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Alex Zander

The Dust Bowl: An Environmental Disaster on the Great Plains

In the United States, the Dust Bowl of the 1930s represented one of the nation's most devastating environmental catastrophes. Years of over cultivation, drought, and high winds helped produce the blackened skies of the Dust Bowl. Massive storms of blowing dust on the Great Plains were not only economically devastating to the farmers and the country but also dangerous and sometimes deadly to its inhabitants. Photographs and historical accounts of the blinding storms reflect and reinforce the frightening nature of what was known as the "dirty thirties." Children were smothered alive and still others, unable to find their way on their farms, were caught in barbed wire.¹ Many people fled the storms while others struggled to stay on their land.

The Dust Bowl resulted in part from the farming techniques used in the 1930s, along with historical changes in the climate. As M.J. Ingram, G. Farmer, and T.M.L. Wigley have noted in *Climate and History: Studies of Past Climates and Their Impact on Man*, climate played a major role in social and economic developments.² Additionally, according to Donald Worster in *Dust Bowl: The Southern Plains in the 1930s*, several technological innovations affected agricultural practices and led to enhanced profitability. These changes included new farming techniques such as dry farming and sod busting, as well as the mechanization of the Great Plains sparked by the industrial revolution. Initially, the cattle business dominated the Great Plains. A "beef bonanza" took place during the 1880s, where the price for cattle soared from three dollars to sixty dollars a head.³ Shortly after this skyrocketing price, the Great Plains experienced the harshest winter in

recorded history, which destroyed much of the buffalo grass and killed eighty-five percent of cattle. The unpredictability of the climate would become a recurring theme of the area.⁴

Following the cattle collapse, settlers poured into the area looking to farm the land. They turned the dirt into their homes and began busting the sod for farming and living purposes.⁵ This led to the development of the pasturage farms, a term coined by John Wesley Powell. These farms were much larger and tended by fewer people.⁶ Between 1910 and 1940, farmers turned to dry farming, where “the land was to be kept from reverting to useless grass and imperial cattlemen.” Dry farming required “deep plowing in fall, packing the subsoil, frequently stirring up a dust mulch, and summer fallowing, leaving part of the ground unplanted each year to restore moisture.”⁷

During World War I, wheat prices soared and the Great Plains became a “wheat factory.” Mechanization, especially the use of tractors and combines, allowed for a massive amount of farming to be done in much less time and with less work. As a result, the farmers built a wheat empire out of the American Midwest, breaking the land to make fields of wheat.⁸ This great leap towards a wheat empire was only possible due to the tractor and the combine. These machines also made farming possible for outside investors, referred to as suitcase farmers; they existed mostly as speculators trying to make quick cash from a wheat crop.⁹ In one example, a suitcase farmer started with 32,000 acres of land but three years later had 50,000 acres of wheat. Under these circumstances, the suitcase farmers could even afford to lose a crop because it was not their primary income. Many times, the crop was left to the mercy of the wind if it looked unprofitable, and the farmer would never return.¹⁰

In this way, American farmers in the West, fueled by the new industry of wheat, sought to maximize their profits while paying little attention to the impact on the land.¹¹ Americans

were not the first to farm beyond their means, and they echoed the “culture of modern western man” that “he is autonomous in nature” and a “sovereign creature” who controlled the environment.¹² Unwilling to adapt to the land and partner with the environment ensured the devastation of the Dust Bowl.¹³ Farmers during the dust bowl faced unpredictable weather patterns. These factors, in combination with outdated farming techniques, resulted in unprecedented dust storms causing forced evacuations, economic hardships, and medical issues. While these factors led to an environmental crisis, they also resulted in the introduction of new farming techniques.

The unpredictable weather patterns of the Great Plains helped create the Dust Bowl. The area suffered from a history of drought, some lasting for twenty year periods. There were five droughts within the three hundred sixty year period of agricultural settlement; three were considered larger droughts, and two were minor. The Dust Bowl was considered the worst of all previous droughts. Droughts were random and hard to predict.¹⁴ According to the study *Climate and History*, droughts adversely affected wheat yields. During the drought of the 1930s, for example, not only did farmers harvest the smallest amount of wheat but they also planted the most amount of wheat that was not harvested. Reminiscent of the suitcase farmers, this development in the 1930s witnessed farmers planting but not harvesting wheat.¹⁵

Another major problem for the farmers of the Great Plains were the massive dust storms that formed from of the topsoil of their farms. According to Aubert de la Rüe in, *Man and the Winds*, these storms were caused by high gusts of wind and the dryness of the climate. In addition, protective vegetation natural to the area was absent.¹⁶ Dust Storms were not a new phenomenon to the area. In 1887 Western Canada experienced a few dust storms as well; early Kansas records show evidence of their existence, though not at the same level as the ones seen

during the 1930s.¹⁷ Usually these dust storms did not cause any serious damage and “after the first crop began to grow and hold the soil, after the first spring rains, the danger was over.”¹⁸ According to the *New York Times*, in one storm the dust mixed with rainfall and created balls of mud that fell from the sky. The winds were so bad that “chickens were denuded of feathers” and “oil rigs and houses were blown down.”¹⁹ Another *New York Times* article describes a massive dust storm that blew into Kansas. It was reported to be twelve miles long and traveled along a two hundred and fifty mile route, damaging wheat crops, blotting out the sun, and sending dust thousands of miles away.²⁰ A photograph taken by Arthur Rothstein shows a sand dune as tall as a barn, looking starkly similar to dunes found in the Sahara Desert. All vegetation in the area was either removed or dead.²¹ The storms and conditions had completely destroyed the area in the photograph. These first-hand accounts show just how powerful these storms were and how devastating they could be for the people living in the Dust Bowl.

Ellen Grey argued in *NASA Study Finds 1934 had Worst Drought of Last Thousand Years* that there were two factors that caused the drought which led to the Dust Bowl. First, there was a high-pressure system that lingered on the west coast of the United States that forced wet weather away from the area.²² This forced the winter storms that would have normally occurred to get pushed out of the area, leaving hardly any source of rainfall.²³ As the winter ended, the pressure system moved eastward, further preventing any spring or summer rain that would normally fall on the plains.²⁴ The second factor was land mismanagement by the farmers themselves. Land mismanagement further aggravated the dust storms that suppressed any rainfall due to dust clouds reflecting sunlight and blocking solar energy and also preventing evaporation that would normally cause rain clouds to form.²⁵ According to the *New York Times*, the drought became so

intense that “The entire state of Kansas was designated as official drought territory...push[ing] the national total to 1,021 counties in twenty-two states.”²⁶

The Dust Bowl amply demonstrated that the land of the Great Plains simply was not suitable for extensive cultivation. When the farmers stripped the land of virtually all its grasses, this development coincided with the beginning of the drought.²⁷ According to R. Douglas Hurt, “Prior to 1930, American farmers commonly regarded soil erosion as a ‘spasmodic phenomenon’ largely confined to lands subject to washing. Many farmers believed moderate blowing was beneficial because it mixed the soil and thereby helped to maintain fertility.” Hurt adds that the urban population knew even less about soil conservation.²⁸ Another problem was ignorance of how climate and droughts functioned. The farmers believed that “rain would follow the plow,” so the more one would plow the more rain was expected to fall.²⁹ These farmers refused to change their habits given the profitability of Great Plains wheat.³⁰ As Worster notes, “It was easy for them to dismiss the grass as unproductive, unprofitable, and unnecessary, and to force the land to grow wheat instead. By the values they had been taught, they were justified in what they did.”³¹ In as little as seven years, most of the dirt was ploughed and primed for blowing, ready to be transformed into the terrible and deadly black blizzards.³² Although Dust Bowl farmers did not create the weather, they did engage in harmful practices that made the drought much worse for the lands of the Great Plains. Indeed, according to de la Rüe, the storms caused 321,000,000 acres of damage, leaving nearly a quarter of the land useless for agriculture.³³

The creation of the Dust Bowl had many consequences for Americans. It caused the destruction of the land and the life of the plains farmers. As President Franklin D. Roosevelt noted in a fireside chat after having visited the Great Plains, the land was so devastated that there was little left in terms of production and profits. He saw field upon field of destroyed crops and

recounted a conversation with a cattle farmer, who had to sell all of his livestock save for his breeding cows. Some cattle were only alive due to water brought in from faraway places with tanker trucks. The destruction was so widespread that farmers even lost the water in their wells. They had nothing left.³⁴

Due to these grim circumstances, some families chose to leave the area all together. Even farmers who had worked through the drought for four years were ready to give up and move away. The *New York Times* noted that one hundred families had sought federal aid for moving elsewhere, but aid was not immediately forthcoming.³⁵ Many families chose to move to California in search of a new existence. These refugees took jobs that once belonged to Chinese, Japanese, and Mexican workers. They were favored for jobs, the *Times* claimed, because they were more familiar with farming than were “foreign immigrants.”³⁶ Moreover, during harvest time, their labor was coveted due to their experience with farming.³⁷ The Dust Bowl families were in fact met with suspicion and hostility by some residents. One Californian described the refugees as “lazy, no account failures and they’d rather live on the county than work...why I’ve offered them land and they won’t work it!”³⁸ Still others argued that that “They’re just the same as the rest of us, but their breaks were tougher.”³⁹ Despite these mixed opinions, many refugees ultimately found better lives in California, especially as a result of government assistance. Seventy thousand refugees fled to California and many of them expected government aid.⁴⁰ According to the *New York Times*, “If work becomes too hard to get or pay is below their standard, they firmly believe the government will support them in a pinch.”⁴¹

The Dust Bowl not only devastated the land and forced people to flee, it also took the lives of children and adults. Still others suffered from the sickness that accompanied the dust storms, commonly called “Dust Pneumonia.” In Meade Country, Kansas, fifty two percent of the

cases reported at hospitals were a result from dust pneumonia.⁴² Patients who arrived at the hospital spat up clods of dirt, had mud washed out of their mouth, their noses swabbed with Vaseline, and their eyes rinsed with boric acid.⁴³ While the dust held no organic life that could cause sickness, it did have a high concentration of silica, which had a poisoning effect similar to lead, and the fine particles cut into lung tissue and contributed to respiratory infections such as sinusitis, pharyngitis, laryngitis, and bronchitis.⁴⁴ Health officials were troubled by the persistence of the dust sickness.⁴⁵ The Red Cross, for example, dispensed 17,700 dust masks to residents and sent nurses to 1,631 homes, mostly for dust illnesses.⁴⁶ Treatments for these illnesses were limited. Besides wearing the dispensed masks, “health officials recommended attaching translucent glass cloth to the inside frames of windows, although people also used cardboard, canvas, or blankets. Hospitals covered their patients with wet sheets, and housewives flapped the air with wet dish towels to collect dust.”⁴⁷ Residents would also seal up their windows with tape or rags, sometimes leading to the restriction of air circulation in homes and families had to open the windows just to get air into the house regardless of the dust that also entered their homes.⁴⁸

The Dust Bowl produced many adverse effects, but the people of the Great Plains responded to these distressing times with innovation. The introduction of new farming practices such as water management and terracing helped produce a record harvest in 1942.⁴⁹ Suitcase farmers and corporations appeared again to try and make huge profits. Plains farmers grew restless with cautionary practices. Agrarian technicians saw their work once again cause a boom in the 1940s.⁵⁰ In the 1950s, a drought occurred that threatened to cause another Dust Bowl. Last minute rainfall averted a recurrence of this natural disaster. One farmer affirmed that “we know how to farm better than we do farm. We simply take chances, winning in good season, and losing

when it fails to rain, or if the wind blows out our crops. It's not in our blood to play a safe game."⁵¹ Lessons from the trials of the 1930s were jettisoned for quick profits. Techniques originally developed to ward off another catastrophe encouraged farmers to produce more than before in hopes of making higher profits—no matter the risk.

The trials of the Dust Bowl show what can happen when humans and nature collaborate to create a catastrophe. Although initially some farmers may not have known that they were creating ripe conditions for the Dust Bowl, even when confronted with the reality of their farming practices, they continued their destructive ways. The legacy of the Dust Bowl is ever-present. Environmental historian Donald Worster conducted an interview with a modern day farmer asking, "Can the Dust Bowl come back as it was in the 1930s?" He answered: "No sir, there's no way that could happen. We've got the machinery to stop it, and we know how to farm better."⁵² While this sounds eerily similar to what the farmers of the 1920s and 1930s said prior to the formation of the Dust Bowl, perhaps knowledge of this prior disaster can prevent similar destruction in the futur

¹ R. Douglas Hurt, *The Dust Bowl: An Agricultural and Social History* (Chicago: Nelson-Hall, 1981), 51.

² G. Farmer, M. J. Ingram, T. M. L. Wigley, *Climate and History: Studies of Past Climates and Their Impact on Man* (New York: Press Syndicate of the University of Cambridge, 1981), 4.

³ Donald Worster, *Dust Bowl: The Southern Plains in the 1930s* (New York: Oxford University Press, 1979), 82-83.

⁴ *Ibid.*, 83.

⁵ *Ibid.*, 83-85.

⁶ *Ibid.*, 85.

⁷ *Ibid.*, 87.

⁸ *Ibid.*, 89.

⁹ *Ibid.*, 93.

¹⁰ Hurt, *The Dust Bowl*, 28.

¹¹ Worster, *Dust Bowl*, 90-93.

¹² *Ibid.*, 94.

¹³ *Ibid.*, 97.

¹⁴ Farmer, Ingram, and Wigley, *Climate and History*, 494.

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- ¹⁵ Ibid., 496.
- ¹⁶ E. Aubert de la Rüe, *Man and the Winds*, trans. Madge E. Thompson (London, Hutchinson & Co., 1955), 108.
- ¹⁷ Ibid, 109.
- ¹⁸ Ibid.
- ¹⁹ “Dust Storm Kills Four in Midwest: Trains Delayed, Trees Felled as Great Clouds Whirl for 36 Hours Over 7 States,” *New York Times*, March 17, 1935.
- ²⁰ “Gale-Driven Dust Darkens Skies from Midwest to Pacific: Dust Storms Visit 6 States of West, ,” *New York Times*, March 23, 1936.
- ²¹ Arthur Rothstein, “The winds of the ‘dust bowl’ have piled up large drifts of soil against this farmers barn near Liberal, Kansas,” Photograph, March 1936, Library of Congress, <http://www.loc.gov/pictures/item/fsa1998018503/PP/>, accessed October 10, 2016.
- ²² Ellen Gray, “NASA Study Finds 1934 Had Worst Drought of Last Thousand Years,” *NASA*, 2014, http://www.nasa.gov/content/goddard/1934-had-worst-drought-of-last-thousand-years/#.VRxLavnF_al, accessed April 14, 2015.
- ²³ Ibid.
- ²⁴ Ibid.
- ²⁵ Ibid.
- ²⁶ “All Kansas Included in Drought Territory: Last 25 Counties Are Added to List, With Two in Iowa and Two in Kentucky,” *New York Times*, August 22, 1936.
- ²⁷ de la Rüe, *Man and the Winds*, 108- 110.
- ²⁸ Hurt, *The Dust Bowl*, 67.
- ²⁹ Worster, *Dust Bowl*, 82.
- ³⁰ Ibid.
- ³¹ Ibid., 97.
- ³² Hurt, *The Dust Bowl*, 28.
- ³³ de la Rüe, *Man and the Winds*, 113.
- ³⁴ Franklin D. Roosevelt, “On Drought Conditions,” Address of the President, September 6th, 1936, <http://docs.fdrlibrary.marist.edu/090636.html>.
- ³⁵ “Colorado Families Flee Dust Storms: Residents of 2 Counties Begin Exodus As Ranchers Plan to Move 50,000 Cattle,” *New York Times*, March 25, 1935.
- ³⁶ Douglas W. Churchill, “Exiles from the Dust: They Create a Grave Problem for California,” *New York Times*, March 13, 1938.
- ³⁷ Ibid.
- ³⁸ Ibid.
- ³⁹ Ibid.
- ⁴⁰ “Dust Bowl Exiles Roam California,” *New York Times*, Jul 18, 1937.
- ⁴¹ Ibid.
- ⁴² Worster, *Dust Bowl*, 20.
- ⁴³ Ibid.
- ⁴⁴ Hurt, *The Dust Bowl*, 51.
- ⁴⁵ Ibid., 53.
- ⁴⁶ Ibid., 52.
- ⁴⁷ Worster, *Dust Bowl*, 21.
- ⁴⁸ Ibid.

⁴⁹ Ibid., 225.

⁵⁰ Ibid., 226.

⁵¹ Ibid.

⁵² Ibid., 236-237.