

Climatology of the United States

No. 20

1971-2000

Station: RACINE, WI

COOP ID: 476922

Climate Division: WI 9

NWS Call Sign:

Elevation: 595 Feet Lat: 42° 42N Lon: 87° 47W

Temperature (°F)																					
Mean (1)				Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
Month	Daily Max	Daily Min	Mean	Highest Daily(2)	Year	Day	Highest Month(1) Mean	Year	Lowest Daily(2)	Year	Day	Lowest Month(1) Mean	Year	Heating	Cooling	Max >= 100	Max >= 90	Max >= 50	Max <= 32	Min <= 32	Min <= 0
Jan	28.1	13.3	20.7	60	1950	25	31.1	1990	-31	1982	11	6.7	1977	1372	0	.0	.0	.6	18.7	29.4	6.6
Feb	31.9	18.5	25.2	67	1976	28	35.6	1998	-24	1996	3	16.1	1979	1114	0	.0	.0	1.2	13.8	25.2	2.7
Mar	40.9	28.0	34.5	83	1986	30	41.8	2000	-12	1962	1	27.9	1996	947	0	.0	.0	6.1	5.5	21.9	.1
Apr	51.2	37.1	44.2	91	1980	23	48.9	1977	12	1982	5	38.9	1975	625	0	.0	@	15.3	.4	7.5	.0
May	62.5	46.6	54.6	92+	1975	20	61.2	1977	25	1966	10	49.6	1983	338	14	.0	.2	28.2	.0	.4	.0
Jun	73.4	56.5	65.0	100+	1988	26	70.7	1971	37	1969	4	59.3	1982	98	96	.1	1.4	30.0	.0	.0	.0
Jul	78.6	63.9	71.3	104	1995	14	76.2	1999	42	1972	5	66.8	1992	12	206	.1	3.4	31.0	.0	.0	.0
Aug	77.6	64.0	70.8	102	1948	24	75.6	1995	40	1977	25	66.2	1992	13	193	.1	1.9	31.0	.0	.0	.0
Sep	70.3	55.9	63.1	101	1953	1	67.9	1978	32+	1956	20	58.5	1993	112	54	.0	.4	29.9	.0	.1	.0
Oct	59.0	44.1	51.6	91	1963	6	58.7	1971	20+	1962	26	46.1	1988	422	4	.0	@	26.6	.0	2.8	.0
Nov	45.4	32.1	38.8	79	1950	1	45.5	1999	-5+	1976	30	29.9	1976	788	0	.0	.0	10.3	2.6	15.5	.1
Dec	33.3	19.8	26.6	66	2001	6	33.7	1998	-23	1983	25	15.5	1983	1191	0	.0	.0	1.7	11.9	26.7	3.1
Ann	54.4	40.0	47.2	104	Jul 1995	14	76.2	Jul 1999	-31	Jan 1982	11	6.7	Jan 1977	7032	567	.3	7.3	211.9	52.9	129.5	12.6

+ Also occurred on an earlier date(s)

@ Denotes mean number of days greater than 0 but less than .05

Complete documentation available from: www.ncdc.noaa.gov/oa/climate/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

093-A

Climatography of the United States

No. 20 1971-2000

National Climatic Data Center
Federal Building
151 Patton Avenue
Asheville, North Carolina 28801
www.ncdc.noaa.gov

Station: RACINE, WI

COOP ID: 476922

Climate Division: WI 9

NWS Call Sign:

Elevation: 595 Feet Lat: 42° 42N

Lon: 87° 47W

Precipitation (inches)

	Precipitation Totals									Mean Number of Days (3)				Precipitation Probabilities (1) Probability that the monthly/annual precipitation will be equal to or less than the indicated amount											
	Means/ Medians(1)		Extremes							Daily Precipitation				Monthly/Annual Precipitation vs Probability Levels These values were determined from the incomplete gamma distribution											
Month	Mean	Med-ian	Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year	>= 0.01	>= 0.10	>= 0.50	>= 1.00	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95	
Jan	1.72	1.52	1.65	1960	12	4.70	1999	.16	1981	10.0	4.5	1.1	.2	.37	.53	.78	1.01	1.24	1.48	1.76	2.09	2.52	3.21	3.87	
Feb	1.45	1.32	1.57	1997	21	3.73	1994	.01	1987	8.2	3.8	.8	.2	.15	.26	.46	.66	.88	1.12	1.41	1.77	2.25	3.06	3.85	
Mar	2.42	2.08	2.65	1976	5	7.56	1976	.65	1999	10.3	5.4	1.5	.5	.60	.83	1.19	1.50	1.81	2.13	2.50	2.93	3.49	4.38	5.22	
Apr	4.03	3.99	2.92	1976	25	7.82	1973	.92	1989	11.5	7.0	2.7	1.1	1.42	1.80	2.35	2.82	3.26	3.71	4.21	4.78	5.52	6.65	7.70	
May	3.28	3.25	2.76	1996	21	9.02	2000	.47	1992	10.8	6.4	2.2	.7	.68	.98	1.46	1.90	2.34	2.81	3.35	3.99	4.83	6.18	7.46	
Jun	3.68	3.59	3.55	1954	3	8.88	1972	.78	1988	10.2	6.6	2.5	.8	1.06	1.41	1.94	2.40	2.84	3.31	3.82	4.42	5.20	6.43	7.57	
Jul	3.57	2.98	3.99	2000	3	8.15	1978	1.76	1988	9.9	6.5	2.3	1.0	1.38	1.71	2.18	2.58	2.95	3.33	3.74	4.22	4.82	5.75	6.60	
Aug	4.08	4.11	3.10	1983	17	8.38	1987	.38	1973	9.1	6.5	2.6	1.3	1.31	1.70	2.27	2.76	3.23	3.72	4.25	4.88	5.68	6.94	8.10	
Sep	3.70	3.16	3.97	1991	12	8.43	1986	.04	1979	9.0	6.0	2.5	1.0	.43	.71	1.23	1.75	2.30	2.91	3.63	4.52	5.74	7.74	9.68	
Oct	2.48	2.10	3.15	1991	5	7.17	1991	.93	1999	9.4	5.5	1.7	.4	.75	.99	1.34	1.64	1.94	2.24	2.58	2.97	3.48	4.28	5.01	
Nov	2.88	2.44	2.27	1992	2	6.67	1985	.60	1976	9.7	5.8	1.8	.4	.77	1.04	1.46	1.83	2.18	2.56	2.98	3.47	4.12	5.13	6.08	
Dec	2.06	1.82	1.90	1982	3	5.20	1987	.19	1976	9.9	4.8	1.1	.3	.42	.61	.91	1.18	1.46	1.76	2.10	2.50	3.03	3.89	4.70	
Ann	35.35	35.65	3.99	Jul 2000	3	9.02	May 2000	.01	Feb 1987	118.0	68.8	22.8	7.9	27.64	29.19	31.14	32.59	33.88	35.11	36.36	37.74	39.40	41.78	43.81	

+ Also occurred on an earlier date(s)

Denotes amounts of a trace

@ Denotes mean number of days greater than 0 but less than .05

** Statistics not computed because less than six years out of thirty had measurable precipitation

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1948-2001

(3) Derived from 1971-2000 serially complete daily data

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Station: RACINE, WI

COOP ID: 476922

Climate Division: WI 9

NWS Call Sign:

Elevation: 595 Feet

Lat: 42° 42N

Lon: 87° 47W

Snow (inches)																							
Snow Totals															Mean Number of Days (1)								
Means/Medians (1)					Extremes (2)										Snow Fall >= Thresholds					Snow Depth >= Thresholds			
Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year	0.1	1.0	3.0	5.0	10.0	1	3	5	10
Jan	12.9	12.6	5	3	13.0	1999	3	44.2	1979	38	1979	25	27	1979	6.8	4.5	1.7	.8	.1	-9.9	-9.9	-9.9	-9.9
Feb	8.4	5.1	4	3	10.0	1994	26	38.0	1994	23	1994	13	14	1979	4.4	2.6	1.1	.4	@	12.8	5.4	2.4	.7
Mar	6.0	5.5	1	1	13.5	1996	7	15.0	1971	14	1996	7	8	1979	3.3	1.7	.6	.3	@	5.6	2.2	1.0	.1
Apr	1.3	.5	#	0	10.5	1982	6	13.0	1982	4+	2000	8	#+	2000	.8	.4	.2	@	@	.3	.1	.0	.0
May	.1	.0	#	0	1.0	1990	10	1.0	1990	1	1990	10	#+	1994	.1	@	.0	.0	.0	@	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jul	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Aug	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Sep	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.2	.0	#	0	2.5	1989	20	2.5	1989	2	1976	27	#+	2000	.1	.1	.0	.0	.0	@	.0	.0	.0
Nov	2.2	1.0	#	#	8.0	1975	27	8.4	1995	9	1977	28	7	1977	1.4	.7	.2	.1	.0	1.4	.4	.2	.0
Dec	6.8	5.4	2	1	13.0	2000	12	19.0+	1987	25	2000	31	13	2000	4.2	2.5	1.0	.4	@	4.9	1.6	1.1	.3
Ann	37.9	30.1	N/A	N/A	13.5	Mar 1996	7	44.2	Jan 1979	38	Jan 1979	25	27	Jan 1979	21.1	12.5	4.8	2.0	.1	-9.9	-9.9	-9.9	-9.9

+ Also occurred on an earlier date(s) #Denotes trace amounts

@ Denotes mean number of days greater than 0 but less than .05

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

(1) Derived from Snow Climatology and 1971-2000 daily data

(2) Derived from 1971-2000 daily data

Complete documentation available from:

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NWS Call Sign:

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Lat: 42° 42N

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Freeze Data									
Spring Freeze Dates (Month/Day)									
Temp (F)	Probability of later date in spring (thru Jul 31) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	5/20	5/14	5/10	5/07	5/04	5/01	4/28	4/24	4/18
32	5/08	5/04	4/30	4/27	4/25	4/22	4/19	4/16	4/11
28	4/23	4/19	4/16	4/13	4/11	4/08	4/06	4/02	3/29
24	4/16	4/11	4/07	4/04	4/01	3/28	3/25	3/21	3/16
20	4/08	4/02	3/29	3/26	3/22	3/19	3/16	3/12	3/06
16	4/02	3/26	3/21	3/17	3/14	3/10	3/06	3/01	2/22
Fall Freeze Dates (Month/Day)									
Temp (F)	Probability of earlier date in fall (beginning Aug 1) than indicated(*)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	9/25	9/29	10/03	10/06	10/08	10/11	10/14	10/17	10/21
32	10/05	10/11	10/15	10/18	10/21	10/25	10/28	11/01	11/06
28	10/23	10/27	10/30	11/01	11/04	11/06	11/08	11/11	11/15
24	10/27	11/01	11/05	11/08	11/11	11/14	11/18	11/21	11/27
20	11/05	11/11	11/15	11/18	11/22	11/25	11/28	12/02	12/08
16	11/10	11/16	11/20	11/24	11/27	12/01	12/04	12/08	12/14
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	177	170	165	160	156	152	148	143	136
32	201	193	188	183	179	175	170	165	158
28	222	217	213	210	206	203	200	196	191
24	249	241	234	229	224	219	214	208	199
20	270	261	254	249	243	238	233	226	217
16	283	275	268	263	258	253	248	241	233

* Probability of observing a temperature as cold, or colder, later in the spring or earlier in the fall than the indicated date.

0/00 Indicates that the probability of occurrence of threshold temperature is less than the indicated probability.

Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Degree Days to Selected Base Temperatures (°F)													
Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1372	1114	947	625	338	98	12	13	112	422	788	1191	7032
60	1217	974	792	476	213	40	1	1	43	282	638	1036	5713
57	1124	890	699	388	151	20	0	0	20	209	549	943	4993
55	1062	834	637	331	115	12	0	0	11	167	491	881	4541
50	907	694	487	202	50	2	0	0	2	84	354	733	3515
32	405	256	92	4	0	0	0	0	0	0	49	275	1081

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	56	66	168	369	699	988	1217	1203	933	605	251	107	6662
55	0	0	0	6	102	310	504	490	253	59	3	0	1727
57	0	0	0	3	75	258	442	428	203	39	1	0	1449
60	0	0	0	1	44	188	350	336	135	19	0	0	1073
65	0	0	0	0	14	96	206	193	54	4	0	0	567
70	0	0	0	0	3	36	93	85	13	0	0	0	230

Growing Degree Units (2)																								
Base	Growing Degree Units (Monthly)												Growing Degree Units (Accumulated Monthly)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
40	1	5	51	175	464	749	969	948	694	366	97	11	1	6	57	232	696	1445	2414	3362	4056	4422	4519	4530
45	0	0	22	91	313	599	814	793	544	232	45	2	0	0	22	113	426	1025	1839	2632	3176	3408	3453	3455
50	0	0	7	41	187	449	659	638	396	123	18	0	0	0	7	48	235	684	1343	1981	2377	2500	2518	2518
55	0	0	1	19	95	309	504	483	259	55	3	0	0	0	1	20	115	424	928	1411	1670	1725	1728	1728
60	0	0	0	2	47	184	350	331	144	17	0	0	0	0	0	2	49	233	583	914	1058	1075	1075	1075
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	0	30	86	230	457	645	634	410	173	41	3	0	0	30	116	346	803	1448	2082	2492	2665	2706	2709

(1) Derived from the 1971-2000 Monthly Normals

(2) Derived from 1971-2000 serially complete daily data

Note: For corn, temperatures below 50 are set to 50, and temperatures above 86 are set to 86

Complete documentation available from:

www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

Notes

- a. The monthly means are simple arithmetic averages computed by summing the monthly values for the period 1971-2000 and dividing by thirty. Prior to averaging, the data are adjusted if necessary to compensate for data quality issues, station moves or changes in station reporting practices. Missing months are replaced by estimates based on neighboring stations.
- b. The median is defined as the middle value in an ordered set of values. The median is being provided for the snow and precipitation elements because the mean can be a misleading value for precipitation normals.
- c. Only observed validated values were used to select the extreme daily values.
- d. Extreme monthly temperature/precipitation means were selected from the monthly normals data.
Monthly snow extremes were calculated from daily values quality controlled to be consistent with the Snow Climatology.
- e. Degree Days were derived using the same techniques as the 1971-2000 normals.
Complete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normal/usnormals.html
- f. Mean "number of days statistics" for temperature and precipitation were calculated from a serially complete daily data set.
Documentation of the serially complete data set is available from the link below:
- g. Snowfall and snow depth statistics were derived from the Snow Climatology.
Documentation for the Snow Climatology project is available from the link under references.

Data Sources for Tables

Several different data sources were used to create the Clim20 climate summaries. In some cases the daily extremes appear inconsistent with the monthly extremes and or the mean number of days statistics. For example, a high daily extreme value may not be reflected in the highest monthly value or the mean number of days threshold that is less than and equal to the extreme value. Some of these difference are caused by different periods of record. Daily extremes are derived from the station's entire period of record while the serial data and normals data were for the 1971-2000 period. Therefore extremes observed before 1971 would not be included in the 1971-2000 normals or the 1971-2000 serial daily data set. Inconsistencies can also occur when monthly values are adjusted to reflect the current observing conditions or were replaced during the 1971-2000 Monthly Normals processing and are not reconciled with the Summary of the Day data.

- | | |
|---|---|
| <ol style="list-style-type: none">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html
Snow Climatology Project Description, www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html
Eischeid, J. K., P. Pasteris, H. F. Diaz, M. Plantico, and N. Lott, 2000: Creating a serially complete, national daily time series of temperature and precipitation for the Western United States. J. Appl. Meteorol., 39, 1580-1591,
www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf