslands.

In sum, I think I learn much about the biology of the great American prairie and some reasonable solutions to conserve the prairie. Interestingly, Manning intrudes humans’ perspectives on the matter, pointing out the personal and social (political, economic) issues.

