

## WHEN STORMS CONVERGE: LESSONS OF THE DUST BOWL

Perspective, we are told, can be everything. Where lack of memory meets reckless abandon for the future, perspective vanishes as though caught in a swirl of dust. What is true for individuals, is true for communities, is true for nations. It is the story of our species—told again and again—sometimes with benign lessons learned, sometimes with catastrophic consequences. Such is the story of the Dust Bowl of the 1930s, named by many historians the greatest ecological disaster of the 20th century. To view the crisis simply as a result of changing weather patterns is to entirely miss the point; that would be to lose perspective. For anyone with eyes to see, it was all bound to happen then, as it could well happen again.

How many of our essays find their genesis in conversation generated at Pen and Plate meetings? My interest in the Dust Bowl was piqued three years ago in just that way. I had recently finished reading Timothy Egan's superb book, The Worst Hard Time: The Untold Story of Those Who Survived the Great American Dust Bowl. During the "plate" portion of the next Pen and Plate meeting I asked what others knew about this chapter of our history. O.E. Starnes told the story of his father taking him in the car west of Asheville one day and pointing to the hazy brown horizon: "Son, that is the Dust Bowl." At once I was aware and deeply grateful for one of the greatest treasures in this club—the witness of generations gathered in a space that allows us to hear and appreciate our own history. The Dust Bowl gained new meaning as I spoke with someone who had witnessed its effects.

I suppose I first learned of the catastrophe as part of a larger unit of high school history dealing with the many woes of the Great Depression and the New Deal. Later I was moved by John Steinbeck's vivid portrayal of dispossessed Okies fleeing their barren homeland in The

Grapes of Wrath. And like many of us I still have the hauntingly beautiful photographic images of Dorothea Lange seared in my mind. My early impression had been that the Dust Bowl was an exotic anomaly, the unfortunate coincidence of drought, depression and dust storms. I now realize that the Dust Bowl has far more profound lessons to teach us, if only we will heed them. Some 70 years since the terrible dust storms of the great high plains subsided, some 80 years since they began, it is worth a closer look. As there appears no record of a Pen and Plate essay dealing with this topic, I think it is high time.

The relative youth of the United States leaves us both open to new possibilities and vulnerable to them. Lacking the perspective of the longer view, we are neither shackled by the past, nor prone to pay the past its due. As one who daily encounters teenage thinking, I cannot help but see the parallels to our own adolescence as a nation. On the one hand, there is boundless energy, enthusiasm and exhilaration; on the other there is the heartbreak of poor judgment borne out of lack of experience and no regard for the future. Perspective can be everything.

From the time Europeans first landed on these shores there appeared endless bounty. Little wonder that the North American continent was described as the New Canaan: surely this was a land flowing with milk and honey. At least for a while. If and when the soil became poor and depleted from overuse, why worry? There was always more. Indeed, poor farming techniques became part of the engine for our expansion. Stephen Ambrose described one late colonial mindset this way:

The Virginians' lust for land and their resulting rage for speculation can only be marveled at. Before the revolution, George Washington owned tens of thousands of acres in the Tidewater and Piedmont and over sixty-three thousand acres of trans-Appalachia. He wanted more. Jefferson inherited more than five thousand acres in the Piedmont from his father. He wanted more.<sup>1</sup>

Contemporary tobacco farming techniques were depleting the soil, necessitating a view to newer tracts of land. Westward expansion was inevitable; it was intoxicating; it was endless. Just a century before our club was founded, Lewis and Clark set our young nation's gaze westward. In a later generation Robert Penn Warren would find another way to capture our obsession:

For West is where we all plan to go some day. It is where you go when the land gives out and old-field pines encroach. . . . It is where you go when you hear that that's gold in them-thar hills. It is where you go to grow up with the country. It is where you go to spend your old age. Or it is just where you go.<sup>2</sup>

Nevertheless, there were cautionary voices. Even the founding fathers, themselves once young and petulant, issued warnings in their later years. Writing to Alexander Hamilton in 1796, President George Washington expressed his concern and outrage for farming practices that depleted the soil:

It must be obvious to every man, who considers the agriculture of this country. . . .how miserably defective we are in the management. . . .A few years more of increased sterility will drive the inhabitants of the Atlantic States westward for support. . .<sup>3</sup>

Jefferson, too, decried farming practices of his day:

The indifferent state of [agriculture] among us does not proceed from a want of knowledge merely; it is from our having such quantities of land to waste as we please. In Europe the object is to make the most of their land, labor being abundant; here it is to make the most of our labor, land being abundant.<sup>4</sup>

With so much room to grow westward, there was no need for conservation. And so our story unfolds.

On the surface, the Southern Plains hardly seem a likely destination for those wanting to move to more fertile lands. Few places on earth have such extreme weather; life on the prairie has always been tenuous and inhospitable. But a look at its geological history reveals hidden treasure. For millions of years, deep soil covered much of the North American continent.

Canada was lush; redwoods thrived even in the Arctic. Then, about 2.5 million years ago, glaciers formed; frozen rivers stripped northern Canada down to hard rock, dumping ancient soil far south to present-day Iowa, Ohio and Missouri. High winds blew the fertile pulverized dust-like dirt—loess—even farther to shape Kansas, Nebraska, the Dakotas and beyond. In that rich soil, grass took hold, and in turn held the soil in place. The area we now call the Southern Plains boasted endless miles of thick, lush grass, fertilized by the millions of bison which roamed for hundreds of thousands of years.<sup>5</sup>

Spanish conquistadors came in search of gold, but all they could see was worthless grass for miles in any direction. When Coronado arrived in the High Plains in 1541, he found little human habitation, even less to recommend settlement, and no reason to stay. With horses brought by the Spanish, the indigenous people were more mobile than ever. Comanche ruled the High Plains, moving in search of bison herds. They used a curious kind of sign language to communicate across large distances. (Might this language have developed to counter the howling winds which make speaking difficult and impractical?) Comanche knew how to make the most of what seemed a meager existence on the prairie: bison provided for nearly every need, supplemented by berries and birds of the grasslands. When white settlers began moving into the plains in the nineteenth century, conflict arose with the native peoples. The Medicine Lodge Treaty of 1867 promised on behalf of the President of the United States that the tribes of the Plains would be allowed exclusive hunting rights in the Great American Desert, that region south of the Arkansas River. The wetter regions of the Plains, to the north, were reserved as prime areas for white settlers. Thus an all too familiar pattern was repeated: natives relegated to the land no one else wanted.

Even the new land was not sacrosanct. Ignoring the new treaty, anglo hunters desecrated the land killing bison by the millions, taking only what could be sold—tongues, hides and horns—leaving the carcasses to rot on the prairie. Between 1872 and 1873 some 25 million bison were slaughtered. Texans also defied the treaty, resentful that the federal government would presume to place any land that belonged to them in the public domain. In the Red River War of 1874-1875, General Philip Sheridan succeeded in surprising, then routing the Comanche. As for the bison, Sheridan ordered their annihilation, thus ensuring that no Indians would ever return to the Panhandle region.

For the sake of a lasting peace, kill, skin and sell until the buffaloes are exterminated. Then your prairie can be covered with speckled cattle and the festive cowboy, forerunner of an advanced civilization.<sup>6</sup>

Just five years before, one bison herd might have covered up to 50 square miles. The southern herd of bison had once numbered 30 million. By 1880 virtually none remained. Now that the bison and Indian had been removed, the stage was set for the next chapter.

In 1880 Texas was intent on having the most glorious state capitol in the nation. To finance it, legislators decided to sell land. Three million acres in the Panhandle were offered to anyone willing to fund construction. The lush buffalo grass seemed perfect for cattle, so a group of U.S. and British investors formed the Chicago-based Capitol Syndicate. In return for building the red granite capitol, which cost \$3.7 million, the syndicate acquired three million acres. The land cost \$1.23 per acre.<sup>7</sup> The syndicate moved quickly to fence the acreage with newly invented barbed wire, to bring in livestock, to build windmills to pump water from deep wells for the animals, and to build the XIT Ranch, the largest fenced ranch in the world. Even if unsuitable for agriculture—a standard plow was unable to break through and was useless—the thick prairie grass offered ideal grazing for 150,000 cattle. Soon business was booming; new towns were

springing up along the rail lines. But profitability proved elusive for the XIT. Prices for beef fell as more and more cattle were brought into neighboring states. Even more troubling was the weather, perhaps the most extreme of any place on earth. Droughts, blizzards, grass fires, hail storms, tornadoes, flash floods, and dramatic temperature swings all contributed to life-threatening conditions for cattle. Bison are the greatest thermo-regulators ever adapted to the plains, capable of survival in 110 degrees during the summer, and -30 degrees in the winter. Cattle, by contrast, are much less well adapted; the winter of 1885-86 proved disastrous, nearly wiping out the herds.<sup>8</sup> And so another chapter began.

Increasingly, as investors demanded a return, the syndicate began to market parcels of the ranch as agricultural real estate. Initially, not many were drawn to buy. After all, this was arid land, averaging scant rainfall, still labeled on many maps as "Great American Desert." In 1806 Zebulon Pike had compared the vast expanse to the African Sahara. Explorer Stephen Long, who renamed the region the Great Plains, had given this sobering analysis in 1820: "It is almost wholly uninhabitable by a people depending upon agriculture for their subsistence." How, then, to sell such land? The syndicate launched a slick and aggressive marketing campaign to counter the image of wasteland: for very little money anyone could own a piece of the American dream. The syndicate even provided free train fare to the Texas Panhandle so that people could see for themselves. What they saw were model farms that lured speculators on a grand scale. Soon there were new claims: "Riches in the soil, prosperity in the air, progress everywhere. An empire in the making!" "Get a farm in Texas while land is cheap—where every man is a landlord."<sup>9</sup> To many this seemed to be the final chance at a land grab. Particularly vulnerable were sharecroppers displaced from exhausted and depleted farms in the East; and immigrants, newly arrived in the United States, yearning for their share in the American dream.

As for the arid conditions, new dry farming techniques would allow farmers to grow wheat where once thought impossible. Despite average rainfall amounts well below the accepted threshold of 20 inches (not to mention the high evaporation rate that made what rain fell even less usable), dryland farming and windmill irrigation promised to spin useless grassland into gold. Plant wheat in the fall, do nothing in the winter, wait for spring rains, harvest in the summer. What could be easier? What's more, experts claimed, the very act of plowing the soil would actually increase rain in the region. "Rain will follow the plow." Indeed, as railroads became more prevalent, even the steam from the locomotives would cause the skies to weep. Ludicrous and dishonest though this all sounded to seasoned ranchers who knew the harsh realities of the region, the marketing was now attracting thousands of newcomers. The cowboys knew, as the Indians before them had known, that the only crop that would withstand these dry, windy, extreme conditions was what held in place the land—quite literally—the thick carpet of buffalo grass. But the new nesters, the "sodbusters," were intent on plowing and planting, and they were encouraged by wetter than usual conditions in those early years. Cowboys watched with disdain and disbelief as the turf—once seemingly so endless—disappeared. By 1912 no cattle remained on the XIT Ranch; by the mid 1920s, of the three million acres that had once been covered with grass, over 2.5 million had been plowed. The same was happening throughout the Southern Plains—in southeastern Colorado, western Oklahoma, southwestern Kansas, northeastern New Mexico. Few heeded the warning not to tamper; few listened to the caution not to turn the land wrong side up. In the final 30 years of the 19th century farmers in the U.S. brought as much virgin land into cultivation as they had in the previous 200. By now the next chapter was well underway.

What had made agriculture in the Southern Plains even remotely feasible were two innovations of the mid 19th century. In 1838 John Deere invented a steel plow capable of removing the thick carpet of buffalo grass. Then came the McCormick mechanized harvester, allowing farmers to reap and thresh wheat on a scale larger than ever imagined. But when tractors arrived in the Plains, the landscape was truly transformed. A team of horses pulling a steel plow could turn over as much as three acres in a day. A tractor could turn over 50. By the end of World War I there were 85,000 tractors at work on U.S. farms; just two years later there were 250,000.<sup>10</sup> Farmers bought the fancy machinery on credit. In 1916 a 40 year loan at 6% was standard. So long as they could plow more ground so as to grow more wheat, there seemed no end to the bounty. What newcomers failed to see was that the relatively wet years would inevitably be followed by drought. Tough buffalo grass had adapted to such climatic swings, and even in the driest years held in place the soil and precious moisture, as the incessant winds blew. What would happen once that grass was gone, replaced by less hardy crops? What would then hold the soil in place? In 1902 a report of the U.S. Geological Survey concluded that plowing in this region would surely lead to disaster.<sup>11</sup> But a shortage of wheat during World War I led to unheralded prices, further bolstered and guaranteed by the U.S. Government. The warning of the U.S. Geological Survey was buried by optimistic speculator farmers, including a new breed of so-called "suitcase farmers," whose sole interest was profit. Buying on credit the land, often sight unseen, as well as the necessary machinery, they arrived only long enough to plant in the fall, then return only long enough to harvest in late spring. In 1917 some 45 million acres of wheat were planted in the U.S. Just two years later that had grown to 75 million. It cost .35 to grow and harvest a bushel of wheat; at \$2.00 a bushel a half-section could easily yield a profit of \$8,000. In the decade leading up to 1920 the value of farm implements on typical farms in the region tripled. During the 1920s that number tripled again. Plow as much ground as



possible, plant as much wheat as possible, gather the harvest, repay those loans, then enjoy the profits. This worked so long as the grain prices held, and so long as the rains came. But in 1929 the prices collapsed; in 1931 the rains ceased. And the next chapter began.

When news of the stock market crash reached towns like Dalhart, Texas or Boise City, Oklahoma or Springfield, Colorado, it must have seemed a world away. Wheat harvests were at record levels in 1928-29. While unemployment might be taking its toll elsewhere, the rural plains continued to boom. Meanwhile, across the nation and around the world hopes faded for a quick recovery. Then the mood grew dark on the High Plains, too, as a glut of wheat resulted in falling prices. What had seemed so distant just months before suddenly became all too real and present. Farmers could hardly believe what was happening, and in an effort to stay afloat, they rushed to plow up even more prairie, to plant more wheat. After all, there were debts to pay. As weeks turned into months, the Depression deepened. Record harvests continued, but now the grain was fetching as little as .24 per bushel. Wheat soon sat in piles by railroad depots. Worse was to come. When in 1931 the rains stopped, "suitcase farmers" packed their bags and walked away from worthless fields, fields now stripped bare of the buffalo grass that once held the earth in place. As the winds began to blow, which they did with a ferocity no one could have imagined, there was nothing to keep the soil in place. The worst chapter was now underway.

High winds and severe weather are a constant companion on the Great Plains. In the winter and early spring, "blue northers" sweep in from Canada and the Dakotas, dropping temperatures 40 degrees in an hour and blowing over 50 miles per hour for days on end. In the spring and early summer hailstorms and tornadoes tear paths of destruction across the prairie; what little rain falls comes in sudden downpours causing flashfloods. In the summer withering hot winds further dry an already dry landscape. It has always been that way. What happened in

the 1930s was unlike anything anyone had ever experienced. On September 14, 1930 the first "black duster" blew south from western Kansas through western Oklahoma into the Texas Panhandle. Thus was ushered in a decade known as the "Dirty Thirties." It came on the heels of a dry and hot summer. This was no typical sandstorm; instead it rolled like a giant mountain, and it contained dark dust that scoured everything in its path. Static electricity was so strong that barbed wire fences glowed blue and cars shorted out; men shaking hands were knocked to the ground. Of course, no one realized that this was just a harbinger of an ordeal that would last over eight years.

This new kind of dust storm would become commonplace, a new constant companion on the Great Plains. Egan describes one such storm of January 21, 1932:

A cloud ten thousand feet high from ground to top appeared just outside Amarillo. The winds had been fierce all day, clocked at sixty miles an hour when the curtain dropped over the Panhandle. The sky lost its customary white, and it turned brownish then gray as the thing lumbered around the edge of Amarillo. . . . Nobody knew what to call it. It was not a rain cloud. . . it was not a twister. It was thick like coarse animal hair; it was alive. People close to it described a feeling of being in a blizzard—a black blizzard, they called it—with an edge like steel wool.<sup>12</sup>

That year 14 blinding black blizzards were recorded in the region; in 1933 that number was 38; in 1934 there were 22; in 1935, 40; in 1936, 68; in 1937, 72. Cattle choked on the dust, were blinded by it, and died ingesting it; in some places 90 percent of the chickens died. Dust permeated everything, even inside houses, so that window sills, floors, eating surfaces were all covered. Bed sheets dampened with water were hung at the doors in a futile attempt to catch the dust drifting through every orifice. Ceilings collapsed under the weight of dust that accumulated in the attic. It was said that people getting out of bed in the morning would find a silhouette of their head on the pillow case, the only thing not covered by grit and grime. Daily chores

included shoveling dust off floors and front stoops, then digging out fenceposts, cars and tractors that had been covered by drifting dirt.

The dust storms formed in all seasons. When mixed with snow, they were known as “snusters”; when mixed with rain, the precipitation fell like pellets of mud. The color of the dust indicated its geographic source: black meant Kansas, gray was Colorado, orange was Oklahoma, red was New Mexico. Each had its own distinctive smell. The wind-driven soil felt like a file against the skin, and it stripped paint from walls. The air, so charged with static electricity, seemed to crackle; fruits and vegetables, where there were any, would be killed by the electric charge carried in the storms. A duster could blow for hours; it could blow for days.

The drought produced yet other bizarre fruit. Swarms of insects, particularly winged grasshoppers, descended on the fields, utterly devouring any vegetation, even the stubble of wheat, some said even wooden handles on tools. Snakes and poisonous spiders appeared in the sod houses and wooden houses alike. The strangest specter was the arrival of hundreds of thousands of jackrabbits, desperate for food that no longer existed in their own habitat. They came out of the hills into towns and onto farmsteads. Weekly rabbit drives were organized to corral and slaughter the animals that were taking what little food the farmers could produce. Reminiscent of the biblical plagues, this all seemed to many to be the curse of God. Everything seemed out of whack, out of balance, perhaps because the grass was gone and the land turned wrong side up.

1932 was dry; and it was also the hottest on record—so far. Each of the coming years would see more severe weather than the ones before; successive records were set for drier and hotter summers. As the dusters increased in number, so also did a terrifying malady—a hacking

cough that led to respiratory distress and death, known as "dust pneumonia." At first no one knew quite what it was, only that more and more people were coming down with it. As it turns out, plains soil has a high content of silica, and residents were inhaling it, coating their lungs. Hospital admissions for acute respiratory problems skyrocketed as dust pneumonia afflicted more and more people. There were not enough dust masks to go around. According to one report, in 1935 one third of all deaths in Floyd County, Kansas, were attributed to dust pneumonia.<sup>13</sup> God's curse was surely being fulfilled. Especially eerie was an oft-cited passage from the Book of Deuteronomy which seemed more fitting with each passing year:

The LORD will afflict you with consumption, fever, inflammation, with fiery heat and drought, and with blight. . . they shall pursue you until you perish. The sky over your head shall be bronze, and the earth under you iron. The LORD will change the rain of your land into powder, and only dust shall come down upon you from the sky until you are destroyed.<sup>14</sup>

How ironic that the region's clean air, to which so many had once come for their health, was now turning so toxic.

Little wonder that so many fled such devastation, desperate for a better life elsewhere. (Some 350,000 sought new homes in other parts of the country.) More remarkable still is that for every family that left, three stayed behind, somehow hopeful that change would soon come, that rains would soon return. Residents of the Southern Plains were known as "tomorrow people," because of their belief that in the midst of such hardship and travail, there was always the chance that life would improve tomorrow or next year. As the situation in the Dust Bowl deteriorated, the stalwarts dug in their heels. The young editor of the Dalhart Texan, John McCarty, urged his readers to "grab a root and growl." McCarty, the "dustbowl cheerleader," founded the "Last Man Club," challenging citizens to pledge their allegiance to the plains and never give up.<sup>15</sup> They tried everything to coax rain from the skies—prayers, incantations, even

explosives sent high into the atmosphere. As more Exodusters were forced to abandon their land, the social fabric also deteriorated: schools, churches, banks and businesses closed; crime increased; hospitals were overwhelmed; ghost towns emerged from what had been boomtowns just a few years before. Therein lies part of the problem: since most of the towns on the Southern Plains had sprung to life after 1900, weather records were sparse; the perspective of time simply did not yet exist. Had the nesters listened to the now-silent voices of the Comanche, or even the cowboys, they would have known that severe drought was simply a fact of life on the high plains. The rains that encouraged farmers to plant wheat were short-lived, part of the 20 year drought cycle that had long characterized that region. In the end, even John McCarty left.

The inauguration in 1933 of Franklin Delano Roosevelt ushered in an era of new hope with the New Deal; it also heralded a time of growing awareness of the plight of the Great Plains. Nearly every state in the Union was experiencing some degree of drought; for most Americans the Southern Plains were but one more trouble spot in a very troubled economy. In the four months between Roosevelt's landslide victory and his inauguration, 5,000 banks closed; each month 20,000 farmers were losing their land. 14 million people were out of work; 9 million had lost their life's savings. So while news from the Southern Plains was bleak, few outside the region could be bothered. Among those who understood the implications was Roosevelt himself. His famous radio speech of April 7, 1932 had pledged support to the "forgotten man" who worked the land, and early in his administration he turned attention to the farming crisis. Steeped in an ethos of conservation, he wasted no time addressing the problem. Within the first 100 days, he summoned to the White House the nation's leading soil conservation scientist, Hugh Bennett.

"Big Hugh" Hammond Bennett was a native of North Carolina. Born in 1881, and raised in Anson County on a farm, he had learned from his father how terracing a field can reduce erosion. After graduating from the University of North Carolina, he took a position with the Bureau of Soils, a job that would allow him to observe soil conditions in every state of the Union; by 1930 he had traveled throughout Central and South America, as well. He saw first-hand what poor farming techniques had wrought: the rate of erosion of topsoil was not only deplorable; it constituted a national crisis. Long before others were concerned about soil conservation, Hugh Bennett was sounding the alarm:

There are national associations for the preservation of wild flowers and for the preservation and propagation of wild life but none for the preservation of the soil. Conservation of this most fundamental and important of all resources is seldom seriously considered by any one not directly or indirectly associated with the ownership or management of a farm, and it is too infrequently considered even by the farmers themselves. . . . To visualize the full enormity of land impairment and devastation brought about by this ruthless agent [erosion] is beyond the possibility of the mind. An era of land wreckage destined to weigh heavily upon the welfare of the next generation is at hand.<sup>16</sup>

Worse still, the U.S. Department of Agriculture was promoting the destruction by continuing to insist that soil constituted "the one resource that cannot be exhausted." Quipped Bennett: "I didn't know so much costly misinformation could be put into a single sentence."<sup>17</sup>

Roosevelt tapped Bennett to head up the newly organized Soil Erosion Service; within a year it would be renamed the Soil Conservation Service with oversight of 150 CCC camps. Bennett quickly organized demonstration projects such as planting trees, building erosion control structures, planting cover crops, and leveling dunes that had resulted from the dusters. Much of Bennett's credibility with farmers on the Southern Plains was that he was himself a farmer; his folksy, down-home manner won their trust; he was one of them. He spoke plainly and directly: "Americans have been the greatest destroyers of land of any race or people, barbaric or civilized."<sup>18</sup> Bennett's appointment could not have been more timely. Dusters had already made

life miserable for residents of the region; soon they would get the attention of the entire nation.

In May of 1934, a huge dust storm blew from the plains toward the eastern seaboard. Picking up strength as it picked up ever more topsoil, the black, boiling front was nearly three miles in height. Egan provides this description:

Carrying three tons of dust for every American alive, the formation moved over the Midwest. It covered Chicago at night, dumping an estimated six thousand tons, the dust slinking down walls as if every home and every office had sprung a leak. By morning, the dust fell like snow over Boston and Scranton, and then New York slipped under partial darkness. Now the storm was measured at 1,800 miles wide, a great rectangle of dust from the Great Plains to the Atlantic, weighing 350 million tons.<sup>19</sup>

In Chicago alone four pounds of dust had fallen for every person alive in the city. Dust was reported as far south as Atlanta and Savannah. As the storm moved out over the ocean, ships 200 miles off shore were coated with dust. Washington, DC was darkened, dust seeping into the Capitol and White House. Bennett saw that storm as a turning point in the nation's awareness of the crisis:

I suspect that when people along the seaboard of the eastern United States began to taste fresh soil from the plains 2,000 miles away, many of them realized for the first time that somewhere something had gone wrong with the land. It seems to take something like a disaster to awaken people who have been accustomed to great national prosperity, such as ours, to a national menace.<sup>20</sup>

Overnight, the Soil Erosion Service, led by Hugh Bennett, was thrust into the forefront of New Deal projects.

The challenge facing "Big Hugh" and FDR was daunting. The Dust Bowl region had grown to some 100 million acres, Bennett's earlier warnings now proving prophetic. If the blowing soil was due to the removal of the thick buffalo grass that had protected it from the winds, was there any way to replant grass where no topsoil remained? Bennett calculated that it took some 1,000 years to produce one inch of topsoil in the Great Plains. Already, virtually all

the topsoil had blown off millions of those acres, and there was little chance of reversing the trend soon. The hard pan beneath the topsoil was sterile and like concrete; without the upper layer of nutrient-rich soil, grass would not grow. Bennett's strategy was two-pronged: first, find a grass that could take hold in such dry, windy conditions; second, encourage individual farmers to think collectively so as to concentrate conservation efforts on a much larger scale. While there was certainly some resistance to yet another government program foisted on the forgotten man, more remarkable is how quickly and nearly universally Bennett's conservation districts were accepted, testimony to his personal and affable manner. Meanwhile, the temperature continued to rise, the drought continued to worsen, the winds continued to blow.

Indeed, they seemed to be blowing with a new viciousness. The spring of 1935 was unlike any that had ever preceded it. By the third week in March, eastern Colorado and western Kansas had experienced twelve consecutive days of dust storms. Then in the fourth week a duster blew up across the Southern Plains that destroyed five million acres of crops in the ground; in that one storm twice as much earth blew away as was removed to make the Panama Canal.<sup>21</sup>

But nothing compared to what would occur on April 14, Palm Sunday. Dawning as a beautiful spring day, it turned into an apocalyptic nightmare known forever as Black Sunday. People who had felt trapped inside their homes for nearly a month awoke to a warm clear day; they came outside to breathe in fresh spring air, to clear debris from recent storms, to clean their homes of the dirt that had blown inside, to go on picnics, even to plant—optimistically—gardens. By midafternoon the temperature had plunged 50 degrees, and residents noticed the strange sight of birds fluttering nervously in their yards, then taking flight in huge numbers. Suddenly, on the northern horizon there appeared a black blizzard unlike anything ever seen:



there was no wind ahead of it, there was no sound, only a huge, rolling dark cloud. As it headed south everything turned to utter darkness. Packing winds of 60 miles an hour on the ground, and some 100 miles an hour aloft, Slide 41 the menacing purplish-black cloud climbed over 20,000 feet and was hundreds of miles wide. It was so dense that drivers could no longer see the hood ornaments on their cars; those who scrambled for cover inside could barely breathe and could see nothing; quite literally, a person could no longer see his hand in front of his face. Those who were stranded outside struggled for air, some suffocated to death. Stories of survivors are harrowing; consider the tale of one hapless homesteader:

Johnson was just half a block from home when the blizzard overwhelmed him. He fell to the ground, fumbled for something to hold on to, tried to get his bearings. It was worse than either of the twisters he had lived through, worse than hailstorms that destroyed his crops in the past, as if all No Man's Land was heaved up and collapsed. Felled by the duster, he crawled forward, crossing the road on his belly. Disoriented in the blackness, he moved on his hands and knees one way, he thought would lead him to the house. But it led another way, and he never found it. The heavy sand blew up his nose and got in his eyes, burning. He crawled about six blocks away from the house, fumbling over hard ground and drifts, until he found a shed. It felt as if hornets had stung his eyeballs. Heavy sand was lodged under the lids and against the eyes. He rubbed them for relief, but that only wedged the dirt deeper. When Johnson's family found him later in the evening, his eyes were full of black dirt and he said he could not see. He went blind on Black Sunday, and his vision never recovered.<sup>22</sup>

Among others who would never forget Black Sunday was Woody Guthrie, then just twenty-two years old. Huddled in a dust-choked room with several other people, he began humming the refrain to a new song: "So long. It's been good to know ya."

Photographs of Black Sunday appeared in newspapers around the nation. Big Hugh Bennett was in Washington, appearing before Congress to advocate for more funding and to establish a much more comprehensive plan for soil conservation. No longer was it sufficient to merely fix in place the blowing soil; what he wanted now was an enduring program that would change farming habits and attitudes toward the earth. As he studied the weather maps and read the dispatches, he realized he now had a singular opportunity to make his point. Using charts

and citing history of land use from the Roman Empire to Thomas Jefferson, Bennett slowly made his case before skeptics reluctant to appropriate any additional money. Realizing that the remnants of the Black Sunday storm were heading east, Bennett saved his most persuasive argument for last. On Friday, April 19, meeting with senators in the Senate Office Building, Bennett dragged out the afternoon until an aide brought him word that the dust storm had finally arrived. As though scripted, daylight began to dim; senators went to the window to see the sun vanishing and darkness settling in at midday. "This, gentlemen, is what I'm talking about. There goes Oklahoma."<sup>23</sup> Immediately, Bennett had new funding and a permanent agency to oversee and manage the nation's soil. The Soil Conservation Service remains the longest-standing New Deal initiative.

Yet more records for heat and drought fell in 1936. It was an election year. FDR's New Deal programs were under attack by critics who saw such massive government intervention as un-American; Roosevelt needed convincing proof that his programs were worthwhile. The Farm Security Administration provided just such a tool with a newly minted photographic unit, headed by Roy Stryker. In the end this team, comprised of young masters like Dorothea Lange and Arthur Rothstein, would preserve the most poignant and provocative images of the Dust Bowl, focusing the lens especially on the faces of its victims. Journalists coming to the region, struggled to find words for what they saw. Wrote Ernie Pyle that summer:

I saw not a solitary thing but bare earth and a few lonely, empty farmhouses. . . .There was not a tree or blade of grass, or a dog or a cow or a human being—nothing whatsoever, nothing at all but gray raw earth and a few farmhouses and barns, sticking up from the dark gray sea like white cattle skeletons on the desert. . . .It was the saddest land I have ever seen.<sup>24</sup>

As if to drive home Pyle's description of "this withering misery," temperatures in No Man's Land reached 118 degrees three days that summer.

In August Big Hugh Bennett came to Dalhart, Texas, to inspect "Operation Dust Bowl," his agency's most ambitious soil conservation project. The object was to show how contour plowing, terracing and strip planting could slow the blowing of soil, so that Sudan grass could get a foothold; thereafter crop rotation would help rebuild the nutrients in the soil. He had also come to the Dust Bowl to rally support for his proposed soil conservation districts. What made this concept so revolutionary was that it called farmers to give up their sense of independence, and instead work in a spirit of interdependence—not only with one another, but with the environment. Big Hugh was convinced that the only successful solution was one that had a long view of history; this was not to be a quick fix. Of all that Bennett ultimately achieved, the soil conservation district is his most enduring and successful legacy.

That same month Roosevelt received an initial report from the Great Plains Drought Area Committee, a blue ribbon group he had convened one month earlier, charging its members to report back on causes of the Dust Bowl. Its conclusions were stark: contrary to what many believed, the weather was not to blame, as it had not changed; what was to blame were misguided government policies that had encouraged a form of agriculture altogether unsuitable for such a region. In just over fifty years the amount of prairie grass turned under for wheat had gone from 12 million to over 100 million acres. Relatively wetter years had lulled farmers to believe they could count on such conditions in the future, when in fact a closer look showed that seasons of drought were inevitable. Whether the situation could be redeemed was not certain. The report concluded that the only viable solution would be long-term.<sup>25</sup>

The winds continued to blow in 1937. That year there were 134 dusters in the High Plains, the most yet. But there were signs that Bennett's plan was working. Though it remained extremely dry, pockets of success were now sprouting. As aggressive New Deal efforts at

conservation began to take hold, so too did newly planted grass. Roosevelt's own pet project was a hundred-mile wide shelter belt of trees being planted from the Canadian border to southern Texas. In 1938 those conservation efforts had reduced blowing soil by 60%, despite the drought. In 1939 the rains finally returned. By now attitudes of many had changed: there was a new respect for conservation measures, a new caution about tampering with the tenuous hold on environmental stability. The final report of the Great Plains Drought Area Committee, delivered in 1937, had quoted from the work of the great conservationist, Aldo Leopold:

Civilization is not the enslavement of a stable and constant earth. It is a state of mutual interdependent cooperation between human animals, other animals, plants, and the soils, which may be disrupted at any moment by the failure of any of them.<sup>26</sup>

No one knew this better than those who endured the Dust Bowl.

Is the story of the Great American Dust Bowl concluded? The Southern Plains experienced drought and blowing dust storms again in the 1950s, the 1970s and the 1990s. By now the pattern is clear. Winds will always blow; the cycle of drought will continue. In every case wind erosion occurs when protective plant cover is removed, then replaced with cereal crops. True, none of the more recent crises has been as obviously destructive as that of the Dirty Thirties. But another insidious crisis is surfacing. At the end of the 1930s the first wells were tapped into the Ogallala Aquifer, an underground watershed nearly the size of Lake Huron, some 300-500 feet below the very prairie land most parched during the Dust Bowl. By the 1970s, encouraged once again by the USDA claims that "we have achieved a climate-free agriculture on the plains," farmers were lured into believing that with deep-well irrigation they had found a panacea, confident once again that they had outwitted nature.<sup>27</sup> Today rich green crop circles can be seen from the air, even from outer space. A 5,000 acre farm will use two billion gallons

of water each year. At the current rate of depletion, some areas in Kansas have only twenty-five years of water left; many predict that the aquifer could be dry in less than a century.<sup>28</sup>

The lessons of the Dust Bowl are there for any with eyes to see. Donald Worster concludes that the storms that swept across the southern plains "created the most severe environmental catastrophe in the entire history of the white man on this continent. . . . And in ecological terms we have nothing in the nation's past, nothing even in the polluted present, that compares."<sup>29</sup> I suspect all of us could agree. More provocative is his assertion that the catastrophe was the logical trajectory of our relationship with the land:

Americans blazed their way across a richly endowed continent with a ruthless, devastating efficiency unmatched by any people anywhere. When the white men came to the plains, they talked expansively of "busting" and "breaking" the land. Some environmental catastrophes are nature's work, others are the slowly accumulating effects of ignorance or poverty. The Dust Bowl, in contrast, was the inevitable outcome of a culture that deliberately, self-consciously, set itself that task of dominating and exploiting the land for all it was worth.<sup>30</sup>

Worster may be correct. However, I would contend that Aldo Leopold and Hugh Bennett viewed the situation through a lens most likely to bring healing to the damaged soil and our resulting damaged soul as a nation. It is a lens at once ancient and modern, much at the heart of the so-called Gaia Principle articulated in recent years by Lovelock and others, that our world is a complex entity involving the earth's biosphere, atmosphere, oceans, and soil. Far from being above creation, we are very much a part of it. After all, Adam's name comes from the Hebrew for "of the soil." The very words "human" and "humility" are linguistic cousins, derived from the same Indo-European root for "earth." In that sense we are most human when we are most grounded and understand our relationship to the soil. Just as O.E. Starnes' dad showed him, so must we assume the mantle of responsible stewardship. Our children deserve the best from their elders who can bear witness to the interconnectedness of life on this "fragile earth, our island home."<sup>31</sup> Perspective is everything.

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- <sup>1</sup> Stephen E. Ambrose, Undaunted Courage, 32
- <sup>2</sup> Robert Penn Warren, All the King's Men, 270
- <sup>3</sup> George Washington as cited by Montgomery, 124
- <sup>4</sup> Thomas Jefferson as cited by Montgomery, 125
- <sup>5</sup> Montgomery, 145f
- <sup>6</sup> Sheridan, speaking to the Texas Legislature in 1875, as quoted by Egan, 19
- <sup>7</sup> Egan, 20
- <sup>8</sup> Egan, 22
- <sup>9</sup> Egan, 22
- <sup>10</sup> Montgomery, 146
- <sup>11</sup> As cited by Montgomery, 148
- <sup>12</sup> Egan, 113
- <sup>13</sup> "Surviving the Dust Bowl" The American Experience, PBS, 1998
- <sup>14</sup> Deuteronomy 28:22-24
- <sup>15</sup> Timothy Egan, NPR interview, January 8, 1906
- <sup>16</sup> H. H. Bennett and W. R. Chapline. Soil Erosion A National Menace. These quotes are from the section of report written by Bennett, pp.19-22.
- <sup>17</sup> Bennett, as cited by Egan, 126.
- <sup>18</sup> Bennett, as quoted in "Surviving the Dust Bowl."
- <sup>19</sup> Egan, 150f
- <sup>20</sup> Maurice G. Cook, "Hugh Hammond: the Father of Soil Conservation," p.8
- <sup>21</sup> Worster, 18
- <sup>22</sup> Egan, 214f
- <sup>23</sup> Egan, 228
- <sup>24</sup> Ernie Pyle, as quoted by Egan, 256
- <sup>25</sup> "Report of the Great Plains Drought Area Committee, August 1936" [www.newdeal.feri.org](http://www.newdeal.feri.org)
- <sup>26</sup> Aldo Leopold, quoted in "Future of the Great Plains" as cited by Worster, 204
- <sup>27</sup> Worster, 234
- <sup>28</sup> "Plains Farmers Learn from Past as Aquifer Depletes," NPR broadcast, August 11, 2007

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<sup>29</sup> Worster, 24

<sup>30</sup> Worster, 4

<sup>31</sup> Book of Common Prayer, 370

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