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Decade of Drought

A Year-by-Year Account of Weather-related Changes in 1930s Kingsbury County

A drought of exceptional extent and duration ravaged America's major wheat-producing states in the 1930s. It reached from upper Texas northward through Oklahoma, Kansas, Nebraska, South Dakota, and North Dakota and westward into Wyoming and Montana. It bulged into northwestern New Mexico and eastern Colorado. Western Minnesota felt its brunt, though the eastern Corn Belt states were largely spared. For the decade as a whole, the lowest proportions of normal precipitation were observed in five states: South Dakota, 82 percent; North Dakota, 85 percent; Nebraska, 86 percent; Montana, 87 percent; and Kansas, 88 percent.[1] Naturally, some areas within the vast drought region suffered more or less than the broad averages suggest. One such place was South Dakota's Kingsbury County, which endured a lower percentage of normal rainfall than the state overall.

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1. U.S., Department of Agriculture, *Climate and Man: 1941 Yearbook of Agriculture* (Washington, D.C.: Government Printing Office, 1941), p. 148.

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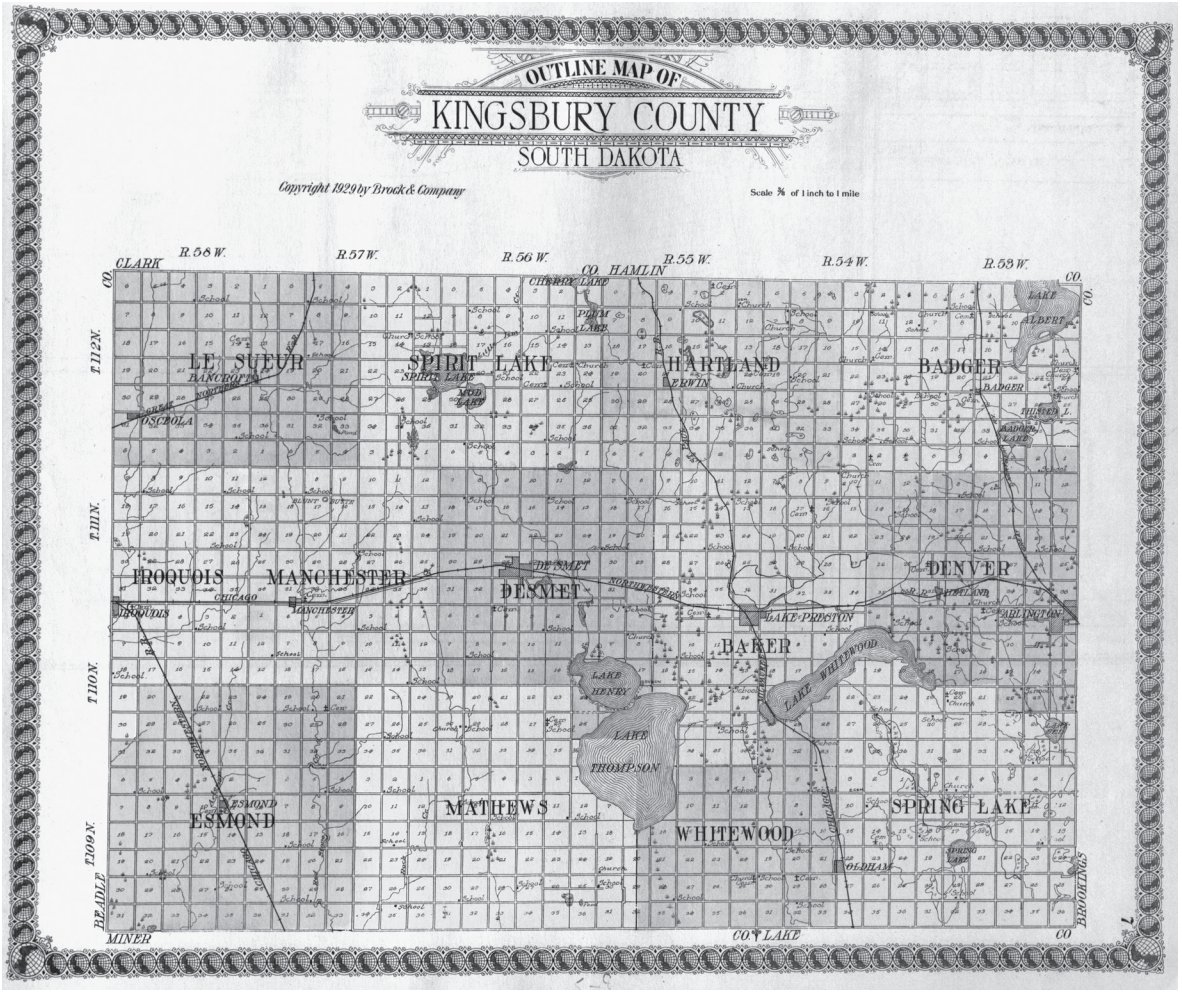
Kingsbury County was dotted with lakes and wetlands in 1929, the year this map was published. The author grew up on a farm on the western edge of the county's largest body of water, Lake Thompson, which vanished during the 1930s.



Coinciding with the epic drought was the Great Depression, a national calamity that has claimed the notice of historians and possessed the public mind at the expense of attention to the drought. Moreover, literature and film have largely dwelt on the lurid features of the dust storms. As a result, studies of the character of drought are needed to provide a more balanced historical account of life on the Northern Great Plains in the 1930s. As a teenager in Kingsbury County during the decade, I experienced the dry years firsthand. This work supplements my personal recollections with on-the-spot reports from the *De Smet News*, the weekly newspaper published at the county seat.

Located midway between Nebraska and North Dakota, and with Minnesota about thirty miles to the east, Kingsbury County lies at the western margin of the prairie region. Beadle County, adjacent on the west, falls within a transitional belt wherein prairie gives way to plain.[2] Testifying to Kingsbury County's prairie-like topography are several shallow lakes, some quite large in area. At the close of the 1920s, these lakes were well supplied with water, much as they had been since white settlers began to arrive in significant numbers in the 1880s. The lakes, together with scattered potholes and wetlands known locally as "sloughs," were prime stopovers for flights of waterfowl migrating between the Gulf of Mexico and Arctic regions.

During the early twentieth century, Kingsbury County farmers employed a diversified set of farming practices. Crop rotations included corn, but a larger acreage was devoted to "small grain," the accepted term for wheat, barley, oats, and rye. Most farm tasks were still accomplished with the aid of draft horses, posing an obvious need for oats and hay. Farmers who depended heavily on income from cereal crops often kept a cow or two for milk and raised some hogs; even corn of inferior quality could be "hogged off" to fatten swine or cut to provide fodder or silage. In farms adjoining the larger lakes, undeeded land with native grasses was often made to serve as pasture or hayland, encouraging extra reliance upon production of beef and dairy products.

Kingsbury County's farmers were well versed in problems posed by

2. Herbert S. Schell, *History of South Dakota*, 4th ed., rev. John E. Miller (Pierre: South Dakota State Historical Society Press, 2004), p. 11.

weather. Heavy spring rains could delay planting; insufficient moisture could impede seed germination; heavy rain near harvest could flatten small-grain stems and shatter heads; a hail storm could ruin a crop. In harvesting small grain, horse-drawn reapers known as "binders" lopped off the plants and ejected twine-bound bundles back onto the field. A dozen or so bundles were then manually leaned together in clumps called "shocks" that—while somewhat effective at shedding rain and allowing air to circulate—could let grain mold if weather or busy schedules long delayed the arrival of a threshing rig. Insects could damage plants. Untimely hot winds could hinder proper development of a corn crop.[3] While cognizant of these and other weather-related

3. Norman O. Thomsen, *Growing Up on the Farm in the Thirties: A South Dakota Family's Story* (Providence Forge, Va.: By the Author, 2000). Thomsen provides admirable coverage of farming practices and farm life about sixty miles southeast of Kingsbury County. For more on harvesting methods, *see* ancillary material in Sterling Evans, "Entwined in Conflict: The South Dakota State Prison Twine Factory and the Controversy of 1919–1921," *South Dakota History* 35 (Summer 2005): 95–124.

Before mechanized equipment replaced draft horses, a portion of every harvest went to feed the animals who helped to produce the crop. This undated photograph was taken in rural Kingsbury County.

This portrait of the author at work on his parents' farm shows how grain bundles were arranged into shocks. Aubrey Sherwood, longtime editor of the *De Smet News*, took the photograph to accompany a story on Johnson's selection as the 1939 Kingsbury County 4-H Club health champion.

problems, however, farmers were not familiar with protracted drought.

In 1890, Congress had established the Weather Bureau and placed it within the United States Department of Agriculture (USDA). To supplement a modest set of federal weather observers, the bureau recruited a much larger network of volunteer observers and provided them with equipment for measuring precipitation as well as maximum and minimum daily temperatures. The *De Smet News* made a habit of reporting the local volunteer's measurements of rain and snow; other weather data, such as wind velocity or temperature, was reported as the editor saw fit. A search of the *News* for the first four years of the 1930s revealed precipitation amounts for major rains and snows, but no annual precipitation totals—a critical measure of drought—appeared. Finally, in its issue of 25 January 1935, the newspaper reported Huron's annual precipitation for the years 1930–1934 (15.64, 12.49, 15.49, 11.10, and 15.98 inches, respectively). Huron, the seat of Beadle County and a regional population center, had a weather station manned by USDA employees. Although the average annual precipitation at Huron is typically less than that at De Smet (20.9 versus 23.84 inches, respectively, for the period 1971 to 2000), the towns are only thirty-three miles apart and thus likely to experience similar climate trends. Annual precipitation figures for De Smet for the years 1935 through 1939 were determined by totaling the rain and snow amounts reported in the *News* (22.04, 14.59, 16.91, 18.71, and 16.93 inches, respectively).[4] Dividing the ten annual figures for actual precipitation by their annual expectations yields ten proportions with a mean of 0.71. Hence, the measurements indicate that during the 1930s farmers in the De Smet and Huron areas received about 71 percent of the normal precipitation received in the area during the last quarter of the twentieth century.

To suggest the significance of drought percentages, consider a hypothetical setting in which approximately half of normal precipitation is lost to evaporation and to the runoff that occurs during heavy

4. *Climate and Man*, pp. 687–89; High Plains Regional Climate Center, University of Nebraska-Lincoln, "Historical Climate Data Summaries," 1971–2000, De Smet, S.Dak., Huron S.Dak., http://www.hprcc.unl.edu/index.php, accessed 24 Oct. 2013. I employed the widely used conversion standard of one inch of water per ten inches of new snow. *See Climate and Man*, p. 558.

rains or instances of snow melting over frozen ground.[5] The remaining half is available for growing plants. Now comes a drought year with 75 percent of normal precipitation along with high temperatures and persistent winds, increasing the amount of moisture lost to evaporation and offsetting the decreases in runoff. As a result, the amount of moisture left for crops is halved. By the same reasoning, a 50-percent drought will leave next to nothing for crops: fields, pastures, hay lands and roadsides will be brown or bare. Simplified though this example may be, it explains rather well what happened in the 1930s. In the year-by-year reports that follow, the subheadings indicate the percentage of normal precipitation received each year.

1930: 75%

In June, the prospect for crops appeared good in Kingsbury County, which had been nourished by five inches of rain in the first two weeks of May. July, however, brought three weeks of high temperatures and unusually hot, dry winds from the south. On 22 August, the *De Smet News* reported that a general rain of 0.74 inches had broken the county's longest dry spell in years.[6] The small grains matured sufficiently early to produce light yields, but aside from a few lucky farmers whose ground received extra moisture, most corn fields were cut for fodder or silage.

1931: 60%

Farmers shrugged off the previous year's disappointing weather and planted as usual. Spring, however, brought them little rain, and by late June they were lamenting the poor small-grain prospects. All hope of a corn harvest perished, due to late-June and July winds accompanied by temperatures that on twelve days exceeded one hundred degrees Fahrenheit.[7] Many corn fields were again cut for fodder and silage. Clearly, the area was now in the grip of drought.

5. Joseph M. Moran and Michael D. Morgan, *Meteorology: The Atmosphere and the Science of Weather*, 2d ed. (New York: MacMillan, 1989), p. 126. Worldwide, evaporation over land is said to be about 40 percent.

6. *De Smet News*, 16 May, 6 June, 22 Aug. 1930.

7. Ibid., 3, 31 July 1931.

Ring-necked pheasants (of Asian origin and known locally as "Chinese pheasants") were well established in the area, but because they nest on the ground, rains can interfere with brooding. Hence, dry weather usually favors an increase in the pheasant population. This year, though, pheasants were reported to be dying. Some farmers—in testimony to the scanty grain yields—attributed the losses to starvation. Game wardens investigated and found no evidence that pheasants were starving.[8]

South Dakota's branch of the USDA Extension Service was headquartered at South Dakota State College of Agriculture and Mechanic Arts (later South Dakota State University). Extension agents scattered around the state in county seats coordinated farm programs, supported 4-H clubs, and disseminated USDA educational material. According to the Extension Service, grasshoppers would be a natural concomitant of drought. The average female was said to lay more than two hundred eggs that in normal years would result in few mature grasshoppers because of fungus, parasites, and predators. With dry weather handicapping these foes, however, hatches might be hugely successful. Although the De Smet area escaped much trouble from the pests in 1931, problems were reported west toward the Missouri River.[9]

The USDA specialists also knew that some grasshoppers respond to overcrowding by producing generations with strong wings and a yen to migrate. Such grasshoppers are conventionally called locusts, and in North America two main species possess this ability—the migratory locust and the Rocky Mountain locust. The latter, which easily qualifies as America's most destructive insect to date, denuded vast regions of the plains and prairies in the nineteenth century. Even though it had been inactive for roughly forty years by 1930, the USDA remained concerned because insect plagues can follow highly irregular timetables.[10]

8. Ibid., 25 Sept., 1931. For a description of the pheasant and its nesting habits, *see* John Bull and John Farrand, Jr., *The Audubon Society Field Guide to American Birds, Eastern Region* (New York: Alfred A. Knopf, 1977), pp. 497–98.

9. *De Smet News*, 21 Aug. 1931.

10. Jeffrey A. Lockwood, *Locust: The Devastating Rise and Mysterious Disappearance of the Insect that Shaped the American Frontier* (New York: Basic Books, 2004) gives a detailed discussion of the Rocky Mountain locust and its ravages. For other grasshoppers,

1932: 74%

By a highly unfortunate coincidence for drought-stricken farmers, economic conditions, already poor, had become extremely depressed, with farm prices dropping to unprecedented lows. Because the previous year's dearth of rain had withered pastures and hay fields, relief workers were estimating that half of all cattle in Kingsbury County were underfed, and some were even starving. Cattlemen were desperately trying to reduce herd sizes at giveaway prices. As a result of urgent appeals, the federal government shipped in about one hundred boxcars of feed in February and March. For families in need, the Red Cross provided more than eight hundred barrels of flour and sixty-two thousand bushels of government-stored wheat.[11]

Meanwhile, much of South Dakota began receiving enough rain to revive hopes that the drought was ending. In June, the state's secretary of agriculture predicted good crops, as noted in the 8 July issue of the *De Smet News*, whose editor remarked that the forecast could not credibly apply to Kingsbury County. One week earlier, the newspaper had reported the first dust storm of the season. One week later, it reported that hot, dry winds were endangering crops. The following week, the temperature exceeded one hundred degrees for five days. There were scattered accounts of grasshoppers further harming already drought-damaged corn fields. Losses of cattle to anthrax were mentioned in August. During 1932, South Dakota Governor Warren Green began encouraging the planting of trees on farms and school property. Because the varieties common in tree claims and farmyards—such as box elder and ash—were in trouble, the Extension Service touted the Chinese elm, a variety known for drought resistance.[12]

Even though the immediate problems in 1932 were a late spring and an unusually hot and dusty July, signs of chronic drought were increasingly evident. Water levels in lakes were going down. The Russian thistle, that classic symbol of aridity, was taking over roadsides and

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see J. L. Capinera, R. Scott, and T. J. Walker, *Field Guide to Grasshoppers, Katydids and Crickets of the United States and Canada* (Ithaca, N.Y.: Cornell University Press, 2004).

11. *De Smet News*, 12, 19, 26 Feb., 25 Mar. 1932.

12. Ibid., 1 Apr., 1, 8, 15, 22 July, 12 Aug., 2 Sept. 1932.

Photographer Arthur Rothstein of the federal government's Resettlement Administration documented this Pennington County scene in 1936. Russian thistles, or tumbleweeds, are piled up against a barbed-wire fence, leaving the fenceposts barely visible.

other uncultivated areas. The plant's spindly arms provide little surface for evaporation, and its taproot can penetrate many feet in search of moisture. A typical specimen matures into a prickly ball perhaps twenty inches in diameter, breaks off, and scatters its copious seeds as it tumbles away in the wind. These thistles, or tumbleweeds, often came to rest against fences, where they constituted a barrier ideally suited for catching drifting snow or soil.

1933: 53%

Early snow and rain sufficed to encourage spring plantings, but the outlook soon dimmed. Extreme heat in June, reportedly the hottest June since 1880, withered the small-grain fields. July brought just

enough rain to encourage some reseeding of fields to millet and sorghum as possible sources of livestock feed. In August, a state agency estimated that the crop yield in Kingsbury County would be 19 percent of normal.[13] Many cattlemen, while still selling stock or trying to rent pastures at distant locations, were stacking green Russian thistles as possible winter nourishment for their herds. Because the thistles are unpleasantly toxic to the digestive systems of cattle and sheep, their use indicated direst need.

By now, every wind was picking up dirt and moving it. Dust, previously shrugged off as an annoyance, was becoming a serious health and household problem. In the early afternoon of Sunday, 12 November, a miles-high dark wall approached steadily from the west-northwest, rolling ominously as it came. An unexpected kind of dust storm, this one virtually turned day to night as it passed over. Five days later, the *De Smet News* (published on Fridays) reported that "the most severe dust storm in South Dakota history" had reduced visibility to twelve feet at times and made lights necessary for hours.[14] This enormous movement of soil, which apparently gathered momentum in arid expanses far to the west, freighted dust well beyond the state. "Awesome," "unforgettable": ordinary words do little justice to the experience of witnessing the phenomenon firsthand.

In another manifestation of extreme drought, Kingsbury County lakes were going dry. Among those already parched was the largest, Lake Thompson, normally an expanse four miles wide and over five miles long. Although the lake was naturally shallow, neighborhood elders had never heard of it being completely dry. Its extensive margin of reeds and coarse grasses, once a choice attraction for migrating waterfowl, had become a source of low-quality hay for nearby farmers.[15]

13. Ibid., 23 June, 14 July, 11, 18 Aug. 1933.

14. Ibid., 17 Nov. 1933.

15. Ibid., 1 Dec. 1933. By the 1990s, Lake Thompson, actually a semipermanent wetland, had again undergone transformation. A series of years with higher rainfall and snow runoff increased the lake's size to nearly twenty thousand acres, making it the largest natural "lake-like" body of water in South Dakota. United States Geological Survey, Northern Prairie Wildlife Research Center, "Eastern South Dakota Wetlands," http://www.npwrc.usgs.gov/resource/wetlands/eastwet/overview.htm.

1934: 76%

Kingsbury County normally receives about thirty inches of snow per year, but less than a foot fell during the winter of 1933–1934. The usual sight of drifting snow was replaced by that of drifting soil, a dreary situation that began making front pages of the *De Smet News* in February. Mid-April saw the worst dust storm in months, and late April brought one that "rivaled November 12th."[16] As the winds moved dirt, the Russian thistles lodged against fences were being obliterated—along with the fences.

16. Ibid., 27 Apr. 1934.

In Beadle County, bordering Kingsbury County on the west, wind-blown dust and sand accumulated in large drifts along the south shore of Lake Byron during the 1930s.

Such scenes made a profound impression on me, a fourteen-year-old farm boy in 1934. During a high wind, I was amazed to see long, eerie whiskers brightly streaming downwind from the windmill in our barnyard. This electrical discharge was presumably akin to what sailors call Saint Elmo's Fire, a luminous glow that can emanate from the mast of a ship in a heavy sea.[17]

The county's rural one-room schools were of conventional design with large side windows for daytime illumination, but winter and spring saw many days when extra lighting was required. In an era still lacking rural electricity, teachers resorted to kerosene lanterns. I was an eighth-grader in Kingsbury County Public School No. 20. Because the wind usually blew all night, each morning our teacher, Dorothy O'Hora, used a broom to sweep the dust off the old wooden desks before sweeping the floor. On days when we needed additional light, she supplemented the kerosene lanterns with pressurized gasoline lamps that belonged to the Lake Thompson Farmers Club, a social organization that met at the school one night a month. The dust storm of Wednesday, 9 May—one that the weary *De Smet News* simply wrote off as "bad"—was destined to make national and international news. Propelled by a powerful west wind, by Thursday it was dropping layers of soil on Illinois and neighboring states. Reaching New York City on Friday, it dimmed a sunny day for five hours and forced the use of street lights. Dust fell all along the eastern seaboard. Saturday's *New York Times* billed it as the greatest dust storm in United States history.[18]

For South Dakota farmers, early 1934 was a time of utter desperation. Because the weather offered no hope for the usual crops, the Extension Service recommended trying to raise forage by planting drought-resistant crops; in support of this effort, relief agencies shipped in large quantities of Sudan grass, millet, and sorghum seeds during May. At the same time, the county received 250 tons of poison-mash materials to combat an expected large hatch of grasshoppers. Then, surprisingly, June rains summed over six inches. Some farmers planted corn, hoping

17. *See* Texas A&M University, Atmospheric Sciences, "St. Elmo's Fire," http://atmo.tamu.edu/weather-and-climate/weather-whys/626-st-elmos-fire, accessed 24 Oct. 2013.

18. *New York Times*, 12 May 1934.

South Dakota suffered from intense dust storms in 1934. This storm hit Huron on 16 March, making the use of streetlights necessary at four o'clock in the afternoon.

Another view of Huron during the 16 March 1934 storm shows cars wending their way up a darkened downtown street.

to produce fodder. Nearly two inches of rain fell in July but were lost to a heat wave that peaked late in the month at 110.5 degrees. August started out extremely hot, produced an inch of rain, and ended with a frost that damaged some of the corn plants intended for fodder. A cool September brought nearly four inches of rain, and October added nearly two more.[19] Though November and December added little in the way of precipitation, the autumn rains had nourished hopes that normality might be returning.

The years of water shortage had affected the area's fauna by encouraging creatures that prefer dry habitat, among them the white-tailed jackrabbit and Richardson's ground squirrel. The rabbit in its mottled-brown summer coat resembles its southern cousin, the black-tailed jackrabbit. What most distinguishes the two is that the northern rabbit is white in the winter. A jackrabbit may weigh up to about eight pounds, leap twenty feet at a bound, and reach a top speed of forty-five miles per hour. Richardson's ground squirrel, known somewhat descriptively as the "flickertail," is best described as a miniature version of its famous cousin, the prairie dog. The animal lives and hibernates in colonies with a network of underground burrows.[20] The weasel, a natural enemy that prefers wetlands, was on the decline, but thanks to the government, a less-effective foe of the flickertail—poison bait—was available at the courthouse in De Smet.

1935: 92%

Temperate spring weather encouraged farmers, despite a persistent dust-colored atmosphere that was finally explained by news that huge dust storms were raging in states to the south.[21] De Smet had 4.6 inches

19. *De Smet News*, 18, 25 May, 8, 15, 22 June, 13, 20, 27 July, 17, 24, 31 Aug., 7, 14, 28 Sept., 19, 26 Oct. 1934.

20. Durward L. Allen, *The Life of Prairies and Plains* (New York: McGraw-Hill, 1967). An informative and well-illustrated introduction to the fauna and flora of the region, including Richardson's ground squirrel and the white-tailed jackrabbit. For the distributions of these animals in the mid-twentieth century, *see* William H. Burt and Richard P. Grossenheider, *A Field Guide to the Mammals* (Cambridge, Mass.: Houghton Mifflin, 1952).

21. *De Smet News*, 1 Mar. 1935. *See* Timothy Egan, *The Worst Hard Time* (New York: Houghton Mifflin, 2006), pp. 171–221 for gripping aspects of the 1935 dust storms in western Kansas and areas to the south.

of much-needed rain in April. May was cool, and the rains returned in June and July. For the first time in years, Kingsbury County farmers reaped a good small-grain crop. De Smet's weather observer proudly reported that precipitation through July totaled 17.34 inches. The corn crop was helped by August rains that delayed some threshing jobs.[22]

The improved weather and crops were a tremendous lift to everyone's spirits. Farming made sense again, even though crop prices were still low. Blacksmiths worked overtime forging parts needed to repair old binders and threshing machines. Farmers worried over decisions about when to cut the ripening grain, then made great haste to get the job done before wind and heavy rain might damage the crop. Then

22. *De Smet News*, 2, 9, 30 Aug., 13 Sept. 1935.

A tractor-powered threshing rig works in a field in central South Dakota in the 1940s. By the time this scene was recorded, trucks had replaced horse-drawn wagons for transporting shocks of grain to the threshing machine.

came threshing, the most exciting activity of the year because it required joint effort on the part of several families.

A rig consisted of a huge threshing machine, plus a clumsy tractor with power sufficient to operate the thresher via a long belt and haul it from farm to farm. In operation, the rig required numerous men and horses: at least six men with hay wagons to haul bundles from field to thresher, two grain wagons to move grain from thresher to granary, one man to nurse the tractor, and another to monitor the thresher's numerous belts, blowers, augers, vibrating screens, and rotating bundle chopper for maladjustments and mishaps. Threshing commenced when the dew dried off a bit in the morning and, with a meal break at noon, continued until near sunset. When a rig visited a farm, the farmer's wife needed extra kitchen help in order to feed the hungry crew their noon meal.[23]

One unhappy note during the year: a malady reported as "sleeping sickness" killed a number of work horses in the area. There was said to be no known remedy for the disease, likely equine encephalitis, and no evident cause for the outbreak.[24] My parents, Olai and Dorothy Johnson, lost their best work horse, a splendid mare of Belgian descent. The animal grew listless, lay down in her stall, and expired in about three days. A neighbor reputed to have some veterinary knowledge administered a potion, but to no avail.

Given the near-normal precipitation recorded in De Smet, farmers could hardly be blamed for thinking that 1935 had heralded the end of the drought.

1936: 61%

During January and February, snowstorms hit the county, and though they dropped only eighteen inches of snow, their high winds

23. For social aspects of threshing, *see* Thomas D. Isern, "Folklife of the Threshing Outfit," *South Dakota History* 16 (Spring 1986): 18–34.

24. *De Smet News*, 4 Oct. 1935. Equine encephalitis is now known to be carried by mosquitoes, with birds acting as the most important hosts of the virus. *See* Carol Turkington and Bonnie Ashley, *Encyclopedia of Infectious Diseases*, 3d ed. (New York: Facts on File, 2007), pp. 98, 101. *See also* Mosquito-Borne Diseases" (Mt. Laurel, N.J.: American Mosquito Control Association, 2011), p. 2, which mentions no relationship to drought.

piled up unusually deep drifts. Blocked roads were common. The blizzard that ended in February closed all roads and tied up rail traffic until tracks were cleared. What made the two months even more memorable was the bitter cold. At De Smet, temperatures of twenty degrees below zero were common, and the two coldest nights reached thirty-five and thirty-seven below. At one point, the temperature remained below zero for fifteen days. Coal ran short. Many schools closed—a recourse seldom taken—because of fuel shortages and blocked roads.[25]

The weather relented in March and April, and modest rains encouraged planting. Despite the rain, in April a dramatic fire swept across the bed of Lake Thompson, feeding on vegetation that had flourished in 1935.[26] My parents' farm abutted the lake on the west side. As some neighbors had done, they fenced a margin of the lake for cattle pasture. Fences at the time normally consisted of wooden posts and barbed wire. I vividly recall seeing, on the night of the fire, a long line of irregularly spaced red lights. Fenceposts were burning off at the base, flopping over on wires still not grounded, and glowing in the dark. The fire was a potent reminder that the area was nowhere near recovery from drought.

Clear skies in May and June made for disappointing yields of small grain, followed by a hot spell that ruled out any prospect of a corn crop. In De Smet, July saw seventeen days with highs above 100 degrees; three days reached 109 and another three 110. Temperatures in the high nineties persisted in August, again with several highs over one hundred degrees. The nearly four inches of rain received in August seemingly evaporated before the first major dust storm of the year arrived in September.[27] The autumn weather reports usually said "clear," "partly cloudy," or "dusty."

As a result of the drought and federal efforts to reduce crop plantings, the region now had extensive acreages of dry lake beds, untilled farmland, and unused pastures. These and perhaps other circumstances had stimulated the reproduction of white-tailed jackrabbits to un-

25. *De Smet News*, 10 Jan., 7, 14, 21, 28 Feb. 1936.
26. Ibid., 17 Apr. 1936.
27. Ibid., 26 June, 3, 10, 24, 31 July, 18 Sept. 1936.

precedented levels. The rabbits were hungry—farmers unloading hay for cattle were eyed by dense circles of rabbits waiting to join the cattle once the farmer departed. To the dismay of the USDA's Forest Service, which was promoting tree planting, ravenous rabbits were gnawing the bark of young trees. One way the Forest Service countered this depredation was by encouraging rabbit hunts.

A typical hunt involved a square mile of land and about forty men armed with shotguns. Ten men dispersed along each side of the square tried to scare rabbits inward to bring them within shooting range at the climax of the hunt. In December, the De Smet post of the American Legion sponsored two hunts of this general nature; the first slew 870 rabbits, the second 895.[28] Doubtless some rabbits were not frightened out of their hiding places, and some escaped by fleeing outwards. Inasmuch as a square mile has 640 acres, these hunts were scouring land with between one and two rabbits per acre. Two memories stand out from the single hunt in which I participated. Jumping down from the leeward edge of a two-foot bank of drift-hardened snow, I nearly landed on a badger sunning itself (we enjoyed nice weather that day), and at the close of the hunt we were rewarded with a serving of hot oyster stew. Ironically, in its issue describing the hunt, the *De Smet News* also reported that airplanes were proving to be even more effective than ground vehicles in hunting wolves and coyotes, natural enemies of immature and ailing jackrabbits.[29] At the time, there were bounties on wolves and coyotes.

Though during the drought some local farmers had been moving west to coastal areas, that exodus was small. Few jobs were available anywhere, and few families had funds that would enable resettlement. In general, Kingsbury County farm families stayed, watered a tiny garden (if the well sufficed), raised egg-laying hens, perhaps kept a cow or two, and subsisted. This state of affairs meant spartan medical and dental care, patching and repatching of garments, contending with aging cars and machinery, lowering educational aspirations, and stinting in every possible way. Schools, churches, card parties, and the like

28. Ibid., 25 Dec. 1936.
29. Ibid.

played vital roles in maintaining social cohesion. The federal government provided patchy help through a variety of agencies, but Works Projects Administration (WPA) jobs for thousands of South Dakotans were curtailed in 1936.[30]

Portions of the state suffered an infestation of grasshoppers said to be the worst since statehood in 1889. It was weather extremes, however, that made 1936 a historic year for South Dakota. The state's lowest recorded temperature, 58 degrees below zero, was observed at McIntosh on 17 February and its highest, 120 degress above, occurred at Gann Valley on 5 July. The state's average annual precipitation was 10.93 inches, the minimum since official record-keeping began in 1886.[31]

1937: 71%

The year came in windy and cold. By January's end, snowfalls had created deep drifts. A snowmelt in early March was followed by a blizzard later in the month. A vicious blizzard in April ended the winter with a newsworthy livestock kill. While the small grain benefited from May rains, the yields were light and spotty due to late planting, with fall rye providing the best results. The grasshopper bait being shipped to Huron was reported to consist of 75 percent sawdust, 25 percent bran, and traces of arsenic and sweetener. Six WPA employees were assigned to mix bait in a vacated Ford garage in De Smet, and an unreported fraction of the bait was spread on untilled land by USDA workers.[32] The corn crop withered due to scanty rain and hot winds in July and August. Farmers were further depressed because draft horses were again dying of "sleeping sickness," and numerous farms were losing cattle to anthrax. No connection between dry weather and the diseases was stated at the time, but now the Extension Service sees a likely relationship between anthrax and drought; anthrax spores can exist for

30. Ibid., 13 Nov. 1936.

31. Schell, *History of South Dakota*, p. 295; U.S., National Weather Service, Sioux Falls Forecast Office, "Selected Quick Reference Climatic Info for Sioux Falls and South Dakota," http://www.crh.noaa.gov/fsd/?n=quickref, accessed 29 July 2013; *Climate and Man*, p. 1112. *The World Almanac and Book of Facts* (New York: Infobase Learning, 2012), p. 305, reports that the record high was again reached at Fort Pierre in July 2006.

32. *De Smet News*, 5 Feb., 5, 26 Mar., 30 Apr., 25 June, 16, 23 July 1937.

long periods in the soil, and during a drought when the grass is meager, cattle munch closer to the ground.[33] One is tempted to speculate that dust storms might have exposed buried spores and possibly even moved some to noninfected areas.

As a result of snowmelt and May rain, a few sloughs had come through the summer with some standing water, thus encouraging hunters to expect a few ducks. In August, however, those hopes evaporated. Pheasant hunting was limited because many birds had died in the cruel winter; hunters were held to four half-days and a daily limit of three cocks. The year tapered off with occasional dust storms, some fine "Indian-summer" days, light snow, and moderate winds.[34]

1938: 78%

On 4 February, the *De Smet News* noted that the rate of farm foreclosures was declining: twenty-two the previous year against thirty-nine in 1936. Mentioned later in the same issue was that county residents had purchased 15,400 trees to plant in 1937. Thawing snow and early rains made for rather wet fields, but seeding of small grain was underway in earnest by the end of March. April and May brought about seven inches of rain, leading the *News* editor to opine that crop prospects were the best in years.[35]

Workers with the WPA again began mixing poisonous grasshopper bait, and in June the operation went on three shifts. The insects were much in evidence, and USDA experts urged farmers to spread bait—not just to avoid immediate damage but to diminish the next year's hatch. The *News* mentioned a locally constructed bait spreader that used an automobile's rear axle assembly geared to a propeller to scatter bait as it fed down from an attached metal barrel.[36]

33. Ibid., 6, 23 Aug. 1937. For current information on anthrax, *see* Bill Epperson, "Frequently Asked Questions: Anthrax," Extension Extra 11010, South Dakota State University Cooperative Extension Service, 2003, http://agbiopubs.sdstate.edu/articles/ExEx11010.pdf, accessed 29 July 2013.

34. *De Smet News*, 5, 12 Nov., 17 Dec. 1937.

35. Ibid., 11 Feb., 25 Mar., 6, 20, 27 May 1938. Beginning 21 May 1938, the newspaper was published on Thursday rather than Friday.

36. Ibid., 24 June, 28 July 1938.

Poisoned grasshopper bait, typically consisting of arsenic and sawdust, could kill large numbers of the insects. This pile of dead grasshoppers was photographed near Pierre in 1933.

The big news in July was that because of well-timed rains, Kingsbury County had produced the largest small-grain crop in years. Unfortunately, prices were still very low.[37] Meanwhile, the beneficial rain had abated and most corn fields were cut for fodder and silage. The county had escaped severe damage from grasshoppers, although the pests still posed a risk for the fall rye planting. Hunters enjoyed au-

37. Ibid., 28 July 1938.

tumn because pheasants were plentiful and migrating ducks were being attracted to numerous ponds now retaining water. Fall ended with little rain or snow.

In December, South Dakota's extension director was quoted to the effect that statewide, each dollar's worth of grasshopper bait had returned an estimated $22.66 in improved crop yields.[38] News reports did not specify who had spread the bait—farmers or federal workers. As I recall, the farmers I knew were not enthusiastic about spreading bait.

1939: 71%

In January, De Smet's weather observer reported that precipitation of 18.71 inches had fallen in 1938, an improvement over the 16.91 inches measured in 1937. In other news, the Forest Service, while planning sixty-five miles of shelterbelt in Kingsbury County, was offering farmers $15.50 per acre to plant trees. The list of available seedlings included American elm, caragana, Chinese elm, cottonwood, green ash, hackberry, honey locust, Russian olive, ponderosa pine, and red cedar. Meager spring precipitation discouraged grain planting, and dust storms returned in April and May.[39]

The county's extension agent, Charlie Sayre, commented in May that he had never seen grasshoppers hatch so early. Bait mixing started at once, and the *De Smet News* carried a report that grasshopper hatching was the worst in the state's history. Federal programs financed the baiting of idle land and roadsides.[40] One team hired by the USDA was composed of Norman Johnson, Virgil McKittrick, and myself. Provided with a new Chevrolet pickup truck, we towed one of the car-axle bait spreaders, working for a few weeks on idle Kingsbury County land west of South Dakota Highway 25. The bait consisted, we believed, of sawdust and bran laced with arsenic. My only vivid recollection is that of the stench we encountered in passing areas previously baited.

Although the dusty spring retarded healthy development of small-grain plants, a series of showers in late May and June dropped about

38. Ibid., 1 Dec. 1938.
39. Ibid., 5, 26 Jan., 23 Feb., 9 Mar. 1939.
40. Ibid., 11, 18, 25 May 1939.

Federal and state authorities encouraged the planting of trees in rural South Dakota as windbreaks during much of the 1930s. This well-tended shelterbelt was planted near Mitchell in 1937.

seven inches of rain and brightened prospects for corn. There existed, of course, the risk of severe damage from the teeming grasshoppers; in one test designed to measure their frequency, twenty-three bushels of the insects were captured on three acres. The 20 July issue of the *De Smet News* featured a USDA history of grasshopper devastations, which stated that the plains were known to have been ravaged on fourteen occasions and that a plague from 1861 to 1864 had forced American Indians and wildlife into the mountains.[41]

Unfortunately, July and August turned dry and ended with a big dust storm. The small-grain yield was low, and stunted ears made the

41. Ibid., 25 May, 1, 15, 22 June, 20 July, 3 Aug. 1939.

corn crop a disappointment.[42] The year 1939 ended with several weekly reports of drifting soil, a fitting end for a decade often alluded to as the "Dirty Thirties."

From 1932 until the end of the decade, grasshoppers were reported as a threat to Kingsbury County crops. Scattered news reports and personal observations help but little in assessing the damage done by the pests. Better known, however, is what the insects did not do. They failed to destroy Kingsbury County crops, reported as fair to good in 1935 and 1938 and light in 1930, 1932, 1937, and 1939. Rainfall variations explain rather well the variations in yields, among them the poor-to-failed results in 1931, 1933, 1934, and 1936. Thus, the main problem during the decade was lack of timely rain, not grasshopper damage. Some credit for this outcome must be accorded to USDA baiting efforts, but what really kept the agency's fears from being realized was that the Rocky Mountain locust failed to appear. Happily, no live specimen has been collected since 1902.[43] While other grasshoppers were abundant, most of them stayed near their hatching grounds. During only one day in 1939 did a substantial swarm of locusts land on my parents' farm. The insects made ominous chewing noises in an oat field near the house, but damage was limited because they flew away the next morning. One former resident of Kingsbury County, the noted author Laura Ingalls Wilder, experienced a ruinous onslaught of Rocky Mountain locusts in the 1870s before her family moved from Minnesota to Dakota Territory. Her chilling account has been applauded by ecologist and author Jeffrey Lockwood as "the ultimate" description of a locust plague. Lockwood concludes that the Ingalls family was hit by part of the most immense locust swarm in recorded history.[44]

Because De Smet expects roughly twenty feet of precipitation per decade, and the climate distortion of the 1930s reduced the amount by roughly 29 percent, farmers in the De Smet area must have endured a loss of nearly six feet of water. Huron lost just over five feet of water.

42. Ibid., 27 July, 31 Aug. 1939.

43. Lockwood, *Locust*, p. 128.

44. Laura Ingalls Wilder, *On the Banks of Plum Creek* (New York: Harper Collins, 1965), pp. 192–208; Lockwood, *Locust*, pp. 14–16. Wilder's chapter on the locust swarm is entitled "The Silver Cloud."

No other dry spell has approached these magnitudes in the time since white settlers first arrived.

Tragic losses of topsoil are not readily visible, but unpainted buildings, obliterated fences, dead trees, and dry lakes were obvious to any visitor to Kingsbury County in 1940. A close observer might have noted the presence of plants not typically found in the area, for example, blue grama grass, more adapted to semiarid conditions and growing from seeds presumably dropped from elsewhere during dust storms. Alien creatures normally seen farther west were in evidence, among them black-billed magpies and burrowing owls that had moved in with the flickertails. The unpredictable jackrabbit population had sharply declined. A December 1940 hunt near the now-extinct town of Manchester yielded only seventy-eight rabbits.[45] Numbers of domestic livestock, especially hogs, had declined sharply since 1930.

Kingsbury County's 1930 population of 12,805 declined to 10,809 in 1940, a drop of about 16 percent.[46] The drought caused some of this decline in numbers, but on the other hand, it postponed until the 1940s a technological revolution that soon replaced draft animals with tractors and provided steadily improving implements and farming practices. Each technological advance has led to fewer and fewer farmers.

Despite the fact that the most notorious dust storm of the 1930s—the one that darkened New York City on 11 May 1934—originated in northern states, national consciousness of the drought came to center on northwest New Mexico, southeast Colorado, and the panhandles of Oklahoma and Texas. In 1935, a journalist referred to this region as a "dust bowl." The term caught on and, together with a fictionalized group of refugees called "Okies," was immortalized in *The Grapes of Wrath*, John Steinbeck's celebrated 1939 novel and a 1940 film.[47] At the time, the Dust Bowl and the "Okies" symbolized for many a stalled economy and maladjusted social system. Ironically, history has it that fewer Oklahoma farmers migrated to California in the 1930s than in

45. *De Smet News*, 12 Dec. 1940.

46. Ibid., 11 July 1940.

47. Charles J. Shindo, "The Dust Bowl Myth," *Wilson Quarterly* (Autumn 2000): 25–30. Here the distortions are attributed to Steinbeck's 1939 novel and the 1940 motion picture, songs by Woody Guthrie, and photographs by Dorothea Lange.

the 1920s, a time of prosperity for the nation's industrial economy but one of falling prices in the agricultural sector. It also turns out that the migrant families portrayed as "Okies" were suggested by the plight of destitute renters or sharecroppers from cotton-producing states, unfortunates who had been evicted by landowners paid to reduce cotton production under a new federal program.[48]

While one might desire that the northern states had shared in the nation's recognition of the hardships caused by the drought of the 1930s, the southwestern Dust Bowl was probably deserving of its publicity. South Dakota's drought experience was lengthy but somewhat intermittent, as when the 1935 crop was instrumental in lifting spirits while southern regions were suffering from tremendous dust storms. Moreover, Kingsbury County possessed topographical advantages in its lakes and sloughs. The level bottoms of these areas captured more arriving water, in contrast to cultivated lands that experienced runoff losses. The area's diversified farming practices also helped by encouraging farmers to experiment with drought-resistant crops. In discussing a parched decade that is fast fading from memory, one must note that since then, America's wheat belt has been blessed with good weather and minor damage from grasshoppers. Locusts are still seen, but none have displayed the destructiveness demonstrated by the Rocky Mountain locust. Some experts suggest that farming in the wheat belt would have been far more risky had the locust not disappeared; some entertain the notion that a ravenous cousin of it may someday appear. Climatologists would agree—based on the cycles observed in tree rings and other evidence—that a dry spell comparable to the thirties might well again beset the wheat belt.[49] Just as the farmer plants with high hopes for each growing season, one hopes that neither a locust plague nor a long drought is on the near horizon.

48. Robert S. McElvaine, ed., *Encyclopedia of the Great Depression*, 2 vols. (New York: Macmillan Reference USA, 2004), 1:255–56.

49. *The Economist*, 29 Jan. 2011, p. 32, reported that Lake Mead, upstream from Hoover Dam, was only 40 percent full and still dropping because of a decade-long drought in the Colorado River Basin.

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On the covers: Lyle R. Johnson (front) grew up on a farm near Lake Thompson in Kingsbury County (back, bottom) during the 1930s. In this issue, he provides a year-by-year account of the decade of drought and its effects. Harl A. Dalstrom delves into the life and career of A. M. Jackley (back, top), sometimes called the Saint Patrick of South Dakota for his work to eliminate the rattlesnakes that posed a threat to the state's West River residents.