

Soil, Culture, and Human Responsibility

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“Can you tell me where the Dust Bowl is?” “Stay where you are and it’ll come to you”
(A puzzled tourist questioning a Kansas wheat farmer, quoted in Worster 2004, p. 29)

Less than a hundred years ago, the bounty of the Southern Plains still seemed endless. Kansas farmer Earl Owens remarked: “Boom, all you had to do was plant, and you had a crop. It was just no problem. In the 1920s . . . it was a cinch. You put the grain in the ground, and it grew” (Riney-Kehrberg 1994, p. 12).

Any calls to heed the delicate and complex ecology of the plains seemed ludicrous. After all, as the U.S. Bureau of Soils had stated in the beginning of the twentieth century, “The soil is the one indestructible asset that the nation possesses. It is the one resource that cannot be exhausted; that cannot be used up” (quoted in Montgomery 2007, p. 148).

But this was not the understanding of the U.S. Geological Survey. Citing the conclusion of the twenty-second annual report of the USGS (1900-1901), geologist David R. Montgomery has written:

The semiarid High Plains from Nebraska to Texas were fatally vulnerable to rapid erosion if plowed: “The High Plains, in short, are held by their sod.” With rainfall too low to support crops consistently, grazing was the only long-term use for which the “hopelessly nonagricultural” region was well suited. (Montgomery 2007, p. 148)

But, enticed by land speculation and competitive crop prices, farmers paid little attention to such warnings. The

value of wheat as a new commodity grew rapidly after the outbreak of World War I. When the Turkish navy blocked the Dardenelles—the narrow strait in the northwestern part of Turkey—the shipment of Russian wheat to Europe was impeded. Suddenly American farmers had at their disposal a market that could match the abundant performance of the land. Backed by the government, farmers transformed the Southern Plains into a uniform, golden monoculture of wheat.

Remarkably, wheat acreages would continue to increase in the decade after the war—even as the price per bushel dropped and there was no longer a need for such production. In 1917, about 45 million acres of wheat were harvested nationwide. Two years later that figure had increased by nearly 70% to over 75 million acres (Egan 2006, p.43).

What Holds the Earth Together?

The Great Plains were home to several hundred grasses. There were tall grasses—some as tall as eight feet—like big bluestem, switch grass, and Indian grass. There were short grasses: blue grama, buffalo grass, wire grass, bluestem bunch grass, galleta, western wheat grass, salt grass, sand dropseed, needle grass, prairie three-awn, and others. But the apparent monotony of it all was deceiving. In the midst of grass country, one encountered many brightly colored flowers, including the pinkish-purple dotted gay feather, the

rich wine-red cups of low poppy mallow, the red-orange of Indian blanket, and the yellow of broomweed.

Directly or indirectly, the grasses nurtured a rich animal life. There were hundreds of grasshopper and locust species; black-tailed jackrabbits; mice, pocket gophers, kangaroo rats, and prairie dogs; insectivorous moles, rattlesnakes, burrowing badgers, black-footed ferrets, and skunks; soaring hawks and eagles; coyotes, wolves, and pronghorn antelopes, not to mention the astonishing numbers of bison. The American painter and author, George Catlin, writing about his experiences in the 1830s, told how bison congregated so thickly in some places that they darkened the prairie for many miles. "As long as the grasses flourished," environmental historian Donald Worster has noted, "the plain was no silent, empty wasteland" (Worster 2004, p. 74).

But there were few settlers who marveled at and understood the intricacies of this landscape. In the early nineteenth century the Great Plains were described as a desolate waste of uninhabitable solitude. In maps—up to the end of the Civil War—they were marked as the Great American Desert. Not many settlers managed the perspective of one Texas sheepherder, who remarked, "Grass is what counts. It's what saves us all—far as we get saved ... *Grass is what holds the earth together*" (Worster 2004, p. 78; my emphasis).

Between Earth and Sky

The High Plains is a land of volatile weather. Between earth and sky, living creatures and their landscape are exposed to sharply contrasting weather patterns: hot and cold, fierce winds and uncanny stillness, unyielding droughts and torrential floods. There are also blizzards, tornadoes, and cyclones.

Grass was indeed what held the earth together. The native grasses, some with roots six feet deep or more, protected the soil from the scorching sun, mighty winds, erosion, and heavy downpours. The grasses were a pacifying force: unable to tame the elements, they nevertheless moderated their effect and created a more benign world for other forms of life (Worster 2004, p. 71).

But in the early twentieth century the grasses began to be plowed under. The living tapestry of roots, "woven" by the buffalo, bluestem bunch, and other grasses, was torn apart. So thick was the sod that early accounts described the sound of the prairie being plowed as a "fusillade of pistols, the pistol-shot cracks of roots breaking" (Manning 1997, p. 143). By the mid-1930s, 33 million acres lay bare, ungrassed, and vulnerable to the winds. The dust storms that followed, in what came to be known as the Dust Bowl, created what Worster, a professor emeritus at the University of Kansas,

has called "the most severe environmental catastrophe in the entire history of the white man on this continent":

In no other instance was there greater or more sustained damage to the American land, and there have been few times when so much tragedy was visited on its inhabitants. Not even the Depression was more devastating, economically. And in ecological terms we have nothing in the nation's past, nothing even in the polluted present, that compares. (Worster 2004, p. 24)

The Dust Bowl was no natural disaster caused merely by an unfortunate drought. It was prepared by a world-view severed from any ecological and social context. The fate of the southern plains was already foreshadowed by the quality of language used by the settlers and speculators. The land, instead of being cultivated, was "broken" and its sod "busted." Wheat, once seen as a gift from the gods, became a "cash crop." And in lieu of farmers and agriculturalists, the land was shaped by "cash-grain operators," "grain dealers," "sodbusters," and "suit farmers." The farm, as Worster put it,

... became an arithmetical abstraction, a quantity identified by number instead of a personality or history: "T 28-S. R 32-W, sw 1/4," for example, instead of "the old Briggs place" or "Maidenstone Farm." In Haskell County [Kansas] a farm often was merely a 160-acre expanse of soil, and by that definition a man might be said to operate six or seven farms, none of them carrying any special identity or allowing much emotional attachment. (Worster 2004, p. 143)

Haskell County itself was delineated as a perfect box—exactly 24 miles on each side—and inside this box were 580 smaller boxes, all of them full 640-acre sections of lands, divided and subdivided into smaller and smaller boxes.

It was not only counties in Kansas that were so arbitrarily shaped. The U.S. Rectangular Survey, launched by the Ordinance of 1785, would eventually impose the same abstract and homogeneous pattern on 69 percent of the land in 48 U.S. states.

No matter how ecologically diverse a region or landscape might be, the Rectangular Survey showed a complete disregard of the unique qualities and intricacies of each type of terrain. This enforced linearity allowed tractors to plow so unswervingly that real estate ads of the 1920s could boast: "A tractor can be driven in a straight line from corner to corner of the county." The grid pattern and the type of farming it encouraged were the antitheses of the vision of farming described by Wendell Berry:

Farming becomes a high art when farmers know and respect in their work the distinct individuality of their place and the neighborhood of creatures that live there. (Berry 2010, p. 9)

The American gridiron hindered this high and respectful art. It fostered detachment from the land, making it easier to turn the land into a salable commodity. Having lost its distinctive character, the land could be worked and sold by farmers and speculators as interchangeable boxes.

Perhaps nothing illustrates this detachment better than the commodification of wheat and the creation of the grain market in Chicago.

Wheat

According to another leading environmental historian, William Cronon:

To grasp the changes in grain marketing ... one must understand several key features of this early waterborne trading system. All hinged on the seemingly unremarkable fact that shippers, whether farmers or merchants, loaded their grain into sacks before sending it on its journey to the mill that finally ground it into flour. As the sack of grain moved away from the farm—whether pulled in wagons, floated on flatboats or lofted on stevedores' backs—its contents remained intact, unmixed with grain from other farms. Nothing adulterated the characteristic weight, bulk, cleanliness, purity, and flavor that marked it as the product of a particular tract of land and a particular farmer's labor. (Cronon 1991, p. 107)

The railroads changed all this. Compared with the water-based system, where the grain sacks had to be handled multiple times, railroad cars were faster and more efficient. Instead of thinking of grain shipments in individual sacks, traders began to treat grain shipments as "carloads" consisting of about 325 bushels each, even though at first the grain was still being moved in sacks.

The counterpart of the railroad—and the solution for the storage problem—was the steam-powered grain elevator. The efficiency of the elevator hinged on one condition: the grain needed to be moved without the restraint of sacks.

Cronon states that elevator operators began objecting to keeping small quantities of different owners' grain in separate bins—for an unfilled bin represented underutilized capital. This condition severed the bond between shippers and the individual farmers whose grain they shipped. The corn or wheat would cease to act like solid objects traceable to their origin, and behave more like liquids.

To regulate this golden flow of grain, the Chicago Board



of Trade, founded in 1848, proposed a system of regulations designating three categories of wheat—white winter wheat, red winter wheat, and spring wheat. This decision laid the foundation for a radical transformation that would forever change how grain was to be sold in the world.

Before 1856, the wheat one purchased expressed, not only the characteristics of a particular landscape, soil type, and weather pattern, but also the fruits of labor from an individual farmer or family. The grain could always be traced back to "Farmer Tom's" place, or to "Farmer John's." It would never be mixed with grain from other places.

The new regulatory system solved the quandary of the elevator operator, who otherwise had to keep track of the owner of each sack of grain. William Cronon describes how this technical solution had deep consequences:

As long as one treated a shipment of wheat or corn as if it possessed unique characteristics that distinguished it from all other lots of grain, mixing was impossible. But if instead a shipment represented a particular "grade" of grain, then there was no harm in mixing with other grain of the same grade. Farmers and shippers delivered grain to a warehouse and got in return a receipt that they or anyone could redeem at will. Anyone who gave the receipt back to the elevator got in return not the *original* lot of grain but an equal quantity of *equally graded* grain ... the changes in Chicago's markets suddenly made it possible for people to buy and sell grain not as the physical product of human labor on a particular tract of prairie earth, but as an abstract claim on the golden stream flowing through the city's elevators. (Cronon 1991, p. 116)

This new cash-crop system soon proved not only destructive to the land, but also to community life. Haskell County offers a clear example of this:

The land of Haskell is by and large as sterile and uninteresting as a shopping center's parking lot—almost every acre totally, rigidly, managed for

maximum output ... It is an environment that comes from and leads back to alienation—not a place that can stir much love and concern in the human heart. (Worster 2004, p. 238)

The Land's Perspective

The economic rationalization of plains agriculture might seem to have made a great deal of sense—until one looks at it from the perspective of the land, the less successful operators, later generations, or the taxpaying public (Worster 2004, p. 228). Only a severe drought and the resulting Dust Bowl would make widely visible the fruit of the political interests, new technologies, and economic order that took hold in the Great Plains during the early twentieth century.

But even more fundamentally, the Dust Bowl was the result of our way of seeing, thinking, and speaking about agriculture and the world. For what we meet in the rectangular land survey, in unvarying monocultures, in grain elevators and the sterile landscapes are not only elements of a mechanized agriculture. They are also, and decisively, an expression of human consciousness. In an essay entitled “The Mystery of the Earth,” the Dutch physician, Ita Wegman, wrote in 1929:

Nature is becoming a mirror of chaotic human behavior, as is evident in catastrophes and anomalies; we perceive them in nature's mirror without recognizing them as our own reflection.

Could other forms of thinking and speaking about the land, instead of fostering alienation and destruction, engender a contextual way of seeing that promotes responsible and conscious actions? Could we have a kind of agriculture and land cultivation that neither imposes on nature a preconceived plan, nor allows things simply to take their own course?

Already in 1924 Rudolf Steiner approached this need for a renewed relationship to nature and agriculture when he gave a cycle of lectures on the *Spiritual Foundations for the Renewal of Agriculture*. This course became the basis for what is now known as “biodynamic agriculture.”

During this course it became clear that what Steiner was offering was not simply another agricultural system and set of techniques. In this course he raised questions that still go far beyond our contemporary frame of reference. He pointed to the need for a much broader way of looking at the life of plants and animals, and also at the life of the Earth itself. He invited farmers to expand the scope of their vision even to include the cosmos.

Steiner urged the importance, for each farmer, of developing a personal relationship to everything on the farm. Far from reducing the land to abstract units and unrelenting monoculture, the farmer should conceive the farm as a self-contained individuality.

Biodynamic agriculture invites the farmer to develop new images, questions, and ideas of what agriculture could be. One might, for example, ask:

- How do I participate—inwardly and outwardly—in the development of my farm and all that lives in its landscape?
- How can I become more conscious of the different qualities of my place?
- How do I create the space and conditions for my farm to realize its perhaps unrecognized potential?
- How do I foster and contribute to the health of our soils and community?

Agriculture indeed, as we heard Wendell Berry say, can become a high art when farmers know and respect in their work the distinct individuality of their place and the neighborhood of creatures that live there.

Awakening to our Farms

As important as it is to describe the consequences of the Dust Bowl and illuminate current destructive practices, Ehrenfried Pfeiffer, renowned soil scientist and pioneer of biodynamic agriculture, suggested that this is not enough:

A description of possible future hardships does not induce people to change their way of life. And the change to a self supporting agricultural life must be preceded by corresponding training and education, for no one can become a farmer or gardener merely by picking up a spade or putting on heavy boots. Another incentive is needed ... (Pfeiffer, 1983, p. 29)

According to Pfeiffer the essential thing is to awaken in young people and those interested in starting to farm a feeling for the forces of growth, for the eternally creative forces of Nature. He further wrote:

The next step is to awaken in them a sense of responsibility toward these forces of growth, towards the health of the soil, of plants, of animals and of men, and also an inner sense of satisfaction in progressing towards this goal.

A radical and inspiring initiative launched by the Biodynamic Association (BDA) in 2009 goes exactly in this direction. The North American Biodynamic Apprenticeship Program (NABDAP) helps aspiring farmers develop the skills and knowledge they need to build successful organic

and biodynamic farms. An internationally recognized program of the Biodynamic Association, NABDAP combines on-farm training and mentoring with a course of classroom study to provide a strong foundation in both the practical and theoretical aspects of biodynamic agriculture. This program began with a handful of apprentices and mentor farms. Since then, the program has blossomed and grown, with mentor farms across the United States and Canada, and nearly forty apprentices currently enrolled.

Pfeiffer was one of the founders of the BDA in 1938. Today the BDA is the oldest nonprofit, sustainable agriculture organization in North America. I dare say that Pfeiffer would have been delighted to see the flourishing of this agricultural training program and read the statement made from NABDAP graduate, Megan Durney, who today is the head gardener at the Pfeiffer Center in Chestnut Ridge, New York.

I entered into biodynamics because I wanted to participate in an agricultural activity that was conscious, where farmers are awake to the true impact they have on the land and the earth as a whole. (<https://www.biodynamics.com/nabdap-graduate-profile-megan-durney>)

What biodynamic agriculture teaches us is that we need not only a shift in agricultural practices, but also a shift in human consciousness out of which new ways of interacting with nature in agriculture can develop. To awaken to our

farms also means to awaken to ourselves and to our personal responsibility. In this light, the renewal of agriculture is an accomplishment waiting to be achieved.

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