PRECIPITATION SUMMARY FOR 1994

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State Climatology Office
1995

In 1994, Wisconsin received 98 percent of its normal precipitation—31.2 inches of rain and snowfall. Although the state as a whole experienced near-normal conditions, several months and regions were significantly above or below normal values. Precipitation was measured at more than 200 National Weather Service and other stations around the state (fig. 1).

The driest regions in 1994 in Wisconsin were the southeastern and the north-central climatological divisions. (Fig. 1 shows these divisions.) Table 1 compares 1994 to 1993 precipitation for each climate division; figure 2 shows the distribution of precipitation across the state during the year. The southeast was particularly dry in 1994; it received 3.7 inches less precipitation than normal. Some farmers in the region reported problems with dry soil through the early summer. The rainfall totals for the southeast in March through May were 47 percent of normal. As a result, by mid-June all farmers in the southeast region were reporting shortages in soil moisture (Wisconsin Crop Weather, 1994). However, a return to more normal rains eased dry conditions in the following weeks.

Precipitation values for the year ranged from more than 40 inches in southern Monroe County to less than 24 inches in northern Clark County (fig. 2). In general, most of the northern half and southeastern quadrant of Wisconsin experienced below-normal precipitation; the far western counties and the southwest were above the long-term average (fig. 3). The driest stations in the state were Stanley (22.72 in.), Washington Island (23.24 in.), Owen (23.74 in.), Chilton (24.29 in.), Fond du Lac (24.37 in.) and Plymouth (24.96 in.) The wettest stations in 1994 were Ontario (40.63 in.), Mondovi (39.30 in.), Richland Center (38.83 in.), Galesville (38.40 in.), Blair (38.36 in.) and Monroe (38.34 in.).

Table 1. Comparison of precipitation amounts for Wisconsin climatological divisions for 1994 and 1993. "Normal" is the 30-year average from 1961–90. Divisions are shown in figure 1.

	Total 1994 (in.)	Departure from normal	Total 1993 (in.)	Departure from normal
Division				
Northwest	30.6	- 0.7	30.8	- 0.6
North Central	30.2	- 1.7	31.4	- 0.5
Northeast	29.9	- 1.4	32.4	+ 1.1
West Central	34.3	+ 2.1	38.2	+ 6.0
Central	31.8	- 0.2	38.5	+ 6.5
East Central	27.8	- 2.8	34.1	+ 3.5
Southwest	33.6	+ 1.4	43.6	+11.4
South Central	31.8	- 0.7	42.3	+ 9.8
Southeast	28.9	- 3.7	36.4	+ 3.9
State	**31.1**	**- 0.6**	**35.6**	**+ 3.8**

Precipitation also fluctuated from month to month. Table 2 lists monthly totals of precipitation for each division as well as the statewide average. The driest months in 1994 were March and December, when the state received less than 40 percent of its usual precipitation in each of these months. In April and September, Wisconsin received more than 130 percent of its normal rainfall.

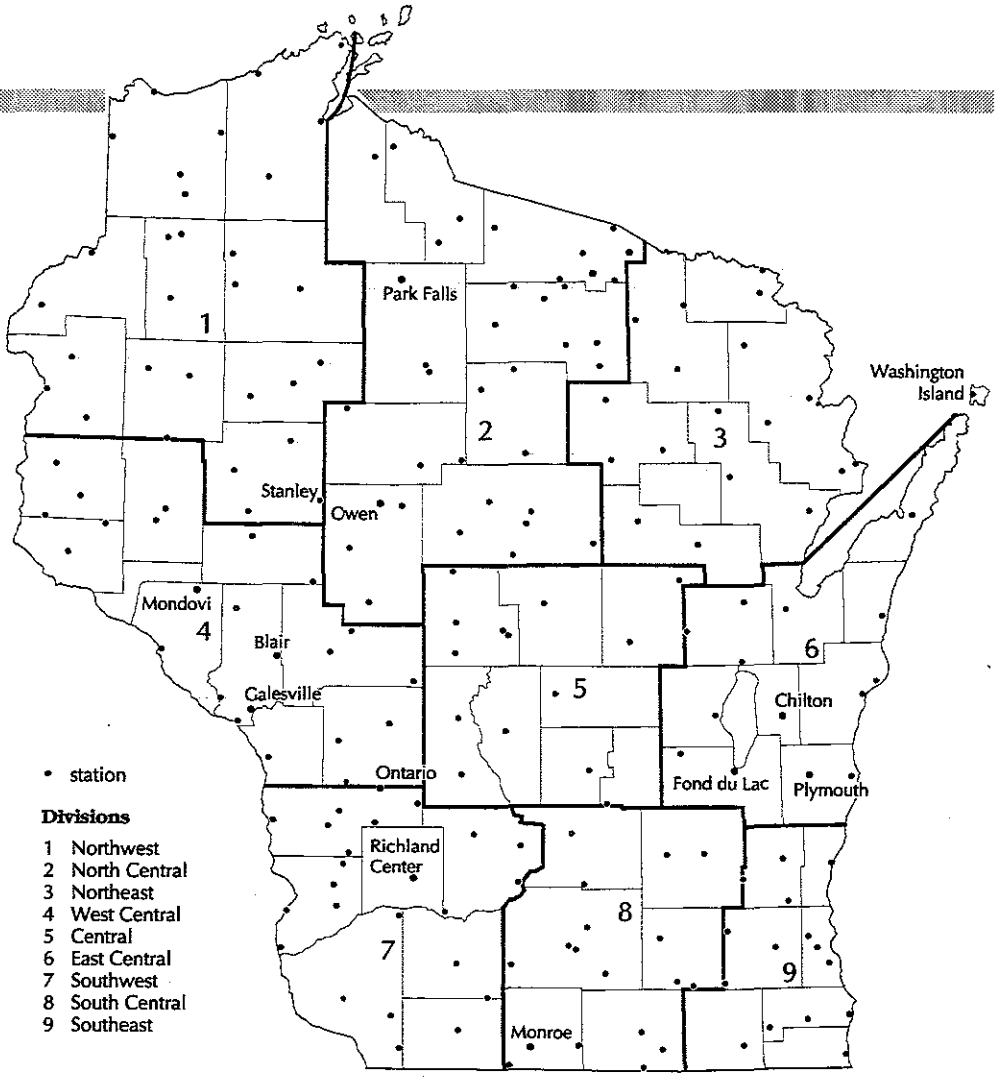

Figure 1. *Map of station locations and climatological divisions (adapted from Climatological Data, Wisconsin, National Oceanic and Atmospheric Administration, National Climatic Data Center). Only stations that are discussed in text are named on this map.*

Although annual precipitation amounts in the north-central region were slightly below normal, in the month of September the region experienced 157 percent of normal rainfall from September 12 to 16. Figure 4 shows the distribution of rainfall from this several-day storm event. Rainfall amounts of up to 12 inches were reported in north-central Wisconsin in conjunction with this storm, which consisted primarily of thunderstorms moving along a stationary front oriented west to east in northern Wisconsin.

The heaviest rains in north-central Wisconsin occurred on the evening of September 12 and caused roadway washouts and small dam breaks. Amounts of up to 5 inches were reported in Price County. Severe weather was associated with the rainfall that occurred on the evening of September 13, which was centered in west-central Wisconsin north of La Crosse. North-central Wisconsin received an additional 4 inches of rainfall on this day. On September 15, heavy rainfalls of up to 5 inches were observed in northwestern Wisconsin, and severe weather again hit central Wisconsin in the form of high winds and a tornado near Ladysmith. The result of the rainfall was widespread flooding in the north-central region. Several dams had to be sandbagged and more than 100 people were evacuated (*Weather and Climate Impacts in the Midwest*, 1994).

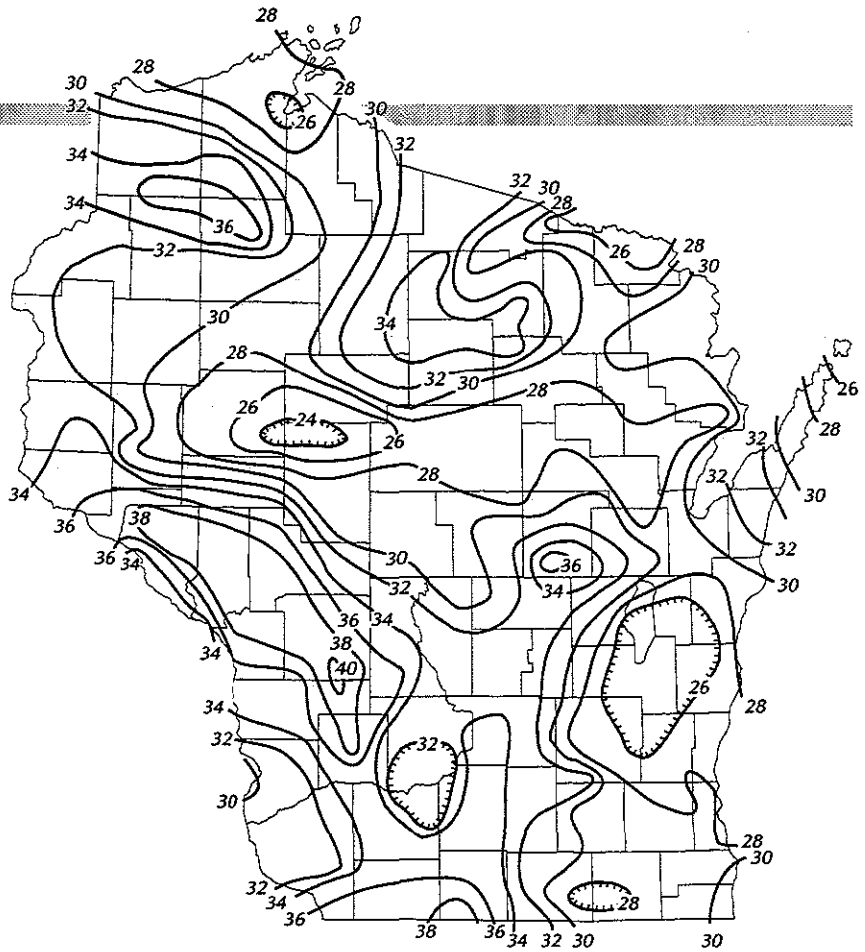

Figure 2. *Total precipitation in inches, 1994.*

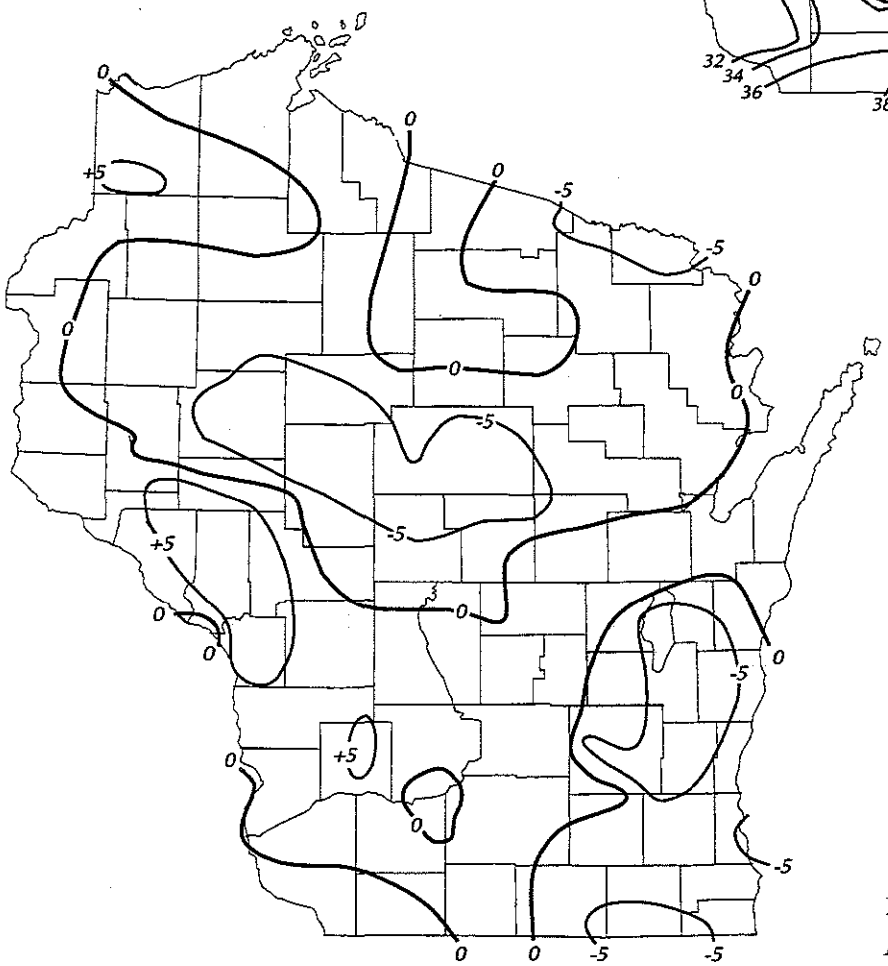

Figure 3. *Departure from normal precipitation in inches, 1994.*

Table 2. Precipitation in 1994, averaged by climatological division

Monthly Totals, 1994 (in inches)

Division*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Northwest	1.18	0.66	1.00	4.09	1.89	3.27	4.25	3.46	6.17	2.17	2.01	0.48
North Central	1.06	0.57	0.89	3.32	2.02	3.31	4.32	3.48	6.60	2.35	1.99	0.33
Northeast	1.14	0.77	1.18	3.68	1.81	2.76	4.48	3.19	6.37	2.39	1.90	0.23
West Central	1.23	0.71	0.39	5.24	1.96	4.43	4.95	4.96	6.12	1.82	1.98	0.52
Central	1.30	0.87	0.66	4.81	1.54	3.23	6.86	4.51	4.18	1.44	2.01	0.40
East Central	1.67	1.51	1.01	3.89	1.72	2.29	5.40	3.58	2.77	1.41	2.00	0.50
Southwest	1.61	1.84	0.28	3.04	2.07	5.09	6.16	4.54	4.60	0.91	2.55	0.87
South Central	1.50	2.32	0.52	1.79	1.97	5.68	4.16	5.26	3.95	0.75	3.01	0.93
Southeast	1.89	3.02	0.87	1.94	1.17	3.54	4.49	4.69	1.63	0.94	3.72	1.00
Statewide average, 1994	1.32	1.13	0.77	3.70	1.86	3.68	4.92	4.06	5.22	1.74	2.22	0.53
Normal, 1961-90	1.09	0.95	1.97	2.72	3.39	3.83	3.75	4.06	4.01	2.51	2.03	1.48
Departure from normal	0.24	0.18	-1.20	0.98	-1.53	-0.15	1.17	0	1.21	-0.77	0.18	-0.95
Percentage of normal	122	121	39	136	55	96	131	100	130	69	109	36

Statistics, 1994

Division*	Total	Norm	Depart	Pct
Northwest	30.63	31.34	-0.71	98
North Central	30.24	31.91	-1.67	95
Northeast	29.93	31.26	-1.33	96
West Central	34.31	32.24	2.07	106
Central	31.81	31.96	-0.15	100
East Central	27.75	30.52	-2.77	91
Southwest	33.56	32.20	1.36	104
South Central	31.84	32.56	-0.72	98
Southeast	28.90	32.57	-3.67	89
Statewide average, 1994	31.15	31.79	-0.64	
Normal, 1961-90	31.79			
Departure from normal	-0.64			
Percentage of normal	98			

Cumulative Statistics

Division*	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Total	1.32	2.45	3.22	6.92	8.78	12.46	17.38	21.44	26.66	28.40	30.62	31.15
Departure	0.24	0.42	-0.78	0.20	-1.33	-1.48	-0.31	-0.31	0.90	0.13	0.31	-0.64
Percentage of normal	122	121	81	103	87	89	98	98	103	100	101	98

*See figure 1.

Division averages are based on arithmetic averages of available station precipitation measurements. These data are collected from National Weather Service offices, cooperative observers, and other participating agencies. Some values may differ from those in *Climatological Data, Wisconsin* (published by the National Oceanic and Atmospheric Administration, National Climatic Data Center). Statewide precipitation is calculated using an area-weighted average of climatological division values.

Precipitation totals for individual stations can be obtained from the State Climatology Office, 1225 W. Dayton Street, Madison, Wisconsin 53706, telephone 608/263.2374; FAX 608/262.5964; Internet *stclim@macc.wisc.edu.* Please consult the State Climatology Office before using the data for legal or regulatory purposes.

Because of the near-normal rainfall conditions in 1994, groundwater levels in the state remained near 1993 levels, with slight declines or rises at some locations. The greatest declines were in southeastern Wisconsin (Zaporozec, 1995), where the rainfall deficits were greatest. ▩

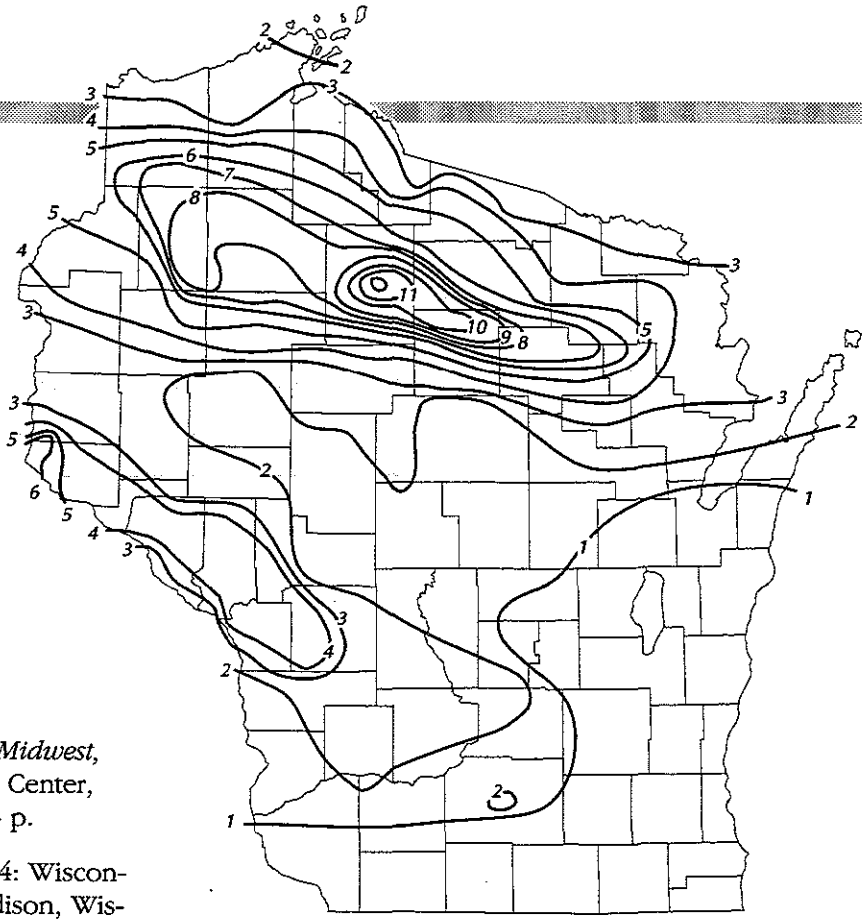

Figure 4. *Accumulated precipitation in inches, September 12–16, 1994.*

References

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Wisconsin Crop Weather, June 6, 1994: Wisconsin Agricultural Statistics Service, Madison, Wisconsin, vol. 17, no. 18, 2 p.

Zaporozec, A., 1994, *Groundwater Levels in Wisconsin, 1994*: Wisconsin Geological and Natural History Survey Educational Series 15, 4 p.

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