

ILLINOIS WATER AND CLIMATE SUMMARY March 2004

March 2004 Overview (Bob Scott)

Temperatures in Illinois during March were well above average, ranking as the 15th warmest March since 1895. Precipitation was above average. Soil moisture within the top 40 inches of soil was above the long-term statewide average. Mean streamflows were near median heights. Shallow groundwater levels were below long-term average depths.

Temperatures across Illinois (Figure 1) for March were well above average (a 3.7-degree departure) uniformly across the state. Crop Reporting District (CRD) temperatures ranged from 3.1 degrees above average (southeast) to 4.0 degrees above average (northeast).

Precipitation amounts for the state were above average (Figure 1). The statewide average of 4.49 inches represents a 1.28-inch departure or 140 percent of average. March totals were highest in the southwest CRD (5.41 inches) and lowest in the west CRD (3.53 inches). Compared to average precipitation values for March, totals ranged from 114 percent of average (southeast CRD) to 179 percent of average (northwest CRD).

Soil moisture in the 0- to 40-inch (0- to 100-centimeter) layer at the end of March was above normal. Soil moisture levels at the end of March were near to above normal across Illinois, except in the deepest layer, which had regions of dry to very moist soils in northern and southern Illinois, respectively.

Mean provisional streamflow statewide was near the median flow, 118 percent of median (Figure 1). Rivers in Illinois recorded mean discharges in the above normal to below normal range this month. Peak stages recorded at stations on the Illinois River did not exceed flood stage. Stations along the Illinois border of the Mississippi River recorded peak stages below flood stage with the exception of Chester, which recorded a peak stage just above flood stage. The Ohio River at Cairo recorded a peak stage well above flood stage.

Water surface levels at the end of March were below the normal pool/target operating level at 3 of 35 reporting reservoirs while the water surface levels at Rend Lake, Lake Shelbyville, and Carlyle Lake were well above target levels. Lake Michigan's mean level remains below the long-term average.

Statewide, **shallow groundwater levels** continue to be below normal for the 19th consecutive month, mainly due to the continuing declines in northwestern Illinois. Deviations from normal averaged 0.7 feet below average, and levels averaged 2.6 feet higher than those observed in February and approximately 3.1 feet above March levels one year ago.

Note: Extended network descriptions appear in the January and July issues. Network maps are available upon request.

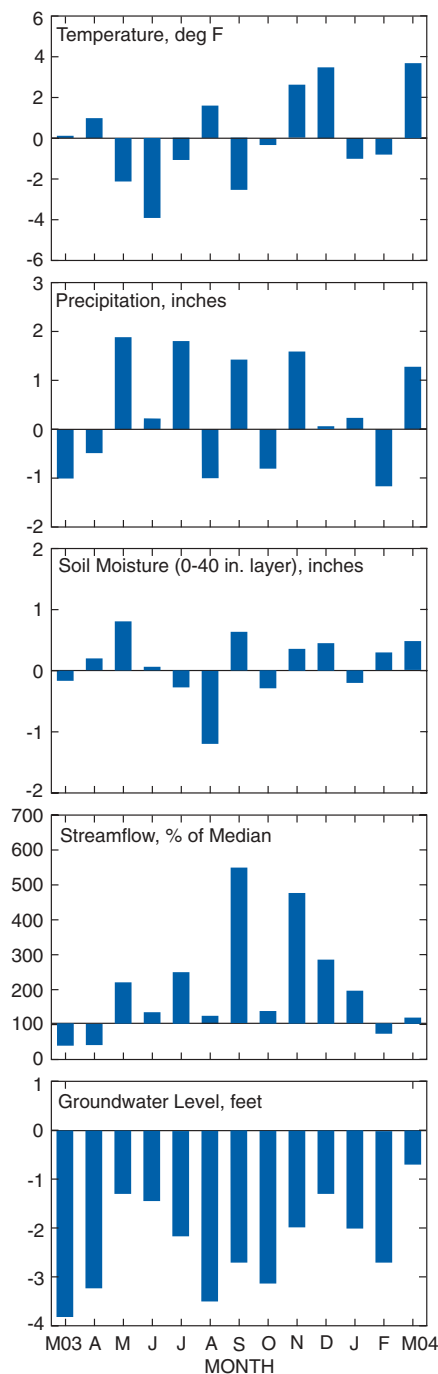


Figure 1.
Statewide departures from normal

Contact

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For more information, see www.sws.uiuc.edu/warm

Weather/Climate Information (Jim Angel and Bob Scott)

Temperatures across Illinois for March were well above average (Figure 2 and Table 1), the 15th warmest March since 1895. Extremes ranged from 7°F at Peru on March 7 to 81°F at Cairo on March 29.

Precipitation for March was above average statewide (Figure 2 and Table 1), the 20th wettest March since 1895. Urbana reported the highest one-day precipitation (2.92 inches) and also the highest monthly precipitation total (7.74 inches). Heading into the growing season, statewide precipitation over the last 3, 6, and 12 months has been very close to average.

Snowfall for March was below average across Illinois, except for the northwestern portion of the state. Far southern Illinois reported no snowfall, but central and northeast Illinois reported 1–2 inches. The heaviest snowfall occurred in the Quad Cities area, with Moline and Galesburg both reporting 6-inch totals for March.

No **severe weather** was reported in Illinois during March, except for a strong low-pressure system that passed through the state on March 5. Wind gusts from this large-scale storm exceeded 50 mph at numerous locations, causing traffic accidents across central and northern Illinois and leaving 47,000 Chicago customers without power.

Illinois Climate Network (ICN) Data. Average daily wind speeds across Illinois for March (Figure 3) ranged from 6 mph at Dixon Springs and Rend Lake to 13 mph at Monmouth, Bondville, and Stelle. The highest wind gusts for the month, 56 mph, were recorded at DeKalb and Stelle on March 5. Wind speeds in excess of 50 mph also were recorded that day at Bondville, St. Charles, and Peoria. The prevailing wind direction during the month was from the west-southwest. Wind speeds in excess of 8 mph varied from 177 hours at Dixon Springs to 565 hours at Monmouth. (March has 744 hours.) Average air temperatures for the month ranged from 38°F at Freeport to 51°F at Dixon Springs and Carbondale.

Solar radiation totals in March showed seasonal increases tempered by frequent cloud cover with the heavy precipitation across the state and ranged from 313 Mega-Joules per meter squared (MJ/m²) at St. Charles to 463 MJ/m² at Dixon Springs. Potential evapotranspiration varied from 1.9 inches at St. Charles to 3.3 inches at Dixon Springs. Soil temperatures at the 4- and 8-inch levels ranged from the upper 30s in northern Illinois to the lower 50s in southern Illinois.

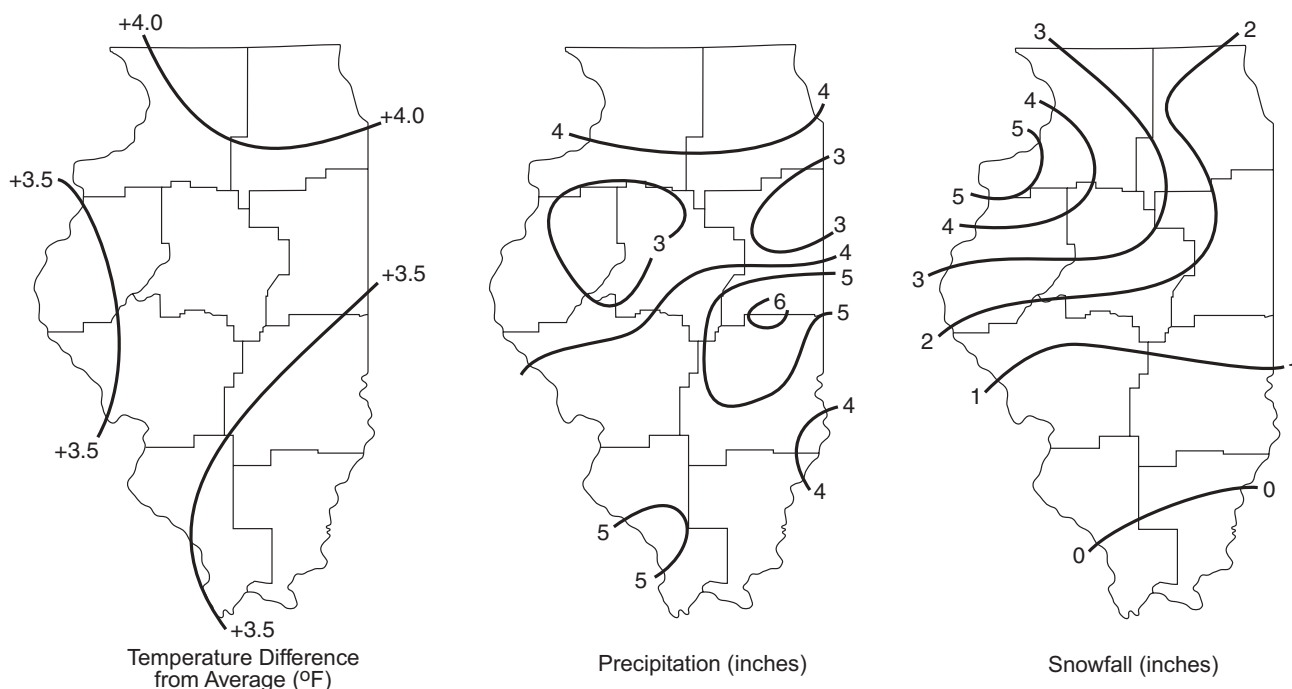


Figure 2. Illinois temperature, precipitation, and snowfall during March 2004

Table 1. Illinois Precipitation (inches) and Temperature (°F) by Crop Reporting District

| <i>Crop Reporting District</i> | <i>Last Month</i> | | | <i>Last 3 Months</i> | | | <i>Last 6 Months</i> | | | <i>Last 12 months</i> | | |
|--------------------------------|----------------------|--------------|-----------------|-----------------------|--------------|-----------------|-----------------------|--------------|-----------------|-----------------------|--------------|-----------------|
| | <i>Mar 04 Amount</i> | <i>% Avg</i> | <i>Temp Dev</i> | <i>Jan 04- Mar 04</i> | <i>% Avg</i> | <i>Temp Dev</i> | <i>Oct 03- Mar 04</i> | <i>% Avg</i> | <i>Temp Dev</i> | <i>Apr 03- Mar 04</i> | <i>% Avg</i> | <i>Temp Dev</i> |
| Northwest | 4.53 | 179 | 3.9 | 6.24 | 116 | 1.3 | 14.53 | 113 | 2.0 | 34.34 | 95 | 0.7 |
| Northeast | 4.19 | 165 | 4.0 | 5.89 | 103 | 0.9 | 14.91 | 109 | 1.5 | 37.00 | 101 | 0.3 |
| West | 3.53 | 123 | 3.4 | 5.02 | 83 | 0.7 | 13.89 | 98 | 1.4 | 38.64 | 103 | 0.2 |
| Central | 3.90 | 130 | 3.9 | 5.60 | 88 | 0.8 | 13.97 | 95 | 1.4 | 37.08 | 100 | 0.2 |
| East | 4.81 | 157 | 3.8 | 6.92 | 106 | 0.7 | 15.78 | 105 | 1.3 | 42.97 | 114 | 0.1 |
| West-southwest | 4.33 | 130 | 3.7 | 7.72 | 108 | 0.3 | 17.05 | 106 | 1.2 | 42.10 | 112 | 0.0 |
| East-southeast | 4.88 | 134 | 3.4 | 9.54 | 115 | 0.7 | 19.46 | 107 | 1.4 | 45.12 | 110 | 0.2 |
| Southwest | 5.41 | 135 | 3.5 | 9.57 | 105 | 0.8 | 18.82 | 95 | 1.5 | 42.56 | 100 | 0.3 |
| Southeast | 4.94 | 114 | 3.1 | 9.46 | 92 | 0.7 | 17.91 | 84 | 1.5 | 41.73 | 94 | 0.5 |
| State Average | 4.49 | 140 | 3.7 | 7.30 | 103 | 0.8 | 16.26 | 102 | 1.4 | 40.12 | 103 | 0.3 |

Note: Data are provisional. Complete, quality controlled data are available about six months after a given month.

Extended climate outlooks issued by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Climate Prediction Center for April call for warmer than normal temperatures, especially in northern Illinois, and equal chances of above, below, and normal precipitation statewide. April–June outlooks call for equal chances of above, below, and normal temperatures and precipitation across Illinois.

Soil Moisture Information (Bob Scott)

Due to above average precipitation in Illinois during March, near surface soil moisture levels at the end of the month were near to above normal (Figure 4). Moisture values in the 0- to 6-inch layer ranged from 86 percent of normal at Dixon Springs to 149 percent of normal at Springfield. Moisture levels were highest in central and southern Illinois within the region of greatest precipitation. Conditions were much closer to normal in the 6- to 20-inch layer, where amounts ranged from 92 percent of normal at Dixon Springs to 121 percent of normal at Rend Lake. The 20- to 40-inch layer displayed drier soils in northern Illinois, with values ranging from 70 percent of normal at Peoria to 128 percent of normal at Rend Lake. Soil moisture in the 40- to 72-inch layer continued to show high variability, although the extreme dryness seen over north-central Illinois during the last several months has lessened. Moisture levels in that layer ranged from 57 percent of normal at Peoria and DeKalb to just over 200 percent of normal at Rend Lake. Overall, soil moisture in Illinois at the end of March was above normal (Figure 1).

Compared to the end of last month, soil moisture generally decreased in the 0- to 6- and 6- to 20-inch layers in northern Illinois but increased in southern Illinois (Table 2). Changes as high as 25 to 40 percent were measured nearest the surface at a few sites, but most stations reported changes of 10 percent or less. Relatively small changes in soil moisture, 8 percent or less, were observed the 20- to 40-inch layer.

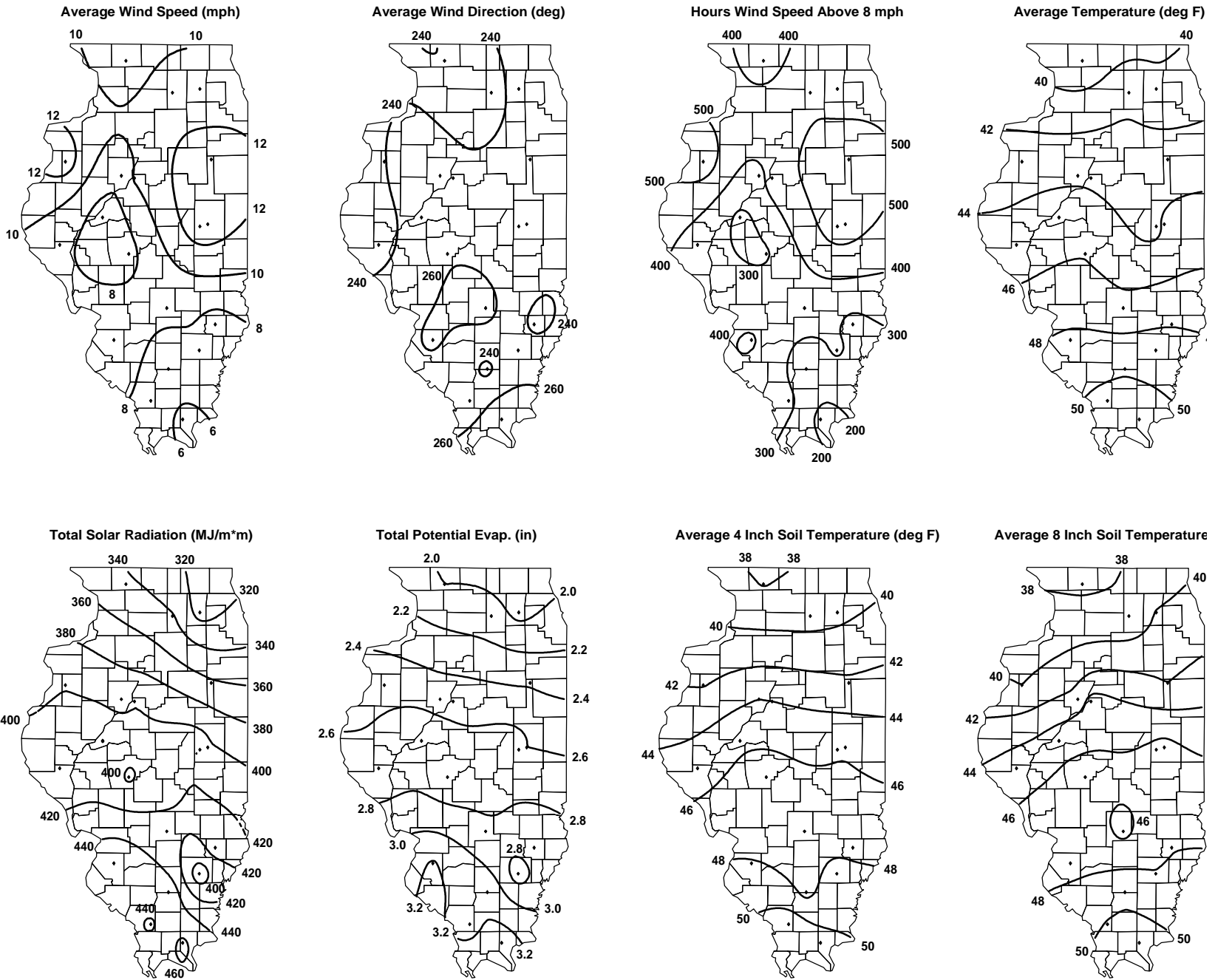


Figure 3. March monthly averages and totals as collected by the Illinois Climate Network

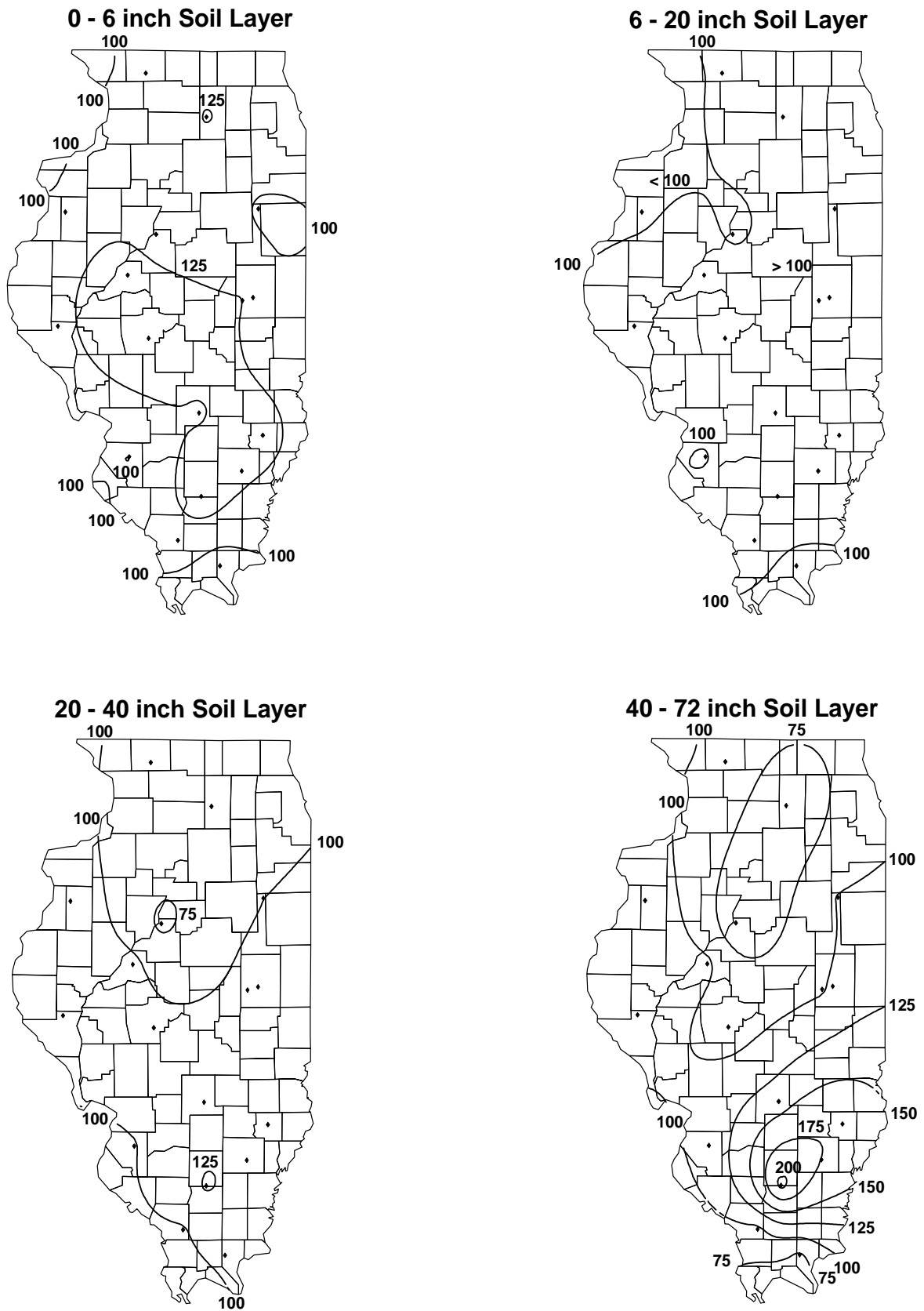


Figure 4. April 1 observed percent-of-normal soil moisture based on 1985-1995 mean

Table 2. Soil Moisture in Various Layers on April 1, 2004

| <i>Location</i> | <i>Apr 1 0 - 6 (inches)</i> | <i>Change from Mar 1 (%)</i> | <i>Apr 1 6 - 20 (inches)</i> | <i>Change from Mar 1 (%)</i> | <i>Apr 1 20 - 40 (inches)</i> | <i>Change from Mar 1 (%)</i> |
|--------------------|-------------------------------------|--------------------------------------|--------------------------------------|--------------------------------------|---------------------------------------|--------------------------------------|
| Freeport (NW) | 2.2 | -26 | 4.8 | -5 | 7.1 | 3 |
| DeKalb (NE) | 2.7 | 0 | 5.7 | 6 | 7.3 | -2 |
| Monmouth (W) | 2.1 | -15 | 4.7 | -13 | 7.0 | 0 |
| East Peoria (C) | 2.3 | -9 | 5.2 | -9 | 7.6 | 8 |
| Topeka (C) | 1.3 | -10 | 2.9 | -3 | 3.4 | -8 |
| Stelle (E) | 2.4 | -6 | 5.7 | -4 | 6.9 | -5 |
| Champaign (E) | 2.3 | -5 | 5.5 | 0 | 6.8 | 0 |
| Bondville (E) | 2.8 | 6 | 5.6 | 9 | 8.4 | 1 |
| Perry (WSW) | 2.4 | 0 | 5.5 | -3 | 8.3 | 0 |
| Springfield (WSW) | 2.4 | 16 | 5.4 | 8 | 8.1 | 3 |
| Brownstown (ESE) | 2.9 | -11 | 5.0 | 2 | 8.5 | 2 |
| Olney (ESE) | 2.9 | -3 | 4.8 | 1 | 7.2 | 1 |
| Belleville (SW) | 2.4 | -1 | 5.2 | -1 | 8.8 | 0 |
| Carbondale (SW) | 2.9 | 28 | 5.6 | 9 | 8.0 | 0 |
| Ina (SE) | 3.2 | 37 | 5.5 | 10 | 7.9 | 5 |
| Fairfield (SE) | 2.9 | 13 | 5.6 | 1 | 7.6 | 3 |
| Dixon Springs (SE) | 2.3 | -3 | 5.0 | 1 | 8.2 | 1 |

Surface Water Information (Sally McConkey)

River and stream discharge and stage data are obtained from gaging stations operated by the U.S. Geological Survey (USGS) or the U.S. Army Corps of Engineers (USACE). The USGS gaging station network is supported in part by the Illinois Department of Natural Resources Office of Water Resources and the Illinois State Water Survey (ISWS), and the USACE. Provisional discharge data are obtained from direct computer access to the USGS.

Table 3 lists selected streamgaging stations located on the Illinois, Mississippi, and Ohio Rivers, flood stage and the provisional peak stage for the current month. The peak stage is determined from the daily morning readings posted by the National Weather Service and/or the USACE. Stations on the Illinois River recorded peak stages below flood stage this month. The Mississippi River along the Illinois border also recorded peak stages below flood stage, with the exception of Chester. The Ohio River at Cairo peaked above flood stage on March 12.

Table 4 lists 26 streamgaging stations located throughout Illinois. Provisional monthly mean flows posted by U.S. Geological Survey (USGS) are listed if available; otherwise, daily mean discharge data posted by the USGS were used to estimate the mean flow for the month. Long-term mean flows for each month are published by the USGS. The month's median flow for each station listed in Table 4 was determined by ranking the March mean flow for each year of record, and selecting the middle value, 50 percent exceedence probability.

Mean provisional flow statewide is near the median this month (118 percent of the median) and very near the mean (96 percent of the mean). Flows in the northern part of the state were generally in the normal range. Flows in several central and southern Illinois rivers were above normal. Only the Big Muddy at Plumfield recorded a mean flow below normal. Flows recorded at Plumfield may be affected by retention of water in Rend Lake.

Water-Supply Lakes and Major Reservoirs. Table 5 lists reservoirs in Illinois, their normal pool or target water surface elevation, and other data related to observed variations in water surface elevations. Reservoir levels are

Table 3. Peak Stages for Major Rivers, March 2004

| <i>River</i> | <i>Station</i> | <i>River mile*</i> | <i>Flood stage (feet)*</i> | <i>Peak stage (feet)**</i> | <i>Date</i> |
|--------------|----------------|--------------------|----------------------------|----------------------------|-------------|
| Illinois | Morris | 263.1 | 13 | 11.8 | 07 |
| | La Salle | 224.7 | 20 | 19.3 | 07 |
| | Peoria | 164.6 | 18 | 14.5 | 10 |
| | Havana | 119.6 | 14 | 13.0 | 12 |
| | Beardstown | 88.6 | 14 | 12.9 | 13 |
| | Hardin | 21.5 | 25 | 22.2 | 10 |
| Mississippi | Dubuque | 579.9 | 17 | 10.7 | 31 |
| | Keokuk | 364.2 | 16 | 10.9 | 08 |
| | Quincy | 327.9 | 17 | 13.8 | 06 |
| | Grafton | 218.0 | 18 | 16.4 | 08 |
| | St. Louis | 180.0 | 30 | 25.4 | 08 |
| | Chester | 109.9 | 27 | 27.3 | 09 |
| | Thebes | 43.7 | 33 | 31.7 | 10 |
| Ohio | Cairo | 2.0 | 40 | 45.3 | 12 |

Notes:

* River mile and flood stage from *River Stages in Illinois: Flood and Damage Data*, Illinois Department of Natural Resources, Office of Water Resources, July 1998.

** Peak stage based on daily a.m. readings, not instantaneous peak.

reported in terms of their difference from normal pool (or target level). Reservoir levels are obtained from a network of cooperating reservoir operators who are contacted each month by ISWS staff for the current water levels. The average of the month-end readings for the period of record is reported in terms of the difference from normal pool or target level (column 6 of Table 5), while the number of years of record for each reservoir also is given (column 7). Most reservoirs serve as public water supplies, with the exceptions noted in the last column.

Compared to levels at the end of February at 33 reservoirs, the water surface elevation had risen at 19 reservoirs, was the same as last month at 12 reservoirs, and had decreased at 2 reservoirs by the end of March. For the 35 reservoirs reporting observations at the end of March, 22 reservoirs had water surface levels above the normal pool (or target operating level), 10 reservoirs were at normal pool, and 3 reservoirs were below normal pool. Canton Lake remains more than 3 feet below normal pool.

Major Reservoirs. Water levels at Lake Shelbyville, Carlyle Lake, and Rend Lake have increased since the end of February and are well above their seasonal target levels.

Great Lakes. Current month mean and end-of-month values are provisional and are relative to International Great Lakes Datum 1985. The March mean level for Lake Michigan was 577.1 feet, compared to a mean level of 576.5 feet in 2003. The long-term average lake level for March is 578.6 feet, based on 1918–2002 data. Historically, the lowest mean level for Lake Michigan in March occurred in 1964 at 576.0 feet, and the highest level occurred in 1986 at 581.1 feet. The month-end level of Lake Michigan was 577.2 feet.

Table 4. Provisional Mean Flows, March 2004

| Station | Drainage area (sq mi) | Years of record | 2004 mean flow (cfs) | Long-term flows | | Flow condition | Percent chance of exceedence | Days of data this month |
|------------------------------------|-----------------------------|-----------------------|----------------------------|-----------------|-----------------|----------------|------------------------------------|-------------------------------|
| | | | | Mean* (cfs) | Median (cfs) | | | |
| Rock River at Rockton | 6363 | 68 | 7270 | 7266 | 7915 | normal | 53 | 31 |
| Rock River near Joslin | 9549 | 60 | 9615 | 10820 | 9663 | normal | 50 | 31 |
| Pecatonica River at Freeport | 1326 | 84 | 1458 | 1752 | 1676 | normal | 56 | 31 |
| Green River near Geneseo | 1003 | 64 | 777 | 1037 | 872 | normal | 61 | 31 |
| Edwards River near New Boston | 445 | 65 | 362 | 499 | 397 | normal | 55 | 26 |
| Kankakee River at Momence | 2294 | 85 | 3136 | 3284 | 3150 | normal | 50 | 31 |
| Iroquois River near Chebanse | 2091 | 79 | 2610 | 3139 | 2617 | normal | 51 | 31 |
| Fox River at Dayton | 2642 | 83 | 3395 | 3276 | 2762 | normal | 38 | 31 |
| Vermilion River at Pontiac | 579 | 59 | 645 | 742 | 664 | normal | 52 | 31 |
| Spoon River at Seville | 1636 | 86 | 1092 | 1664 | 1233 | normal | 58 | 31 |
| LaMoine River at Ripley | 1293 | 79 | 752 | 1316 | 888 | normal | 62 | 31 |
| Bear Creek near Marceline | 349 | 58 | 273 | 378 | 247 | normal | 46 | 31 |
| Mackinaw River near Congerville | 767 | 54 | 543 | 939 | 748 | normal | 63 | 31 |
| Salt Creek near Greenview | 1804 | 61 | 1849 | 2147 | 1706 | normal | 46 | 31 |
| Sangamon River at Monticello | 550 | 90 | 1098 | 719 | 605 | above normal | 22 | 31 |
| South Fork Sangamon near Rochester | 867 | 53 | 1291 | 1034 | 724 | above normal | 25 | 31 |
| Illinois River at Valley City | 26743 | 64 | 25490 | 33850 | 29753 | normal | 59 | 31 |
| Macoupin Creek near Kane | 868 | 74 | 1264 | 901 | 606 | above normal | 24 | 31 |
| Vermilion River near Danville | 1290 | 81 | 3004 | 1708 | 1350 | above normal | 16 | 31 |
| Kaskaskia River at Vandalia | 1940 | 33 | 2856 | 3014 | 2259 | normal | 49 | 31 |
| Shoal Creek near Breese | 735 | 59 | 1137 | 988 | 803 | normal | 39 | 31 |
| Embarras River at Ste. Marie | 1516 | 89 | 2643 | 2185 | 1887 | normal | 32 | 31 |
| Skillet Fork at Wayne City | 464 | 83 | 711 | 789 | 743 | normal | 53 | 31 |
| Little Wabash below Clay City | 1131 | 88 | 2226 | 1738 | 1486 | above normal | 28 | 31 |
| Big Muddy at Plumfield | 794 | 32 | 633 | 1298 | 1116 | below normal | 74 | 31 |
| Cache River at Forman | 244 | 79 | 449 | 599 | 440 | normal | 49 | 31 |

Notes:

N/A = not available.

Much below normal flow = 90-100% chance of exceedence.

Below normal flow = 70-90% chance of exceedence.

Normal flow = 30-70% chance of exceedence.

Above normal flow = 10-30% chance of exceedence.

Much above normal flow = 0-10% chance of exceedence.

*As reported in U.S. Geological Survey (USGS) Water Resources Data, Illinois, Water Year 2002.

Table 5. Reservoir Levels in Illinois, March 2004

For security considerations, statewide tabular reservoir data are not available on the Internet. Specific data requests may be made to Sally McConkey at: sally@sws.uiuc.edu.

Groundwater Information (Ken Hlinka)

Comparison to Average Levels. Shallow groundwater levels in 16 observation wells, which are remote from pumping centers, were below average levels for March by 0.7 feet and ranged from 13.0 feet below to 2.9 feet above average. Once again, northern Illinois reported the largest deviations at Cambridge (Henry County) and Mt. Morris (Ogle County). This is the 13th consecutive month for a record monthly low at Mt. Morris; however, recovery is occurring, and levels at both Mt. Morris and Cambridge since last month have risen by 0.7 and 26.3 feet, respectively.

Comparison to Previous Month. Shallow groundwater levels were above those of February. Levels averaged 2.6 feet higher than those of last month and ranged from 0.4 feet lower to 26.3 feet higher.

Comparison to Same Month, Previous Year. Shallow groundwater levels in March were above levels of last year. Levels averaged 3.1 feet higher and ranged from 2.3 feet lower to 23.5 feet above levels of last year.

Table 6. Month-End Shallow Groundwater Level Data Sites, March 2004

| Number | Well name | County | Well depth (feet) | This month's reading (depth to water, feet) | Deviation from | | | |
|----------|---------------|------------|----------------------|---|---------------------------------|------------------------------------|-----------------------------|----------------------------|
| | | | | | 15-year avg. level (feet) | Period of record avg. (feet) | Previous month (feet) | Previous year (feet) |
| 1 | Galena | JoDaviess | 25.00 | 20.96 | +0.28 | +0.56 | +1.17 | +0.39 |
| 2 | Mt. Morris | Ogle | 55.00 | 32.40* | -13.63 | -13.01 | +0.73 | -2.28 |
| 3 | Crystal Lake | McHenry | 18.00 | 5.99 | -1.36 | -1.25 | +0.76 | +0.88 |
| 4 | Cambridge | Henry | 42.00 | 11.49 | -4.10 | -4.20 | +26.31 | +23.51 |
| 5 | Fermi Lab | DuPage | 17.00 | 1.77 | +2.98 | +2.94 | +3.40 | +10.11 |
| 6 | Good Hope | McDonough | 30.00 | 4.10 | +2.41 | +2.34 | +1.43 | +7.09 |
| 7 | Snicarte | Mason | 42.00 | 39.10 | -2.05 | -1.99 | -0.13 | -0.90 |
| 8 | Coffman | Pike | 28.00 | 8.32 | -0.46 | +0.74 | +1.58 | +0.37 |
| 9 | Greenfield | Greene | 20.70 | 5.19 | +2.85 | +2.19 | +1.55 | +9.19 |
| 10 | Janesville | Cumberland | 11.00 | 4.80 | -0.12 | -0.26 | +0.23 | +0.27 |
| 11 | St. Peter | Fayette | 15.00 | 0.88 | +0.64 | +0.86 | +0.19 | +0.13 |
| 12 | SWS #2 | St. Clair | 80.00 | N/A | N/A | N/A | N/A | N/A |
| 13 | Boyleston | Wayne | 23.00 | 1.29 | +0.46 | +0.80 | +0.63 | +0.18 |
| 14 | Sparta | Randolph | 27.00 | 3.94 | +0.20 | +0.77 | +2.47 | +1.45 |
| 15 | SE College | Saline | 10.19 | 1.77 | -0.15 | -0.38 | +0.86 | +0.10 |
| 16 | Dixon Springs | Pope | 8.63 | 2.68 | -0.55 | -1.11 | -0.37 | -0.70 |
| 17 | Bondville | Champaign | 21.00 | 2.80 | -0.18 | -0.26 | +0.52 | +0.05 |
| Averages | | | | | -0.80 | -0.70 | +2.58 | +3.12 |

Notes:

N/A = Data not available.

*Lowest level of record for March.

Addendum

Long-Term Precipitation Networks (Nancy Westcott)

Imperial Valley Precipitation. March 2004 precipitation amounts (Figure 5a) were moderate. Gage amounts were greatest in the southwestern and eastern portions of the network, and precipitation was lightest in the east-central region of the network. Individual gage totals ranged from 3.35 inches at site #23 to 2.29 inches at site #16. The 30-year, 1971–2000, average precipitation amounts for March at Havana and Mason City are 2.77 and 2.98 inches, respectively. The March 2004 network average of 2.84 inches was about 136 percent of the 11-year (1992–2002) March network average of 2.09 inches.

Cook County Precipitation. March 2004 precipitation amounts (Figure 5b) precipitation amounts were above average. Precipitation was greatest in the north-central region and the southeastern corner of the network, and lightest in the southern portion of the network. Amounts ranged from 5.39 inches at site #25 (Chicago Heights) to 2.89 inches at site #19 (Avenue O). The March 2004 network average of 3.74 inches was about 166 percent of the 14-year (1990–2003) March network average of 2.25 inches.

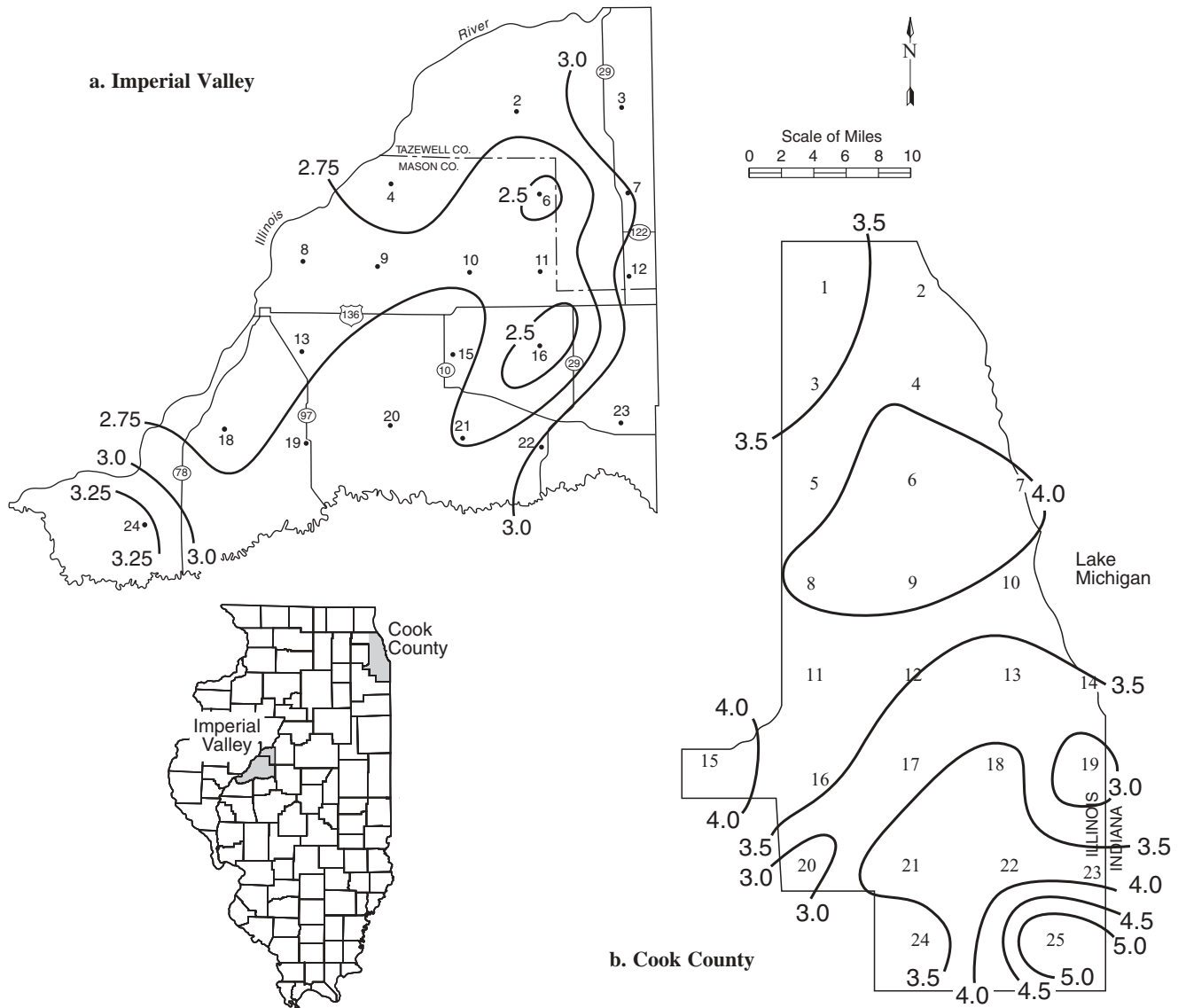


Figure 5. Long-term raingauge network precipitation totals (inches) for March 2004

Data sources for information in this publication include the following:
 CPC - Climate Prediction Center, <http://www.cpc.ncep.noaa.gov/products/predictions/>
 ISWS - Illinois State Water Survey, <http://www.sws.uiuc.edu/>
 MRCC - Midwestern Regional Climate Center, <http://mrcc.sws.uiuc.edu/>
 NCDC - National Climate Data Center, <http://www.ncdc.noaa.gov/>
 NWS - National Weather Service, <http://www.nws.noaa.gov/>
 USACE - U.S. Army Corp of Engineers, <http://water.mvr.usace.army.mil/>
 USGS - U.S. Geological Survey, <http://water.usgs.gov/>
 WARM - Water and Atmospheric Resources Monitoring Program, <http://www.sws.uiuc.edu/warm/>

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