

A History of Weather Observations In Illinois

Wayne M. Wendland
Illinois State Water Survey
Champaign, IL 61820

INTRODUCTION

The first formal and systematic meteorological observations (as opposed to occasional records in diaries etc.) in the United States were made along the eastern seaboard in the late 1700s. Only several decades later did such observations begin in the central United States. Systematic observations under the auspices of the U. S. Army began in the early 1830s. However, substantial growth awaited several more decades, specifically until the 1870s and 1900, when funding to the Signal Service (which directed the meteorological effort) increased ten-fold. By 1904, there were more than 3,900 reporting weather stations in the U. S.

The number of reporting stations increased rapidly in the late 1800s in Illinois as well, and continues. Figure 1 shows the number of Illinois stations beginning operation in each decade since 1850. The 1880s and 1890s represent the decades with greatest growth in Illinois, with about half of those continuing to the present time. Additional stations were added in the 1940s and 1970s, almost all of which persist to the present time, with about 2/3 reporting precipitation only. Table 1 lists the weather stations in Illinois since 1850, for which daily data are extant, including the first year of operation, whether precipitation, or precipitation and temperature were observed, and whether operation continues to the present. The table was composed by merging data from published National Weather Service and U. S. Army Signal Corps documentation, and from carbon copies of daily observations in the archives of the Illinois State Water Survey. Obviously, other stations may have operated in the state from time to time, but records are no longer extant.

The Smithsonian Institution began to distribute raingages to individuals in exchange for observations by 1853 (Anon., 1855). The first observers in Illinois submitting data to the Smithsonian Institution (Anon., 1855) are presented in Table 2. Unfortunately, the daily observations from these observers are no longer extant.

Meteorological data were published by several and, sometimes, multiple sources during the mid- and late-1800s, including the Smithsonian, and/or some state agency (e.g., the Illinois State Weather Service, Chicago around the turn of the century), and/or privately published sources, e.g., Blodget (1857).

EARLY OBSERVERS AND OBSERVATIONS FROM ILLINOIS

Many of the earliest observing sites continued only for a few years. Six of the cities in Illinois which began observations in the 1870s are no longer cities. Clear Lake (Putnam Co.) became McNabb in 1900; Prairieville (Lee Co.) is now a rural delivery route of Dixon; Irishtown (Clinton CO.) remains only as a township name today; Brush Hill (Tazewell Co.) now only remains as the name of a rural school near Pekin IL; Jordon's Grove (Randolph Co.) disbanded during the 1880s; and Three Mile (Perry CO.), whose population in 1880 was 27, now only remains as the name of a prairie occupying large portions of 2 townships.

The earliest observations in Illinois under the direction of a state or federal agency are from Ft. Dearborn (Chicago), 1832; Albion, 1856; Alton, 1843; Marengo, 1855; Ottawa, 1852; Pekin, 1855; White Hall, 1854; and Woodstock, 1857. Of these, Pekin and Woodstock, no longer function as active weather stations.

Published mean and extreme data from Illinois first appeared in the 1850s. Blodget (1857) published mean temperatures for 7 Illinois sites, Chicago (Ft. Dearborn), data beginning in 1832, Ft. Armstrong (Moline), Ottawa, Augusta, Athens, Ft. Des Moines, and Ft. Dodge. The means were composed of 2 to 12 year's daily data.

The Smithsonian Institution was first to promote and sponsor systematic meteorological observations in the U. S., interestingly, some decades before the efforts of the Mannheim Meteorological Society in Europe during the 1890s, the latter having made great strides distributing instruments and encouraging routine observations at sites around the world. In 1873, the Smithsonian published (Anon., 1873) mean monthly precipitation values for 40 Illinois sites, based on 2 to 20 year's data. In 1876, mean temperature values for 93 Illinois sites appeared (Anon., 1876) the data covering the same general time as those for precipitation. In 1885, mean monthly precipitation data from 78 sites in Illinois (Anon., 1885) were published. Unfortunately, the daily observations for those summaries do not survive.

Eighty-one Illinois weather stations began observing prior to 1900 and continue to the present (listed in Table 1). The earliest of these daily records from Illinois is from Ottawa.

ESTABLISHMENT OF A NATIONAL WEATHER OBSERVING NETWORK

The occasional observations made by individuals in Illinois and elsewhere prior to about 1850 evolved into routine, systematic observations first made under the auspices of the U. S. Dept. of War, when Calhoun was Secretary, the program being under control of the Surgeon General (Maury, 1857). The

directing agency then became the U. S. Dept. of Agriculture, and finally the U. S. Dept. of Commerce.

One of the first to tout systematic observations taken at a common time was Lt. Matthew Fontain Maury (USN). In a 1855 letter to the Editor of the American Farmer, Maury urged farmers to join in systematic weather observing, as he had successfully urged sailors earlier (Maury, 1857). His comments are most perceptive, namely, "We want not only corresponding observations as to the time, but we want them made with instruments that are alike, or that can be compared; with them we may expect to find out something certain and valuable concerning the movements of this grand and beautiful machine, called the atmosphere." (op. cit., p. 488). Not only did he recognize the importance of standard exposures, but also the importance of a common time of observation.

CHANGES IN OBSERVING TACTICS WITH TIME

Prior to the mid 1800s, observations from official sites were usually made at two or more of the following times: 0500, 0600, 0700, 1400, 1700, 1800, and 2100 local time. Temperature, precipitation, snowfall and snow on the ground were typically observed. Mean and extreme daily temperatures could therefore be calculated by a variety of methods. Standard methods for calculating the daily mean included:

$$\begin{aligned} & [T (\text{morning}) + T (\text{evening})] / 2 \\ & [T7 + T14 + T21] / 3, \text{ or} \\ & [T7 + T14 + T21 + T21] / 4 \end{aligned}$$

As maximum and minimum thermometers became available, once-per-day observations were possible, having captured the maximum and minimum temperatures.

Because of the numerous ways used to calculate daily means, the homogeneity of temperature records reaching back into the 1800s are suspect until verified. Even if daily means were obtained from maximum/minimum thermometers throughout the time of record, changes in the time of observation must be known to accommodate the time of observation bias (Karl, et al., 1987). Today, once-per-day observations are typically made at 0700, 1700 or midnight (observer choice).

Aside from station relocations and changes in the time of observation, mean monthly temperature data from prior to about the turn of the century to after are likely not homogeneous. Therefore the use of means to determine change or trend over time is questionable. In addition, only after the mid-1880s in the United States was instrument exposure emphasized. At this time Hazen and Aitken strongly argued for proper thermometer exposures, including a radiation screen with ventilation. Prior to that time, thermometers were generally located in an unheated, north-facing room, or hung outside in a (hopefully) shaded location.

OBSERVATIONS AT URBANA

Beginning in 1873, maximum and minimum temperature, 24-hour precipitation, snowfall, wind direction, cloud amount, and "intensity" of storms were recorded by Prof. Burrill, Director of the University of Illinois Experiment Station (Burrill m.s., Univ. of Illinois library). Perusal of these observations shows that January and February of 1875 were very cold indeed, e.g., January's mean temperature was -10.0°C (current mean: -4.1°C), a value only exceeded 3 times since 1888 (1918, 1977 and 1979). Similarly the February 1875 mean temperature was -9.4°C (current mean: -1.5°C), coldest of any February of record.

Regular, systematic observations on the University of Illinois campus began primarily because of 2 significant occurrences, (1) passage of the Hatch Act in March 1887 (which authorized federal support to establish agricultural experiment stations, and (2) the foresight of the University Trustees, who 6 days after law passage, resolved that the University would establish a weather station.

Changnon & Boyd (1963) report that the Urbana site was first located near the southeast corner of the current Lincoln Hall. In June 1897, the observing site was moved about 200 m to the south southeast, adjacent to Morrow Plots. The site was moved twice more at the Plots, but never more than 20 m from the second location (in April, 1904 and again in June 1948). The initial raingage was essentially the same as one still used today, i.e., a 20.3 cm (8 inch) diameter can. The max/min thermometers were mounted in a louvered wooden shelter. Soil temperature was measured by thermometers placed in glass tubes which penetrated the sod to the appropriate depth.

Station operation was initially under the direction of the Agricultural Experiment Station at the University of Illinois-Urbana. With time, Agronomy Department personnel became interested in the operation of the site, as well as other faculty in the University, notably from the Depts. of Soils, and Geography. In August 1902 the Urbana station became a U.S. Weather Bureau Cooperative Station, a status which continues to today. During the 1930s, interest in the Morrow Plots weather station relaxed somewhat, in part because the University South Farms were growing in use. Indeed, a second observing site was installed at the South Farms under the direction of the Agronomy Dept., the operation of which also continues until today.

The Illinois State Water Survey has supervised the operation of the (now) National Weather Service Cooperative station since May 1948. The site remained at the Morrow Plots until summer of 1984, when it was moved 2.6 km to the Water Survey Research Center. Recording instruments continue to be maintained at the Morrow Plots, and temperature comparisons between the 2 sites will be made after several years of mutual data have been collected.

MEMORABLE WEATHER EVENTS IN EARLY ILLINOIS

The accounts of Andrew Ellicott, of Cairo IL, refer to the severity of the 1796-1797 winter, claiming a minimum temperature of -17.2°C on 22 Dec 1796, still the December record low temperature in Cairo.

Records of early tornadoes in Illinois are sparse. After the Mormon community left Nauvoo, a French communal group (Icarians) settled to restore the Mormon temple. The temple was totally destroyed by a tornado 27 May 1850 (Ludlum, 1970).

On 13 June 1857, Pana experienced a tornado which destroyed 25 houses, and essentially ruined the remaining buildings in the town from the effects of wind and hail. In another occurrence, nineteen persons were killed, and 50 injured in the Ellison (Warren Co., population: 500) tornado, 31 May 1858.

Ludlum (1968) reports several severe winters and winter storms in Illinois. At times, it is difficult to determine whether the storms were more severe or more frequent than today, or whether the early settlers were simply inexperienced with the severity of Midwestern winters. Regardless, the winter of 1830-31 is now generally known as the Winter of the Deep Snow in Illinois. Records from Ft. Armstrong (Moline) and Ft. Dearborn (Chicago), and those of Dr. Samuel Mead of Augusta IL, a quality observer serving under the direction of the Smithsonian, all indicated cold temperatures for the winter as a whole, and heavy snowfalls of 60 to 90 cm occurring at the end of December. This severe winter with a resulting poor corn harvest in northern Illinois, compelled northern Illinoisans to seek grain in southern Illinois, who had largely escaped the extreme conditions of the north. The furnishing of grain by the south was reminiscent of the Biblical account, leading to the use of the term "Little Egypt" being applied to southern Illinois.

The winter of 1836-37 is known as the Winter of Starving Time in Illinois (Ludlum, 1968). In December a strong cold front passed through northern and central Illinois dropping temperatures by more than 22°C in less than 24 hrs. (A temperature change of that intensity in November, today, has a recurrence frequency of about once each 4 years; Wendland, 1987). A man riding a horse from Chatham to Springfield to procure a marriage license began the trip in rain, and arrived in Springfield in snow with temperatures falling rapidly through 0°C. Upon arrival, his great coat was frozen solid, and he was so firmly frozen to the saddle, that he and the saddle were carried into a house and thawed next to the fire. Ft. Dearborn reported a mean December temperature (method of calculation unknown) of -6.7°C (4.2 below the 1951-80 mean), that of January was -5.1°C (+0.8), that of February was -5.6°C (-2.2), and that of March was -2.0°C (-4.1).

The winters of 1855-56 and 1856-57 were also memorable in Illinois. During the former, temperatures at Dubuque IA were less than 0°C for all observations from 21 December through 15 February, 57 days. From 22 December through 11 January, the maximum temperature at Sandwich IL (100 km west of Chicago) never exceeded -17.2°C. The winter of 1856-57 was very cold in the Upper Midwest, with Ft. Ripley MN reporting -45.5°C on 10 February 1857.

THE STATE OF CLIMATOLOGICAL DATA TODAY IN ILLINOIS

The Morrow Plots site continues to be monitored for temperature and precipitation, however a full component of parameters is now continuously measured at the Water Survey Research Center.

About 175 NWS Cooperative stations (shown as a dot on Fig. 2) daily record temperature, precipitation, snowfall and snow on the ground. These data are quality-controlled and published by the National Climatic Data Center (NCDC), Asheville NC. Copies of the original forms are on file at the ISWS, as is the published information from NCDC.

In addition, NWS supports 5 first order stations in the state: O'Hare, Rockford, Moline, Peoria and Springfield (Fig. 2). These sites currently operate 24 hours a day, monitoring virtually all components of the near surface atmosphere; strongly focused on flight operations. Because (1) these site are all located in the northern half of the state, (2) because of the increasing interest in alternative energy sources, and requirements for the specification of parameters other than temperature and precipitation, and (3) because of the Water Survey's commitment to monitor the whole water environment of the state, about 5 years ago the ISWS, supported by the Illinois Dept. of Energy and Natural Resources, installed 17 automatic, recording weather stations in the state, each monitoring temperature, precipitation, pressure, wind, solar, soil temperature and soil moisture (Fig. 2). One need only recall the Water Survey's timely assessments of the 1988 drought to realize only one of the benefits of such a network.

The Water Survey was a pioneer in establishing a means for the dissemination of near real-time climate data to the user public by establishing the Climate Assistance Service (CLASS) in the early 1980s (Changnon et al., 1987). This computer-based system of data and information was widely used by Illinoisans and others to assess the current state of climate and water resources. About half of the users were individuals/farmers, followed by state and federal agency personnel. Principle product requests included (1) pest advisories, (2) weekly forecasts, (3) raw data requests, (4) past 14 day-mean temperatures, and (5) past 14-day total precipitation (Changnon et al., 1987). CLASS provided the foundation for the near real-time regional data and information system operated by the Midwest Climate Center, located at the Illinois State Water Survey.

The Water Survey represents the largest community of meteorologists and climatologists in one location in Illinois, indeed, in most states. Its data, services and research have added much to the understanding of the atmosphere. We are committed to maintain that posture.

LITERATURE CITED

- Anon., 1855: "Smithsonian Contributions to Knowledge." Vol. 7. Smithsonian Institution, Washington, DC.
- Anon., 1862-1872: Smithsonian Inst. Meteorological Records. Washington, DC.
- Anon., 1873: "Smithsonian Contributions to Knowledge." Vol. 18. Smithsonian Institution, Washington, DC.
- Anon., 1876: "Smithsonian Contributions to Knowledge." Vol. 21. Smithsonian Institution, Washington, DC.
- Anon., 1885: "Smithsonian Contributions to Knowledge." Vol. 24. Smithsonian Institution, Washington, DC.
- Anon., 1887-1900: U.S. Dept. of War. Substation Meteorological Records.
- Anon., 1891-1948: U.S. Dept. of Agriculture. Weather Bureau. Substation Meteorological Records. Illinois.
- Anon., 1905-1913: U.S. Dept. of Agriculture. Weather Bureau. Climatological Records. LaSalle IL (monthly summaries of several parameters, and daily temp and precip)
- Blodget, L., 1857: "Climatology of the United States." Lippincott and Co., Philadelphia. 536 p.
- Changnon, S. A., Jr. & G. R. Boyd, 1963: History of Urbana weather station, 1888-1963. Circular 88, Illinois State Water Survey, Champaign. 37 p.
- Changnon, S. A, W. M. Wendland & J. L. Vogel, 1987: Usage of near real-time climate information. J. Clim. & Appl. Meteor. 26:1072-1079.
- Karl, T. R., C. N. Williams, Jr., P. J. Young & W. M. Wendland, 1986: A model to estimate the time of observation bias associated with monthly mean maximum, minimum, and mean temperatures for the United States. J. Clim & Appl. Meteor. 23:145-160.
- Ludlum, D. M., 1968: Early American winters II, 1821-1870. Amer. Meteor. Soc., Boston. 257 p.
- Ludlum, D.M., 1970: Early American tornadoes, 1586-1870. Amer. Meteor. Soc., Boston. 219 p.
- Maury, M. F., 1857: Meteorology for the farmers. Ill. State Agr. Soc., Trans. 2:487-491
- Wendland, W. M., 1987: Prominent November coldwaves in the North Central United States since 1901. Bull., Amer. Meteor. Soc. 68:616-619.

Table 1. Sites of extant daily temperature and/or precipitation observations in Illinois. Beginning year listed. Upper case sites continue to the present. "P" indicates precipitation only observations.

ALBERS P	1964	CARLINVILLE	1891
ALBION	1887	CARLYLE	1898
ALEDO	1888	CARMI	1923
Alexander	1893	Carrollton	1890
Alexis P	1978	CASEY	1887
ALGONQUIN P	1978	Catlin	1890
Altamont	1890	Cazanovia	1890
ALTON	1943	Cedarville	1887
ANNA	1884	CENTRALIA P	1923
ANTIOCH	1901	CHANNAHAN P	1954
APPLE RIVER CANYON P	1985	CHARLESTON	1880
Arlington Heights P	1940	CHEBANSE	1977
Ashland	1887	Chemung	1889
ASHLEY P	1978	CHENOA	1945
Astoria	1899	CHESTER P	1891
Atlanta	1890	CHICAGO *	1859
Atwood	1887	CHILLICOTHE P	1940
AUGUSTA P	1978	Cicero	1933
AURORA	1870	Cisne	1890
AVON P	1950	CLAY CITY P	1946
BARRINGTON	1962	Clear Creek	1894
BEARDSTOWN P	1901	CLINTON P	1910
Beason	1887	Coatsburg	1892
BEECHER CITY P	1962	Cobden	1883
BELLEVILLE	1887	Collinsville	1888
Belvidere	1887	COLMAR P	1965
Bement	1907	CONGERVILLE P	1983
BENTLEY P	1951	Cordova	1890
BENTON	1887	COULTERVILLE P	1978
BLOOMINGTON	1891	CRETE P	1978
Bluffs P	1940	CRYSTAL LAKE	1988
BOURBONAIS	1987	Dakota	1905
BRADFORD P	1980	DANVILLE	1900
BROOKPORT	1926	DAYTON P	1977
BROWNSTOWN	1980	DECATUR	1891
Brush Hill	1888	DE KALB	1881
Bushnell	1890	DES PLAINES P	1983
CAHOKIA	1968	DIONA P	1976
CAIRO	1871	DIX P	1972
Camargo	1888	DIXON	1890
Cambridge	1890	DIXON SPRINGS	1966
CANTON P	1940	DOWNS P	1978
CARBONDALE	1892	DU QUOIN	1887

Dwight	1888	HAVANA	1870
EAST ST. LOUIS P	1910	HENNEPIN	1887
Eberle	1887	Henry	1888
EDWARDSVILLE	1899	Herod P	1940
EFFINGHAM	1898	Herrins Prairie	1893
ELEROY P	1974	HIGHLAND P	1962
ELGIN	1888	HILLSBORO	1894
ELIZABETH	1980	Hollidayboro	1894
ELWOOD	1980	Holts	1890
Equality	1898	HOOPESTON	1887
FAIRBURY	1949	HOWARD	1973
FAIRFIELD	1885	HUTSONVILLE P	1945
Fairview P	1888	ILLINOIS CITY	1936
FARMER CITY	1961	INA P	1972
FILLMORE P	1962	Irishtown	1887
FLORA	1869	Iron	1890
FOX RAPIDS STATE PARK P	1975	IUKA	1980
Frederick	1890	JACKSONVILLE	1887
FREEPORT	1905	JERSEYVILLE	1940
Friend Grove	1898	JOLIET	1887
FULTON P	1935	Jordan's Grove	1887
Galatia P	1940	KANKAKEE	1887
GALENA P	1920	KASKASKIA	1895
GALESBURG	1895	KEITHSBURG P	1931
GALVA	1876	Kendall	1890
GEBHARD WOODS	1912	KEWANEE	1939
GENESEO	1888	KILBOURNE	1989
GIBSON CITY P	1888	KINCAID P	1972
Gilman	1890	Kinmundy	1890
GLADSTONE	1936	Kishwaukee	1888
Glenwood	1890	Knoxville	1895
GLENVIEW P	1983	Lacon	1887
Golconda	1885	La Grange	1892
GOLDEN	1889	LA HARPE	1879
GRAFTON P	1896	Lake Forest	1887
Grand Chain P	1948	LAKE VILLA	1985
GRAND TOWER P	1940	Lanark	1887
Grayville	1898	La Salle	1877
GREENFIELD	1949	LAWRENCEVILLE P	1942
GREENUP P	1942	Le Roy P	1936
GREENVIEW P	1977	Lexington	1890
GREENVILLE	1878	LIBERTYVILLE P	1987
Gridley P	1940	LINCOLN	1888
GRIGGSVILLE	1882	Loami	1896
GURNEE P	1978	LOCKPORT P	1978
Halfway	1896	Louisville	1890
HAMMOND P	1974	LOWELL P	1971
HARRISBURG	1888	MACKINAW P	1940

MACOMB P	1905	Oswego	1887
Mahomet	1887	OTTAWA	1852
MARENGO	1855	PALESTINE	1882
MARIETTA P	1978	PALOKA P	1962
MARION	1895	PANA	1886
MARSEILLES	1941	PARIS	1887
Martinsville	1893	PARK FOREST	1952
Martinton	1887	PAW PAW	1913
Mascoutah	1882	PAXTON	1986
MASON CITY	1961	PAYSON P	1888
MATTOON	1888	Pearl P	1917
MC HENRY P	1940	Pekin	1888
MC LEANSBORO	1882	PEORIA	1855
MEDORA P	1942	PEOTONE P	1940
Melvin	1887	Perry	1887
MINONK	1893	PERU	1945
MOLINE **	1871	PETERSBURG	1889
MOMENCE P	1977	Philo	1887
MONMOUTH	1887	PINKNEYVILLE P	1972
MONTICELLO	1942	PIPER CITY	1912
Morgan Park	1897	PITTSFIELD P	1978
Morris	1911	PLUMFIELD P	1983
MORRISON	1895	Plum Hill	1896
MORRISONVILLE	1899	PONTIAC	1887
Mound City	1887	PRAIRIE DU ROCHER P	1953
MOWEQUA	1962	Prairieville	1887
MT. CARMEL	1887	PRINCETON	1945
MT. CARROLL	1890	PRINCEVILLE	1929
MT. OLIVE P	1930	PROPHETSTOWN P	1978
MT. PULASKI P	1930	QUINCY P	1911
MT. STERLING P	1943	RAMSEY P	1962
MT. VERNON	1894	RANTOUL	1895
MURPHYSBORO P	1978	Raum	1899
NASHVILLE	1901	RED BUD P	1946
Neponset	1887	REND LAKE	1973
New Athens	1887	Reynolds	1896
NEW BOSTON P	1936	Richview	1887
New Burnside	1895	Riley	1859
NEWMAN P	1974	RIPLEY P	1937
NEWTON	1921	RIVERTON P	1975
NOKOMIS P	1978	Roberts P	1911
NORMAL	1893	Robinson	1896
Old DuQuoin	1888	ROCHELLE P	1926
OLIVE BRANCH	1983	ROCK FALLS P	1984
OLNEY	1887	ROCK ISLAND	1935
Oneida	1887	ROCKFORD	1872
Oquawka	1887	Rose Hill	1890
OREGON	1909	ROSICLARE	1942

Round Grove	1897	TUSCOLA	1893
RUSHVILLE	1889	URBANA	1888
SALEM P	1915	UTICA	1941
Savanna	1887	VANDALIA	1887
Scales Mound	1897	VARNA P	1987
Schylar	1890	VIRDEN	1887
SEVILLE P	1983	VIRGINIA P	1962
SHAWNEETOWN P	1910	WALNUT	1891
SHELBYVILLE	1978	WALTONVILLE P	1972
SHIRLAND P	1959	Wapella	1888
Shobonier	1900	Warsaw P	1905
SIDELL P	1945	WASHINGTON P	1978
SKOKIE P	1978	Wataga	1888
SMITHLAND	1980	WATERLOO	1912
SPARLAND P	1987	WATERMAN P	1978
SPARTA	1887	WATSEKA	1887
SPRINGFIELD	1877	WAUKEGAN	1923
St. Charles	1890	Waverly P	1935
St. John	1883	WAYNE CITY P	1947
St. Peter	1902	WENONA P	1978
STE. MARIE	1946	WEST FRANKFORT P	1978
STEELVILLE P	1983	WEST SALEM P	1967
Sterling	1887	WHEATON	1887
STOCKTON	1944	Wheeling	1888
Strawn	1900	WHITE HALL	1869
STREATOR	1893	Willow Hill	1854
Sullivan	1900	WILMETTE P	1982
Sumner	1909	Winchester	1888
Sycamore	1880	WINDSOR	1888
Tampico	1890	WOODHULL P	1978
Three Mile	1887	Woodstock	1857
Tilden	1886	Yale	1888
TISKILWA	1894	YATES CITY P	1978
Toulon	1887	Yorkville	1887
TUNNEL HILL P	1987	Zion	1894

* earliest records from Ft. Dearborn IL

** earliest records from Davenport IA

Table 2. Early weather observers in Illinois (after Anon., 1855).

<u>LOCATION</u>	<u>BEGINNING DATE</u>	<u>OBSERVER</u>
Alton*	May 1849	Johnson
Athens	Jan 1843	Prof. J. Hall
Augusta*	Aug 1833	Dr. S. B. Mead
Chicago*	Jul 1832	Surgeon General S. Meacham, S. Brooks, I. I. Langguth
Elgin*	Jan 1824	Assistant Surgeon
Highland	Jan 1841	Dr. Ryhiner, and A. G. Bandelier
Jacksonville*	Apr 1849	T. Dudley & Coffin
Joliet*	Oct 1843	Dr. M. K. Brownson
Marseilles*	1858	E. P. Bosworth**
Monroe	1849	Main
Upper Alton*	1849	James
Warsaw	May 1840	Ben Whitaker
Waukegan*	1849	Joslyn

* observations continue at present, though record perhaps discontinuous

** data in diary, continuous to 1902, same observer, not yet reduced

Figure 1. Per decade, the number of weather stations beginning operation, number of stations measuring precipitation only, and the number of stations continuing operation from 1850 to the present.

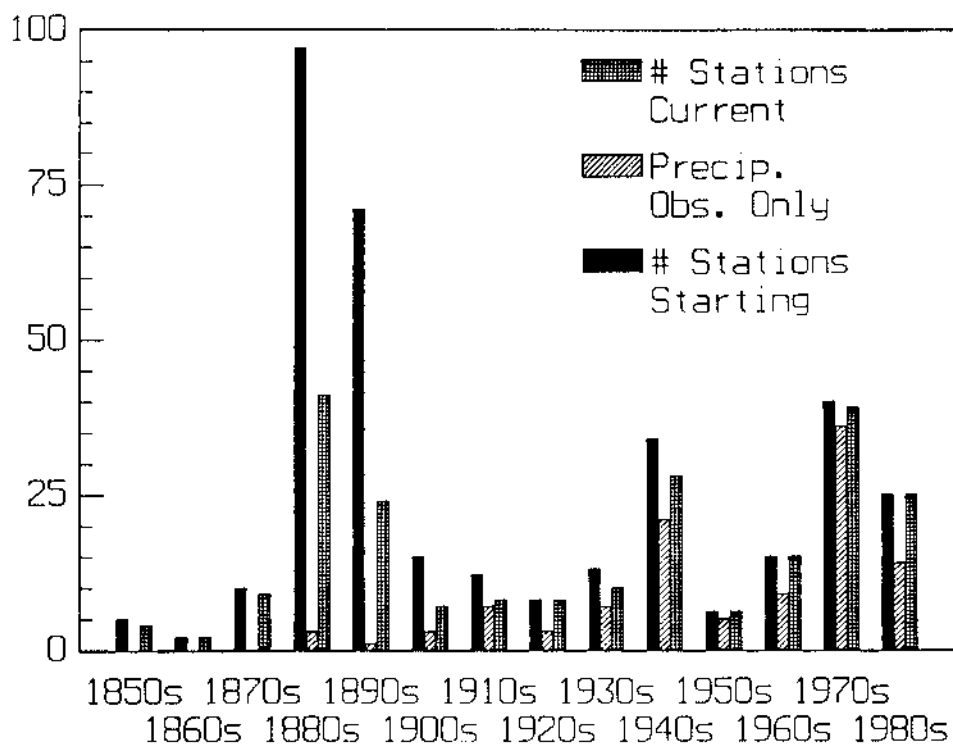


Figure 2. Distribution of weather observing sites in Illinois.

