CLIMATOLOGICAL TABLES

CONDENSED CLIMATOLOGICAL SUMMARY

In the following table are given for the various sections of the climatological service of the Weather Bureau the monthly average temperature and total rainfall; the stations reporting the highest and lowest temperatures, with dates of occurrence; the stations reporting the greatest and least total precipitation; and other data as indicated by the several headings.

The mean temperature for each section, the highest and lowest temperatures, the average precipitation, and the greatest and least monthly amounts are found by using all trustworthy records available.

The mean departures from normal temperatures and precipitation are based only on records from stations that have 10 or more years of observations. Of course, the number of such records is smaller than the total number of stations.

Condensed climatological summary of temperature and precipitation by sections, June 1933

[For description of tables and charts, see REVIEW, January, p. 37]

Section	Temperature								Precipitation					
	Section average	Departure from the normal	Monthly extremes						Section average	Departure from the normal	Greatest monthly		Least monthly	
			Station	Highest	Date	Station	Lowest	Date			Station	Amount	Station	Amount
	° F.	° F.		° F.			° F.		In.	In.		In.		In.
Alabama	78.5	+0.3	Brewton	109	17	Riverton	45	15	3.04	−1.28	Bay Minette	8.71	Decatur	0.34
Arizona	77.6	−.3	Gila Bend	120	11	2 stations	25	[1] 1	.48	+.02	Paradise	2.93	14 stations	.00
Arkansas	78.4	+1.4	2 stations	107	[1] 23	do	40	[1] 13	1.30	−2.71	Freeman Springs	3.61	2 stations	.00
California	65.7	−2.5	Greenland Ranch	120	16	Madeline	20	17	.22	−.10	Crescent City (near)	6.12	60 stations	.00
Colorado	66.0	+4.5	Las Animas	111	30	Pearl	21	1	.91	−.51	Westcliffe	6.02	2 stations	.00
Florida	79.1	−.7	2 stations	105	[1] 7	2 stations	49	3	5.23	−1.39	Bartow	13.47	Long Key	.34
Georgia	79.3	+1.3	Eastman	108	20	Blairsville	34	15	2.96	−1.47	Savannah No. 2	9.05	Goat Rock	.49
Idaho	64.2	+3.9	Grand View	107	13	Pelton Ranch	26	30	.99	−.23	Grangeville	4.80	Jerome	.00
Illinois	78.1	+6.6	Greenville	106	30	Waukegan	37	14	1.48	−2.60	Warsaw	5.96	3 stations	T
Indiana	77.2	+5.8	2 stations	108	[1] 24	Marengo	34	15	1.16	−2.65	Whiting	4.37	Farmland	.02
Iowa	77.8	+8.3	Denison	109	10	Webster City	34	14	1.64	−2.99	Keokuk No. 2	7.97	Chariton	T
Kansas	80.7	+7.1	2 stations	114	30	Sedan	42	14	.87	−3.13	Horton	4.71	2 station	.00
Kentucky	76.5	+2.7	Franklin	105	21	Middlesboro	39	[1] 14	1.57	−2.54	High Bridge	5.97	Irvington	T
Louisiana	78.9	−1.1	Dodson	105	[1] 21	Robeline	45	15	1.94	−2.70	Crowley	5.79	2 stations	.00
Maryland-Delaware	72.5	+1.7	Cumberland, Md	102	[1] 8	Oakland, Md	28	15	2.73	−1.22	Westminister, Md	5.13	Crisfield, Md	.58
Michigan	69.8	+6.2	2 stations	103	28	Wolverine	22	14	2.31	−.81	Eau Claire	5.10	Croswell	.13
Minnesota	72.5	+7.6	Beardsley	109	25	2 stations	30	14	2.04	−2.01	Orr	4.56	Albert Lea	.23
Mississippi	78.8	.0	3 stations	105	[1] 20	Duck Hill	43	15	1.79	−2.35	Poplarville	5.42	Hernando	.04
Missouri	78.4	+5.0	2 stations	107	[1] 25	Goodland	38	15	1.72	−3.07	Gorin	9.10	2 stations	.00
Montana	65.5	+5.8	Kenilworth (near)	107	17	3 stations	26	[1] 2	1.58	−.93	Turner	4.19	Crow Agency	.00
Nebraska	77.7	+8.7	Beaver City	113	30	Weeping Water	39	12	1.03	−2.75	Weeping Water	3.44	Potter	.00
Nevada	67.1	+2.8	Clay City	110	[1] 12	Zorra Vista Ranch	25	[1] 17	.06	−.43	Minden	.40	12 stations	.00
New England	65.9	+2.1	2 stations	103	29	Pittsburg, N. H.	25	2	2.24	−1.09	Hanover, N.H.	5.90	Newport, Vt.	.66
New Jersey	71.0	+2.2	Elizabeth	105	10	Layton	32	2	2.79	−.92	Runyon	5.71	Belleplain	.52
New Mexico	69.2	+.3	3 stations	110	[1] 4	Seisor Ranch	22	[1] 7	2.14	+.87	Mountain Park	6.91	Glenrio	T
New York	68.0	+3.1	4 stations	102	29	Indian Lake	27	2	2.12	−1.52	Scio	8.12	High Market	.47
North Carolina	75.3	+1.4	2 stations	106	21	Mount Mitchell	28	14	2.44	−2.30	Stonewall	6.20	Caroleen	.41
North Dakota	70.7	+8.2	Fort Yates	110	18	Eckman	33	12	1.75	−1.70	Valley City	4.49	Hettinger	.38
Ohio	74.4	+5.0	3 stations	103	[1] 8	Dennison	31	15	1.78	−2.00	Circleville	4.60	Xenia	.26
Oklahoma	80.6	+3.5	Jefferson	113	5	5 stations	45	[1] 8	.42	−3.38	Smithville	2.67	5 stations	.00
Oregon	60.6	+1.1	Blitzen	105	14	Fremont	18	19	1.43	+.22	Brookings	10.60	Danner	.00
Pennsylvania	70.9	+3.0	Sharon	107	8	Somerset	28	15	2.58	−1.60	Bloserville	6.57	New Castle	.67
South Carolina	78.5	+1.1	2 stations	106	21	2 stations	43	15	2.74	−2.03	Florence No. 1	6.30	Winthrop College	.57
South Dakota	76.5	+10.0	4 stations	111	26	Castlewood	33	13	1.48	−2.07	Bowdle	3.96	Pine Ridge	.23
Tennessee	76.0	+1.4	2 stations	105	[1] 20	2 stations	36	15	1.79	−2.43	Elkmont	4.51	Kenton	.23
Texas	80.3	+.1	4 stations	109	[1] 4	Wiergate	42	13	.77	−2.43	George West	5.97	25 stations	.00
Utah	68.5	+4.0	Hanksville	110	26	Soldiers Summit	22	6	.06	−.51	Escalante	.80	20 stations	.00
Virginia	73.0	+2.0	Clerksville	104	22	Burkes Garden	35	[1] 14	2.11	−2.11	Emporia	5.60	Timberville	.48
Washington	59.6	−.8	3 stations	105	[1] 11	Stockdill Ranch	22	10	1.42	−.19	Cougar	5.74	Kennewick	.04
West Virginia	71.4	+1.9	Wheeling	104	8	2 stations	28	15	2.75	−1.62	Richwood	7.08	Benson	.52
Wisconsin	72.6	+7.5	Hancock	106	27	Coddington	26	14	2.62	−1.41	Manitowoc	7.55	Meadow Valley	.60
Wyoming	64.3	+5.7	Pine Bluffs	104	27	South Pass City	18	8	.56	−1.06	Devil's Tower	2.70	4 stations	.00
Alaska (May)	41.7	+.3	Fairbanks (near)	82	26	Savoonga	−4	1	1.35	−.22	View Cove	7.01	Hot Springs	T
Hawaii	72.2	−1.3	Haiku	91	20	Kanalohuluhulu	45	16	3.79	−1.49	Hiloa-Manawaiopuna Divide.	24.00	9 stations	.00
Puerto Rico	78.5	+.2	Dorado	95	3	Guineo Reservoir	48	8	6.78	+.54	San Sebastian	18.94	Jayuya	2.67

[1] Other dates also.

TABLE 1.—*Climatological data for Weather Bureau stations, June 1933*

[Compiled by Annie E. Small]

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max. + mean min. ÷ 2	Temperature of the air: Departure from normal	Temperature of the air: Maximum	Temperature of the air: Date	Temperature of the air: Mean maximum	Temperature of the air: Minimum	Temperature of the air: Date	Temperature of the air: Mean minimum	Temperature of the air: Greatest daily range	Mean wet thermometer	Mean temperature of the dew-point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 or more	Wind: Total movement	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles								0-10	In.	In.
New England							65.4	+1.8										75	2.40	−0.6										5.1		
Eastport	76	67	85	29.80	29.88	−0.05	55.8	+0.7	83	10	64	39	2	48	33	51	49	83	3.18	+.2	14	6,518	sw.	30	e.	18	6	13	11	6.3	0.0	0.0
Greenville, Maine	1,070	6	----	28.73	29.88	------	61.2	------	89	28	73	34	16	50	41	----	----	----	3.33	------	10	4,618	se.	19	------	1	6	13	11	----	.0	.0
Portland, Maine	103	82	117	29.77	29.89	−.06	64.6	+2.1	93	12	73	45	2	56	34	58	54	71	1.61	−1.7	12	6,278	s.	23	nw.	17	15	11	4	3.9	.0	.0
Concord	289	70	79	29.59	29.89	−.07	66.9	+4.0	98	9	80	36	2	54	43	----	----	----	1.25	−1.9	6	4,265	nw.	19	nw.	17	18	9	3	3.3	.0	.0
Burlington	403	11	48	29.48	29.90	−.06	66.5	+.8	94	28	77	37	2	56	37	----	----	----	2.59	−.8	9	6,091	s.	32	se.	28	9	12	9	5.5	.0	.0
Northfield	876	12	60	------	29.90	−.06	62.6	+1.3	94	28	76	32	2	49	42	----	----	76	1.32	−1.9	12	5,018	s.	25	sw.	30	7	13	10	5.8	.0	.0
Boston	125	106	165	29.76	29.89	−.07	69.6	+3.1	99	29	80	47	2	60	37	61	55	64	1.22	−1.7	10	6,345	sw.	29	sw.	9	8	16	6	5.1	.0	.0
Nantucket	12	14	90	29.90	29.91	−.07	62.8	+1.8	81	9	70	48	3	56	20	58	56	83	4.78	+2.1	10	9,193	s.	40	sw.	10	9	14	7	5.2	.0	.0
Block Island	26	11	46	29.89	29.92	−.05	63.4	+1.6	78	22	69	49	2	58	17	60	58	87	3.13	+.5	11	8,776	s.	32	sw.	12	11	9	10	5.5	.0	.0
Providence	160	215	251	29.74	29.91	−.06	68.2	−.1	94	12	78	45	2	59	31	60	55	67	2.85	+.2	12	7,625	nw.	31	nw.	12	12	11	7	4.8	.0	.0
Hartford	159	70	104	29.74	29.91	−.06	69.5	+2.4	95	26	80	44	2	59	37	----	----	----	2.18	−.9	9	------	sw.	----	------	----	11	11	8	5.1	.0	.0
New Haven	106	74	153	29.81	29.92	−.05	69.2	+2.6	94	12	78	47	2	60	33	62	57	69	2.26	−.8	9	6,133	s.	24	n.	1	9	14	7	5.3	.0	.0
Middle Atlantic States							72.9	+2.5										68	2.75	−0.9										4.9		
Albany	97	107	115	29.81	29.91	−.06	71.4	+3.4	100	9	82	43	2	61	35	63	59	69	2.21	−1.2	9	5,507	s.	22	n.	1	6	20	4	5.2	.0	.0
Binghamton	871	60	68	29.03	29.94	−.03	68.8	+3.2	98	29	81	39	2	57	37	----	----	----	1.91	−1.5	11	3,950	nw.	21	sw.	30	7	8	15	6.5	.0	.0
New York	314	414	454	29.59	29.92	−.06	70.8	+2.0	96	9	79	47	15	62	29	63	59	71	2.55	−.8	10	9,326	n.	67	nw.	10	7	14	9	5.5	.0	.0
Bellefonte	1,050	5	42	28.86	29.95	------	68.3	------	93	8	82	38	2	55	38	63	59	73	2.87	------	10	------	sw.	----	------	----	5	20	5	5.6	.0	.0
Harrisburg	374	94	104	29.54	29.93	−.06	73.4	+3.1	97	9	84	48	15	63	34	64	59	64	3.46	−.1	12	4,885	w.	37	w.	9	7	15	8	5.1	.0	.0
Philadelphia	114	123	367	29.82	29.95	−.03	74.4	+3.0	98	9	84	50	15	65	32	64	59	62	4.78	+1.5	10	8,481	sw.	36	nw.	7	11	13	6	4.9	.0	.0
Reading	323	283	304	29.59	29.94	------	72.4	+2.6	98	9	83	45	15	62	36	64	58	63	1.77	−1.8	9	7,108	nw.	58	nw.	7	8	15	7	5.3	.0	.0
Scranton	805	72	104	29.09	29.93	−.05	70.2	+2.4	96	9	82	41	2	59	38	61	56	62	2.92	−.8	10	4,663	sw.	32	nw.	7	7	19	4	4.9	.0	.0
Atlantic City	52	37	172	29.88	29.93	−.05	69.8	+3.2	91	22	77	47	15	63	27	64	60	76	1.84	−1.2	6	9,864	s.	38	se.	7	13	9	8	5.0	.0	.0
Sandy Hook	22	10	55	29.90	29.92	------	69.6	------	91	9	77	51	15	62	28	64	60	77	4.59	+.8	12	8,423	sw.	50	sw.	5	13	12	5	4.4	.0	.0
Trenton	190	159	183	29.73	29.93	------	72.0	+2.5	99	9	83	45	15	61	35	64	60	68	2.93	−.2	11	6,314	s.	32	nw.	7	10	15	5	5.0	.0	.0
Baltimore	123	100	215	29.81	29.94	−.05	76.0	+3.3	98	9	86	50	15	66	32	66	61	61	3.09	−.8	10	7,069	sw.	41	nw.	7	13	11	6	4.6	.0	.0
Washington	112	62	85	29.83	29.94	−.06	74.7	+2.5	100	9	85	47	15	64	34	66	61	65	3.88	−.2	12	4,296	nw.	30	nw.	22	14	11	5	4.2	.0	.0
Cape Henry	18	8	54	29.93	29.95	------	74.4	+1.5	95	20	82	51	16	67	30	68	64	74	2.03	−1.9	6	7,641	se.	41	n.	17	9	17	4	4.7	.0	.0
Lynchburg	681	153	188	29.24	29.97	−.04	76.0	+1.4	100	22	88	48	15	64	36	68	64	68	2.61	−1.2	5	4,117	nw.	24	ne.	8	18	11	1	3.7	.0	.0
Norfolk	91	170	205	29.87	29.96	−.04	76.8	+2.4	99	22	86	52	16	67	28	67	62	68	2.05	−2.2	7	7,446	s.	34	w.	25	8	15	7	5.8	.0	.0
Richmond	144	11	52	29.82	29.96	−.05	75.8	+1.7	100	22	87	48	15	64	38	67	62	66	1.63	−2.3	6	5,041	ne.	22	n.	6	14	11	5	4.0	.0	.0
Wytheville	2,304	49	55	27.68	29.98	−.03	69.8	+1.1	94	8	82	38	15	58	34	62	57	68	2.50	−1.7	8	4,091	w.	18	w.	17	14	13	3	3.9	.0	.0
South Atlantic States							78.1	+1.7										66	2.35	−2.3										4.5		
Asheville	2,253	89	104	27.73	30.00	−.01	72.3	+3.6	97	8	85	42	15	60	38	63	58	66	3.28	−.6	7	4,592	nw.	21	n.	9	10	14	6	5.0	.0	.0
Charlotte	779	244	267	29.17	29.99	−.02	78.3	+2.8	98	21	88	51	15	68	26	66	59	56	1.31	−2.9	9	7,184	n.	32	n.	6	12	16	2	4.1	.0	.0
Greensboro	886	6	56	29.06	29.99	------	75.7	------	100	21	89	42	15	62	40	66	60	61	.32	------	5	4,795	n.	29	nw.	6	10	16	4	4.5	.0	.0
Hatteras	11	5	50	29.94	29.95	−.06	75.1	−.5	88	20	81	58	16	69	22	70	68	80	.77	−3.8	4	8,693	sw.	32	n.	1	15	9	6	4.3	.0	.0
Raleigh	376	103	146	29.58	29.96	−.05	77.9	+2.2	101	21	89	49	15	67	33	66	60	59	1.44	−3.0	7	5,847	n.	37	nw.	6	11	11	8	4.9	.0	.0
Wilmington	72	73	106	29.91	29.98	−.03	77.5	+.7	98	21	87	51	3	68	33	69	66	73	1.61	−3.5	4	6,275	sw.	27	nw.	6	13	10	7	4.4	.0	.0
Charleston	48	11	92	29.94	30.00	−.01	79.6	+.7	99	5	87	59	15	72	27	71	68	74	2.72	−1.9	13	7,253	sw.	37	n.	6	12	10	8	4.6	.0	.0
Columbia, S.C.	351	41	57	29.62	29.99	−.02	80.2	+2.1	100	20	92	55	15	69	31	68	62	62	1.21	−3.0	6	4,262	sw.	22	ne.	6	13	13	4	4.2	.0	.0
Greenville, S.C.	1,039	139	146	28.92	29.98	------	78.8	+4.7	98	7	89	52	15	68	31	60	60	57	1.59	−3.0	4	5,398	n.	32	sw.	24	14	12	4	4.2	.0	.0
Augusta	182	62	77	29.79	29.98	−.03	81.0	+2.3	103	19	93	53	16	69	35	70	65	64	.90	−3.8	9	4,218	s.	18	nw.	25	11	14	5	4.5	.0	.0
Savannah	65	73	152	29.92	30.00	−.01	79.7	+.7	99	20	90	59	15	70	30	70	66	71	4.15	−1.1	10	7,004	sw.	32	nw.	1	14	6	10	4.0	.0	.0
Jacksonville	43	209	245	29.95	30.00	−.01	79.0	−.9	94	20	87	62	16	71	26	70	66	71	6.84	+1.5	12	7,245	sw.	34	nw.	13	9	13	8	5.0	.0	.0
Florida Peninsula							80.2	−0.5										76	8.27	+2.1										5.2		
Key West	22	10	64	29.94	29.96	−.03	80.8	−1.1	89	14	86	69	4	76	19	75	73	78	10.91	+6.7	13	6,642	e.	19	e.	18	11	11	8	5.0	.0	.0
Miami	25	124	168	29.97	30.00	.00	80.4	+.4	91	15	85	66	3	76	23	74	71	76	9.39	+2.5	11	6,965	se.	25	s.	15	8	7	15	6.6	.0	.0
Tampa	35	88	197	29.96	29.99	−.02	79.5	−.7	95	7	88	62	3	71	27	71	68	73	4.50	−2.8	13	7,112	e.	29	ne.	15	10	12	8	4.4	.0	.0
Titusville	44	5	----	29.94	29.99	------	79.2	------	96	7	88	61	3	70	28	----	----	----	7.72	------	15	------	se.	----	------	----	15	6	9	4.6	.0	.0
East Gulf States							79.0	+0.5										64	3.38	−1.3										4.0		
Atlanta	1,173	190	198	28.79	30.00	−.01	78.0	+2.0	99	19	88	56	14	68	26	66	59	58	5.65	+1.9	7	5,908	w.	23	se.	10	12	11	7	4.6	.0	.0
Macon	370	76	84	29.60	29.99	−.02	79.2	+.3	100	7	91	53	16	68	36	68	62	66	1.62	−2.4	9	4,552	s.	21	n.	10	14	9	7	4.5	.0	.0
Thomasville	273	49	103	29.71	30.00	.00	79.8	+.3	100	19	91	55	16	69	32	69	64	67	1.96	−3.5	8	5,367	sw.	26	w.	28	13	10	7	4.4	.0	.0
Apalachicola	36	11	51	29.96	30.00	------	80.0	------	95	7	88	65	16	72	24	72	68	70	4.76	−.8	3	6,150	s.	27	e.	22	16	11	3	3.2	.0	.0
Pensacola	56	149	185	29.94	30.00	+.01	78.4	−.9	99	20	85	62	2	72	26	71	68	72	2.87	−1.8	9	8,287	sw.	38	se.	8	15	14	1	3.1	.0	.0
Anniston	741	9	57	------	------	------	77.9	+2.9	103	20	92	48	15	64	41	----	----	----	2.05	------	7	------	nw.	----	------	----	12	11	7	----	.0	.0
Birmingham	700	11	48	29.26	30.01	+.02	78.6	+.7	102	21	91	52	14	66	32	66	61	63	2.65	−1.8	9	3,974	n.	21	se.	8	14	9	7	4.2	.0	.0
Mobile	57	125	161	29.94	30.00	+.01	79.4	−.9	98	19	88	60	15	70	28	69	65	67	5.90	+.5	7	6,426	n.	24	w.	28	15	9	6	3.8	.0	.0
Montgomery	218	92	105	29.76	30.00	.00	80.1	+.5	103	19	91	57	15	69	32	68	61	60	4.07	+.3	10	4,499	w.	23	sw.	11	12	7	11	5.1	.0	.0
Corinth	469	6	----	------	------	------	79.4	------	104	21	93	48	15	66	40	----	----	----	1.14	------	6	------	se.	----	------	----	15	14	1	----	.0	.0
Meridian	375	87	95	29.62	30.00	+.02	77.8	−.3	99	21	89	55	15	66	34	67	62	64	5.12	+.6	7	3,722	sw.	34	e.	8	15	8	7	3.9	.0	.0
Vicksburg	247	65	73	29.75	30.01	+.04	78.6	−.4	97	22	88	59	15	70	24	69	64	64	1.96	−2.0	4	4,774	sw.	22	nw.	9	17	6	7	3.4	.0	.0
New Orleans	53	76	84	29.95	30.00	+.02	81.6	+1.0	99	20	90	64	15	74	23	70	65	62	.59	−5.3	4	4,568	sw.	23	ne.	21	16	11	3	3.4	.0	.0
West Gulf States							80.4	+0.7										63	0.83	−2.6										2.8		
Shreveport	249	92	227	29.74	30.00	+.04	81.5	+.8	102	21	92	58	15	71	27	69	63	59	.15	−3.4	4	6,499	s.	30	s.	11	22	7	1	2.3	.0	.0
Bentonville	1,303	11	44	28.63	29.96	+.02	77.1	+3.0	100	25	91	47	14	64	35	----	----	----	.14	------	1	3,803	sw.	16	ne.	12	20	7	3	----	.0	.0
Fort Smith	457	79	94	29.50	29.97	+.03	80.8	+3.3	104	25	93	57	14	68	32	68	62	59	.72	−3.0	4	4,559	ne.	31	sw.	26	20	6	4	2.8	.0	.0
Little Rock	357	94	102	29.63	30.00	+.04	79.4	+2.0	100	22	90	55	16	69	29	68	61	59	.99	−2.8	4	5,034	sw.	21	s.	23	19	8	3	2.9	.0	.0
Austin	605	136	148	29.34	29.97	------	80.4	−.8	101	23	92	57	16	69	29	68	62	59	.41	−2.0	2	5,595	se.	21	s.	29	21	7	2	2.6	.0	.0
Brownsville	57	88	96	29.88	29.94	------	81.2	−1.2	97	23	89	68	16	73	26	73	70	75	.41	−2.5	2	6,666	se.	21	e.	14	21	6	3	3.3	.0	.0
Corpus Christi	20	11	78	29.97	29.99	+.08	80.6	−.4	95	22	87	69	16	75	23	73	71	75	2.72	+.1	6	7,568	se.	21	se.	30	18	5	7	4.0	.0	.0
Dallas	512	220	227	29.44	29.98	------	81.0	------	101	25	90	62	16	72	25	----	----	----	T	−3.9	0	7,526	se.	38	ne.	11	27	2	1	1.5	.0	.0
Fort Worth	670	106	114	29.26	29.96	+.04	81.6	+1.7	104	25	93	59	15	70	30	67	59	51	.03	−3.3	2	6,545	s.	22	ne.	11	21	7	2	2.8	.0	.0
Galveston	54	106	114	29.94	30.00	+.05	81.5	+.8	96	22	86	68	15	77	20	72	68	68	.98	−3.4	5	6,899	s.	26	nw.	10	22	6	2	2.3	.0	.0
Houston	138	292	314	29.86	30.00	------	80.8	−.6	98	20	90	61	15	72	27	----	----	----	1.85	−2.7	6	7,738	s.	32	se.	23	20	8	2	3.0	.0	.0
Palestine	510	64	72	29.48	30.00	+.06	79.4	+.4	100	22	90	57	15	69	27	68	62	61	.38	−3.2	2	5,073	s.	22	s.	27	22	6	2	2.4	.0	.0
Port Arthur	34	58	66	29.96	30.00	------	80.8	------	97	20	89	60	15	73	25	71	68	67	1.01	−3.8	3	5,456	s.	20	nw.	23	17	12	1	3.2	.0	.0
San Antonio	693	242	301	29.25	29.95	+.05	80.9	−.1	99	25	92	62	15	70	26	69	64	64	1.74	−.7	4	8,358	se.	30	se.	27	18	9	3	3.4	.0	.0
Taylor	571	38	51	29.40	30.00	+.08	79.9	−.1	101	22	92	55	15	68	30	----	----	----	.24	−1.8	2	6,170	s.	21	e.	10	24	5	1	2.0	.0	.0

TABLE 1.—*Climatological data for Weather Bureau stations, June 1933*—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max. + mean min. ÷ 2	Temperature: Departure from normal	Temperature: Maximum	Temperature: Date	Temperature: Mean maximum	Temperature: Minimum	Temperature: Date	Temperature: Mean minimum	Temperature: Greatest daily range	Mean wet thermometer	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 or more	Wind: Total movement	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	%	In.	In.		Miles								0-10	In.	In.
Ohio Valley and Tennessee							**76.8**	**+4.0**										**60**	**1.89**	**−2.0**										**3.5**		
Chattanooga	762	190	215	29.22	30.02	+0.02	77.6	+2.2	100	8	89	54	15	67	32	66	61	61	1.44	−2.7	7	4,798	sw.	30	se.	30	11	13	6	4.5	0.0	0.0
Knoxville	995	79	97	28.98	30.00	.00	77.2	+3.2	100	8	89	51	14	66	32	66	61	60	3.29	−.8	5	4,118	n.	21	nw.	12	20	6	4	3.2	.0	.0
Memphis	399	78	86	29.59	30.00	+.03	80.3	+2.7	99	22	89	56	15	72	23	68	62	58	.30	−3.2	5	4,641	sw.	32	n.	26	19	9	2	2.8	.0	.0
Nashville	546	168	191	29.46	30.03	+.04	77.8	+2.2	99	7	90	52	16	66	32	68	62	63	1.76	−2.2	6	5,177	w.	40	nw.	12	15	10	5	3.7	.0	.0
Lexington	989	193	230	28.99	30.03	+.03	76.5	+4.3	95	7	87	47	14	66	27	----	----	----	4.56	+.5	7	7,615	sw.	41	nw.	12	25	5	0	1.6	.0	.0
Louisville	525	188	234	29.44	30.01	+.03	79.0	+4.3	98	30	89	48	14	69	26	67	60	56	.67	−3.2	3	6,475	s.	34	se.	28	15	13	2	3.6	.0	.0
Evansville	431	76	116	29.54	30.00	+.03	80.5	+5.4	100	30	91	50	14	70	28	68	61	55	.38	−3.7	2	5,464	sw.	23	nw.	26	17	12	1	3.0	.0	.0
Indianapolis	822	194	230	29.12	29.98	+.01	78.4	+6.8	98	24	89	46	14	67	34	66	58	52	2.50	−1.1	6	6,740	sw.	41	ne.	6	16	10	4	3.3	.0	.0
Terre Haute	575	96	129	29.38	29.98	------	79.2	------	102	30	90	48	14	68	28	66	60	54	.03	−3.9	2	5,984	sw.	25	sw.	30	21	8	1	2.3	.0	.0
Cincinnati	627	11	51	29.33	30.00	+.01	77.6	+6.4	98	21	89	46	14	66	30	66	61	62	3.30	−.4	6	4,797	sw.	30	nw.	30	16	10	4	3.5	.0	.0
Columbus	822	216	230	29.13	29.98	−.01	76.1	+5.2	98	8	87	47	15	65	30	65	58	58	1.71	−1.6	11	6,746	sw.	32	nw.	6	15	14	1	3.5	.0	.0
Dayton	899	137	173	29.05	29.98	------	77.5	+6.1	97	21	89	46	14	66	31	66	58	55	1.00	−2.8	3	5,836	sw.	28	ne.	6	17	12	1	3.0	.0	.0
Elkins	1,947	59	67	28.03	30.02	+.02	67.6	+.7	93	9	80	38	14	55	36	61	58	76	5.02	.0	15	3,486	nw.	30	nw.	3	7	14	9	5.8	.0	.0
Parkersburg	637	77	82	29.37	30.02	+.02	75.2	+3.8	98	8	87	41	15	64	36	66	61	65	1.24	−2.8	9	3,880	se.	32	se.	9	13	15	2	4.2	.0	.0
Pittsburgh	842	353	410	29.10	29.98	−.01	73.3	+2.6	96	8	84	41	15	63	30	62	57	59	1.16	−2.6	5	6,346	w.	38	nw.	3	11	12	7	5.0	.0	.0
Lower Lake Region							**71.3**	**+4.6**										**64**	**1.37**	**−2.0**										**4.3**		
Buffalo	767	243	280	29.12	29.94	−.03	67.1	+2.7	97	29	75	44	13	60	27	61	57	72	1.51	−1.3	8	8,443	sw.	54	w.	7	14	9	7	4.7	.0	.0
Canton	448	10	61	29.42	29.88	------	66.8	+1.0	95	28	79	39	1	55	34	----	----	----	2.11	−1.2	7	5,217	sw.	39	nw.	28	12	12	6	4.6	.0	.0
Ithaca	836	74	100	29.04	29.93	------	70.1	+3.9	102	29	83	39	2	57	39	62	57	67	3.07	−.5	10	5,578	nw.	32	nw.	21	9	12	9	5.4	.0	.0
Oswego	335	71	85	29.56	29.92	−.05	67.0	+2.2	90	11	76	46	2	58	29	61	56	69	.84	−2.4	9	5,733	w.	24	n.	14	10	13	7	4.8	.0	.0
Rochester	523	86	102	29.38	29.94	−.03	70.2	+4.1	97	28	80	43	15	60	31	61	56	62	1.34	−1.7	11	5,716	sw.	30	sw.	30	16	9	5	4.3	.0	.0
Syracuse	596	65	79	29.31	29.95	−.02	70.5	+3.6	96	28	81	45	2	60	35	----	----	----	1.58	−2.3	8	4,887	nw.	21	nw.	3	8	11	11	5.7	.0	.0
Erie	714	130	166	29.20	29.96	−.02	71.0	+4.8	95	21	80	44	15	62	28	65	62	73	1.75	−1.6	6	7,900	w.	38	n.	7	17	8	5	3.7	.0	.0
Cleveland	762	267	337	29.16	29.96	−.02	73.0	+5.9	98	8	81	47	15	65	27	63	56	58	.39	−2.7	5	8,117	w.	36	sw.	30	11	15	4	4.4	.0	.0
Sandusky	629	5	67	29.31	29.98	.00	74.4	+5.6	100	8	85	45	15	64	36	----	----	----	1.11	−2.4	7	5,483	sw.	22	sw.	30	12	14	4	4.0	.0	.0
Toledo	628	79	87	29.30	29.97	.00	75.4	+6.7	99	28	86	46	14	65	33	64	58	57	1.02	−2.3	9	6,147	w.	26	w.	30	20	8	2	2.4	.0	.0
Fort Wayne	857	69	84	29.06	29.97	------	76.0	+7.5	97	7	88	44	14	64	33	65	58	56	.50	−3.1	6	5,741	sw.	28	nw.	25	15	11	4	3.6	.0	.0
Detroit	730	218	258	29.19	29.96	−.01	74.6	+7.2	100	8	85	48	13	64	34	63	57	58	1.19	−2.4	9	6,348	sw.	28	nw.	21	11	14	5	4.4	.0	.0
Upper Lake Region							**68.6**	**+6.2**										**68**	**2.44**	**−0.8**										**4.3**		
Alpena	609	13	89	29.29	29.95	−.01	65.0	+4.6	100	27	75	40	14	55	41	59	55	72	2.02	−1.3	9	6,545	se.	41	nw.	11	13	14	3	3.7	.0	.0
Escanaba	612	54	60	29.28	29.93	−.01	66.3	+5.6	93	30	75	40	14	58	30	60	57	73	2.34	−.9	11	6,184	s.	28	ne.	7	11	14	5	4.5	.0	.0
Grand Haven	632	54	89	29.28	29.94	−.02	68.5	+4.8	94	28	78	41	14	59	26	62	57	68	2.65	−.3	8	6,629	sw.	29	w.	30	12	7	11	4.9	.0	.0
Grand Rapids	707	70	244	29.21	29.96	−.01	74.0	+6.2	97	27	85	42	14	63	33	65	60	62	2.05	−1.4	8	7,204	sw.	32	sw.	15	13	11	6	4.1	.0	.0
Houghton	668	64	99	29.20	29.91	−.03	66.0	+6.0	99	19	78	44	14	54	47	----	----	----	1.93	−1.0	8	6,644	e.	34	sw.	8	8	19	3	4.9	.0	.0
Lansing	878	6	88	29.03	29.95	------	71.6	+5.2	96	28	84	40	14	59	37	65	61	71	2.56	−1.0	9	5,713	s.	29	sw.	4	18	9	3	3.7	.0	.0
Ludington	637	60	66	29.26	29.95	------	66.2	+5.7	87	27	75	39	14	58	25	61	56	69	1.82	−1.1	14	5,664	sw.	22	nw.	11	19	8	3	3.1	.0	.0
Marquette	734	77	111	29.12	29.92	−.02	64.8	+5.9	98	19	77	43	1	53	38	58	54	69	1.32	−1.9	11	5,790	w.	30	w.	8	9	17	4	4.8	.0	.0
Port Huron	638	79	120	29.27	29.95	−.02	69.8	+5.6	97	27	81	44	13	58	38	62	57	66	1.39	−1.4	7	6,379	sw.	30	n.	11	13	10	7	4.5	.0	.0
Sault Sainte Marie	614	11	52	29.26	29.94	−.02	63.4	+4.8	91	8	76	35	14	51	41	57	53	71	2.29	−.6	8	4,668	se.	31	nw.	12	12	13	5	4.6	.0	.0
Chicago	673	7	131	29.25	29.97	+.01	76.2	+8.9	100	27	86	51	14	67	33	65	59	60	3.44	+.1	4	6,700	sw.	37	w.	4	18	7	5	3.3	.0	.0
Green Bay	617	109	141	29.26	29.91	−.04	72.9	+8.0	98	27	85	42	14	61	35	65	60	67	5.07	+1.4	12	6,833	sw.	37	ne.	11	10	11	9	5.1	.0	.0
Milwaukee	681	97	221	29.22	29.95	.00	73.1	+9.2	101	27	83	47	14	63	35	63	58	62	2.47	−.9	9	8,024	w.	35	n.	11	13	10	7	4.2	.0	.0
Duluth	1,133	5	47	28.70	29.90	−.02	63.2	+6.0	95	19	76	40	1	51	36	57	53	72	2.90	−1.0	12	7,205	ne.	29	nw.	27	11	14	5	4.6	.0	.0
North Dakota							**71.6**	**+8.5**										**56**	**1.66**	**−1.9**										**4.0**		
Moorhead	940	50	58	28.86	29.85	−.05	72.8	+8.4	104	18	86	44	13	59	42	62	55	56	2.13	−1.9	9	5,898	s.	29	nw.	28	13	13	4	4.4	.0	.0
Bismarck	1,674	8	57	28.10	29.84	−.03	73.2	+9.5	106	18	86	46	13	60	43	61	53	55	1.95	−1.4	11	6,073	se.	29	w.	18	11	17	2	4.3	.0	.0
Devils Lake	1,478	11	44	28.32	29.86	−.02	70.2	+8.3	103	18	83	42	12	57	39	60	53	58	.96	−2.6	10	6,099	s.	30	nw.	5	13	12	5	4.4	.0	.0
Grand Forks	833	12	67	------	------	------	71.1	------	105	18	85	40	13	57	39	62	----	----	2.01	------	8	------	nw.	43	ne.	29	7	17	6	----	.0	.0
Williston	1,878	41	48	27.91	29.83	−.03	70.4	+7.7	100	17	83	47	11	58	37	59	52	55	1.60	−1.8	8	5,245	se.	32	e.	28	18	9	3	3.0	.0	.0
Upper Mississippi Valley							**78.7**	**+8.2**										**58**	**1.97**	**−2.1**										**3.4**		
Minneapolis	918	102	208	28.90	29.86	------	77.9	+10.4	100	19	89	49	13	67	32	----	----	----	1.31	−2.9	6	6,796	s.	38	n.	11	14	10	6	4.1	.0	.0
St. Paul	837	114	149	29.00	29.88	−.04	77.8	+10.7	99	27	89	49	14	66	32	----	----	----	.92	−3.2	6	5,772	sw.	35	sw.	7	15	12	3	3.5	.0	.0
La Crosse	714	11	48	29.14	29.89	−.04	76.5	+8.2	102	20	89	42	14	64	35	67	62	65	2.11	−2.0	8	3,500	s.	20	sw.	8	12	13	5	4.0	.0	.0
Madison	974	70	78	28.91	29.93	−.01	76.0	+8.8	97	27	86	45	14	66	31	65	59	59	1.64	−2.1	4	5,691	sw.	25	se.	27	14	9	7	4.3	.0	.0
Wausau	1,247	4	62	28.63	29.93	------	73.8	------	100	27	87	38	14	61	41	----	----	----	2.73	−1.3	10	4,466	s.	28	nw.	11	19	11	0	2.8	.0	.0
Charles City	1,015	10	51	28.87	29.91	.00	76.2	+9.7	101	30	90	42	14	62	40	66	60	58	1.74	−2.9	8	4,994	se.	20	sw.	9	15	13	2	3.5	.0	.0
Davenport	606	118	143	29.31	29.96	+.02	79.6	+9.1	100	26	91	49	13	68	29	67	60	56	3.12	−1.0	7	6,539	sw.	38	n.	23	17	9	4	3.6	.0	.0
Des Moines	861	5	99	29.03	29.91	−.01	79.8	+9.2	103	6	93	47	14	67	36	66	58	51	.23	−4.5	4	6,785	s.	23	nw.	23	14	11	5	4.0	.0	.0
Dubuque	700	81	96	29.20	29.93	.00	77.4	+8.0	98	20	88	47	14	66	31	66	60	59	1.74	−2.6	7	4,653	sw.	22	nw.	30	14	9	7	4.3	.0	.0
Keokuk	614	64	78	29.31	29.97	+.03	80.0	+7.5	99	6	91	55	14	69	28	67	61	54	6.88	+2.8	7	5,120	sw.	19	sw.	8	19	8	3	3.0	.0	.0
Cairo	358	87	93	29.62	29.99	+.02	79.6	+3.3	98	21	90	54	14	70	27	69	64	63	.91	−2.9	3	4,845	s.	28	ne.	13	18	4	8	3.9	.0	.0
Peoria	609	11	45	29.33	29.98	+.03	78.9	+8.0	101	26	92	46	14	66	34	67	62	60	1.15	−2.6	5	4,006	sw.	15	sw.	8	22	6	2	2.0	.0	.0
Springfield, Ill.	636	5	191	29.31	29.97	+.02	80.7	+8.5	101	30	93	50	14	68	29	68	62	57	3.29	−.8	6	6,907	sw.	31	nw.	28	19	9	2	3.0	.0	.0
Hannibal	534	74	109	29.41	29.97	+.02	79.2	+6.7	100	11	91	49	14	67	33	----	----	----	1.56	−2.3	4	5,874	sw.	24	sw.	29	19	8	3	2.7	.0	.0
St. Louis	568	265	303	29.38	29.98	+.03	81.7	+6.9	102	30	92	56	14	72	27	68	60	51	.15	−3.7	2	7,056	sw.	33	nw.	28	22	7	1	2.2	.0	.0
Missouri Valley							**79.7**	**+8.9**										**48**	**2.15**	**−2.1**										**3.1**		
Columbia, Mo.	784	6	84	29.16	29.97	+.02	78.0	+5.2	99	30	90	48	14	66	32	----	----	----	2.18	−2.6	5	4,980	s.	18	n.	12	22	8	0	2.2	.0	.0
Kansas City	963	10	86	28.94	29.93	+.01	81.8	+8.2	102	29	92	54	13	71	27	66	57	46	1.46	−3.5	4	5,610	s.	34	sw.	27	20	6	4	2.6	.0	.0
St. Joseph	967	11	49	28.92	29.92	------	80.6	------	102	6	92	49	14	69	32	66	59	52	6.05	+1.1	6	5,576	s.	24	sw.	24	23	4	3	2.4	.0	.0
Springfield, Mo.	1,324	98	104	28.62	29.99	+.04	78.2	+5.7	98	23	88	56	13	68	26	66	59	55	3.43	−1.2	3	5,973	s.	29	sw.	27	24	6	0	2.5	.0	.0
Iola	984	11	50	28.94	29.95	+.02	79.7	+5.6	102	23	93	47	14	66	36	----	----	----	.73	−4.7	3	------	s.	----	----	----	14	11	5	----	.0	.0
Topeka	987	92	107	------	------	------	81.8	+8.4	106	29	96	51	14	68	34	----	----	----	2.25	−2.4	6	6,758	s.	38	nw.	27	19	9	2	2.4	.0	.0
Lincoln	1,189	11	81	28.66	29.88	−.02	80.4	+9.0	107	6	93	48	13	68	35	65	56	48	2.53	−1.8	5	7,153	s.	38	w.	29	15	11	4	3.8	.0	.0
Omaha	1,105	115	122	28.76	29.90	−.01	81.5	+9.9	107	6	93	51	13	70	32	65	55	45	.25	−4.3	3	5,347	s.	28	ne.	11	15	12	3	3.6	.0	.0
Valentine	2,598	47	54	27.24	29.88	+.02	77.2	+10.3	102	27	91	51	13	63	41	61	51	46	1.10	−1.8	6	7,282	s.	40	sw.	6	17	13	0	3.2	.0	.0
Sioux City	1,135	94	164	28.69	29.86	−.04	80.0	+10.5	107	10	93	48	13	67	34	65	57	50	1.90	−2.1	5	7,756	s.	37	w.	7	12	10	8	4.7	.0	.0
Huron	1,306	59	74	28.49	29.85	−.03	78.4	+12.2	108	26	93	45	13	63	41	63	52	45	2.04	−1.8	10	7,385	se.	31	nw.	22	20	9	1	3.1	.0	.0
Pierre	1,572	70	75	28.20	29.82	−.05	79.8	+11.3	106	26	94	55	13	66	38	62	51	43	2.32	−.6	10	7,035	se.	37	e.	6	17	13	0	3.3	.0	.0
Yankton	1,233	49	57	28.61	29.88	−.01	79.8	+10.9	105	10	92	49	13	67	38	----	----	----	1.65	−2.1	9	5,984	s.	28	s.	1	14	12	4	3.6	.0	.0

TABLE 1.—*Climatological data for Weather Bureau stations, June 1933*—Continued

District and station	Elevation of instruments: Barometer above sea level	Elevation of instruments: Thermometer above ground	Elevation of instruments: Anemometer above ground	Pressure: Station, reduced to mean of 24 hours	Pressure: Sea level, reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max. + mean min. ÷ 2	Temperature: Departure from normal	Temperature: Maximum	Temperature: Date	Temperature: Mean maximum	Temperature: Minimum	Temperature: Date	Temperature: Mean minimum	Temperature: Greatest daily range	Mean wet thermometer	Mean temperature of the dew point	Mean relative humidity	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Days with 0.01 or more	Wind: Total movement	Wind: Prevailing direction	Wind: Maximum velocity: Miles per hour	Wind: Maximum velocity: Direction	Wind: Maximum velocity: Date	Clear days	Partly cloudy days	Cloudy days	Average cloudiness, tenths	Total snowfall	Snow, sleet, and ice on ground at end of month
	Ft.	Ft.	Ft.	In.	In.	In.	°F.	°F.	°F.		°F.	°F.		°F.	°F.	°F.	°F.	H	In.	In.		Miles								0–10	In.	In.
Northern Slope							68.4	+6.9										49	0.99	−1.3										3.4		
Billings	3,140	5					71.4		102	16	89	45	8	54	50				.40		4		nw.				10	12	8		0.0	0.0
Havre	2,505	11	67	27.27	29.85	0.00	68.7	+6.7	104	16	83	38	11	55	43	54	43	47	2.47	−.4	12	6,399	sw.	38	sw.	3	13	12	5	4.2	.0	.0
Helena	4,124	89	113	25.75	29.85	−.03	66.2	+7.0	98	15	80	43	6	52	40	52	41	46	.73	−1.6	5	6,556	sw.	32	sw.	29	8	15	7	5.5	.0	.0
Kalispell	2,973	48	56	26.89	29.89	.00	61.9	+4.2	94	15	75	42	2	49	41	52	44	58	1.37	−.7	10	4,869	nw.	23	sw.	3	8	16	6	5.0	.0	.0
Miles City	2,371	48	55		29.87	+.02	73.6	+7.6	104	17	86	49	8	61	37			50	.78	−1.9	8	4,572	ne.	34	w.	20	17	13	0		.0	.0
Rapid City	3,259	50	58	26.55	29.87	+.02	72.6	+8.4	97	25	86	48	8	60	35	60	51	49	1.14	−2.2	6	5,538	w.	35	w.	23	14	14	2	4.0	.0	.0
Cheyenne	6,088	84	101	24.06	29.88	+.04	66.6	+6.2	89	27	80	42	8	54	34	52	40	44	1.03	−.6	7	6,887	s.	30	s.	5	5	22	3	5.3	.0	.0
Lander	5,372	60	68	24.64	29.84	−.01	68.6	+8.1	92	27	84	45	29	53	42	51	37	38	.02	−1.1	1	4,606	sw.	26	sw.	28	17	12	1	3.4	.9	.0
Sheridan	3,790	10	47	26.05	29.86		68.5		94	16	84	44	8	53	40	57	49	54	.07	−2.0	3	3,944	nw.	24	nw.	20	14	15	1	3.9	.0	.0
Yellowstone Park	6,241	11	48	23.92	29.90	+.04	60.0	+4.0	85	15	75	35	6	45	39	47	36	49	1.05	−.9	6	6,352	sw.	30	sw.	9	8	14	8	5.2	.0	.0
North Platte	2,821	11	51	27.02	29.87	+.01	77.0	+9.5	102	30	91	52	13	63	37	62	55	55	1.27	−2.0	6	5,582	s.	36	w.	7	12	13	5	4.3	.0	.0
Middle Slope							78.7	+6.9										42	1.06	−2.0										3.8		
Denver	5,292	106	113	24.76	29.88	+.04	72.8	+6.5	96	28	85	53	8	60	33	54	39	37	.16	−1.2	4	5,667	s.	30	se.	6	9	18	3	4.9	.0	.0
Pueblo	4,685	80	86	25.30	29.87	+.04	73.4	+4.4	98	30	88	50	8	59	40	55	42	42	2.66	+1.3	8	5,116	nw.	38	nw.	7	12	13	5	4.4	.0	.0
Concordia	1,392	50	58	28.48	29.91	+.01	82.0	+9.0	107	30	95	53	13	69	37	65	55	44	1.34	−3.1	8	6,388	s.	24	n.	12	13	12	5	4.0	.0	.0
Dodge City	2,509	10	86	27.37	29.90	+.03	79.9	+7.4	107	30	94	52	14	66	39	61	49	40	1.23	−2.1	7	9,347	s.	35	s.	29	17	10	3	3.1	.0	.0
Wichita	1,358	85	93	28.52	29.90	−.01	82.6	+8.2	109	5	96	55	14	70	39	64	52	41	.83	−3.6	5	8,851	s.	43	w.	29	15	10	5	3.7	.0	.0
Oklahoma City	1,214	10	47	28.69	29.94	+.03	81.7	+5.7	104	25	94	54	14	70	29	75	57	50	.15	−3.5	1	7,251	s.	24	s.	7	16	13	1	3.0	.0	.0
Southern Slope							79.8	+1.8										47	0.57	−2.0										3.4		
Abilene	1,738	10	52	28.17	29.93	+.05	80.9	+1.7	101	25	93	56	14	69	31	65	57	50	.32	−2.7	2	7,514	s.	25	s.	7	17	10	3	3.5	.0	.0
Amarillo	3,676	10	49	26.27	29.90	+.05	79.2	+6.4	104	29	93	56	15	65	36	59	47	39	.05	−2.8	1	7,650	s.	34	e.	12	18	12	0	3.1	.0	.0
Big Spring	2,537	5	62	27.36	29.91		81.1		103	4	94	60	16	68	33	65	56	48	.01		1		s.				18	11	1	3.2	.0	.0
Del Rio	944	64	71	28.93	29.89	+.04	81.6	+1.8	99	29	92	61	16	71	27	69	61	57	1.28	−1.3	5	7,539	se.	22	se.	7	13	12	5	4.5	.0	.0
Roswell	3,566	75	85	26.36	29.88	+.08	77.4	+1.1	104	29	92	52	8	63	40	60	47	43	.63	−1.0	5	5,617	se.	29	se.	6	19	9	2	2.7	.0	.0
Southern Plateau							75.2	+1.0										37	0.94	+0.6										3.3		
El Paso	3,778	152	175	26.16	29.83	+0.8	80.0	+.4	102	5	93	59	8	67	37	60	44	38	2.14	+1.6	8	5,906	e.	34	sw.	19	17	9	4	3.3	.0	.0
Albuquerque	4,972	51	66	25.07	29.82		72.2		97	11	87	44	8	58	44	55	40	41	3.81		12	6,315	se.	42	s.	19	12	13	5	4.5	.0	.0
Santa Fe	7,013	38	53	23.35	29.87	+.06	66.1	+1.3	88	11	78	42	7	54	33	51	38	44	2.30	+1.2	12	4,267	e.	19	s.	6	10	6	14	5.7	.0	.0
Flagstaff	6,907	10	59	23.41	29.84	+.06	60.6	+1.3	88	11	78	30	1	43	47	45		41	1.04		5	6,840	sw.	30	sw.	4	10	18	2		.0	.0
Phoenix	1,108	10	107	28.65	29.77	+.03	87.6	+3.1	112	11	103	60	6	73	43	61	40	23	.23	+.2	3	4,777	e.	24	n.	14	21	5	4	2.3	.0	.0
Yuma	141	9	54	29.62	29.77	+.03	85.2	+.5	114	11	102	58	7	68	49	64	49	36	T	.0	0	3,944	sw.	21	e.	15	29	1	0	.8	.0	.0
Independence	3,957	5	26	25.91	29.87	+.09	71.8	−.5	100	13	89	44	2	55	42	50			.05	.0	2		s.				24	4	2			
Middle Plateau							70.2	+5.0										29	0.06	−0.5										2.7		
Reno	4,532	74	81	25.43	29.85	−.01	65.2	+4.2	98	13	81	42	19	49	43	48	33	39	.01	−.3	1	6,386	w.	28	sw.	8	20	6	4	2.8	.0	.0
Tonopah	6,090	12	20				67.8		90	13	80	39	6	56	28	48	30	30	.18		1		se.									
Winnemucca	4,344	18	56	25.56	29.86	−.02	68.0	+5.2	100	14	85	42	30	50	49	48	30	31	.02	−.7	2	5,695	sw.	26	sw.	27	19	9	2	2.6	.0	.0
Modena	5,473	10	46	24.60	29.83	+.01	64.8	+1.5	93	12	83	36	6	46	47	45	23	24	T	−.3	0	8,524	sw.	31	sw.	27	21	5	4	2.5	.0	.0
Salt Lake City	4,360	86	210	25.54	29.80	−.05	75.6	+8.2	95	21	88	53	4	63	35	54	36	27	T	−.8	0	6,119	se.	30	se.	27	23	3	4	2.7	.0	.0
Grand Junction	4,602	60	68	25.34	29.84	+.01	77.2	+5.8	97	27	91	54	7	63	38	53	33	25	.25	−.2	1	6,166	se.	29	s.	5	18	9	3	3.1	.0	.0
Northern Plateau							67.0	+2.9										46	0.58	−0.5										4.7		
Baker	3,471	48	53	26.42	29.96	+.01	61.8	+3.2	96	15	75	41	6	48	39	51	43	57	1.26	−.1	10	4,609	n.	35	sw.	27	12	11	7	4.8	.0	.0
Boise	2,739	79	87	27.07	29.87	−.04	69.7	+4.4	101	15	84	44	6	55	37	54	40	42	.14	−.8	4	4,282	nw.	18	se.	15	11	10	9	4.7	.0	.0
Lewiston	757	40	48	29.12	29.92	−.02	69.1	+2.5	105	14	82	48	2	56	42				.55	−.9	5	3,190	e.	24	w.	6	11	8	11	5.6	.0	.0
Pocatello	4,477	60	68	25.43	29.84	−.03	69.3	+7.1	94	13	84	47	2	55	38	51	34	34	.15	−.9	4	6,071	se.	34	sw.	27	16	8	6	3.5	.0	.0
Spokane	1,929	101	110	27.90	29.92	−.02	64.0	+1.2	97	14	77	40	10	51	42	52	42	51	1.16	−.1	7	5,111	sw.	20	sw.	4	9	11	10	5.2	.0	.0
Walla Walla	991	57	65	28.87	29.93	−.03	68.0	+1.5	100	14	80	45	1	56	38	54	44	46	.42	−.7	6	4,391	s.	18	w.	21	14	8	8	4.5	.0	.0
Yakima	1,076	58	67	28.80	29.94		67.0	+.6	100	13	80	41	10	54	39	53	40	43	.41	−.2	3	5,276	nw.	23	sw.	7	12	12	6	4.4	.0	.0
North Pacific Coast Region							58.5	+0.1										70	1.35	−0.2										6.0		
North Head	211	11	56	29.84	30.07	+.08	54.5	−.3	62	19	58	45	1	51	12	51	49	82	2.08	−.2	12	9,192	n.	49	s.	7	7	10	13	6.4	.0	.0
Port Angeles	29	8	53		30.07		54.2		79	12	62	37	1	47	31				.73	−.2	5	6,369	sw.	24	w.	25	5	12	13		.0	.0
Seattle	125	90	321	29.90	30.02	+.02	60.2	+1.2	82	12	68	46	9	52	32	52	45	61	1.26	−.1	9	5,952	n.	26	sw.	7	8	10	12	6.0	.0	.0
Tacoma	194	172	201	29.84	30.05	+.02	58.9	+.2	80	12	67	44	1	50	28				1.21	−.2	6	6,250	n.	26	sw.	8	9	13	8	5.6	.0	.0
Tatoosh Island	86	10	54	29.97	30.07	+.05	52.6	−.4	64	12	56	43	8	49	14	50	47	86	2.04	−1.2	11	6,025	sw.	23	ne.	11	3	15	12	6.8	.0	.0
Medford	1,329	29	58	28.57	29.96		64.4		97	13	78	40	1	50	45	54	47	60	.15	−.6	3	5,295	nw.	30	nw.	1	12	10	8	5.0	.0	.0
Portland, Oreg.	153	68	106	29.87	30.03	−.01	62.3	−.1	91	12	71	45	10	53	33	54	48	65	2.60	+1.1	8	4,449	nw.	22	sw.	8	5	9	16	6.5	.0	.0
Roseburg	510	75	99	29.48	30.03	.00	62.4	−.1	87	13	74	44	20	51	37	54	48	64	.72	−.4	3	3,902	n.	16	nw.	27	6	13	11	5.8	.0	.0
Middle Pacific Coast Region							63.9	−0.5										65	0.13	−0.2										3.3		
Eureka	62	73	89	30.02	30.09	+.04	55.6	+1.3	67	24	60	46	19	52	14	53	52	90	.30	−.4	3	5,784	n.	30	sw.	1	7	16	7	5.7	.0	.0
Red Bluff	330	5	58	29.54	29.89	+.01	75.7	+.9	110	13	90	49	2	61	39	58	44	39	.26	−.2	1	4,916	se.	18	se.	15	21	6	3	2.3	.0	.0
Sacramento	69	106	117	29.84	29.91	+.02	68.6	−.8	101	13	83	45	2	54	42	56	47	53	.08	−.1	1	6,715	s.	21	sw.	27	24	6	0	1.7	.0	.0
San Francisco	155	208	243	29.81	29.98	+.02	57.6	−.9	73	13	64	49	2	51	22	52	49	79	.01	−.2	1	6,928	w.	26	w.	17	13	8	9	4.1	.0	.0
San Jose	141	12	110	29.85	30.00		62.0	−3.0	88	13	74	44	2	50	39				T	−.1	0	4,930	nw.	21	nw.	27	20	8	2	2.7	.0	.0
South Pacific Coast Region							66.7	−2.0										64	0.21	+0.1										3.6		
Fresno	327	89	98	29.55	29.90	+.05	73.5	−2.3	108	14	88	48	3	58	36	57	43	41	.07	.0	1	6,665	nw.	22	nw.	15	23	4	3	2.0	.0	.0
Los Angeles	338	159	191	29.59	29.95	+.05	65.0	−1.4	85	13	74	52	3	56	28	57	54	73	.47	+.4	2	3,940	sw.	14	w.	20	16	11	3	3.4	.0	.0
San Diego	87	62	70	29.85	29.94	+.02	61.6	−2.3	70	19	66	53	1	57	15	57	54	79	.08	.0	1	4,847	sw.	20	nw.	18	5	23	2	5.4	.0	.0
West Indies																																
San Juan, P.R.	82	9	54	29.88	29.97		80.6	+.9	91	3	86	74	29	76	16				7.97	+2.7	17	7,695	e.	26	ne.	7	1	22	7	6.2	.0	.0
Panama Canal																																
Balboa Heights	118	6	97		[1] 29.84	+.02	79.6	−.5	90	22	85	72	10	74	16			[1] 87	14.36	+6.2	23	3,308	nw.	18	s.	1	0	10	20	7.9	.0	.0
Cristobal	36	6	97		[1] 29.84	+.01	81.6	+1.4	90	16	88	73	27	76	16	76	75	[1] 83	15.88	+2.1	25	3,770	se.	21	n.	25	0	6	24	8.5	.0	.0
Alaska																																
Fairbanks	454	68	87		[2] 29.85		53.7		87	22	65	32	1	42	39			58	1.52	+.1	10	4,255	n.	22	ne.	1	5	11	14		.0	.0
Juneau	80	11	50	[2] 29.85	[2] 29.94		51.4		77	24	58	37	4	45	26	47	43	77	6.92		19	4,824	s.	25	e.	1	5	7	18	7.7	.0	.0
Hawaiian Islands																																
Honolulu	38	86	100	[2] 30.03	[2] 30.07		74.8	−1.8	81	13	79	68	11	71	11	67	64	69	.57	−.4	12	7,820	e.	30	ne.	29	4	16	10	6.0	.0	.0

[1] Pressure not reduced to mean of 24 hours.

[2] Observations taken bihourly.

TABLE 2.—*Data furnished by the Canadian Meteorological Service, June 1933*

Stations	Altitude above mean sea level, Jan. 1, 1919	Pressure: Station reduced to mean of 24 hours	Pressure: Sea level reduced to mean of 24 hours	Pressure: Departure from normal	Temperature of the air: Mean max. + mean min. ÷ 2	Temperature of the air: Departure from normal	Temperature of the air: Mean maximum	Temperature of the air: Mean minimum	Temperature of the air: Highest	Temperature of the air: Lowest	Precipitation: Total	Precipitation: Departure from normal	Precipitation: Total snowfall
	Feet	*In.*	*In.*	*In.*	° *F.*	° *F.*	° *F.*	° *F.*	° *F.*	° *F.*	*In.*	*In.*	*In.*
Cape Race, N.F.	99							39.2		31	3.11		0.0
Sydney, C.B.I.	48	29.82	29.87	−0.08	57.0	+1.6	68.9	45.1	85	35	4.36	+1.13	.0
Halifax, N.S.	88	29.77	29.87	−.08	59.4	+1.7	70.0	48.8	84	36	3.34	−.42	.0
Yarmouth, N.S.	65	29.77	29.84	−.11	56.9	+1.9	65.2	48.6	80	38	2.03	−.90	.0
Charlottetown, P.E.I.	38	29.78	29.82	−.10	57.6	+.2	66.1	49.1	83	38	2.38	−.29	.0
Chatham, N.B.	28	29.72	29.75	−.14	60.4	+.4	72.0	48.9	87	35	6.75	+3.29	.0
Father Point, Que.	20												
Quebec, Que.	296	29.54	29.85	−.07	64.2	+3.0	74.6	53.9	92	38	5.95	+2.30	.0
Doucet, Que.	1,236												
Montreal, Que.	187	29.65	29.85	−.09	68.7	+3.8	77.7	59.7	94	45	1.70	−1.83	.0
Ottawa, Ont.	236	29.63	29.89	−.05	68.2	+2.9	80.3	56.1	97	40	1.69	−1.23	.0
Kingston, Ont.	285	29.61	29.91	−.06	65.8	+2.4	74.2	57.4	88	40	1.92	−.51	.0
Toronto, Ont.	379	29.53	29.92	−.05	67.5	+4.1	78.2	56.8	92	43	1.84	−.96	.0
Cochrane, Ont.	930												
White River, Ont.	1,244												
London, Ont.	808				67.0		79.7	54.3	94	34	4.47		.0
Southampton, Ont.	656												
Parry Sound, Ont.	688												
Port Arthur, Ont.	644	29.23	29.94	.00	61.8	+5.4	71.2	52.4	87	38	1.99	−.74	.0
Winnipeg, Man.	760	29.04	29.85	−.04	67.9	+5.7	79.7	56.2	97	35	.07	−3.22	.0
Minnedosa, Man.	1,690												
Le Pas, Man.	860												
Qu'Appelle, Sask.	2,115	27.61	29.81	−.06	63.8	+3.9	75.7	51.8	98	31	2.63	−.79	.0
Moose Jaw, Sask.	1,759												
Swift Current, Sask.	2,392	27.32	29.79	−.08	62.5	+2.5	72.8	52.1	103	31	2.86	+.19	.0
Medicine Hat, Alb.	2,365	27.34	29.77	−.08	66.6	+4.6	80.1	53.1	104	38	2.08	−.68	.0
Calgary, Alb.	3,540	26.20	29.80	−.04	59.1	+3.1	72.7	45.5	92	35	1.12	−1.33	.0
Banff, Alb.	4,521												
Prince Albert, Sask.	1,450	28.32	29.87	.00	61.8	+4.1	72.8	50.9	92	36	2.21	−.30	.0
Battleford, Sask.	1,592	28.11	29.82	−.04	62.3	+2.8	75.8	48.7	100	34	2.07	−1.24	.0
Edmonton, Alb.	2,150												
Kamloops, B.C.	1,262												
Victoria, B.C.	230	29.77	30.02	+.01	55.7	−.6	63.4	48.0	80	41	1.15	−.05	.0
Barkerville, B.C.	4,180												
Estevan Point, B.C.	20												
Prince Ruppert, B.C.	170												
Hamilton, Ber.	151												

SEVERE LOCAL STORMS, JUNE 1933

[Compiled by Mary O. Souder]

[The table herewith contains such data as have been received concerning severe local storms that occurred during the month. A revised list of tornadoes will appear in the Annual Report of the Chief of Bureau]

Place	Date	Time	Width of path (yards)	Loss of life	Value of property destroyed	Character of storm	Remarks	Authority
Mandarin, Fla.	1	1:30–2 p.m.	[1] 2		$7,500	Heavy hail	Crops damaged; amount of loss to citrus fruits not estimated; chickens killed and roofs damaged.	Official, U.S. Weather Bureau.
Switzerland, Fla.	1	2:30 p.m.				do	Stones as large as hen's eggs; severe damage to crops; some areas complete loss; roofs damaged.	Do.
Titusville, Fla.	1	2:50–3 p.m.	[1] 1		500	do	Stones as large as hen's eggs; crops damaged	Do.
New Smyrna, Fla.	1	3:30 p.m.	[1] 2			do	Considerable damage to young citrus trees; many windows broken; automobile tops damaged.	Do.
Bushnell, Fla.	1	3:45–4 p.m.				Hail	Pepper and tomato crops damaged considerably.	Do.
Baldwin, Fla.	1	5 p.m.	[1] 4			Heavy hail	Small crop damage; property loss not estimated.	Do.
Loretta, Fla.	1					do	Stones as large as hen's eggs; hundreds of dollars damage to crops and trees; poultry killed; path several miles wide.	Do.
Barron, Dunn, Chippewa, and Taylor Counties, Wis.	3	11–12 p.m.			20,000	Wind	Barns, silos, and small buildings wrecked	Do.
Clear Lake, S.Dak.	3	6 p.m.	[1] 2			Hail and wind	Damage to small buildings; chickens and pigs killed.	Do.
Corona, Wilmot, and Milbank eastward to Big Stone Lake, S. Dak.	3	do	[1] 15	1	100,000	Tornadic wind and hail.	Many buildings destroyed; livestock killed	Do.
Hobbs, N.Mex.	4	2:30 a.m.				Tornado	Telephone wires torn down; 1 man injured and 5 buildings wrecked.	Do.
Chicago, Ill.	4	8:13 p.m.		1		Thundersquall	Wires blown down; 15 persons injured; basements and streets flooded; trees damaged.	Do.
Port Byron, Rochelle, and Sycamore, Ill., and vicinity.	4				38,000	do	Property damaged	Do.
Manitowoc (near), Wis.	4					Rain and hail	Loss from washing and flooding of crops	Do.
North of Marquette to vicinity of Kingston, Wis.	5	5:15 p.m.	*150*	*1*	*105,000*	Tornado	3 persons injured; 50 cattle killed or injured; 4 farm homes wrecked; path 10 miles long.	Do.
Martins Ferry, Ohio, vicinity of.	5	P.m.	2,640		87,500	Hail	Street lighting system out of commission; roofs shattered; trees and shrubbery ruined.	Do.
Wheeling, W.Va.	5	P.m.			5,000	Electrical and heavy hail.	Much damage to orchards and truck	Do.
Lena and Oconto Falls, Wis.	5				10,000	Heavy hail	Property damage	Do
Williamsport and Lock Haven, Pa., and vicinity.	5–6	P.m.			7,500	Electrical	Much minor damage by flooding rains; 4 valuable cows killed.	Do.
Loudoun County, Va.	6	6–7 p.m.	[1] 2		10,000	Hail	Damage mostly to apple crop; trees broken down and wheat fields cut.	Do.
Worthington, Minn.	6	P.m.				Wind and rain	Wires blown down, entire town in darkness; roofs blown off; estimated loss several thousand dollars.	Do.

[1] Miles instead of yards.