

Climatography of the United States

No. 20

1971-2000

Station: LEBANON, TN

COOP ID: 405108

Climate Division: TN 3

NWS Call Sign:

Elevation: 525 Feet Lat: 36° 14N Lon: 86° 19W

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	46.2	24.2	35.2	75	1972	14	45.3	1974	-20+	1963	24	20.8	1977	924	0	.0	.0	12.1	5.0	23.2	1.2
Feb	51.4	26.9	39.2	82	1962	13	47.1	1990	-9	1979	10	26.6	1978	724	0	.0	.0	15.2	2.7	19.8	.3
Mar	60.6	35.6	48.1	87+	1982	20	53.9	1973	-2	1980	3	41.3	1999	526	2	.0	.0	24.7	.3	13.3	@
Apr	70.1	43.5	56.8	90+	1989	28	63.5	1981	20	1992	3	49.8	1997	264	18	.0	@	29.0	.0	4.8	.0
May	78.4	52.9	65.7	96	1962	18	72.1	1987	29+	1976	4	60.5	1997	99	120	.0	1.2	31.0	.0	.2	.0
Jun	86.4	62.1	74.3	102+	1977	13	77.0	1994	38	1966	1	69.8	1974	5	282	.3	10.4	30.0	.0	.0	.0
Jul	90.2	66.4	78.3	105	1988	9	82.5	1993	49+	1961	10	75.2	1984	0	413	.8	17.9	31.0	.0	.0	.0
Aug	89.3	64.1	76.7	103+	1962	19	81.0	1983	43	1986	29	72.8	1992	1	363	.5	15.0	31.0	.0	.0	.0
Sep	83.0	56.6	69.8	102+	1990	8	73.9	1980	33	1983	24	65.2	1975	32	176	.1	6.1	30.0	.0	.0	.0
Oct	72.4	43.5	58.0	94	1998	1	65.2	1971	21+	1961	27	51.9	1988	254	36	.0	.1	30.6	.0	5.1	.0
Nov	60.5	35.7	48.1	85+	1961	2	56.0	1985	6	1976	30	39.2	1976	510	3	.0	.0	23.6	.1	13.1	.0
Dec	50.4	27.8	39.1	79+	1998	5	48.3	1984	-11+	1989	22	27.8	1989	802	0	.0	.0	16.2	2.5	20.7	.2
Ann	69.9	44.9	57.4	105	Jul 1988	9	82.5	Jul 1993	-20+	Jan 1963	24	20.8	Jan 1977	4141	1413	1.7	50.7	304.4	10.6	100.2	1.7

+ 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

037-A

Climatology 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: LEBANON, TN

COOP ID: 405108

Climate Division: TN 3

NWS Call Sign:

Elevation: 525 Feet Lat: 36°14N

Lon: 86°19W

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	4.56	4.44	4.17	1957	29	9.45	1999	.39	1986	11.7	7.7	3.1	1.4	1.35	1.78	2.43	2.99	3.54	4.10	4.73	5.47	6.43	7.92	9.31
Feb	4.17	3.76	5.22	1989	14	12.42	1989	1.21	1978	10.7	6.9	2.7	1.1	1.47	1.87	2.44	2.92	3.38	3.85	4.36	4.96	5.72	6.90	7.99
Mar	5.58	4.86	4.08	1975	13	14.42	1975	2.09	1987	12.4	8.8	3.7	1.6	2.00	2.53	3.29	3.92	4.53	5.15	5.83	6.62	7.62	9.18	10.60
Apr	4.38	3.86	3.65	1984	22	9.40	1979	1.09	1986	10.1	7.3	3.0	1.4	1.30	1.71	2.34	2.88	3.40	3.95	4.55	5.26	6.18	7.61	8.95
May	5.24	4.77	5.40	1979	4	12.64	1983	1.39	1977	10.8	7.6	3.3	1.6	1.83	2.33	3.05	3.65	4.23	4.83	5.48	6.23	7.20	8.70	10.08
Jun	4.58	4.64	4.46	1987	13	10.76	1998	.05	1988	9.8	7.3	3.2	1.3	.82	1.23	1.90	2.53	3.16	3.85	4.64	5.59	6.86	8.89	10.84
Jul	4.71	4.13	3.76	1991	3	9.42	1984	.76	1986	9.7	7.0	3.2	1.3	1.28	1.72	2.40	3.00	3.58	4.19	4.87	5.67	6.72	8.36	9.89
Aug	4.02	3.57	3.54	1988	20	7.64	1977	.38	1998	8.5	5.9	3.0	1.2	1.08	1.46	2.04	2.55	3.05	3.57	4.16	4.85	5.75	7.16	8.48
Sep	4.00	3.52	6.51	1979	14	12.17	1979	.11	1998	8.2	5.6	2.6	1.0	.48	.79	1.36	1.91	2.51	3.17	3.94	4.89	6.18	8.30	10.37
Oct	3.40	3.58	4.01	1975	17	7.61	1995	.43	2000	7.8	5.2	2.3	1.0	.83	1.15	1.64	2.08	2.52	2.98	3.50	4.11	4.91	6.18	7.38
Nov	4.62	4.43	4.93	1973	27	9.74	1986	1.18	1971	10.0	7.0	3.3	1.4	1.48	1.92	2.57	3.12	3.66	4.21	4.81	5.52	6.44	7.86	9.17
Dec	5.21	4.29	3.82	1978	9	12.55	1990	1.05	1985	11.7	7.5	3.4	1.6	1.41	1.90	2.65	3.31	3.96	4.64	5.39	6.28	7.44	9.26	10.96
Ann	54.47	52.95	6.51	Sep 1979	14	14.42	Mar 1975	.05	Jun 1988	121.4	83.8	36.8	15.9	39.67	42.56	46.25	49.04	51.51	53.90	56.36	59.07	62.35	67.10	71.20

+ 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

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

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Station: LEBANON, TN

COOP ID: 405108

Climate Division: TN 3

NWS Call Sign:

Elevation: 525 Feet

Lat: 36°14N

Lon: 86°19W

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	2.7	.3	#	#	5.0	1973	8	15.7	1977	8	1988	8	2	1988	1.2	.8	.2	@	.0	2.1	.6	.4	.0
Feb	2.0	.5	#	#	5.5	1979	7	8.9	1978	7	1979	10	2	1979	1.0	.7	.3	@	.0	1.7	.7	.3	.0
Mar	.4	.0	#	#	3.5	1993	13	4.5	1993	5	1996	21	2	1987	.2	.1	@	.0	.0	.2	.1	@	.0
Apr	#	.0	0	0	#	1987	3	#+	1987	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.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	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Nov	.1	.0	#	0	1.4	1976	12	2.2	1976	1	1996	10	#+	1997	.1	@	.0	.0	.0	@	.0	.0	.0
Dec	.2	#	#	#	1.5	1973	21	1.5+	1976	3	1997	29	1	1989	.2	.1	.0	.0	.0	@	.0	.0	.0
Ann	5.4	.8	N/A	N/A	5.5	Feb 1979	7	15.7	Jan 1977	8	Jan 1988	8	2+	Jan 1988	2.7	1.7	.5	@	.0	4.0	1.4	.7	.0

+ 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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No. 20
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Station: LEBANON, TN

COOP ID: 405108

Climate Division: TN 3

NWS Call Sign:

Elevation: 525 Feet

Lat: 36° 14N

Lon: 86° 19W

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	5/09	5/05	5/01	4/28	4/24	4/19	4/12
32	5/04	4/28	4/25	4/22	4/19	4/16	4/12	4/09	4/04
28	4/17	4/12	4/09	4/07	4/04	4/02	3/30	3/27	3/23
24	4/12	4/06	4/01	3/28	3/24	3/20	3/16	3/12	3/05
20	3/26	3/19	3/15	3/11	3/07	3/03	2/27	2/22	2/16
16	3/16	3/08	3/02	2/26	2/21	2/17	2/12	2/07	1/30
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	9/24	9/29	10/02	10/04	10/07	10/09	10/12	10/15	10/20
32	10/02	10/07	10/11	10/14	10/17	10/20	10/23	10/26	11/01
28	10/10	10/16	10/20	10/24	10/27	10/31	11/03	11/07	11/13
24	10/27	11/01	11/05	11/09	11/12	11/15	11/18	11/22	11/27
20	11/03	11/09	11/13	11/17	11/20	11/24	11/27	12/01	12/07
16	11/20	11/28	12/03	12/08	12/12	12/17	12/21	12/27	1/04
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	180	173	167	162	158	153	149	143	135
32	199	193	188	184	180	177	173	168	162
28	223	217	213	209	205	201	198	193	187
24	256	248	242	237	232	227	222	216	207
20	280	272	267	262	258	253	248	243	235
16	326	315	307	300	293	287	280	272	261

* 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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Climate Division: TN 3 NWS Call Sign: Elevation: 525 Feet Lat: 36°14N Lon: 86°19W

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	924	724	526	264	99	5	0	1	32	254	510	802	4141
60	769	584	382	152	42	0	0	0	8	151	371	648	3107
57	686	503	302	101	22	0	0	0	3	103	293	563	2576
55	627	452	253	73	13	0	0	0	1	77	246	505	2247
50	487	325	153	25	3	0	0	0	0	32	148	369	1542
32	131	45	5	0	0	0	0	0	0	0	5	61	247

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	230	246	505	744	1044	1268	1436	1385	1134	805	487	282	9566
55	13	8	40	127	344	578	723	672	445	170	39	13	3172
57	10	3	26	95	290	518	661	610	387	133	26	9	2768
60	0	0	14	56	218	428	568	517	302	88	14	1	2206
65	0	0	2	18	120	282	413	363	176	36	3	0	1413
70	0	0	0	4	53	152	259	218	81	11	0	0	778

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	87	132	302	517	802	1036	1195	1147	902	561	282	127	87	219	521	1038	1840	2876	4071	5218	6120	6681	6963	7090
45	44	73	195	379	647	886	1040	992	752	412	181	69	44	117	312	691	1338	2224	3264	4256	5008	5420	5601	5670
50	18	35	111	252	492	736	885	837	603	281	104	31	18	53	164	416	908	1644	2529	3366	3969	4250	4354	4385
55	3	7	52	152	347	586	730	682	453	170	57	10	3	10	62	214	561	1147	1877	2559	3012	3182	3239	3249
60	0	0	22	77	214	436	575	527	312	88	18	0	0	0	22	99	313	749	1324	1851	2163	2251	2269	2269
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	57	99	201	337	524	698	811	773	594	383	185	87	57	156	357	694	1218	1916	2727	3500	4094	4477	4662	4749

(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