

ILLINOIS WEATHER & CROPS



ILLINOIS
AGRICULTURAL
STATISTICS SERVICE

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SUMMARY OF 1993 ILLINOIS WEATHER

Prepared by the Illinois State Water Survey, Champaign

SUMMARY: Mean annual temperatures in Illinois during 1993 were essentially equal to the long-term average in eastern counties, and as much as two degrees below average in west-central Illinois. Clearly precipitation was highly anomalous, being the wettest year in Illinois history. The annual totals were five to ten inches greater than average in the northern and southern quarters of the state, and 15 to 20 inches greater than average in central Illinois, with some locales as much as plus 25 inches (see accompanying figure).

The heavy and persistent precipitation brought floods of unprecedented magnitude along virtually all rivers of the state, and many non-riverine lowlands from June through at least August. Water resources of the state (soil moisture, surface and ground water) were replenished, remaining well above average for months into 1994.

TEMPERATURE: The somewhat lower than average temperatures sponsored fewer growing and cooling degree days, whereas heating degree days were greater than the 1961-90 average. Heating degree days (July 1992-June 1993) were about five percent fewer than average, 1993 cooling degree days were three to five percent fewer than average, and growing degree days were ten to 15 percent fewer than average.

PRECIPITATION: Precipitation deviations from the long-term average in Iowa, Illinois and Missouri represented 50 to 70 percent over average. Interestingly, to our east, Ohio and Kentucky realized 25 percent less than average. Precipitation in Illinois was the greatest since 1895.

SIGNIFICANT WEATHER EVENTS

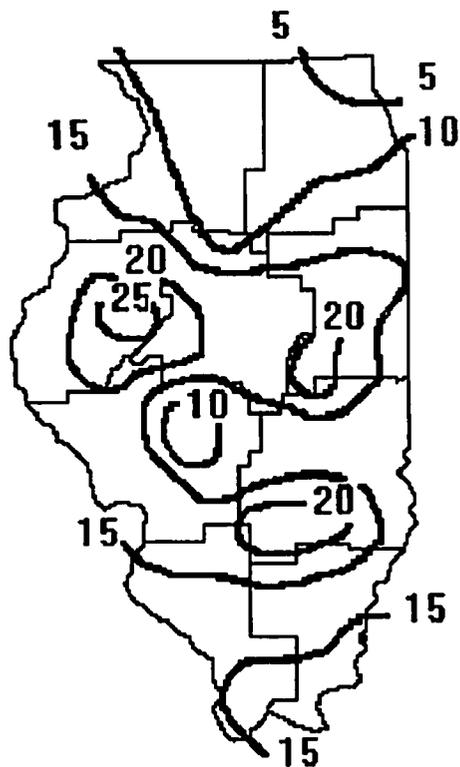
FLOODS: The by-line for the year in the Upper Midwest was flood. Heavier than average precipitation developed in April and continued unabated through October. The heavy amounts were realized by a higher frequency of events as well as greater amounts with most events. By early July, flooding was affecting virtually the entire upper Mississippi River south to Cairo, Illinois, the Missouri, and all lesser tributaries, including the Minnesota, Des Moines, Cedar, Skunk, Iowa, Big Muddy, and Illinois Rivers. This became the worst flood of the century. The floods along the Mississippi in Iowa, Illinois and Missouri were, in part, the result of heavy precipitation which fell in Minnesota and Wisconsin, therefore the discussion which follows is regional in extent.

June through August rainfall, alone, was greater than 20 inches (40 to 60 percent of mean annual precipitation in southern Minnesota, southwestern Wisconsin, northern Missouri and Illinois and all of Iowa). The same areas already accumulated their mean annual precipitation by the end of August. A Soil Conservation Service site in Worth County, Missouri recorded 30.30 inches of rain in July, alone, representing 85 percent of the mean annual precipitation. Some sites in Illinois setting record annual precipitation included Champaign with 56.55 inches, Congerville with 57.20 inches, Dixon Springs with 59.46 inches, Effingham with 57.07 inches, Flora with 60.53 inches, Havana with 59.23 inches, Jacksonville with 56.33 inches, Plumfield with 55.19 inches, Waltonville with 55.21 inches, and Watseka with 58.91 inches.

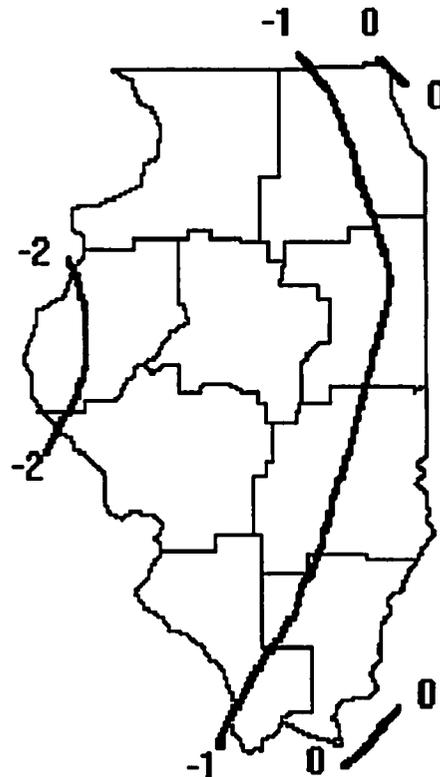
SEVERE WINTER STORMS: Illinois experiences five severe winter storms (six inches or more snow within 24 hrs) on average. There were only three such storms during 1993, one in January and two in February. There were no such storms during November or December of 1993 in Illinois.

TORNADOES AND SEVERE THUNDERSTORMS: Severe thunderstorms and tornadoes began in late spring rather than early spring due to cooler than average temperatures this year. Based on preliminary data, 34 tornadoes were reported in the state in 1993; two in May, 17 in June, five in July, nine in August and one in September (long-term average is 28). No tornado-related deaths or injuries were reported in the state.

PROMINENT WEATHER-RELATED IMPACTS: Traffic across the Mississippi collapsed beginning in May and continued for about three months. The fast flowing, high Mississippi undermined some bridge foundations, halting auto and rail traffic. The routine of persons who lived on one side of the river but worked on the other side was seriously disrupted. For about one month all east-west rail service was diverted to either south of St. Louis or north of Minneapolis.



**Precipitation Departure
from Average (inches) 1993**



**Temperature Departure
from Average (F) 1993**

River traffic was also severely impacted. On June 24 Lock and Dam 17 closed at New Boston. The Mississippi was closed to barge traffic (primarily coal and commodities). Two thousand loaded barges with tugs were stopped for about two months, with daily lost costs in excess of one million. Rails increased their revenues during the summer with increased commodity traffic.

Several hundred miles of public and private levees along the Mississippi in Illinois collapsed under the pressure, or were purposefully blown to save urban areas from flooding.

As of December 1993, water continued to stand over most of Mason County, Illinois. Roads had been elevated about a foot with gravel and oil surface. A shallow aquifer which normally drains into the Illinois River still could not do so due to high ground water.

Temperatures, Illinois averages by districts, months, normal (1961-90 average) and 1992-93 1/

| District and year | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Annual |
|-----------------------|------|------|------|-------|------|------|------|------|-------|------|------|------|--------|
| Degrees | | | | | | | | | | | | | |
| Northwest | | | | | | | | | | | | | |
| Average | 19.2 | 24.0 | 36.4 | 49.4 | 60.6 | 69.9 | 73.8 | 71.4 | 63.8 | 52.3 | 38.9 | 24.8 | 48.7 |
| 1992 | 26.6 | 32.3 | 38.9 | 46.7 | 59.9 | 67.1 | 68.9 | 65.9 | 61.1 | 50.6 | 36.4 | 26.5 | 48.4 |
| 1993 | 23.0 | 23.3 | 33.1 | 45.7 | 61.3 | 67.4 | 73.1 | 72.9 | 58.3 | 49.7 | 37.4 | 28.4 | 47.8 |
| Northeast | | | | | | | | | | | | | |
| Average | 20.7 | 25.2 | 36.7 | 48.7 | 59.6 | 69.3 | 73.5 | 71.6 | 64.4 | 52.9 | 40.1 | 26.5 | 49.1 |
| 1992 | 27.5 | 32.7 | 37.9 | 45.7 | 58.3 | 65.9 | 69.6 | 66.8 | 62.3 | 50.9 | 38.3 | 28.4 | 48.7 |
| 1993 | 25.3 | 24.6 | 33.7 | 45.7 | 60.8 | 67.1 | 74.2 | 73.2 | 59.0 | 49.4 | 38.6 | 29.2 | 48.4 |
| West | | | | | | | | | | | | | |
| Average | 23.2 | 28.0 | 40.0 | 52.6 | 62.8 | 72.0 | 76.1 | 73.4 | 66.3 | 54.9 | 41.8 | 28.2 | 51.6 |
| 1992 | 31.3 | 36.0 | 42.9 | 50.5 | 61.8 | 69.6 | 72.9 | 68.4 | 64.0 | 53.8 | 38.9 | 29.4 | 51.6 |
| 1993 | 25.3 | 25.3 | 35.8 | 49.0 | 63.3 | 70.5 | 75.5 | 75.0 | 59.7 | 51.3 | 38.1 | 30.8 | 50.0 |
| Central | | | | | | | | | | | | | |
| Average | 23.0 | 27.6 | 39.8 | 52.2 | 62.6 | 71.9 | 75.3 | 73.0 | 66.3 | 54.5 | 41.7 | 28.3 | 51.4 |
| 1992 | 30.5 | 35.9 | 42.4 | 50.3 | 61.4 | 69.2 | 72.6 | 68.2 | 64.0 | 53.3 | 39.3 | 29.8 | 51.4 |
| 1993 | 26.3 | 25.6 | 35.3 | 48.5 | 62.9 | 69.8 | 75.1 | 74.4 | 60.6 | 51.8 | 38.7 | 31.6 | 50.1 |
| East | | | | | | | | | | | | | |
| Average | 23.0 | 27.3 | 39.4 | 51.3 | 62.1 | 71.5 | 74.7 | 72.3 | 66.0 | 54.0 | 41.6 | 28.5 | 51.0 |
| 1992 | 29.1 | 35.2 | 41.0 | 48.8 | 60.2 | 67.9 | 71.5 | 67.4 | 63.5 | 52.8 | 40.2 | 29.5 | 50.6 |
| 1993 | 26.7 | 25.4 | 35.4 | 47.9 | 62.8 | 69.6 | 75.2 | 73.8 | 60.4 | 51.4 | 38.9 | 32.0 | 50.0 |
| West Southwest | | | | | | | | | | | | | |
| Average | 25.9 | 30.4 | 42.1 | 54.2 | 63.9 | 72.8 | 76.6 | 74.1 | 67.5 | 56.0 | 43.7 | 31.0 | 53.2 |
| 1992 | 33.0 | 38.8 | 44.6 | 53.5 | 63.1 | 70.4 | 75.9 | 70.1 | 66.2 | 55.7 | 41.9 | 32.7 | 53.8 |
| 1993 | 28.2 | 27.8 | 37.6 | 50.6 | 63.9 | 71.8 | 77.9 | 75.6 | 61.8 | 52.3 | 40.9 | 33.4 | 51.8 |
| East Southeast | | | | | | | | | | | | | |
| Average | 26.7 | 31.2 | 42.8 | 54.3 | 64.1 | 73.0 | 76.5 | 74.3 | 67.9 | 56.1 | 44.2 | 31.9 | 53.6 |
| 1992 | 33.1 | 39.6 | 44.4 | 53.6 | 62.4 | 70.2 | 76.0 | 70.3 | 66.4 | 55.4 | 43.6 | 33.4 | 54.0 |
| 1993 | 30.3 | 28.5 | 38.5 | 50.8 | 64.0 | 72.2 | 78.4 | 75.8 | 62.2 | 52.4 | 41.3 | 34.2 | 52.4 |
| Southwest | | | | | | | | | | | | | |
| Average | 30.3 | 34.7 | 45.7 | 56.7 | 65.7 | 74.3 | 78.1 | 76.0 | 69.3 | 58.0 | 46.5 | 34.9 | 55.9 |
| 1992 | 35.7 | 42.6 | 47.3 | 56.9 | 63.6 | 71.5 | 78.0 | 72.0 | 67.6 | 56.9 | 45.5 | 35.6 | 56.1 |
| 1993 | 33.0 | 32.1 | 41.3 | 52.7 | 65.3 | 73.3 | 80.8 | 79.6 | 65.7 | 54.4 | 42.8 | 36.4 | 54.8 |
| Southeast | | | | | | | | | | | | | |
| Average | 30.6 | 35.0 | 46.0 | 56.7 | 65.7 | 74.2 | 77.9 | 76.0 | 69.5 | 57.9 | 46.9 | 35.4 | 56.0 |
| 1992 | 35.2 | 42.4 | 46.2 | 56.4 | 62.7 | 70.5 | 77.8 | 71.9 | 67.4 | 56.3 | 45.6 | 35.2 | 55.6 |
| 1993 | 34.3 | 32.1 | 41.5 | 52.3 | 64.7 | 72.9 | 80.8 | 79.6 | 65.8 | 54.2 | 43.1 | 36.8 | 54.8 |
| Illinois | | | | | | | | | | | | | |
| Average | 24.8 | 29.3 | 41.1 | 50.0 | 63.1 | 72.2 | 75.7 | 73.6 | 66.8 | 55.2 | 42.8 | 29.9 | 52.4 |
| 1992 | 31.3 | 37.3 | 42.8 | 51.4 | 61.5 | 69.1 | 73.7 | 69.0 | 64.7 | 54.0 | 41.1 | 31.2 | 52.3 |
| 1993 | 28.0 | 27.2 | 36.9 | 49.2 | 63.2 | 70.5 | 76.8 | 75.5 | 61.5 | 51.9 | 40.0 | 32.5 | 51.1 |

Source: National Oceanic and Atmospheric Administration and Illinois State Water Survey
1993 Preliminary

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Precipitation, Illinois totals by districts, months, normal (1961-90 average) and 1992-93 1/

| District and year | Jan. | Feb. | Mar. | April | May | June | July | Aug. | Sept. | Oct. | Nov. | Dec. | Annual |
|-----------------------|------|------|------|-------|------|-------|-------|------|-------|------|------|------|--------|
| Inches | | | | | | | | | | | | | |
| Northwest | | | | | | | | | | | | | |
| Average | 1.33 | 1.14 | 2.60 | 3.68 | 3.88 | 4.18 | 3.99 | 4.08 | 3.87 | 2.75 | 2.49 | 2.04 | 36.03 |
| 1992 | 1.15 | 1.49 | 1.35 | 3.08 | 0.66 | 1.56 | 8.98 | 2.01 | 6.13 | 0.80 | 5.71 | 3.23 | 36.15 |
| 1993 | 2.38 | 1.02 | 3.82 | 5.34 | 3.61 | 10.24 | 4.94 | 6.25 | 4.79 | 1.06 | 1.74 | 1.01 | 46.20 |
| Northeast | | | | | | | | | | | | | |
| Average | 1.57 | 1.33 | 2.68 | 3.73 | 3.64 | 4.05 | 3.98 | 3.96 | 3.79 | 2.50 | 2.83 | 2.38 | 36.44 |
| 1992 | 1.20 | 1.34 | 2.36 | 2.27 | 0.51 | 1.48 | 5.67 | 2.90 | 5.37 | 0.93 | 5.44 | 3.05 | 32.52 |
| 1993 | 3.29 | 1.05 | 3.10 | 5.27 | 2.44 | 9.75 | 4.14 | 5.09 | 4.72 | 1.85 | 1.90 | 0.96 | 43.56 |
| West | | | | | | | | | | | | | |
| Average | 1.45 | 1.41 | 3.09 | 3.76 | 4.10 | 3.98 | 4.39 | 3.74 | 4.28 | 3.01 | 2.63 | 2.28 | 38.12 |
| 1992 | 0.71 | 1.57 | 1.66 | 3.39 | 0.63 | 1.55 | 8.60 | 0.89 | 4.83 | 1.17 | 7.20 | 3.50 | 35.70 |
| 1993 | 1.97 | 1.61 | 3.43 | 4.66 | 3.61 | 6.38 | 9.93 | 6.35 | 7.14 | 1.71 | 2.26 | 0.87 | 49.92 |
| Central | | | | | | | | | | | | | |
| Average | 1.57 | 1.51 | 3.08 | 3.75 | 3.98 | 3.82 | 3.95 | 3.45 | 3.75 | 2.72 | 2.77 | 2.68 | 37.03 |
| 1992 | 1.00 | 1.38 | 2.32 | 2.22 | 0.60 | 1.92 | 11.55 | 1.10 | 4.45 | 1.27 | 6.49 | 3.04 | 37.34 |
| 1993 | 3.83 | 2.07 | 3.32 | 4.95 | 2.45 | 6.77 | 8.69 | 5.96 | 7.84 | 2.89 | 2.81 | 1.31 | 52.89 |
| East | | | | | | | | | | | | | |
| Average | 1.65 | 1.63 | 2.99 | 3.78 | 4.00 | 3.85 | 4.21 | 3.63 | 3.41 | 2.64 | 2.91 | 2.78 | 37.48 |
| 1992 | 1.03 | 1.58 | 2.26 | 2.49 | 1.25 | 2.58 | 9.55 | 1.97 | 4.07 | 1.46 | 6.46 | 2.57 | 37.27 |
| 1993 | 3.82 | 1.78 | 3.09 | 5.11 | 3.43 | 7.90 | 6.52 | 5.45 | 7.72 | 4.22 | 3.40 | 1.36 | 53.80 |
| West Southwest | | | | | | | | | | | | | |
| Average | 1.67 | 1.87 | 3.38 | 3.70 | 4.28 | 3.72 | 3.91 | 3.37 | 3.50 | 2.82 | 3.06 | 2.95 | 38.23 |
| 1992 | 0.96 | 1.33 | 3.03 | 3.29 | 1.20 | 1.45 | 5.51 | 1.51 | 2.72 | 1.11 | 7.81 | 3.02 | 32.94 |
| 1993 | 3.91 | 2.02 | 2.80 | 5.42 | 2.72 | 5.57 | 6.87 | 4.85 | 10.12 | 2.39 | 4.24 | 1.15 | 52.06 |
| East Southeast | | | | | | | | | | | | | |
| Average | 2.03 | 2.21 | 3.74 | 3.83 | 4.23 | 3.81 | 4.23 | 3.36 | 3.15 | 2.86 | 3.50 | 3.42 | 40.37 |
| 1992 | 1.44 | 1.26 | 2.93 | 3.90 | 1.77 | 1.16 | 6.38 | 2.39 | 3.96 | 1.85 | 7.59 | 2.22 | 36.85 |
| 1993 | 4.24 | 2.21 | 2.92 | 5.01 | 3.58 | 4.28 | 7.01 | 4.30 | 8.26 | 2.96 | 7.02 | 1.33 | 53.12 |
| Southwest | | | | | | | | | | | | | |
| Average | 2.36 | 2.79 | 4.33 | 3.93 | 4.44 | 3.74 | 3.85 | 3.51 | 3.28 | 2.96 | 3.84 | 3.77 | 42.80 |
| 1992 | 1.68 | 1.77 | 3.25 | 3.31 | 1.82 | 2.25 | 3.86 | 2.24 | 4.65 | 2.13 | 6.21 | 2.17 | 35.34 |
| 1993 | 4.94 | 3.24 | 3.03 | 4.86 | 4.63 | 5.88 | 4.74 | 3.45 | 8.82 | 3.30 | 7.48 | 1.71 | 56.08 |
| Southeast | | | | | | | | | | | | | |
| Average | 2.69 | 3.05 | 4.75 | 4.39 | 4.89 | 3.86 | 4.05 | 3.37 | 3.08 | 3.01 | 4.01 | 4.05 | 45.20 |
| 1992 | 1.80 | 1.86 | 3.63 | 2.42 | 3.50 | 2.19 | 4.80 | 2.58 | 5.24 | 1.38 | 4.86 | 1.72 | 35.98 |
| 1993 | 4.61 | 2.97 | 2.92 | 5.58 | 4.29 | 4.63 | 4.79 | 3.04 | 7.06 | 3.16 | 7.84 | 1.83 | 52.72 |
| Illinois | | | | | | | | | | | | | |
| Average | 2.08 | 2.19 | 3.48 | 3.85 | 4.07 | 3.85 | 3.95 | 3.65 | 3.51 | 2.85 | 3.03 | 2.86 | 38.79 |
| 1992 | 1.22 | 1.51 | 2.53 | 2.93 | 1.33 | 1.79 | 7.21 | 1.95 | 4.60 | 1.34 | 6.42 | 2.72 | 35.57 |
| 1993 | 3.67 | 2.00 | 3.16 | 5.13 | 3.42 | 6.82 | 6.40 | 4.97 | 7.39 | 2.62 | 4.30 | 1.28 | 51.15 |

Source: National Oceanic and Atmospheric Administration and Illinois State Water Survey
1/1993 Preliminary