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Drought in the United States: 1996 Summary and Historical Perspective

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Drought in the United States: 1996 Summary and Historical Perspective

Overview

Considerable variation in moisture conditions, on both a spatial and temporal basis, occurred in the contiguous United States during 1996. A tenth or more of the country experienced severe to extreme short-term (i.e., monthly) precipitation deficits during nearly half of the months (Figure 1), but in many months there were also large areas of excessive precipitation, which resulted in overall national conditions averaging near normal to wetter than normal (again, see Figure 1). From a national per-

spective, long-term drought peaked at mid-year (Figure 2), when severe drought plagued the South and Southwest.

In the Beginning

The year began on a wet note for most of the nation. By the end of January, only about 3% of the country experienced severe to extreme long-term (i.e., Palmer) drought, while nearly 25% was severely to extremely wet (Figure 2). The dryness was

Month	North-east	E.N. Central	Central	South-east	W.N. Central	South	South-west	North-west	West	National
Jan.	100	96	81	88	94	26	39	77	70	85
Feb.	53	33	15	22	21	2	61	96	85	33
Mar.	29	28	45	92	51	25	20	22	43	33
Apr.	97	34	80	54	26	25	14	100	67	60
May	84	70	96	40	95	5	26	95	90	81
Spr.*	90	40	94	73	79	6	13	94	69	61
Jun.	91	78	67	36	16	60	81	21	38	43
Jul.	101	54	93	48	34	81	59	40	59	90
Aug.	9	26	16	70	32	99	41	26	15	58
Sum.**	92	54	64	43	13	97	63	9	26	75
Sep.	86	27	76	76	92	77	96	88	47	94
Oct.	83	85	37	69	93	39	62	93	48	66
Nov.	56	76	81	71	100	90	74	85	78	93
Aut.***	96	71	85	90	100	86	80	96	72	99
Dec.	95	64	25	27	101	14	45	102	101	89
Annual	102	67	88	73	86	44	45	102	97	98

*Spr.: Spring = March, April, and May
 **Sum.: Summer = June, July, and August
 ***Aut.: Autumn = September, October, and November

Table 1. Monthly, seasonal, and annual 1996 ranks for the contiguous United States and its nine climatological regions. A rank of 1 = driest, 102 = wettest, based on data from 1895 to 1996.

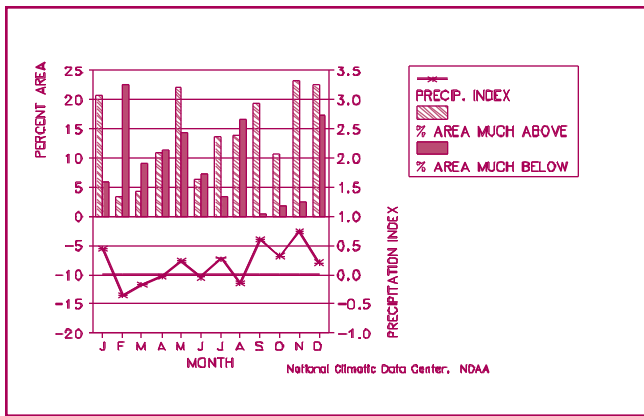


Figure 1. Percent area of the contiguous United States with much above or much below normal precipitation (top) and the monthly precipitation index averaged across the contiguous United States (bottom). Precipitation in the upper ten percentile is categorized as much above normal and that in the lower ten percentile much below normal.

concentrated primarily in the southern Plains, with the south region having the 26th driest January on record (Table 1).

February 1996 was much drier for most of the nation (33rd driest), with most regions east of the Rockies (all regions but the northeast) ranking within the dry third of the historical distribution (Table 1).

Spring

The dry pattern shifted during the spring months (March–May). Most regions that were dry during one or two of these months were wet during the remaining months, except for the south and southwest regions, where drought progressively worsened. Nationwide dryness peaked during May, when nearly 20% of the country experienced severe to extreme long-term (Palmer Index) drought (Figure 2).

The persistent spring dryness in the south region (Figure 3) and southwest region, according to news reports, ravaged the winter wheat crop. October through March is the growing season for the primary hard red winter wheat belt, which consists of most of Kansas, the western half of Oklahoma, and the Texas panhandle (i.e., the northern part of the south region). October 1995–March 1996 was the second driest such growing season for this agricultural belt since 1895 (Figure 4). In 1996, the south

region had the second driest February, second driest January–February, eighth driest September–February, fifth driest May, fifth driest April–May, and sixth driest spring (Figure 5), based on data going back to 1895 (Table 1). The southwest region had the fifth driest November–March, fifth driest June–May, and 13th driest spring (Figure 6) on record in 1996 (Table 1).

Summer

Summer (June–August) rains brought relief from the drought to the south (Figure 3) and southwest regions. However, despite the June precipitation, the south region still had the fifth driest January–June on record (Figure 7). Short-term dryness occurred during June in the northwest and west north central regions, and during August in several regions (see Table 1). The northeast region had the ninth driest August since 1895. By the end of August, the northwest region had the ninth driest summer and the west north central region had the 13th driest summer on record.

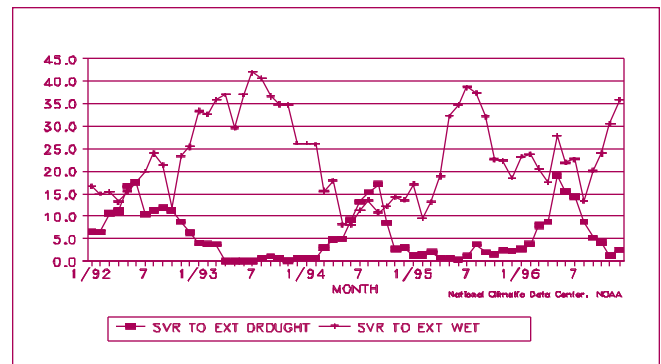


Figure 2. U.S. percent area dry and wet, January 1992–December 1996.

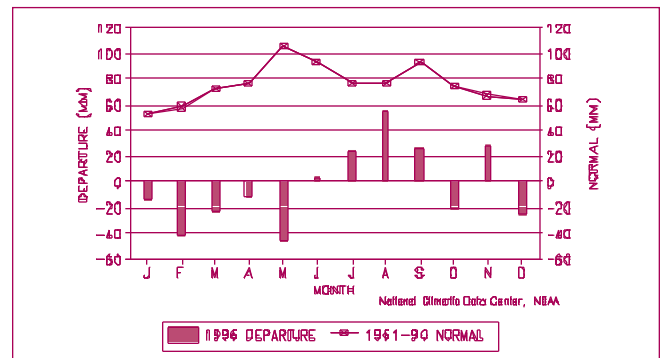


Figure 3. South region 1996 precipitation, normal and 1966 departure from normal.

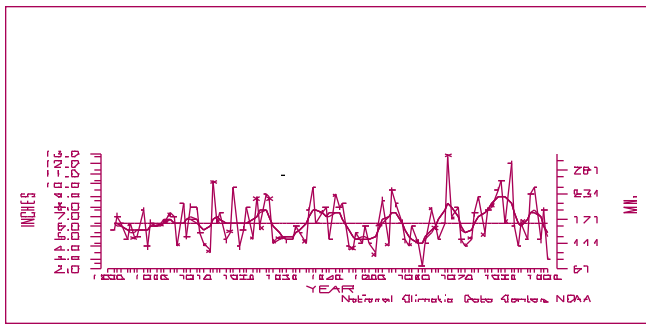


Figure 4. Primary hard red winter wheat belt precipitation, October–March 1895/96–1995/96. Thick smooth curve is 9-point binomial filter.

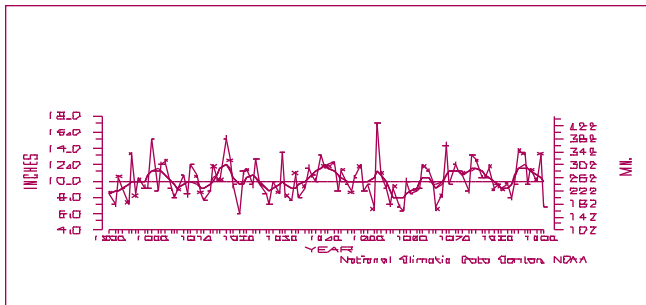


Figure 5. South region precipitation, spring (March–May) 1895–1996. Thick smooth curve is 9-point binomial filter.

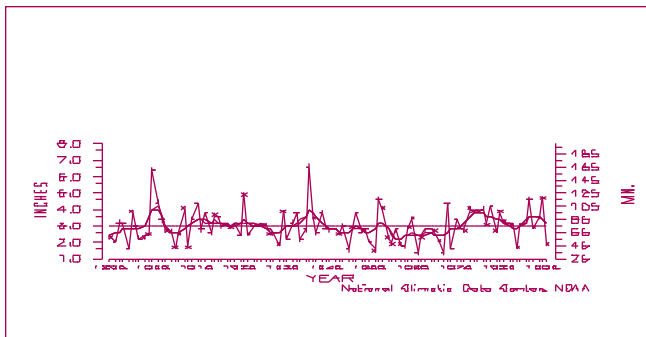


Figure 6. Southwest region precipitation, spring (March–May) 1895–1996. Thick smooth curve is 9-point binomial filter.

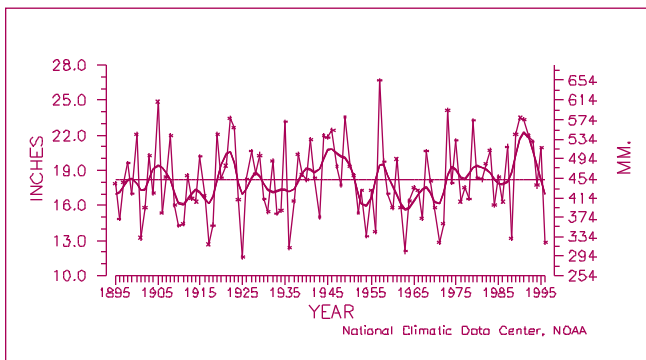


Figure 7. South region precipitation, January–June 1895–1996.

Autumn

Autumn (September–November) was wet over large parts of the United States (Figure 1), with the nation as a whole experiencing the fourth wettest autumn on record in 1996 (Table 1). Only one region (the east north central) ranked in the dry third of the historical distribution for September, and no regions ranked in this category during October and November.

Year-End

Short-term dryness returned to the south region in December, with the three regions from the Ohio Valley (i.e., central region) to the south and south-east ranking in the dry third of the historical distribution (Table 1). The large area of unusual dryness in December was offset by a larger area of unusual wetness (Figure 1), especially in the west, north-west, west north central, and northeast regions, resulting in a national precipitation rank of 14th wettest December (Table 1).

Once again, by the end of the year, only about 3% of the country was experiencing severe to extreme long-term (i.e., Palmer) drought, while more than a third was severely to extremely wet (Figure 2). Nationally, 1996 ranked as the fifth wettest year on record. For the southwest and south regions, which were plagued by severe drought earlier in the year, the 1996 annual rank was in the middle of the historical distribution (Table 1).

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