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Precipitation Summary for 1990

Pamela S. Naber
State Climatology Office

1991

During the 1990 calendar year, Wisconsin received 115 percent of its normal annual precipitation. The statewide average in 1990 was 36.0 inches, 4.7 inches more than the 30-year normal of 31.3 inches. The result: 1990 was the eleventh wettest year in the past 100 years. Table 1 shows the comparison with 1989 rainfall; table 2 gives monthly totals and a state average. Rainfall measurements were taken at more than 200 National Weather Service and other stations around the state (fig. 1).

Precipitation varied greatly across the state, ranging from less than 30 inches along the northeastern border to more than 44 inches in west-central Wisconsin (fig. 2). In general, the areas of greatest precipitation reflect the occurrence of several convective rain events (heavy, localized downpours) during the summer months. Stations that had the highest annual totals are Darlington (44.67 in.), Bloomer (44.62 in.), Monroe (43.65 in.), Westby (43.68 in.), and Stanley (43.31 in.) (fig. 1).

Several other locations reported large amounts of precipitation from single-storm events, most notably Tomah in Monroe County on August 17–18, when more than 9 inches of rain fell in approximately four hours. However, hourly recording station data have not been included in this summary because of incomplete data and different catch efficiencies of the gauges.

The extreme northern edge of Wisconsin was the driest region of the state in 1990; this reflects the continuing drought in the Upper Peninsula of Michigan. Stations that had the lowest annual totals are Ashland (27.17 in.), Phelps Deerskin Dam (27.22 in.), Grantsburg (28.40 in.), Danbury

Table 1. Comparison of precipitation amounts for Wisconsin climatological divisions for 1990 and 1989. "Normal" is the 30-year average from 1951-80.

Division*	Total 1990 (in.)	Departure from normal (in.)	Total 1989 (in.)	Departure from normal (in.)
Northwest	33.6	+2.3	26.5	-4.8
North Central	36.2	+4.3	23.0	-8.9
Northeast	34.0	+2.9	21.0	-10.0
West Central	37.7	+6.2	26.3	-5.2
Central	36.5	+5.5	25.4	-5.5
East Central	36.8	+7.3	23.0	-6.5
Southwest	37.6	+5.7	24.5	-7.4
South Central	36.7	+5.0	24.3	-7.4
Southeast	37.6	+5.9	27.8	-3.9

*see fig. 1

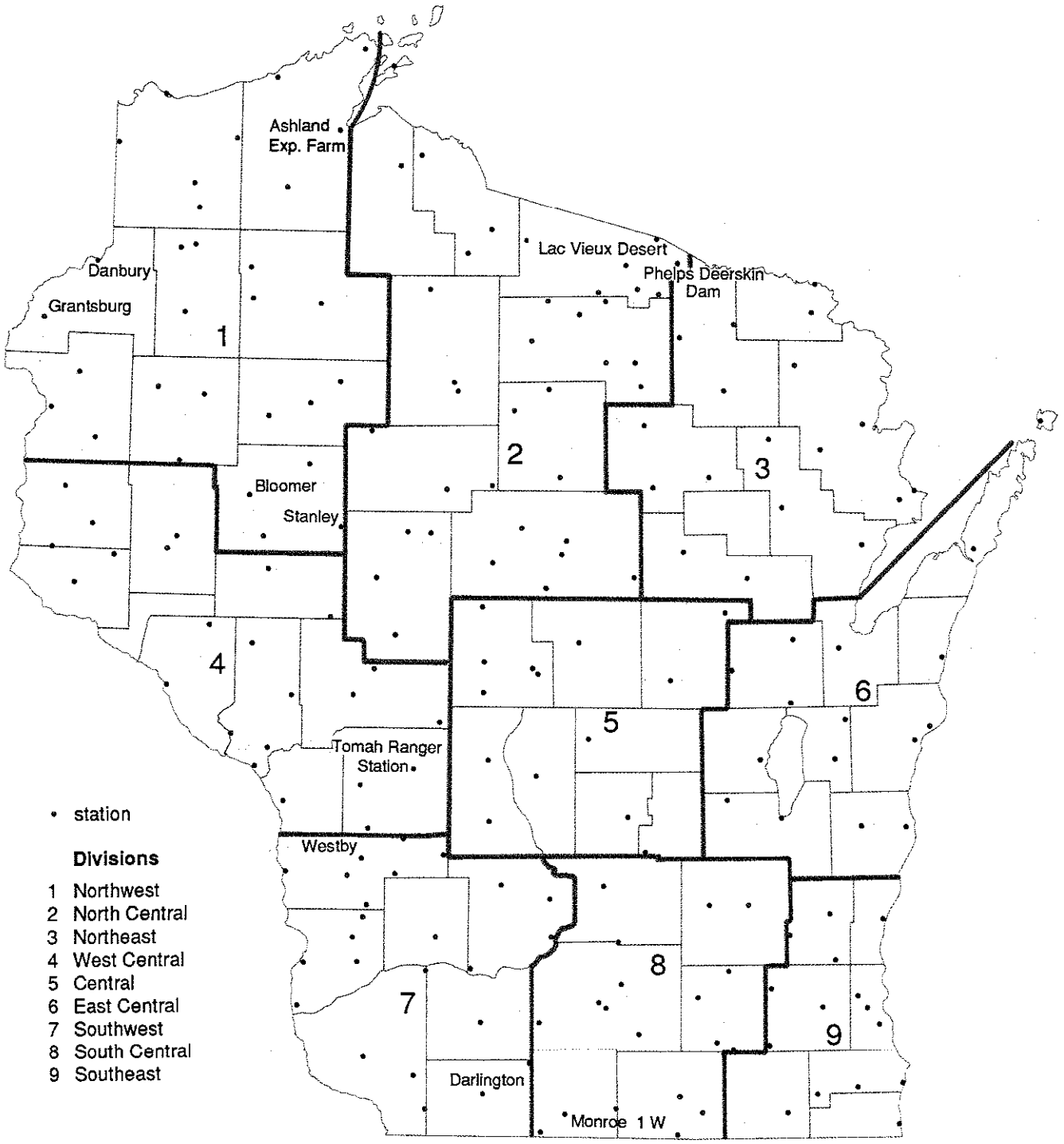


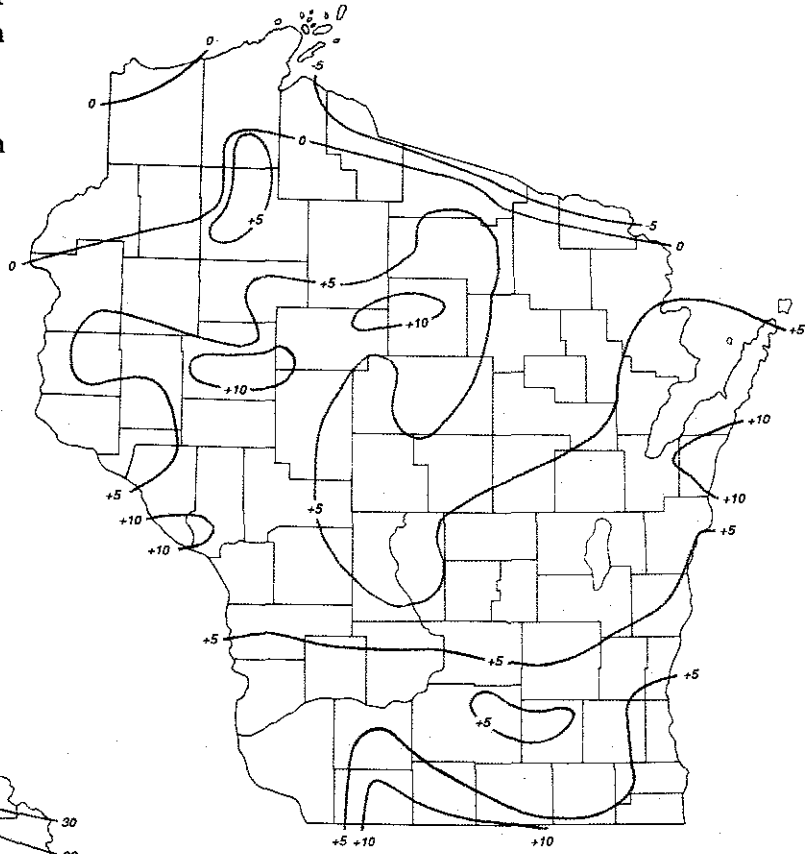
Figure 1. Map of station locations and climatological divisions (adapted from *Climatological Data, Wisconsin,* National Oceanic and Atmospheric Administration). Only stations that are discussed in text are named on this map.

(28.46 in.), and Lac Vieux Desert (28.85 in.) (fig. 1).

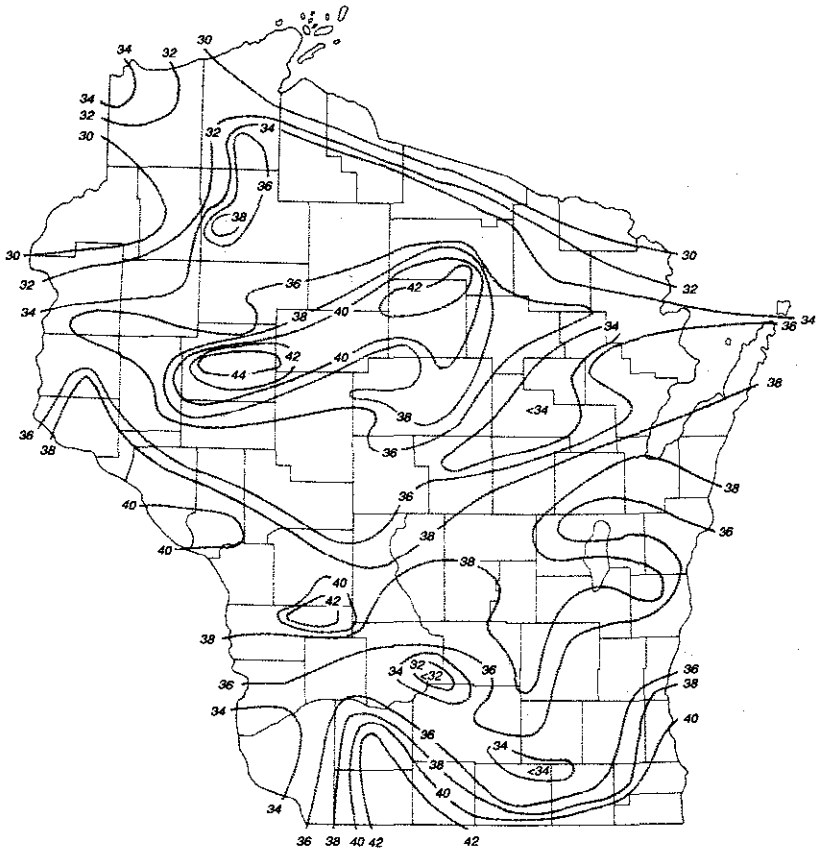
The departures from normal amounts of precipitation shown in figure 3 reflect these patterns: below-normal conditions were recorded in the northern tier of counties; above-normal conditions were reported everywhere else. At several locations near the southern border of Wisconsin and in the west-central part of the state, precipitation that was more than 10 inches above normal occurred at sites of convective rain.

Many aquifers are beginning to recover from the 1988-89 drought. According to groundwater specialists, water levels in some aquifers are now above their average values.

Abundant rainfall in 1990 replenished soil moisture in nearly all agricultural areas in the state, and the soil is moist to a depth of at least 6 feet. Recharge of soil moisture continued into the winter months of 1991; snowmelt occurred slowly in periods of warm weather and infiltrated soil that was less deeply frozen than normal. This leads to an optimistic view of conditions for the growing season in spite of below-normal precipitation in January and February 1991.



▲ **Figure 3.** Departure from normal precipitation, in inches, 1990.



◀ **Figure 2.** Total precipitation in inches, 1990.

Table 2. Precipitation in 1990, averaged by climatological division.

	Monthly totals, 1990 (in inches)												Statistics, 1990			
Division*	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	NORM	DEP	PCT
Northwest	0.53	0.72	2.92	3.25	2.66	5.85	2.96	5.06	4.83	3.46	0.70	0.66	33.60	31.27	2.33	107
North Central	0.72	0.65	2.27	2.70	3.99	5.64	3.63	5.24	5.46	3.70	1.12	1.07	36.19	31.89	4.30	113
Northeast	0.85	0.66	2.53	1.29	4.67	6.73	2.97	4.02	4.77	2.63	1.28	1.55	33.95	31.03	2.92	109
West Central	0.67	0.67	2.98	4.20	4.43	8.12	4.10	6.24	1.84	2.05	0.69	1.68	37.67	31.50	6.17	120
Central	1.07	0.55	3.16	2.41	4.85	6.92	3.14	5.73	3.19	2.32	1.12	1.99	36.45	30.97	5.48	118
East Central	1.33	0.70	2.95	1.70	4.29	7.87	2.23	4.66	4.66	2.59	1.91	1.93	36.82	29.53	7.29	125
Southwest	1.10	0.61	3.08	2.84	4.51	8.40	2.51	7.32	1.32	2.26	1.45	2.19	37.59	31.91	5.68	118
South Central	1.56	1.11	3.69	2.60	4.73	6.09	2.86	5.11	1.62	2.66	2.11	2.59	36.73	31.75	4.98	116
Southeast	2.08	1.43	2.91	2.21	6.25	4.90	2.82	4.10	2.43	3.01	3.07	2.36	37.57	31.71	5.86	118
Statewide average, 1990	0.96	0.73	2.88	2.70	4.22	6.69	3.12	5.34	3.65	2.84	1.29	1.59	36.01	31.32	4.69	115
Normal, 1951-80	1.07	0.94	1.90	2.83	3.55	4.03	3.89	4.09	3.57	2.29	1.81	1.35	31.32			
Departure from normal	- 0.11	- 0.21	0.98	- 0.13	0.67	2.66	- 0.77	1.25	0.08	0.55	- 0.52	0.24	4.69			
Percent of normal	90	78	152	95	119	166	80	131	102	124	71	118	115			
Cumulative total, 1990	0.96	1.69	4.57	7.27	11.49	18.18	21.30	26.64	30.29	33.13	34.42	36.01				
Cumulative departure	- 0.11	- 0.32	0.66	0.53	1.20	3.86	3.09	4.34	4.42	4.97	4.45	4.69				
Cumulative percent of normal	90	84	117	108	112	127	117	119	117	118	115	115				

*see fig. 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* (published by the 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. Consult the State Climatology Office before using the data for legal or regulatory purposes.

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Juergen Reinhardt, Director and State Geologist
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