Dust Bowl

The Dust Bowl, or the Dirty Thirties, was a period of severe dust storms causing major ecological and agricultural damage to American and Canadian prairie lands in the 1930s, particularly in 1934 and 1936. The phenomenon was caused by severe drought coupled with decades of extensive farming without crop rotation, fallow fields, cover crops or other techniques to prevent wind erosion.[1] Deep plowing of the virgin topsoil of the Great Plains had displaced the natural deep-rooted grasses that normally kept the soil in place and trapped moisture even during periods of drought and high winds.

During the drought of the 1930s, without natural anchors to keep the soil in place, it dried, turned to dust, and blew away eastward and southward in large dark clouds. At times, the clouds blackened the sky, reaching all the way to East Coast cities such as New York and Washington, D.C. Much of the soil ended up deposited in the Atlantic Ocean, carried by prevailing winds. These immense dust storms—given names such as "black blizzards" and "black rollers"—often reduced visibility to a few feet (a meter or less). The Dust Bowl affected 100000000 acres (400000 km²), centered on the panhandles of Texas and Oklahoma, and adjacent parts of New Mexico, Colorado, and Kansas.[2]

Millions of acres of farmland were damaged, and hundreds of thousands of people were forced to leave their homes; many of these families (often known as "Okies", since so many came from Oklahoma) migrated to California and other states, where they found economic conditions little better during the Great Depression than those they had left. Owning no land, many became migrant workers who traveled from farm to farm to pick fruit and other crops at starvation wages. Author John Steinbeck later wrote The Grapes of Wrath, which won the Pulitzer Prize, and Of Mice and Men, about such people.

Causes

During early European and American exploration of the Great Plains, the region in which the Dust Bowl occurred was thought unsuitable for European-style agriculture; the region was known as the Great American Desert. The lack of surface water and timber made the region less attractive than other areas for pioneer settlement and agriculture. Following the Civil War, settlement was encouraged by the Homestead Act, the transcontinental railroad, and waves of new immigrants, and cultivation increased.[3][4] An unusually wet period in the Great Plains mistakenly led settlers and the federal government to believe that "rain follows the plow" (a popular phrase among real estate promoters) and that the climate of the region had changed permanently.[5] The initial agricultural endeavors were primarily cattle ranching, with some cultivation; however, a series of harsh winters beginning in 1886, coupled with overgrazing followed by a short drought in 1890, led to an expansion of land under cultivation.
Continued waves of immigration from Europe brought settlers to the plains at the beginning of the 20th century. A return of unusually wet weather confirmed a previously held opinion that the "formerly" semiarid area could support large-scale agriculture. Technological improvements led to increase of mechanized plowing, which allowed for cultivation on a greater scale. World War I increased agricultural prices, which also encouraged farmers to dramatically increase cultivation. In the Llano Estacado, the area of farmland doubled between 1900 and 1920, and land under cultivation more than tripled between 1925 and 1930.[6]

The favored agricultural methods of farmers during this period created the conditions for large scale erosion under certain environmental conditions.[1] The widespread conversion of the land by deep plowing and other soil preparation methods to enable agriculture virtually eliminated the native grasses which held the soil in place and helped retain moisture, even during dry periods. Furthermore, cotton farmers left fields bare over winter months, when winds in the High Plains are highest, and burned the stubble as a means to control weeds prior to planting, thus depriving the soil of organic nutrients and surface vegetation.

The environmental conditions created when severe drought struck the Great Plains region in the 1930s exposed the increased risk for erosion that was created by the farming practices in use at the time. The drought dried the topsoil and over time it became friable, reduced to a powdery consistency in some places. Then, without the indigenous grasses in place, during the drought, the high winds that commonly occur on the plains created the massive duststorms that marked the Dust Bowl period.

**Geographic characteristics**

The Dust Bowl area lies principally west of the 100th meridian on the High Plains, characterized by plains which vary from rolling in the north to flat in the Llano Estacado. Elevation ranges from 2500 feet (760 m) in the east to 6000 feet (1800 m) at the base of the Rocky Mountains. The area is semiarid, receiving less than 20 inches (510 mm) of rain annually; this rainfall supports the shortgrass prairie biome originally present in the area. The region is also prone to extended drought, alternating with unusual wetness of equivalent duration.[7] During wet years, the rich soil provides bountiful agricultural output, but crops fail during dry years. The region is also subject to high winds.[8]
Drought and dust storms

The unusually wet period, which encouraged increased settlement and cultivation in the Great Plains, ended in 1930. This was the year in which an extended and severe drought began which caused crops to fail, leaving the plowed fields exposed to wind erosion. The fine soil of the Great Plains was easily eroded and carried east by strong continental winds.

On November 11, 1933, a very strong dust storm stripped topsoil from desiccated South Dakota farmlands in just one of a series of bad dust storms that year. Then, beginning on May 9, 1934, a strong, two-day dust storm removed massive amounts of Great Plains topsoil in one of the worst such storms of the Dust Bowl. The dust clouds blew all the way to Chicago, where they deposited 12 million pounds of dust. Two days later, the same storm reached cities in the east, such as Buffalo, Boston, Cleveland, New York City, and Washington, D.C. That winter (1934–1935), red snow fell on New England.

On April 14, 1935, known as "Black Sunday", 20 of the worst "black blizzards" occurred throughout the Dust Bowl, causing extensive damage and turning the day to night; witnesses reported they could not see five feet in front of them at certain points.

Human displacement

This catastrophe intensified the economic impact of the Great Depression in the region. The Dust Bowl has been identified as the "most extreme natural event in 350 years". U.S.

In 1935, many families were forced to leave their farms and travel to other areas seeking work due to the drought (which at that time had lasted four years). Dust Bowl conditions fomented an exodus of the displaced from Texas, Oklahoma, and the surrounding Great Plains to adjacent regions. More than 500,000 Americans were left homeless. Over 350 houses had to be torn down after one storm alone. The severe drought and dust storms had left many homeless, others had their mortgages foreclosed by banks, and others felt they were left no other choice than to abandon their farms in search of work. Many Americans migrated west looking for work. Parents were forced to pack up "jalopies" with their families and a few personal belongings, and head in search of work. Some residents of the Plains, especially in Kansas and Oklahoma, fell ill and died of dust pneumonia or malnutrition.
The Dust Bowl exodus was the largest migration in American history within a short period of time. By 1940, 2.5 million people had moved out of the Plains states; of those, 200,000 moved to California.\[16\] In just over a year, over 86,000 people migrated to California. This number is more than the number of migrants to that area during the 1849 Gold Rush.\[17\] With their land barren and homes seized in foreclosure, many farm families were forced to leave. Migrants left farms in Oklahoma, Arkansas, Missouri, Iowa, Nebraska, Kansas, Texas, Colorado and New Mexico, but were often generally referred to as "Okies", "Arkies" or "Texies".\[13\] Terms such as "Okies" and "Arkies" came to be known in the 1930s as the standard terms for those who had lost everything and were struggling the most during the Great Depression.\[18\]

However, migrants did not always travel long distances; many would simply travel to the next town or county. No matter the distance, the Dust Bowl caused the proportion between migrants and residents to be nearly equal in the Great Plains states due to the high number of families which left their farms.\[19\]

**Characteristics of migrants**

When James N. Gregory examined the Census Bureau statistics, as well as other surveys, he discovered some surprising percentages. For example, in 1939, the Bureau of Agricultural Economics surveyed the occupations of about 116,000 families who had arrived in California in the 1930s. It showed that only 43 percent of southwesterners were doing farm work immediately before they migrated. Nearly one-third of all migrants were professional or white collar workers.\[20\] The poor economy brought more than just farmers as refugees to California; many teachers, lawyers, and small business owners moved west with their families during this time. After the Great Depression ended, some moved back to their original states, but many remained where they had started their new lives. In fact, around one-eighth of California's population is from Okie heritage.\[21\]

**U.S. Government response**

During President Franklin D. Roosevelt's first 100 days in office in 1933, governmental programs designed to conserve soil and restore the ecological balance of the nation were implemented. Interior Secretary Harold L. Ickes established the Soil Erosion Service in August 1933 under Hugh Hammond Bennett. In 1935, it was transferred and reorganized under the Department of Agriculture and renamed the Soil Conservation Service. More recently, it has been renamed the Natural Resources Conservation Service (NRCS).\[22\]

Additionally, the Federal Surplus Relief Corporation (FSRC) was created after more than six million pigs were slaughtered to stabilize prices. The pigs were sent to slaughterhouses and the meat packed and distributed to the poor and hungry. FDR in an Address on the AAA commented, "Let me make one other point clear for the benefit of the millions in cities who have to buy meats. Last year the Nation suffered a drought of unparalleled intensity. If there had been no Government program, if the old order had obtained in 1933 and 1934, that drought on the cattle ranges of America and in the corn belt would have resulted in the marketing of thin cattle, immature hogs and the death of these animals on the range and on the farm, and if the old order had been in effect those years, we would have had a vastly greater shortage than we face today. Our program -- we can prove it -- saved the lives of millions of head of livestock. They are still on the range, and other millions of heads are today canned and ready for this country to eat."
The FSRC diverted agricultural commodities to relief organizations. Apples, beans, canned beef, flour and pork products were distributed through local relief channels. Cotton goods were later included, to clothe the needy.\[23\]

In 1935, the federal government formed a Drought Relief Service (DRS) to coordinate relief activities. The DRS bought cattle in counties which were designated emergency areas, for $14 to $20 a head. Animals unfit for human consumption – more than 50 percent at the beginning of the program – were killed. The remaining cattle were given to the Federal Surplus Relief Corporation (FSRC) to be used in food distribution to families nationwide. Although it was difficult for farmers to give up their herds, the cattle slaughter program helped many of them avoid bankruptcy. “The government cattle buying program was a blessing to many farmers, as they could not afford to keep their cattle, and the government paid a better price than they could obtain in local markets.”\[24\]

President Roosevelt ordered the Civilian Conservation Corps to plant a huge belt of more than 200 million trees from Canada to Abilene, Texas to break the wind, hold water in the soil, and hold the soil itself in place. The administration also began to educate farmers on soil conservation and antierosion techniques, including crop rotation, strip farming, contour plowing, terracing, and other improved farming practices.\[25\][26\] In 1937, the federal government began an aggressive campaign to encourage Dust Bowlers to adopt planting and plowing methods that conserved the soil. The government paid the reluctant farmers a dollar an acre to practice one of the new methods. By 1938, the massive conservation effort had reduced the amount of blowing soil by 65%. Nevertheless, the land failed to yield a decent living. In the fall of 1939, after nearly a decade of dirt and dust, the nearly decade-long drought ended, as regular rainfall finally returned to the region.

At the end of the drought, the programs which were implemented during these tough times helped to sustain a positive relationship between America's farmers and the federal government.\[27\]

A 1935 report by the President's Drought Committee, covering the government's assistance to agriculture during 1934 through mid 1935, discusses conditions, measures of relief, organization, finances, operations, and results of the government's assistance.\[28\] Numerous exhibits are included in this report.

**Long-term economic impact**

In many regions, over 75% of the topsoil was blown away by the end of the 1930s, but there was wide variation in the degree to which the land was degraded. Aside from the short-term economic consequences caused by erosion, there were severe long-term economic consequences of the Dust Bowl.

By 1940, counties that had experienced the most significant levels of erosion saw a greater decline in agricultural land values. The per-acre value of farmland declined by 28% in high-erosion counties and 17% in medium-erosion counties, relative to land value changes in low-erosion counties.\[29\] Even over the long-term, the full agricultural value of the land often failed to recover. In highly eroded areas, less than 25% of the original agricultural losses were recovered. The economy adjusted predominantly through large relative population declines in more-eroded counties, both during the 1930s and through the 1950s.

The economic effects persisted, in part, because of farmers' failure to switch to more appropriate crops for highly eroded areas. Because the amount of topsoil had been reduced, it would have been more productive to shift from crops and wheat to animals and hay. During the Depression and through at least the 1950s, there was limited relative adjustment of farmland away from activities that became less productive in more-eroded counties.

Some of the failure to shift to more productive agricultural products may be related to ignorance about the benefits of changing land use. A second explanation is a lack of availability of credit, caused by the high rate of failure of banks in the plains states. Because banks failed in the Dust Bowl region with a higher rate of frequency than in the rest of the country, it was harder for farmers to gain access to the credit they needed to buy capital to shift crop production.\[30\] Another reason is that profit margins to shift from a previously farmed crop to either animals or hay increased only slightly. Therefore, even if they knew about the benefits of changing land usage, the incentive to switch immediately was relatively small.
Influence on the arts

The crisis was documented by photographers, musicians, and authors. Many were hired by various U.S. federal agencies during the Great Depression. The Farm Security Administration hired numerous photographers to document the crisis. This helped the careers of many notable artists, including Dorothea Lange. She captured iconic images of the storms and migrant families, the most famous of which was a photograph entitled Migrant Mother, which depicted a gaunt-looking woman, Florence Owens Thompson, holding her three children. This picture captured the horrors of the Dust Bowl and caused more people to be aware of the crisis of the country.

The work of independent artists, such as American novelist John Steinbeck's novels Of Mice and Men (1937) and The Grapes of Wrath (1939), and the music of folk singer Woody Guthrie, was also influenced by the crises of the Dust Bowl and the Depression.

Migrants leaving the Plains states took their music with them. Oklahoma migrants, in particular, were descended from rural Southerners and transplanted country music to California. Today, the "Bakersfield Sound" describes this blend, which developed after the migrants brought country music to the city. Their new music inspired a proliferation of country dance halls as far south as Los Angeles.

References


Bibliography

External links

- The Dust Bowl photo collection (http://www.weru.ksu.edu/new_weru/multimedia/dustbowl/dustbowlpics.html)
- The Dust Bowl (http://eh.net/encyclopedia/?article=Cunfer.DustBowl) (EH.Net Encyclopedia)
- Black Sunday, April 14, 1935, Dodge City, KS (http://www.kansashistory.us/dustbowl.html)
- Farming in the 1930s (http://www.livinghistoryfarm.org/farminginthe30s/water_02.html) (Wessels Living History Farm)
- Oklahoma Digital Maps: Digital Collections of Oklahoma and Indian Territory (http://www.library.okstate.edu/okmaps/)