ILLINOIS DEPARTMENT OF NATURAL RESOURCES

Illinois State Water Survey

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ILLINOIS WATER AND CLIMATE SUMMARY
January 2003

January 2003 Overview (Bob Scott)

Temperatures in Illinois during January were below average, and precipitation was well below average. Soil moisture within the top 40 inches of soil was below the long-term statewide average. Mean streamflows were below median heights. Shallow groundwater levels were well below long-term average depths. Water resources in Illinois are below average levels and will require average to above average precipitation over the next several months to restore near normal levels.

Temperatures across Illinois (Figure 1) for January were below average (a -2.8-degree departure). Crop Reporting District (CRD) temperatures ranged from 1.0 degree below average (northwest) to 4.0 degrees below average (east-southeast).

Precipitation amounts for the month (Figure 1) were well below average values. The statewide average of 0.72 inches represents a -1.21-inch departure or 37 percent of average, the 11th driest January in Illinois since 1895. District precipitation totals varied from 0.43 inches (northwest) to 1.43 inches (southeast), 31 to 48 percent of average, respectively.

Soil moisture in the 0- to 40-inch (0- to 100-centimeter) layer at the end of January was below normal across Illinois. Soils in much of central Illinois became increasingly drier with depth.

Mean provisional streamflow statewide was below the median flow, 46 percent of median (Figure 1). Rivers in Illinois recorded mean discharges in the much below normal to normal range this month. Peak stages recorded were well below flood stage at stations on the Illinois River and at stations on the Mississippi River along the Illinois border. The Ohio River at Cairo recorded a peak stage below flood stage.

Water surface levels at the end of January were below the normal pool/target operating level at 20 of the 35 reporting reservoirs. Water surface levels at Lake Shelbyville, Carlyle Lake, and Rend Lake were at or slightly above target operating levels. Lake Michigan's mean level remains below the long-term average.

Statewide, **shallow groundwater levels** were below levels for January by 2.1 feet (Figure 1). Deviations from December's levels averaged 0.8 feet lower and levels this month were approximately 2.5 feet below January levels one year ago.

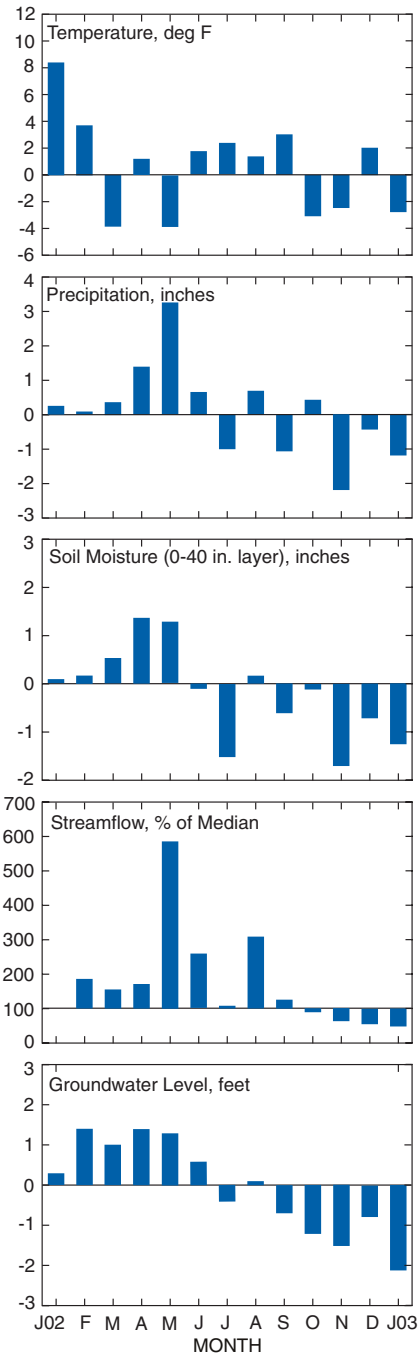

Figure 1.
Statewide departures from normal

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

Contact

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On the Web at www.sws.uiuc.edu/warm

Weather/Climate Information (Jim Angel and Bob Scott)

Temperatures across Illinois for January were colder than average (Figure 2 and Table 1), the 28th coldest January since 1895. The warmest reading, 71º F, was reported on January 9 at Grand Tower. The coldest reading, -15º F, was observed on January 27 at Congerville. Overall, statewide temperatures over the last several seasons have been close to average. Specifically, this was the 45th coolest November–January (3-month period), the 50th coolest August–January (6-month period), and the 41st warmest February–January (12-month period) since 1895.

Precipitation was much below average statewide for January (Figure 2 and Table 1), the 11th driest January since 1895. Grand Chain Dam in southern Illinois reported the highest daily precipitation amount, 1.88 inches on January 1, and also the highest monthly total, 2.40 inches. All CRDs reported less than one-half of their long-term average monthly total for January.

Precipitation across northern Illinois has been severely deficient since September 2002. Over the last five months, total precipitation in the northwest and central CRDs was the second lowest since 1895. Similarly, observed precipitation in the west, northeast, and east CRDs was the 3rd, 6th, and 9th driest September–January period, respectively. Over the past year, Illinois also has experienced the 12th driest November–January (3-month period), the 22nd driest August–January (6-month period), and the 54th driest February–January (12-month period) since 1895.

Snowfall in January was near average in southern and central Illinois, but below average across the northern third of the state (Figure 2). Hoopeston and Perry both reported 14.5 inches of snow for January. However, northwestern Illinois received little snow for the second consecutive month. For example, Moline reported only 2.7 inches of snow in January compared to an average of 10.2 inches.

Severe weather was not reported in January in Illinois.

Illinois Climate Network (ICN) Data. Average daily wind speeds across Illinois for January (Figure 3) ranged from 6 mph at Dixon Springs, Kilbourne, and Rend Lake to 12 mph at Stelle and Bondville. The highest wind gust for the month, 41 mph, occurred at Stelle and Monmouth on January 9. The prevailing wind direction during January was from the west-northwest across the state. Wind speeds in excess of 8 mph reflected a seasonal maximum and varied from 131 hours at Rend Lake to approximately 575 hours at Bondville and Stelle. (January has 744 hours.)

Average air temperatures ranged from 19º F at Freeport to 29º F at Dixon Springs. Solar radiation totals in January in Illinois ranged from 193 Mega-Joules per meter squared (MJ/m2) at St. Charles to just over 272 MJ/m2 at Bondville. Potential evapotranspiration was seasonally low, varying from 0.8 inches at St. Charles to 1.3 inches across southern

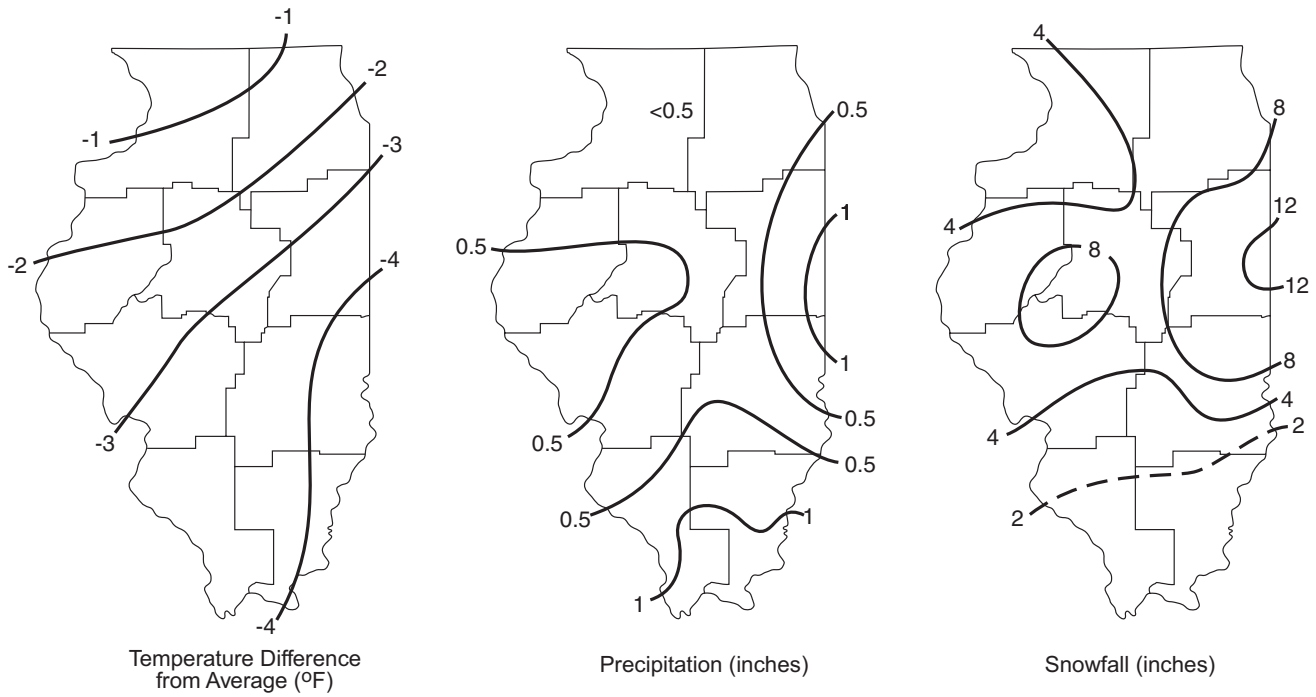

Figure 2. Illinois temperature, precipitation, and snowfall during January 2003

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

	Last Month			Last 3 Months			Last 6 Months			Last 12 months		
Crop Reporting District	*Jan 03 Amount*	*% Avg*	*Temp Dev*	*Nov 02-Jan 03*	*% Avg*	*Temp Dev*	*Aug 02-Jan 03*	*% Avg*	*Temp Dev*	*Feb 02-Jan 03*	*% Avg*	*Temp Dev*
Northwest	0.43	31	-1.0	1.73	29	0.6	11.71	71	0.5	33.15	91	0.4
Northeast	0.49	30	-1.7	2.74	40	-0.4	12.43	73	0.2	30.97	84	0.3
West	0.70	49	-2.4	2.65	41	-0.3	11.55	69	-0.2	34.79	93	-0.1
Central	0.58	36	-2.4	2.95	42	-0.7	11.34	68	-0.3	33.14	89	-0.2
East	0.86	49	-3.5	3.79	51	-1.2	12.93	76	-0.6	35.24	94	-0.4
West-southwest	0.63	34	-3.0	3.52	44	-1.3	13.41	79	-0.7	39.61	105	-0.3
East-southeast	0.69	29	-4.0	5.08	55	-2.0	13.18	70	-0.4	41.09	100	0.1
Southwest	0.95	37	-3.4	7.40	72	-1.5	16.93	85	-0.3	41.51	97	0.1
Southeast	1.43	48	-3.8	8.81	80	-1.8	18.20	90	0.1	44.45	100	0.6
State Average	**0.72**	**37**	**-2.8**	**4.10**	**52**	**-0.9**	**13.32**	**75**	**-0.2**	**36.92**	**95**	**0.1**

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

Illinois. Soil temperatures at both the 4- and 8-inch levels ranged from near 30° F across northern Illinois to 38° F at Dixon Springs.

Extended climate outlooks issued by the U.S. Department of Commerce, National Oceanic and Atmospheric Administration, Climate Prediction Center for February and for February–April call for a slight to moderate chance of above normal temperatures over northern Illinois and a slight chance of below normal precipitation over eastern Illinois. Moving away from these areas, outlooks trend towards equal chances of above, below, and normal temperatures and precipitation.

Additional Information: Illinois temperature and precipitation data are observed at selected Cooperative Observer Network sites of the National Weather Service (NWS), an agency of the National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce (USDOC). The Midwestern Regional Climate Center (MRCC), housed at the Water Survey, receives near real-time data via the NWS Remote Observation Surface Automation system. Data reported are provisional. The MRCC receives complete, quality-controlled data from its parent agency, the National Climatic Data Center of NOAA/USDOC about three months in arrears.

The Illinois Climate Network (ICN) is a 19-station array of automated weather sites scattered across Illinois and operated by Water Survey staff. The network provides enhanced temporal weather observations on atmospheric pressure, air temperature, relative humidity, wind speed and direction, solar radiation, precipitation, and soil temperatures at several depths. Sites are located primarily at Illinois community colleges and University of Illinois and Southern Illinois University agricultural experimental farms. Most sensors are polled automatically every 10 seconds, averaged by hour and day, and downloaded to a Water Survey computer daily. Hourly and daily extremes and times of occurrence also are recorded. Daily temperature and precipitation data are added to MRCC records. The ICN data provide valuable information on extreme and usual weather events, as well as short- and long-term trends in climate data, which may have future direct impacts on other water resources in Illinois.

The Climate Prediction Center (NOAA/USDOC) produces monthly and seasonal climate outlooks based on an extensive source of timely climate information. Outlooks for Illinois are extracted and included for our readers.

Soil Moisture Information (Bob Scott)

Precipitation for January was below average across Illinois, creating soil moisture conditions in the 0- to 6-inch layer that were normal to below normal for this time of year (Figure 4). Site values ranged from 115 percent of normal at Rend Lake to 65 percent of normal at Monmouth. Low precipitation totals during the last five months have created drier regional conditions at increasing soil depths. At the end of January, a band of dry soils stretched across central and northeastern Illinois within the three deepest soil layers. Conditions in the 6- to 20-inch layer were driest at DeKalb (55 percent of normal) and less than 25 percent of normal in the 40- to 72-inch layer at Peoria and Brownstown. Conversely, soil moisture was close to normal in all layers in western and far southern Illinois. In fact,

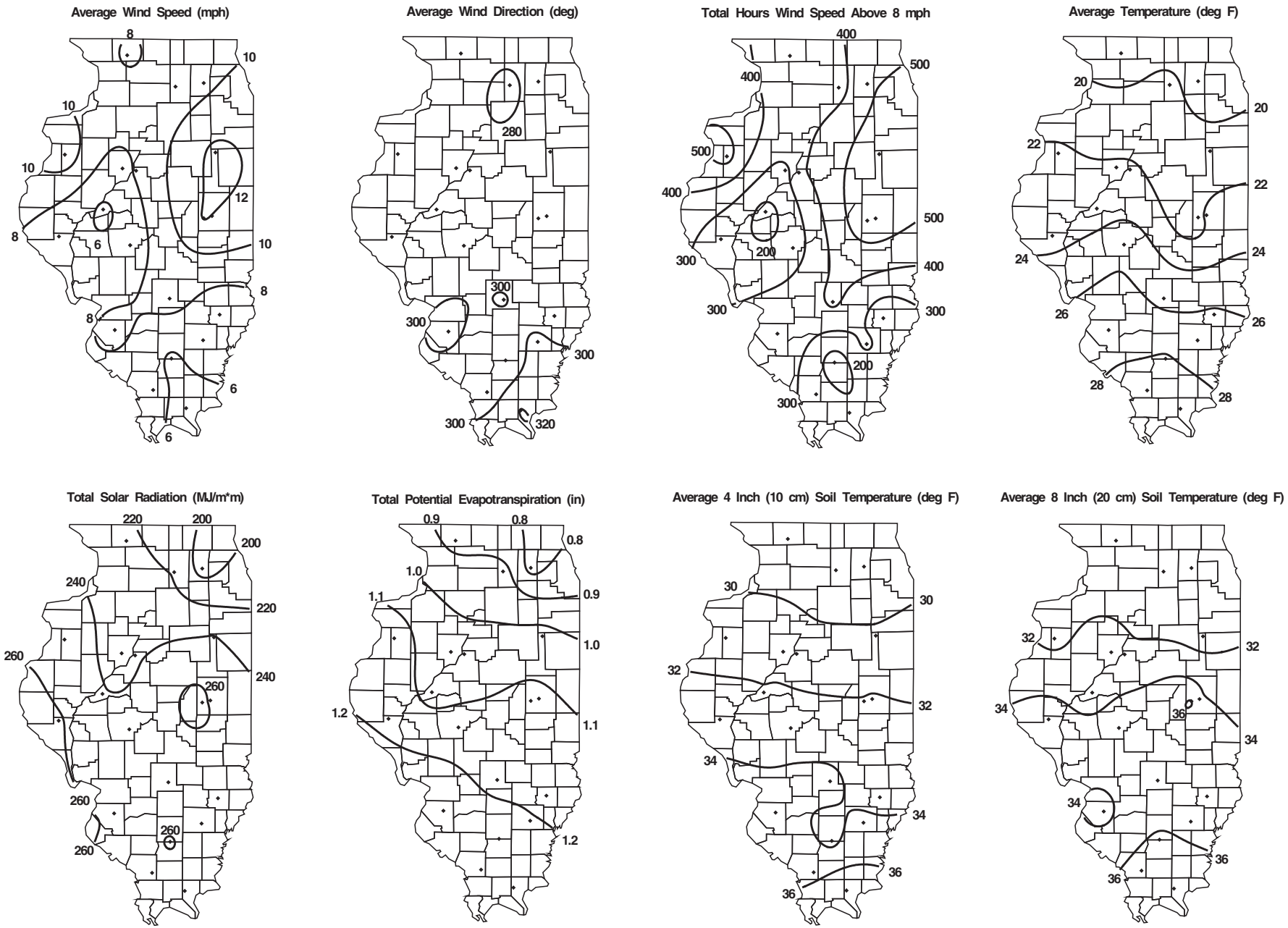

Figure 3. January monthly averages and totals as collected by the Illinois Climate Network

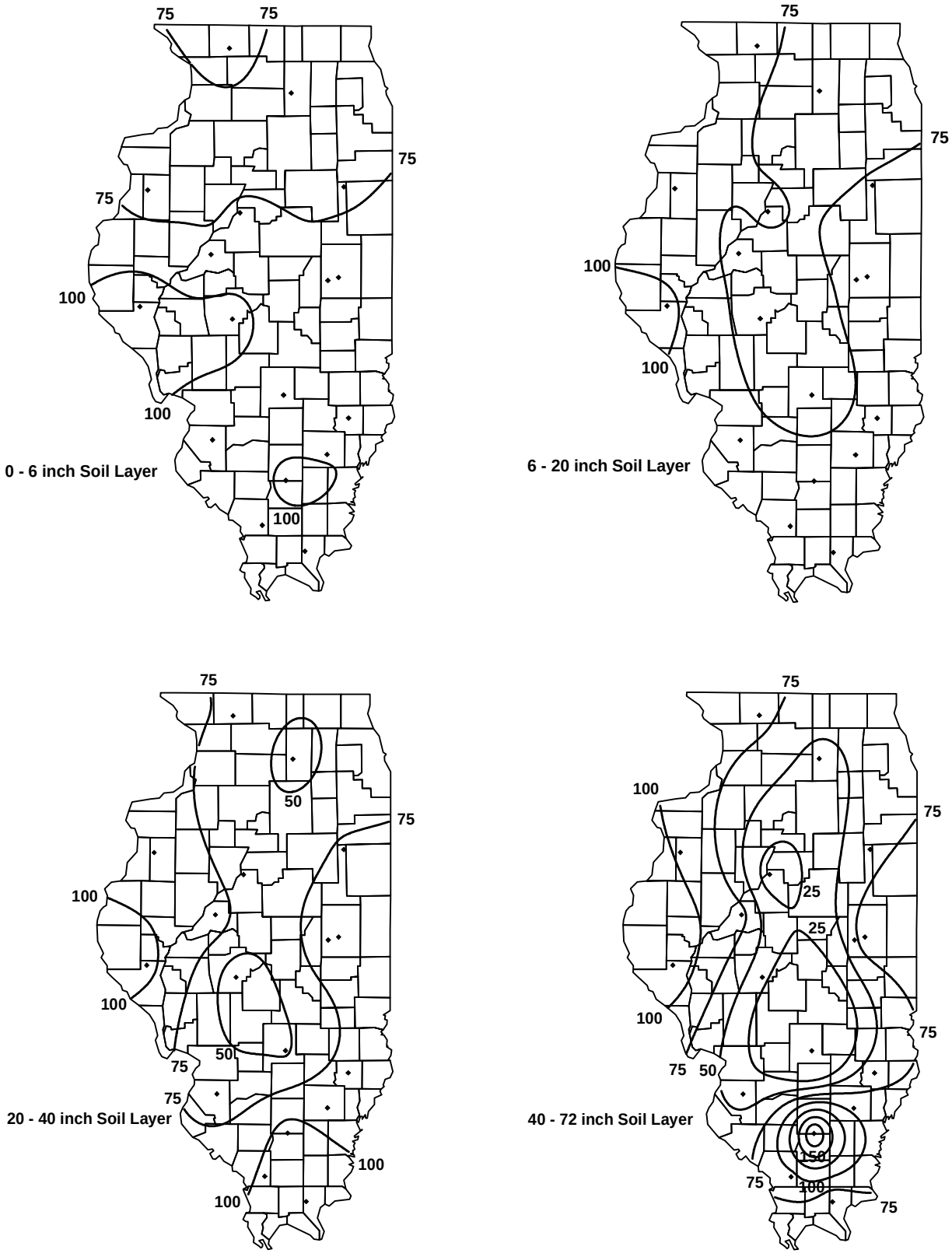

Figure 4. February 1 observed percent-of-normal soil moisture based on 1985-1995 mean

Table 2. Soil Moisture in Various Layers on February 1, 2003

Location	*Feb 1 0 - 6 (inches)*	*Change from Jan 1 (%)*	*Feb 1 6 - 20 (inches)*	*Change from Jan 1 (%)*	*Feb 1 20 - 40 (inches)*	*Change from Jan 1 (%)*
Freeport (NW)	2.1	-3	4.2	2	5.9	-2
DeKalb (NE)	1.9	-11	3.7	7	5.8	4
Monmouth (W)	1.8	-4	4.0	-5	5.9	-1
East Peoria (C)	1.8	-15	4.6	-8	7.2	-1
Topeka (C)	1.3	20	2.4	-12	3.1	7
Stelle (E)	1.8	-20	4.8	1	6.3	28
Champaign (E)	2.3	4	5.0	-2	6.2	3
Bondville (E)	2.0	-6	4.5	-5	7.9	2
Perry (WSW)	2.5	12	5.2	-2	7.8	4
Springfield (WSW)	2.3	2	4.6	-3	6.6	3
Brownstown (ESE)	2.2	5	3.6	-8	6.6	3
Olney (ESE)	2.4	-16	4.4	-10	6.8	-4
Belleville (SW)	2.0	-1	4.3	-8	7.4	8
Carbondale (SW)	2.2	-29	4.9	-10	7.9	1
Ina (SE)	2.8	-4	5.0	-14	7.7	-2
Fairfield (SE)	2.4	-22	4.8	-14	7.3	0
Dixon Springs (SE)	2.3	-21	5.1	-9	8.2	0

moisture values in the 40- to 72-inch layer were well above normal at Rend Lake due to heavy localized precipitation that fell there in November. Overall, soil moisture in Illinois at the end of January was below normal (Figure 1).

Lack of substantial snow cover and colder than normal conditions have resulted in a deeper layer of frozen soils over northern Illinois than seen in the state in recent years. A temporary jump in soil moisture may occur over the next few weeks in deeper soil layers as surface layers begin to thaw. Restoring dry subsoils to normal moisture conditions likely will require above normal precipitation over an extended period.

Compared to last month, soil moisture generally decreased in the top two layers (Table 2). Soil moisture in the 0- to 6-inch layer decreased by 15 to 30 percent at Stelle and at most sites across southern Illinois. Only Topeka showed an increase of the same magnitude. Decreases in the 6- to 20-inch layer were nearly universal, but generally smaller than amounts seen in the top soil layer. Soil moisture changes in the 20- to 40-inch layer maximized at Stelle (a 28-percent increase), but elsewhere changes were less than 10 percent.

Additional Information: Soil moisture is monitored at 17 sites across the state, mostly at sites co-located with ICN stations. Data are collected manually during bi-weekly site visits in the growing season (March–October) and monthly in the remainder of the year. The information aids in pinpointing areas and extent of unusual soil moisture and its impacts on Illinois agriculture. These data become especially important in providing early indications of trends during prolonged periods of precipitation extremes that may appear later in other water resource data in Illinois.

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, 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 reading posted by the National Weather Service and/or USACE. Stations on the Illinois River and on the Mississippi River along the Illinois border recorded peak stages well below flood stage. The Ohio River at Cairo peaked below flood stage.

Table 3. Peak Stages for Major Rivers, January 2003

River	*Station*	*River mile**	*Flood stage (feet)**	*Peak stage (feet)***	*Date*
Illinois					
	Morris	263.1	13	5.2	03
	La Salle	224.7	20	11.6	31
	Peoria	164.6	18	12.6	01
	Havana	119.6	14	6.5	02
	Beardstown	88.6	14	10.1	02
	Hardin	21.5	25	19.7	25
Mississippi					
	Dubuque	579.9	17	8.1	03
	Keokuk	364.2	16	4.1	16
	Quincy	325.0	17	12.3	16
	Grafton	218.0	18	15.9	17
	St. Louis	180.0	30	0.6	02
	Chester	109.9	27	3.4	03
	Thebes	43.7	33	10.1	04
Ohio					
	Cairo	2.0	40	31.4	05

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.

Table 4 lists 26 streamgaging stations located throughout Illinois. Provisional monthly mean flows posted by the 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 January mean flow for each year of record, and selecting the middle value, the 50 percent exceedence probability.

Mean provisional flow statewide was below the median this month (46 percent of median) and below the mean (29 percent of mean). Normal flows were recorded in northwestern Illinois on the Rock and Green Rivers and in northeastern Illinois on the Iroquois, Kankakee and Fox Rivers. Streamflows were typically below normal in central and most of southern Illinois. The Kaskaskia River in southern Illinois at Vandalia was the only reporting station that recorded much below normal streamflow; however, flows here are controlled by releases from Lake Shelbyville. The Big Muddy River at Plumfield and the Cache River at Forman, representing watersheds in the south-central Illinois, reported normal flows for January. At those two gages, the magnitude of the average flow this month reflected high flows during the first week of the month, but decreasing flows during the remainder of the month.

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 obtained from a network of cooperating reservoir operators who are contacted each month by Water Survey staff for the current water levels. Reservoir levels are reported in terms of their difference from normal pool (or target level), and 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. The number of years of record for each reservoir is provided. Most reservoirs listed in Table 5 serve as public water supplies, with the exceptions noted in the last column.

Compared to levels at the end of December at 34 reservoirs, the water surface elevation at the end of January had risen at 5 reservoirs and decreased at 19 reservoirs. The reported elevation was the same as last month at 10 reservoirs. Of the 35 reservoirs reporting at the end of January, 7 reservoirs had water surface levels above normal pool (or

Table 4. Provisional Mean Flows, January 2003

Station	*Drainage area (sq mi)*	*Years of record*	*2003 mean flow (cfs)*	*Long-term flows* *Mean* (cfs)*	*Median (cfs)*	*Flow condition*	*Percent chance of exceedence*	*Days of data this month*
Rock River at Rockton	6,363	67	2,442	3,210	2,700	normal	54	31
Rock River near Joslin	9,549	59	4,363	5,237	4,074	normal	49	31
Pecatonica River at Freeport	1,326	83	494	754	615	normal	61	31
Green River near Geneseo	1,003	63	191	539	357	normal	69	31
Edwards River near New Boston	445	64	28	245	139	below normal	85	29
Kankakee River at Momence	2,294	84	2,226	2,218	1,999	normal	47	28
Iroquois River near Chebanse	2,091	78	620	1,890	1,360	normal	69	31
Fox River at Dayton	2,642	82	1,063	1,477	1,105	normal	53	22
Vermilion River at Pontiac	579	58	38	365	250	below normal	77	31
Spoon River at Seville	1,636	85	125	1,026	666	below normal	84	31
LaMoine River at Ripley	1,293	78	54	626	359	below normal	88	31
Bear Creek near Marceline	349	57	4	153	69	below normal	86	31
Mackinaw River near Congerville	767	53	44	463	262	below normal	76	27
Salt Creek near Greenview	1,804	60	458	1,167	809	normal	63	31
Sangamon River at Monticello	550	89	63	418	266	below normal	74	31
South Fork Sangamon near Rochester	867	52	39	588	294	below normal	76	31
Illinois River at Valley City	26,743	63	6,848	19,750	16,452	below normal	86	30
Macoupin Creek near Kane	868	73	54	528	225	below normal	79	31
Vermilion River near Danville	1,290	58	301	1,129	673	normal	62	28
Kaskaskia River at Vandalia	1,940	32	138	2,392	2,109	much below normal	91	31
Shoal Creek near Breese	735	58	72	664	327	below normal	77	31
Embarras River at Ste. Marie	1,516	88	96	1,662	1,056	below normal	87	31
Skillet Fork at Wayne City	464	82	81	653	362	below normal	75	31
Little Wabash below Clay City	1,131	87	131	1,376	631	below normal	78	31
Big Muddy at Plumfield	794	87	402	845	592	normal	58	31
Cache River at Forman	244	78	564	3,039	344	normal	34	31

Notes:
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 2001.

Table 5. Reservoir Levels in Illinois, January 2003

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.

target operating level), 8 reservoirs were at normal pool, and 20 reservoirs were below normal pool. Eight reservoirs were 3 feet or more below normal/target pool compared to 6 reservoirs last month. Current levels at 13 public water-supply lakes listed in Table 5 were more than a foot lower than their average difference from normal/target levels (for the period of record).

The water level at Kinkaid reservoir, lowered to accommodate spillway work, is expected to remain so until March. Water levels for White Hall reservoir will no longer be reported in Table 5. This reservoir has not been used for public water supply since 1997, and reservoir staff no longer take water-level readings. Starting this month, Sorento reservoir levels will not be listed in Table 5, but a record of occasional observations will be maintained in the Water Survey's database.

Major Reservoirs. Water levels at Lake Shelbyville and Carlyle Lake decreased slightly this month, but the level at Rend Lake was the same as at the end of last month. All three reservoirs were at or slightly above their respective target levels.

Great Lakes. Current month mean and end-of-month values are provisional and are relative to International Great Lakes Datum 1985. The January mean level for Lake Michigan was 576.8 feet, compared to a mean level of 577.4 feet in 2002. The long-term average lake level for January is 578.6 feet, based on 1918–1998 data. Historically, the lowest mean level for Lake Michigan in January occurred in 1965 at 576.1 feet, and the highest level occurred in 1987 at 581.3 feet. The month-end level of Lake Michigan was 576.7 feet.

Additional information: River stage observations are reported in Table 3 at 14 locations along the Illinois, Mississippi, and Ohio Rivers in terms of the water surface height, registered in feet above the gage's datum. The stage of a river is not the same as the depth of its flow. Stage may be converted to a commonly used vertical datum (e.g., National Geodetic Vertical Datum [NGVD] 1929) by adding the stage in feet to the gage datum elevation (reported in feet, NGVD 1929). The elevation of the gage datum varies from station to station. Flood stage is typically defined as the level at which a river goes out of its banks.

The USGS publishes long-term mean streamflows for each month. The month's median flow for 26 stations listed in Table 4 is determined by ranking the current month's mean flow for each year of record, and selecting the middle value, 50 percent exceedence probability. The current month's flow condition (above normal to below normal) is determined on the basis of its rank relative to the historical record for the month. The terms much above normal to much below normal indicate a relative stratification of current conditions and are defined in the notes following Table 4. The statewide average of the computed percentages of median flow for the stations is presented in Figure 1. With very few exceptions, the median flow is less than the mean flow for the 26 reporting stations. That is, the current month's flow as a percent of the median in nearly every case will exceed the percent of the mean.

Reservoir levels are obtained from a network of cooperating reservoir operators who are contacted each month by Water Survey staff for current water levels. The ISWS began collecting month-end water surface elevations at reservoirs in 1983. The number of reporting stations has increased over time. The current month's average month-end water surface elevation for each reservoir is the arithmetic average of the month-end levels for the period of record. The number of years of data also is tabulated.

Groundwater Information (Ken Hlinka)

Comparison to Average Levels. Shallow groundwater levels in 13 observation wells, which are remote from pumping centers, were below the average level for January by 2.1 feet, and station values ranged from 6.2 feet below average to 0.5 feet below average (Table 6). All sites across the state recorded below normal levels this month.

Comparison to Previous Month. Shallow groundwater levels in January were below those of December. Levels averaged 0.8 feet below those of last month and ranged from 3.6 feet lower to 0.9 feet higher.

Comparison to Same Month, Previous Year. Shallow groundwater levels in January were below levels of January 2002. Levels averaged 2.5 feet lower and ranged from 8.7 feet lower to 0.1 feet below levels of last year.

Additional Information: The Water Survey operates a network of 17 shallow groundwater monitoring wells that are sited in rural locations. Wells remote from pumping stations were selected to assess both short- and long-term trends in water table levels under natural conditions. These data help clarify the effects and extent of phenomena such as droughts and floods in Illinois and, in particular, their lingering impacts on shallow groundwater resources in the state. They are also useful in establishing trends that soon may be apparent in other water resources in the state.

Table 6. Month-End Shallow Groundwater Level Data Sites, January 2003

					Deviation from			
Number	*Well name*	*County*	*Well depth (feet)*	*This month's reading (depth to water, feet)*	*15-year avg. level (feet)*	*Period of record avg. (feet)*	*Previous month (feet)*	*Previous year (feet)*
1	Galena	JoDaviess	25.00	N/A	N/A	N/A	N/A	N/A
2	Mt. Morris	Ogle	55.00	25.41	-6.42	-5.79	-0.97	N/A
3	Crystal Lake	McHenry	18.00	6.58	-1.41	-1.11	-0.19	N/A
4	Cambridge	Henry	42.00	N/A	N/A	N/A	N/A	N/A
5	Fermi Lab	DuPage	17.00	N/A	N/A	N/A	N/A	N/A
6	Good Hope	McDonough	30.00	11.04	-1.15	-2.52	-0.53	N/A
7	Snicarte	Mason	42.00	37.94	-0.56	-0.70	-0.14	-0.05
8	Coffman	Pike	28.00	14.98	-2.78	-2.19	-0.90	-1.26
9	Greenfield	Greene	20.70	17.36	-5.92	-6.17	-0.17	-8.72
10	Janesville	Cumberland	11.00	6.23	-1.33	-1.11	-0.16	-0.88
11	St. Peter	Fayette	15.00	3.63	-1.79	-1.54	-0.14	-1.87
12	SWS #2	St. Clair	80.00	N/A	N/A	N/A	N/A	N/A
13	Boyleston	Wayne	23.00	3.87	-1.36	-0.86	-2.94	-2.08
14	Sparta	Randolph	27.00	9.19	-2.82	-1.82	+0.05	-2.10
15	SE College	Saline	10.19	3.98	-1.28	-1.29	-3.55	-3.91
16	Dixon Springs	Pope	8.63	2.64	-0.14	-0.51	-1.85	-2.18
17	Bondville	Champaign	21.00	5.97	-1.85	-2.11	+0.87	-1.70
				Averages	-2.22	-2.13	-0.82	-2.48

Note:
N/A = Data not available

Addendum

Long-Term Precipitation Networks (Nancy Westcott)

Imperial Valley Precipitation. January 2003 precipitation amounts (Figure 5a) were very light. Gauge amounts were heaviest in the southwestern portion of the network and lightest in the eastern portion of the network. Individual gauge totals ranged from 1.12 inches at site #19 to 0.20 inches at site #16. The 30-year, 1971–2000, average precipitation amounts for January at Havana and Mason City, are 1.89 and 1.56 inches, respectively. The January 2003 network average of 0.61 inches is about 28 percent of the 10-year (1993–2002) January network average of 2.17 inches.

Cook County Precipitation. January 2003 precipitation amounts (Figure 5b) were extremely light. Precipitation was heaviest in the east-central region of the network and lightest in south-central and far southern portions of the network. Precipitation values ranged from 0.47 inches at sites #9 (Cicero) and #10 (26th Street) to 0.02 inches at site #24 (Matteson). The January 2003 network average of 0.30 inches is about 14 percent of the 13-year (1990–2002) January network average of 2.18 inches.

Additional Information: The addendum reports on two small, regional, long-term precipitation networks in Illinois. The Imperial Valley Precipitation Network is a 20-site weighing-bucket rain gauge array operated by the Illinois State Water Survey for the Imperial Valley Water Authority since 1992. The network is located in Mason and Tazewell Counties within the most heavily irrigated region of Illinois. Soils here are thick sand-and-gravel deposits associated with the confluence of two major ancient river valleys, the Mississippi and the Mahomet-Teays. The precipitation data help to determine the rate of groundwater drawdown in dry periods and during the growing season, and the rate at which the aquifer recharges.

The Cook County Precipitation Network is a 25-site weighing-bucket rain gauge array operated by the Illinois State Water Survey for the U. S. Army Corps of Engineers and the U.S. Geological Survey since 1989. The network, located in the Lake Michigan and Des Plaines River watersheds of Cook County, was designed to provide accurate precipitation measurements for modeling storm runoff, a crucial parameter used to compute the amount of water diverted from Lake Michigan.

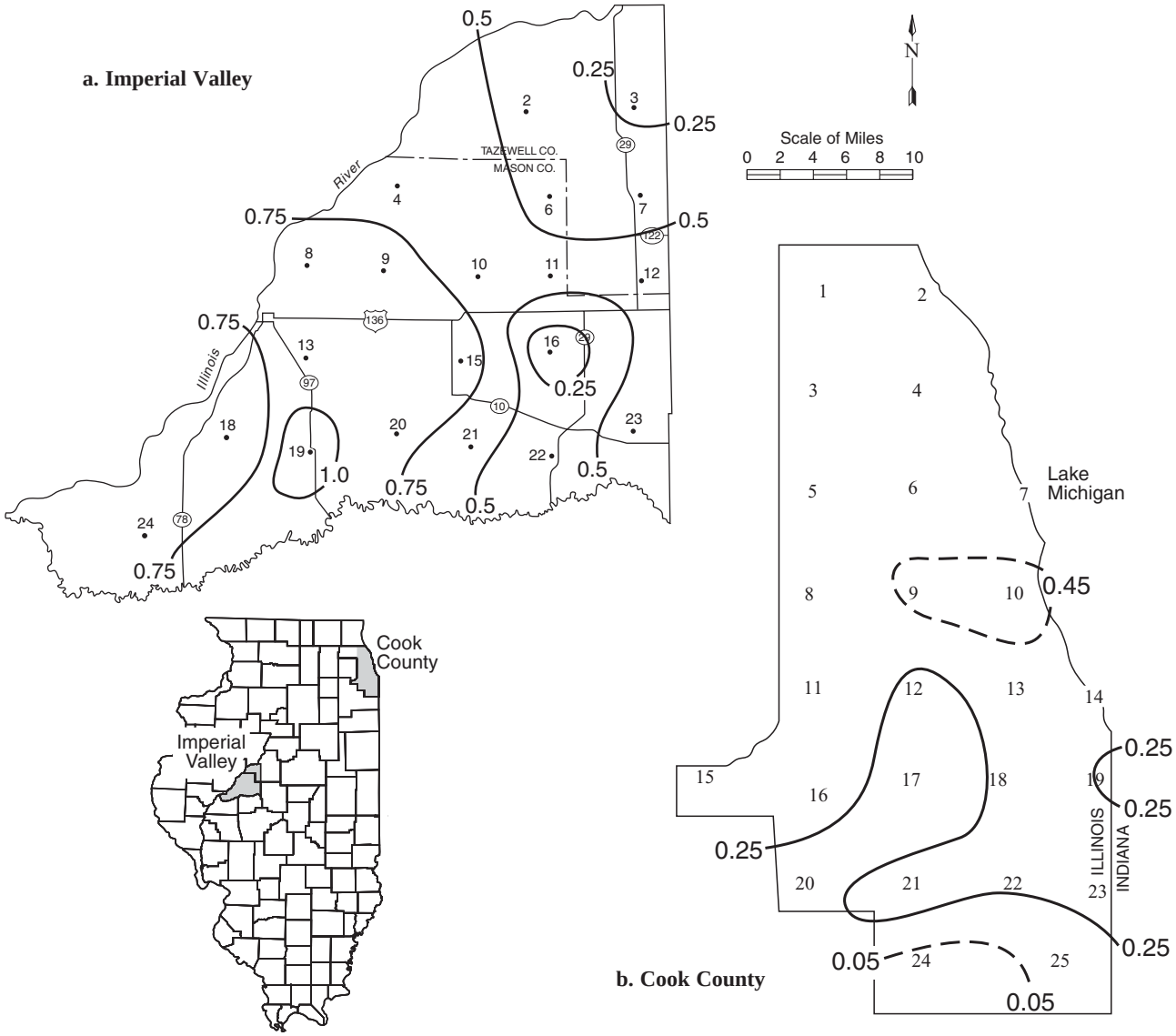

Figure 5. Long-term raingage network precipitation totals (inches), January 2003

Data sources for information in this publication include the following:
CPC - Climate Predication Center, http://www.cpc.ncep.noaa.gov/products/predictions/
ISWS - Illinois State Water Survey, http://www.sws.uiuc.edu/
MCC - 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/