



DUST, DROUGHT, AND DREAMS GONE DRY

In the 1930s, people on the Great Plains endured one of America's most destructive ecological disasters—the Dust Bowl. What caused fertile farms to turn to dust? How did people survive? What lessons can we learn from the Dust Bowl?

We can find answers to these questions in the region's history and geography. Centuries of human interaction with the environment intensified between 1850 and 1930 as farmers believed that they could overcome the area's variable weather and climate. The 1930s disaster taught them that they were wrong. However, people survived the dust and the drought by forging new community ties and by embracing new government programs. People also discovered a new respect for the power of nature. The Dust Bowl experience demonstrates the complex relationship between humans and the dynamic Great Plains environment.

1 FRONT


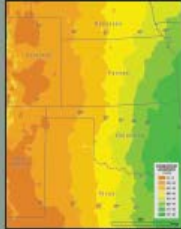


1. PANEL ONE-FRONT

“Dust, Drought, and Dreams Gone Dry”

Humans and the Ecology of the Plains

Myth and reality,ebb and flow,boom and bust—these terms frame the ecological and economic contradictions of the human experience on the Great Plains. The key to that experience has often hinged on the adequacy of rainfall. Denser populations of Native Americans on the eastern Plains cultivated crops in an environment where precipitation is typically more certain and more plentiful. In contrast, humans on the western Plains relied on the abundant resources provided by the bison to sustain them.

During periods of above average precipitation, however, human populations surged west into the semi-arid domain of the Plains' short grasses. Farmers reaped the agricultural rewards offered by the rich soils. Ironically, the rains would diminish and people would adjust by migrating to the tall grass and plentiful rain east of the Plains. Humans repeated the cycle throughout prehistory and into the 20th century history of the Great Plains.

2 FRONT

2. PANEL TWO-FRONT

“Humans and the Ecology of the Plains”

People of the Plains

Bison shared the Plains with other animals and with different groups of indigenous people for thousands of years. Native Americans farmed, hunted bison, and moved to different regions with the seasons. Comanches, Cheyenne, Kiowa, and others called the Southern Plains home. After 1800, western expansion by white farmers began forcing tribal populations westward. In the 1830s, the United States government removed the Five Civilized Tribes (Cherokee, Chickasaw, Choctaw, Creek, and Seminole) to the eastern margins of the Great Plains where they set up farms and communities.

Native Americans increasingly shared the Plains with other people. Hispanic farmers and sheep ranchers from southern Texas moved into the southwestern Plains between the Arkansas and Rio Grande rivers after 1848. White settlers increased their westward migration after 1860 while small groups of African-Americans came out to farming communities on the Plains in the late 1870s in places like Nicodemus, Kansas.

An increase in hunting led to the decline of the bison, and as the human presence in the region grew, towns and ranches occupied more of the Plains. Humans came to rely more on agriculture to sustain themselves. Farming made them dependent on a resource that had a long history of coming and going on the Great Plains—the rain.





3 FRONT

3. PANEL THREE-FRONT

“People of the Plains”

The fields, the grass, the blizz, and the dramatic swings in weather inspired several distinct traditions of art based on the ecology and cultures of the Great Plains. Cheyenne, Kiowa, and Comanche all created art that combined indigenous and European methods.

The grassland ecotone also appeared in the paintings of Albert Bierstadt and other artists. These painters found an audience interested in traditional scenes of the American West, but the work of Bierstadt and others also captured the dynamic environment of the Great Plains in the second half of the nineteenth century.

Like these artists, Willa Cather and other writers sought to capture the distinctive way of living found on the Plains. In Cather's novels, the first one published in the early 1910s, a character's fortune could change as quickly and capriciously as a hailstorm destroys a crop. Most people who bought Cather's books lived well beyond the Plains. Communities in the grasslands, like the artists, became tied to larger economic systems that supported their agriculture along with their art and culture.

Artists of the Plains

4 FRONT

4. PANEL FOUR- FRONT

“Artists of the Plains”

Artists who captured the intense connection of people to their environment in the Plains spoke for the many migrants, farmers, and shopkeepers who had little time to draw or write fiction. Many farming families remembered their ancestors resting on the Plains in the late nineteenth century or before. These voices and stories can be found in the archives and oral history collections of universities, libraries, and historical societies across the United States.

Caroline Henderson became one of the most well-known chroniclers of life on the Plains. Henderson, a graduate of Mount Holyoke College, arrived in Oklahoma in 1907 and wrote lyrical descriptions of the land. Plains natives Marvin Camargo, Lavetta Carragey and Marg Scroggs recorded their memories of the land in oral history interviews. (See QR codes below.)

Henderson, the Camargo, and Scroggs all spoke about the promise of owning land in the Great Plains and all described the dream of becoming independent farmers. Conditions on the Plains often made that dream of independence elusive, and each sought to understand what had caused the economic collapse and environmental adversity that visited farm families.

Voices of the Plains

it brought me so much cheer and satisfaction. The true truth is I have never been so happy as I am now. I am now so happy that I have hated about it. We had very little snow last winter and practically no spring rain, just the lightest of local showers, and we were wet down more than an inch or two. Then we had a regular Egyptian experience with grasshoppers and Texas beetles which destroyed things faster than they could be replanted. Extreme heat with hot winds" through July and part August

5. PANEL FIVE-FRONT

“Voices of the Plains”

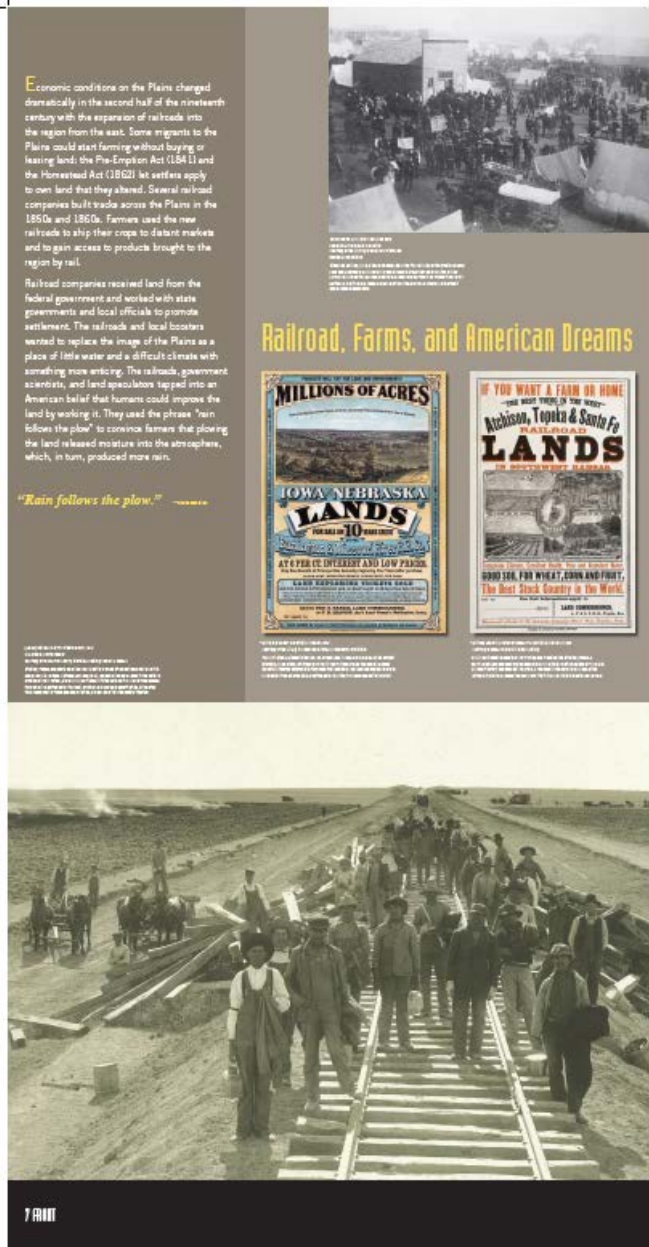
Plains inhabitants faced a complex and highly variable environment featuring periods of wet weather and periods of drought. Plains of the Plains endured horrific weather phenomena such as tornadoes, blizzards, flood, hail storms, dust storms, and the constant wind. The short-lived tornadoes or the hail storm both posed less of a threat than the most serious weather hazard on the Plains: drought. The Plains has episodic, recurrent drought, meaning that people can experience plenty of rain for a period of time, but drought will always return.

Early government surveyors Zebulon Pike and Stephen H. Long traveled through the region during a time of drought in the early nineteenth century and called it “The Great American Desert.” Their description of the area as a wasteland illustrates the impact of drought on the Plains environment. A few years of above average or below average precipitation might make a good or bad condition appear to be permanent. Migrants faced a contradiction between this challenging and unpredictable environment and the region's promise of independence and profit.

Drought

6. PANEL SIX-FRONT

“Drought”



7. PANEL SEVEN-FRONT

“Railroad, Farms, and American Dreams”



8. PANEL EIGHT-FRONT





“Machines and Markets over Nature”

Farmers and their machines radically changed the land of the Plains by converting millions of acres of native grassland to cultivated fields in the years leading up to the Dust Bowl. While farmers expanded their crops and the size of their profits, the removal of the deep, soil-stabilizing roots provided by native grasses set the stage for wind erosion. Between 1900 and 1920 the Plains had abnormally high amounts of rain, so farmers did not notice the potentially negative effects of transforming the landscape.

Many farmers viewed this modification of the land as a natural improvement. Some planted trees surrounding their fields in hopes of increasing rainfall. Mary Scroggs remembered looking out on "the forest of small trees" that her family planted on their farm in Sayre, Oklahoma. On the Scroggs farm, those trees outlined a field planted with wheat.

Encouraged by increasing wheat prices, many farmers grew only wheat after 1900 rather than rotating a variety of crops. This increased their profits, but planting only one type of crop (mono-cropping) robbed the land of nutrients and replaced erosion-preventing grasses with shallow-rooted grains. Mono-cropping would increase with the widespread use of tractors after World War I.

Changing the Land

9 FRONT

9. PANEL NINE-FRONT
"Changing the Land"

In the first decades of the twentieth century the success of wheat farmers appeared to prove right the predictions of prosperity. Machines and hard work could make the Plains a region of profitable family farms. From 1900 to 1920 the number of farms, farmers, bushels of wheat, and acres of land under cultivation increased throughout the Great Plains.

Although farmers did not know it at the time, this period of prosperity relied on temporary conditions. Parts of the Plains received record rainfall in the 1910s and 1920s. For example, from 1911 to 1923, Boise City, Oklahoma, averaged 28 inches of rain, nearly 10 inches above the modern average. Caroline Henderson wrote during this time: "the unusual moisture lures us on to hope for a wheat crop." Soon after, Henderson rejoiced in the "life-restoring rain."

Additionally, in the 1920s farmers increasingly relied on a strain of wheat, Turkey Red, originally brought by Russian immigrants to the Plains in the 1870s. Turkey Red wheat grew very well in the rich soils of the Plains.

Along with better seeds and more rain, the price of land went up in the Plains between 1900 and 1930. Farmers could borrow against the increased value of their property if they needed capital. Most farmers did not see the abundant rain or the high real estate prices as temporary.

False Dawn




"This year for variety an unprecedented amount of rain and snow... the unusual moisture lures us on to hope for a wheat crop in 1929."



10. PANEL TEN-FRONT
"False Dawn"

The property did not last. The temporary environmental and economic conditions that encouraged the boom on the Plains ended in the early 1930s. An epic drought started in 1932, with a center in the Oklahoma panhandle. For much of the 1930s, significant portions of Colorado, Kansas, Oklahoma, Nebraska, Texas, North and South Dakota, and New Mexico experienced severe drought. Climatologists now date the drought one of the worst in the region in the last five hundred years.

Although wind erosion occurred on exposed land, the expansion of agriculture in the Plains since the 1850s intensified the effects of the drought on farms. Agriculture had much more than in previous periods of diversified ranching. Large expanses of the earth lay bare. No longer protected by the grass and its deep roots, the soil dried and turned to a fine dust that the winds spread everywhere.

The lack of rain destroyed the sense of control over nature that Plains farmers had enjoyed during the boom years. The rain did not follow the plow, and new farming machines did little to save crops that could not grow without water. Caroline Henderson wrote that their farm had "no rain for weeks."

No More Rain

"The rain for which we were hoping so eagerly when I wrote last has never come. Indeed, we have had no effective moisture since early June."






TI BACK

11. PANEL ELEVEN-BACK

"No More Rain"






The winds and the dry fields produced epic dust storms. Perhaps the largest one occurred on April 14, 1935, a day known as Black Sunday, when the sunlight grew dim and the sun was blocked by a great dust whirl maintained. Although the Plains had always endured dust storms, the storms increased in frequency between 1932 and 1936 before diminishing in 1938. Some areas endured fifty major dust storms annually during the Dust Bowl years.

Caroline Henderson described a dust storm in "Dust to Eat," a report to the United States Secretary of Agriculture. "There we stay when for hours at a time we cannot see the windmill fifty feet from the kitchen door. There are days when the better part of one cannot distinguish the windows from the solid wall because of the solid blackness of the raging storm."

Marg Scruggs described "Black Sunday" in an oral history interview. "At about 4 p.m., we looked outside and the whole northwest sky and north sky was just black as midnight... it was just black, the blackest I've ever seen." Marvin Caraway later wrote a poem about that day: "I thought it was the end of the world, and we were all going to Hell." The following Sunday, church attendance on the Plains reached all-time highs.

Black Sunday

"I thought it was the end of the world, and we were all going to Hell."

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12. PANEL TWELVE-BACK

"Black Sunday"

In the absence of a dramatic storm, dust still swept through farms. Dust blocked roads, buried fences, damaged tractors, and accumulated the great snow drifts against buildings. In just a few hours, every room inside a house could be covered with a thin layer of dust.

Marg Scruggs described her new routine for setting the table for lunch. "At noontime, when it was lunch, it was so dark, and so much dirt. If you set the table, you didn't set your place up; you always held them face down until you got ready to eat. You'd cover up as much stuff as you could while you were having lunch."

The dust that swept across the farms was much finer than typical house dust—it resembled talcum powder. People cleaned constantly. In a letter to a friend, Caroline Henderson described "the dizzying drift of silt, ground to a fine whitish powder, which gives a ghostly appearance of eeriness to the most familiar landscape. On such days we suffer from a painful sense of helplessness and utter isolation."

People worried about the fine dust entering their lungs—"that pneumonia" killed many animals and people. "We farmers on the Plains endured and continued to fight the grit. Women swept off of porches knowing that they would sweep the porch again and again."

Dust

"There are days when for hours at a time we cannot see the windmill fifty feet from the kitchen door."







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13. PANEL THIRTEEN-BACK

"Dust"

The extreme conditions of the Dust Bowl challenged farm families to find new strategies to survive. In addition to ensuring the overwintering dust, residents of the region witnessed the death of their farm animals. Caroline Henderson wrote a friend of spending "the better part of a night during the week trying to save two of the best young ones" from the effects of the dust.


In response to the hostile conditions, farm families created self-help groups to save their way of life. They made a virtue out of staying on their farms through the dark years. Women often added new duties to their already extensive work. In Kansas, for example, women created cooperatives that shared food, clothing, and chores. Families throughout the Plains gathered together to eat communal meals.

In California, Texas, farmers formed a "last man" club, each of them pledging to be the "last man" to leave the region. These strategies helped many people remain on their farms through the Dust Bowl and long after it ended. Caroline Henderson and her husband did not leave their land until the 1960s. Marg Scruggs lived in Oklahoma until her death in 2012. The Carnegie grew up on separate farms and met after the Dust Bowl. Although Meyer died in 2013, Lawrence still lives in the region today.

Enduring







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14. PANEL FOURTEEN-BACK


"Enduring"

People of the Plains faced difficult personal questions during the Dust Bowl years. Many believed that the prosperity of the 1920s came from hard work—farmers had faith that they controlled their own destiny. When the weather turned hostile, farmers wondered what they had done to deserve such bad fortune. Caroline Henderson wrote that many people believed "the drought is a direct punishment for our sins."

Some people left their farms and moved to the nearest urban center, while others packed their meager belongings and went west, especially to California. Migrant families struggled in the West as they moved throughout the region to find work. Many spent their nights in automobile camps near the agricultural fields where they earned what they could. Many more farmers stayed. These families faced a series of difficult decisions about whether they could survive on their farms. Hebrana estimates that seventy to eighty percent of people in the region of the Dust Bowl remained on their land.

Some did not have enough money to leave. Luke Wood, who grew up on an Oklahoma farm, told interviewees, "When you've got a bunch of kids, where do you go? There's no money or anything to go on, so we were too poor to leave." Other farmers had the option of renting but did not want to leave their land. Gerald Olson lived on a farm in Oklahoma during the 1930s and thanked his parents for staying. "A lot of people left, but my folks decided to stay and I'm glad they stayed."

Difficult Decisions


"When you've got a bunch of kids, where do you go? There's no money or anything to go on, so we were too poor to leave."

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15. PANEL FIFTEEN-BACK

"Difficult Decisions"

The intense physical and psychological experiences of living through dust storms, enduring terrible conditions, or leaving homes on the Plains inspired many artists to try to capture the essence of the Dust Bowl. Woody Guthrie sang ballads about the suffering of ordinary folk on the Plains. Alexander Hogue painted pictures that illustrated the altered landscape of the Dust Bowl.

Photographs by the Farm Security Administration, a government agency, provided evidence to the world about the Dust Bowl experience through documentation of human suffering, dust storms, and agricultural loss. Dorothy Lange's photographs provided a human connection to the Dust Bowl. The lines on the women's faces and the unwashed hair of children conveyed a collective destitution.

The most popular piece of art from the Dust Bowl period remains John Steinbeck's *Grapes of Wrath*. Published in 1939, the novel portrays the experience of the Joad family, a group of migrants from Oklahoma to California. Despite differences from the typical Dust Bowl experience, the trials of the Joad family cemented a popular conception of the Dust Bowl as a disaster for common people from the middle of the United States. Steinbeck's novel also started the process of understanding the tragedy. Who had caused the disaster: farmers, God, capitalism, or something else?

The Art of the Dust Bowl







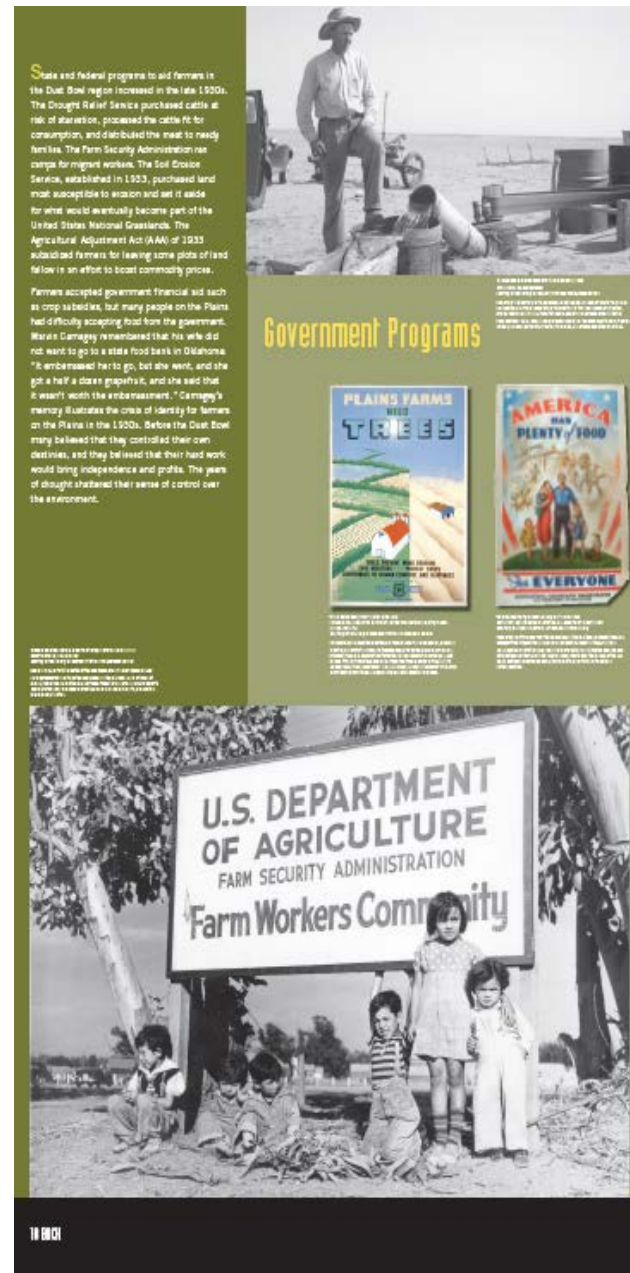

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16. PANEL SIXTEEN-BACK

"The Art of the Dust Bowl"



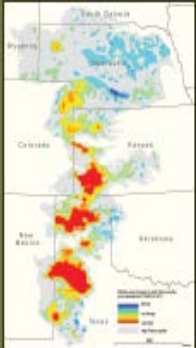
17. PANEL SEVENTEEN-BACK
"Looking for Answers"



18. PANEL EIGHTEEN-BACK
"Government Programs"

Like Plains farmers and government experts in the 1930s, researchers today still seek to learn from the Dust Bowl. Not only social and physical scientists have produced a broad array of scientific literature since the first wave of New Deal era explanations. Some scholars focus on the economic forces driving agriculture in the Plains during the period. Some examine the endurance, cooperation, and creative responses of local communities to the harsh conditions, including widespread irrigation that uses groundwater. Yet others emphasize the application of improved climate data and atmospheric models to enhance our understanding of the past and to predict future drought-based hazards.

Although scholars continue to explore the Dust Bowl, the general public's knowledge of the event has eroded. The Federal agencies that blossomed in the immediate wake of the Dust Bowl have helped wipe the dust from the public's collective memory. Younger generations within the Dust Bowl region know little about what happened and why. Living in an area prone to recurrent drought and facing new environmental challenges, residents can draw on two strong traditions. Resilient communities provide a rich collective memory, while science offers strategies to live within the limits of the environment.



THE WORST HARD TIME
THE DESTRUCTION OF THE GREAT PLAINS
THE DUST BOWL AS HISTORY
BY DANIEL WHEATON

DUST BOWL
DANIEL WHEATON

LETTERS FROM THE DUST BOWL
BY DANIEL WHEATON

ROOTED IN DUST
BY DANIEL WHEATON

On the Dirty Plains Trail

Studying the Dust Bowl

19. PANEL NINETEEN-BACK
“Studying the Dust Bowl”

The people of the Great Plains face new challenges not present in the 1930s. The main source of underground water used for today's farming decreases every year. For now, farmers can draw water from the aquifer deep in the ground and soak their fields with sprinkler systems that spray water in a wide circle. This use of irrigation diminishes the opportunities for severe dust storms to develop. Depleting water resources, however, and the high cost of abstracting the water threaten to curtail irrigation in the future.

Our best bulwark against another ecological crisis on the Plains remains our collective knowledge. How do we build strong communities? How do we reimagine economic and social systems that fit with the natural environment? The history of the Dust Bowl can inform these discussions.






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2010

20. PANEL TWENTY-BACK
“The Plains Today”