

Stephanie Anderson

In Search of Lost Grass

In a glass display case at the Dakota Prairie Museum in Aberdeen, South Dakota, a replica of the native tallgrass prairie stands motionless in the non-wind, sheltering stuffed ground squirrels and prairie dogs underneath a painted-on sky. Carted-in soil bears up the grass: blue grama (*bouteloua gracilis*), western wheatgrass (*agropyron smithii*), Indiangrass (*sorghastrum nutans*). Some plants I recognize, like the prairie coneflower (*ratibida columnifera*). As a child I brought their yellow blooms home to my mother. There is big bluestem (*andropogon gerardi*), the king of prairie grasses, so tall I used to touch the bristly heads with my fingertips while riding horseback. I did not know how rare big bluestem is until years later, when I realized that the prairie I grew up on is nothing like the prairie that once was.

Through the glass I see a still frame of that once-was prairie, before plows turned the sod like a dealer turns over a card, just like that. “Wrong side up,” said a Sioux Indian who watched a white sodbuster rip the grassland open with his plow.[1] The Native Americans knew why soil was best left undisturbed: roots, 25 miles of them in a single square yard of prairie turf just four inches deep[2], held the soil in place, had done so for thousands of years. With a single plow swipe the settlers set it free to blow. Result: the Dust Bowl. Later result: desertification turning the Great Plains into a desert.[3] Less than four percent of the original tallgrass prairie remains, and those defiant acres are rigorously protected.[4] Still, it is feasible that the tallgrass prairie could be gone before I die. A human being’s lifespan is roughly how long it took to destroy 96 percent of it, which does not bode well for the last four.

Seeing an homage to this rare grassland is exciting—somebody cares, hooray!—but the display, part of a larger exhibit on South Dakota agriculture, is also profoundly sad. I feel melancholy creeping in as I study the blue grama, noticing for the first time how strongly it resembles oats you might find in a farmer’s field. I should be enjoying an afternoon with my parents and younger brother who I see twice a year at most. I should do what many of us do at museums (or at least I’ve done before): gaze intently at the

displays, nod seriously, walk at an acceptably slow pace, and when the circuit is over escape into the sunshine and discuss where to have lunch, secretly glad the whole experience is over.

Instead I mourn lost grasses and the gap in my understanding of the prairie. I am a child of it, someone who roamed it alone at age eight and cut and raked it into hay as a teenager, but I only recognize some of the native plants behind the glass and can name even fewer. The grasses I am most familiar with, non-native varieties like crested wheatgrass and smooth brome grass introduced by ranchers, are of course not in this display. I grew up on a ranch in western South Dakota, where pastures stretching thousands of acres provide the illusion of prairie. But these pastures are mostly devoid of native grasses and animals because of poor ranchland management[5]—stand-ins for the prairie, not the real thing. Nationwide, much of the former Great Plains is like this, or it has been transformed into cities or farmland.

Standing at the glass, I long for the prairie of old, one teeming with birds, insects, small mammals like badgers and rabbits, and herds of bison thousands strong. Instead we have a handful of protected native grasslands, like the Tallgrass Prairie National Preserve in Kansas. The Great Plains exists only in small, disconnected chunks, hardly a reflection of its grand name anymore. I stare at the display and get the same feeling I do at zoos, the reason I can't visit them anymore: it's hard to celebrate creatures in captivity knowing that their habitat, and the very lives of their non-captured counterparts, are being destroyed as you observe them.

The South Dakota agriculture exhibit marches on and so do I. I come to a single brick of sod, also encased in glass. It looks like a cracked loaf of dark brown bread. Dried roots weave through the soil. A plaque describes how and why settlers used sod bricks.

...Due to lack of trees, they looked to the land for what they needed, something that would protect them from the elements and would stand up to the endless Dakota winds. That something was called sod.

Because of the dense root structure of the prairie grasses, the top eight inches were often cut into block form and used as building materials for homes, barns and other structures.

These blocks proved easy to work with, provided warmth in the winter and escape from the heat in the summer. Sod homes dotted the prairie for many years until they were gradually replaced with wooden structures.

Oh, what these lines do not describe. Topsoil, generations of fertility, lost to wind and rain. Settlers descending upon the West daily by train and wagon; between 1862 and 1934, more than 270 million acres—10 percent of all U.S. lands—were deeded to individuals[6] through the Homestead Act of 1862 and the Enlarged Homestead Act of 1909. The buffalo slaughtered almost to extinction, and the Native Americans herded onto reservations and told that they, too, must turn the prairie wrong side up. A great prairie parsed into 160-acre blocks.

To most late 19th century Americans, the sod houses and tiny but highly productive fields seemed like improvements. The prairie was known pejoratively then as the Great American Desert. Grass as far as the eye could see was, to many, a waste, like the Florida Everglades seemed decades later. I like to think I would have loved the prairie and found it beautiful had I lived during the homesteading era. I like to believe I would have protected it, like Marjorie Stoneman Douglas did the Everglades. Because of her, I can paddle through Everglades National Park just two hours from my house. But I probably would have wanted the Great American Desert converted to family farms like most others did, including my ancestors who emigrated to South Dakota from Russia, Germany, Norway and other places forgotten over the years. As an immigrant or child of immigrants, I probably would have been fiercely defensive of homesteading, like I was until six years ago fiercely defensive of modern agriculture.

Born and bred to believe American agriculture was sacred, I thought conventional ranching and farming was good and honorable—until a year as an agricultural journalist convinced me it wasn't. I was a newly minted 21-year-old journalist with an unabashed bias: the agri-journalism I produced, I thought, was a beacon of truth in the lies about farming. I felt a sense of honor protecting the farmer, my hero, from slander. I sought the facts, which in my mind were as follows: U.S. farmers nobly feed the world, produce nutritious food, protect the environment, and keep their rural communities alive. I believed what my sources told me, because my sources were land grant university professors and state

agriculture officials, respected scientists and Extension specialists, people my journalism professors had taught me to seek out. Unbiased people whose truth happened to fit with mine. My sources were also farmers and ranchers like my parents, people whose families had farmed the same ground for generations. Good people.

Some stories were harmless, such as profiles of teenage Future Farmers of America (FFA) state officers. Other stories were less innocent. I wrote on the benefits of genetically modified (GM) corn varieties and the latest and greatest machines able to plough, plant, spray, and harvest in record time. I did an especially troubling story about how consumers needn't worry over antibiotic residues in ethanol by-products fed to livestock all over the nation. I kept interviewing "family farmers" on "family farms." But I grew increasingly uncomfortable. The tractors, fields, livestock herds, dairies, farm buildings—everything was super-sized, way bigger than what my father and most of our neighbors had. I toured concentrated animal feeding operations (CAFOs) where the cattle lived 24-7 in their own manure and mega-dairies with sophisticated stainless steel machines that sucked milk right out of the udders. I watched massive sprayers douse fields with chemicals. The more I learned about how these farms operated, the more shame and confusion I felt.

I suppose most people have a moment when they realize something they've believed all their life is wrong. For a long time I believed that family farmers and ranchers were stewards of the land and acted differently than corporate farms. Now I see that I was part of a powerful agribusiness[7] system glorifying the "progress" of industrial, conventional agriculture, a model in which the farm is treated as a factory and packaged to look like family farming. My time at the newspaper prompted what I would call an extended moment in which, over the next few years, I learned that everything I thought I knew about farming and food was a lie.

The museum both acknowledges and ignores the lie, which makes for palatable tension. Some exhibits address the environmental destruction caused by modern agriculture, yet others reinforce the family farm myth. I sense a desire for historical accuracy combined with a need to not offend local farmers (who are presumably paying for the museum in part). I feel a similar tension in my family:

my father still practices conventional, industrial farming and ranching while I am an advocate for sustainable, organic production. We view the exhibits through different lenses, but Midwestern politeness allows us to avoid this uncomfortable fact. We enjoy the stroll, or appear to. And I do genuinely enjoy my father's company as we move through the decades of our shared history, perking up when he mentions a memory triggered by a photograph or an item under a display case. He is not quite 60; he has ranched all his life. He is a good, honest man, and I know he does not contribute to the grassland's ruin out of hatred or evil intentions. He farms like his father and grandfather taught him and his government tells him via tax breaks, the Farm Bill, and other programs. He is growing the cheap food that many people demand. This makes the grassland's demise even more tragic: the generations of people who erased it from the map often thought they were doing the right thing.

I walk through the farm boom of World War I and the roaring '20s and into the man-made Dust Bowl catastrophe. I say "man-made" because the agriculture taking place on the Great Plains actually worsened the drought, causing it to move further north and grow far more intense than it otherwise would have—not a fact the exhibit ignores, but not one it fully explicates either.

The backstory, I know, is this: the initial years of the drought (before it truly intensified) caused widespread crop failures. Why, when the prairie historically resisted cycles of drought? Those miles-long root systems were gone, shredded by the plow. The era's intensive farming caused massive topsoil erosion, water run-off, and soil nutrient loss, even in good years before the drought hit. Wheat and other small grains, lacking the evolved resilience of grasses like big bluestem, withered under what was still a fairly typical La Nina-inspired drought in the early 1930s. But those initial crop failures left the sprawling fields bare and exposed to wind, which triggered never-before-witnessed dust storms and ominous sounding "atmospheric dust loading," or huge uptakes of dust into the atmosphere that helped push drought conditions northward and intensify them. Working with sophisticated climate models, researchers have concluded that "Human-induced land degradation is likely to have not only contributed to the dust storms of the 1930s but also amplified the drought, and these together turned a

modest [drought] into one of the worst environmental disasters the U.S. has experienced.”[8] In other words, the drought fed off the bare prairie like a hurricane feeds off warm water.

The museum’s exhibit depicts the decade-long human, animal, and environmental tragedy that ensued. Grasshopper hordes chewed and swallowed every living plant, along with fence posts, clothes on drying lines, and front porches. Their crispy dead bodies clogged car radiators and coated railroad tracks to the point that train wheels couldn’t get enough traction to move. Dust storms called “black blizzards” lasted days and drifted dirt over homes and animals like snow. These storms created static electricity in the air; if people touched, they risked being shocked. The storms churned and rolled as far as New York City, where wealthy urbanites wiped Dakota topsoil off the hoods of their cars. A particularly nasty one on April 14, 1935, covered five states and became known as “Black Sunday.” Dust pneumonia was a common illness. Livestock died, wildlife died, infants and the elderly died. The grassland was blowing away and the farmers did not know how to stop it.

I find this part of the exhibit painful, but not as painful as what follows. With careful conservation efforts—strip farming, crop rotation and diversification, contour farming, shelterbelts and fencerows, and soil conservation programs that paid farmers not to plow—the prairie stopping blowing. It would never be the same, but it healed and produced crops again. And once it did, we simply resumed our destruction of it in new forms.

When World War II ended and the U.S. no longer needed bombs for dropping over Europe and Japan, the government found itself with extra tons of highly explosive nitrate. For agricultural scientists, there was only one answer to the question of what to do with this nitrate: spread it on America’s fields. Bomb-making plants were converted to fertilizer plants, turning the nitrate into pellets and liquids that infused the soil with nitrogen—tools to master the soil.[9] This synthetic nitrogen fertilizer made natural nutrient recycling unnecessary, so most farmers quickly ditched processes like cover crops and livestock grazing that restored nutrients and generated nitrogen naturally. Pesticides and insecticides, two more World War II leftovers, also became commonly used agricultural tools. Over the decades, a new generation of farmers appeared that

knew little or nothing about creating soil fertility or controlling pests and diseases through natural processes—they only understood how to apply the right formula of agrochemicals.

The 1950s became the era of agribusiness, a term formalized by John Davis, assistant secretary of agriculture, and Ray Goldberg in their 1957 book *A Concept of Agribusiness*. They defined agribusiness as “the sum total of all operations involved in the manufacture and distribution of farm supplies; production operations on the farm; and the storage, processing and distribution of farm commodities and items made from them.”[10] Basically, agribusiness is a word for the production chain from the farm to the consumer—seeds, machines, and fertilizers, farmers and ranchers, food processors and handlers, marketers who move the commodities and food, and supporters like banks, researchers, and consultants. The message to farmers: control as much of the production chain as you can, mechanize and specialize further, absorb more farms. Treat the farm as a business. The message turned into a command with the rise of Earl Butz, the U.S. Secretary of Agriculture from 1971-76 who will be remembered for a five-word edict to farmers, one that haunts agriculture to this day: “Get big or get out.”

The demanding nature of the statement is unsettling. *Get big or get out*. Absorb your neighbor’s farm or lose your own. Buy larger machinery or be plowed under. Make more money however you can or sell out. Think more acres, more technology, more chemicals, and more production, or don’t think about farming at all. “As for the farm families who cannot ‘get bigger’ and therefore have to ‘get out,’ they are apparently written off as a reasonable, quite ordinary, and altogether bearable expense,” wrote Wendell Berry in 1977.[11] For the prairie, “get big or get out” meant one thing: the knife-like edge of the plow once more.

“Get big or get out” unfolds before me in the museum. In pictures, the machinery balloons in size, growing taller and wider with more tires and horsepower, like someone blowing up an inflatable toy. The 1980s and ‘90s parade by, extolling innovation after innovation in the captions. With heavy doses of synthetic fertilizer and RoundUp, genetically modified corn and soybeans thrive in sprawling fields. More than 95 percent of the corn and soybeans grown in America today are genetically modified, a sign proclaims. In a blown-up photo circa the 2000s that is embossed on a wall,

“family farmers” beam into the camera, standing in front of a tractor so massive they look like dolls. They have apparently gotten big to avoid getting out, a step that, I know, almost always involves driving other farmers out of business.

This is my heritage, and it’s tough to feel proud. My family farm got big, and that is both good (my parents did not go bankrupt and I had a comfortable, fulfilling life on the farm) and bad (we are part of the environmental and social problem of industrial agriculture). When the agriculture exhibit ends and we enter an incongruous room of stuffed African animals, I feel both pained and relieved.

Hours after visiting the museum, I take a drive with my husband through the farmland, coasting along the gravel roads of his childhood in a pickup truck. We want to watch a sunset. The windows are down and the evening is golden. Dust lingers behind the truck and genetically modified corn and soybeans line both sides of the road. It’s been years since we’ve visited South Dakota in summer—we usually come from Florida for Christmas, when temperatures are well below zero and snow covers everything—and tonight the silence and open sky enthrall us, shock us even.

We head to a high ridge where we look down on a valley that stretches to the horizon. The sky is pink, purple, yellow, orange, blue. The wind blows our hair straight back and we hug our sweat-shirts tight to our bodies and watch the fireball sun sink. The valley floor is a patchwork of fields with a few scattered pastures. I feel a bit gloomy, though in the photos of that evening I’m smiling into the sun. I can’t say the land isn’t beautiful, because it is. The problem is that I mourn what isn’t there, the lost grass.

The truly beautiful thing, I realize months later, is the soil in that valley remembers everything we have forgotten. It still contains the seeds of prairie grass, dormant but not destroyed. Though the land in South Dakota and across the Midwest is covered in corn and soybeans now, the prairie is still there, waiting to be reborn. In pastures that haven’t been plowed, the rebirth will be much easier. In us, too, are seeds of respect for and love of the prairie that are slowly reawakening. These seeds are already giving rise to greater conservation efforts and more sustainable farming and ranching practices. Thinking about the prairie this way, there is no such

thing as lost grass after all. There are only lost ways of thinking and seeing. Once we remember, our prairie can come back. It's under the soil, waiting for us.

[1] Janine M. Benyus, *Biomimicry: Innovation Inspired by Nature* (New York: HarperCollins, 2009), 16.

[2] David F. Costello, *The Prairie World* (Thomas Y. Crowell Company: New York, 1969), 63.

[3] Steven Saunders, Charles Montgomery, Tom Easley, and Theo Spencer. "Hotter and Drier: The West's Changed Climate." The Rocky Mountain Climate Organization and the Natural Resources Defense Council, March 2008.

[4] "Last Stand of the Tallgrass Prairie," National Park Service, accessed November 2, 2015, <http://www.nps.gov/tapr/index.htm>.

[5] Dwight A. Tober and A. Dean Chamrad, "Warm-Season Grasses in the Northern Plains," *Rangelands* 14.4 (1992): 227.

[6] Lee Ann Potter and Wynell Schamel. "The Homestead Act of 1862." *Social Education* 61, 6 (October 1997): 359-364.

[7] Agribusiness has two definitions: 1.) agriculture practiced using commercial standards, especially the application of advanced technology; 2.) a group of businesses dealing with agricultural produce and services to aid production. The "agribusiness" here means the latter. The powerful business players have developed a self-promotion system that has entangled supposedly objective media outlets such as the one I worked for.

[8] Benjamin I. Cook, Ron L. Miller, and Richard Seager, "Amplification of the North American 'Dust Bowl' drought through human-induced land degradation" *PNAS* 106.13 (2009): 1-4. All facts in the paragraph comes from these pages.

[9] Dan Barber, *The Third Plate: Field Notes on the Future of Food* (New York: The Penguin Press, 2014), 73.

[10] John H. Davis and Ray A. Goldberg, *A Concept of Agribusiness* (Boston: Harvard University, 1957), 2.

[11] Berry, *The Unsettling of America: Culture and Agriculture* (San Francisco: Sierra Club Books, 1977), 33.

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