

# Climatology of the United States

## No. 20

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

Station: LANGLEY AIR FORCE BASE, VA

1971-2000

COOP ID: 444720

Climate Division: VA 1

NWS Call Sign: LFI

Elevation: 10 Feet

Lat: 37°05N

Lon: 76°21W

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	46.7	32.0	39.4	78	1943	17	48.4	1974	-3	1985	21	28.3	1977	795	0	.0	.0	12.3	2.9	15.6	.1
Feb	49.4	33.8	41.6	82	1930	25	49.8	1976	4+	1936	1	30.4	1978	655	0	.0	.0	13.7	1.6	13.6	.0
Mar	57.0	40.6	48.8	90	1945	17	54.9	1977	11	1937	1	44.3	1996	503	0	.0	.0	23.5	.1	5.4	.0
Apr	65.9	48.5	57.2	95	1960	26	63.2	1994	28+	1950	14	53.0	1975	244	12	.0	.2	29.1	.0	.4	.0
May	73.4	58.3	65.9	97	1941	29	71.1	1991	35	1966	11	60.2	1992	65	92	.0	1.0	31.0	.0	.0	.0
Jun	81.0	66.8	73.9	102+	1944	19	78.8	1981	43	1967	2	69.6	1992	4	270	@	4.8	30.0	.0	.0	.0
Jul	85.2	71.8	78.5	103	1940	27	82.4	1993	55+	2001	7	75.6	1982	0	419	.1	10.4	31.0	.0	.0	.0
Aug	83.7	70.7	77.2	105	1980	1	82.2	1978	50	1965	30	73.2	1992	0	379	.2	6.9	31.0	.0	.0	.0
Sep	78.1	65.1	71.6	99	1983	11	76.1	1977	44	1967	24	68.5	1976	9	207	.0	2.1	30.0	.0	.0	.0
Oct	68.3	53.0	60.7	95	1941	5	67.4	1984	26	1962	27	54.2	1976	184	49	.0	.1	30.8	.0	.0	.0
Nov	59.5	43.5	51.5	85+	1993	15	57.3	1985	20+	1955	29	42.8	1976	410	4	.0	.0	26.1	.0	3.7	.0
Dec	51.1	36.0	43.6	79+	1998	8	51.2	1971	6	1935	26	33.1	1989	666	0	.0	.0	17.6	.7	11.4	.0
Ann	66.6	51.7	59.2	105	Aug 1980	1	82.4	Jul 1993	-3	Jan 1985	21	28.3	Jan 1977	3535	1432	.3	25.5	306.1	5.3	50.1	.1

+ 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](http://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: 1930-2001

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

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**Lat: 37°05N**

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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	4.08	4.24	3.10	1937	29	8.69	1987	.72	1981	10.8	7.2	2.8	1.0	1.60	1.98	2.52	2.96	3.38	3.81	4.28	4.81	5.49	6.53	7.48
Feb	3.60	3.42	4.51	1998	4	10.58	1998	.90	1991	10.2	6.4	2.5	.9	1.22	1.56	2.06	2.48	2.88	3.30	3.76	4.29	4.97	6.03	7.00
Mar	4.73	4.14	3.51	1994	2	10.94	1975	1.05	1986	10.6	6.9	3.3	1.6	1.73	2.18	2.81	3.35	3.86	4.38	4.94	5.60	6.44	7.73	8.91
Apr	3.35	3.37	3.07	1975	15	8.38	1983	.31	1994	9.6	6.3	2.3	.7	.79	1.10	1.59	2.03	2.46	2.92	3.44	4.06	4.87	6.15	7.35
May	4.03	3.72	4.43	1948	31	8.64	1979	1.18	1991	10.6	6.9	2.8	1.1	1.68	2.04	2.56	2.98	3.38	3.79	4.22	4.72	5.35	6.32	7.19
Jun	3.44	3.11	5.63	1963	2	8.97	1973	.56	1980	8.4	5.7	2.1	.8	.73	1.05	1.55	2.01	2.47	2.96	3.52	4.18	5.06	6.46	7.79
Jul	4.86	4.22	3.57	1954	15	10.53	1975	.58	1993	11.6	7.2	3.3	1.4	1.41	1.87	2.56	3.17	3.75	4.37	5.04	5.84	6.87	8.49	9.99
Aug	4.74	4.51	4.88	1973	3	12.03	1992	.60	1984	9.2	6.2	2.9	1.3	.97	1.40	2.10	2.73	3.37	4.06	4.83	5.76	6.99	8.96	10.83
Sep	4.84	3.89	6.51	1972	21	19.36	1999	.54	1986	7.8	5.6	2.7	1.5	.53	.90	1.57	2.24	2.96	3.77	4.72	5.90	7.51	10.17	12.76
Oct	3.45	3.31	4.51	1999	17	12.06	1971	.00	2000	7.4	5.0	2.3	1.0	.59	1.06	1.64	2.11	2.58	3.06	3.60	4.23	5.05	6.35	7.56
Nov	3.35	2.60	4.73	1947	3	7.59	1997	1.02	1991	8.7	5.7	2.5	.8	.87	1.19	1.67	2.10	2.52	2.97	3.46	4.04	4.80	6.00	7.12
Dec	3.43	3.16	2.69	1998	13	8.14	1998	.45	1979	10.2	6.4	2.2	.7	.80	1.12	1.62	2.07	2.52	2.99	3.53	4.16	5.00	6.32	7.57
Ann	47.90	46.75	6.51	Sep 1972	21	19.36	Sep 1999	.00	Oct 2000	115.1	75.5	31.7	12.8	31.49	34.57	38.56	41.63	44.38	47.06	49.84	52.94	56.72	62.26	67.08

+ 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: 1930-2001

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

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**Elevation: 10 Feet**

**Lat: 37°05N**

**Lon: 76°21W**

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	2.3	.3	#	0	9.3	1980	5	12.3	1980	8	1973	9	1+	2000	1.2	.8	.3	.1	.0	2.0	.7	.3	.0
Feb	2.4	.3	#	0	12.2	1989	18	21.4	1989	13	1989	19	2	1989	1.2	.6	.2	.1	@	1.6	.6	.3	@
Mar	.5	#	#	0	7.9	1971	26	8.2	1971	3+	1974	25	#	1978	.3	.1	.1	@	.0	.2	.1	.0	.0
Apr	.2	.0	0	0	6.5	1983	18	6.5	1983	#	1983	19	0	0	.0	.0	@	@	.0	.0	.0	.0	.0
May	.0	.0	#	0	.0	0	0	.0	0	#	1981	15	#	2000	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1991	.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	0	1.7	1987	11	1.7	1987	#	1987	12	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Dec	.5	#	#	0	4.0	1988	9	4.0	1988	2	1976	9	#	1993	.4	.2	@	.0	.0	.2	.0	.0	.0
Ann	6.0	.6	N/A	N/A	12.2	Feb 1989	18	21.4	Feb 1989	13	Feb 1989	19	2	Feb 1989	3.1	1.7	.6	.2	@	4.0	1.4	.6	.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

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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	4/17	4/12	4/09	4/06	4/04	4/01	3/29	3/26	3/22
32	4/11	4/05	4/01	3/29	3/26	3/23	3/19	3/15	3/10
28	3/24	3/18	3/15	3/12	3/09	3/06	3/02	2/27	2/21
24	3/18	3/09	3/02	2/25	2/19	2/14	2/08	2/01	1/23
20	3/01	2/21	2/15	2/10	2/05	1/31	1/24	1/15	0/00
16	2/13	2/05	1/30	1/23	1/17	1/07	0/00	0/00	0/00
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	10/22	10/27	10/31	11/03	11/06	11/09	11/12	11/16	11/21
32	11/06	11/10	11/14	11/17	11/20	11/22	11/25	11/29	12/04
28	11/12	11/20	11/25	11/30	12/05	12/09	12/14	12/19	12/27
24	11/29	12/06	12/11	12/15	12/19	12/23	12/28	1/02	1/09
20	12/11	12/20	12/27	1/01	1/07	1/13	1/20	1/31	0/00
16	12/28	1/05	1/12	1/18	1/25	2/04	0/00	0/00	0/00
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	238	230	225	220	216	211	207	201	194
32	256	250	245	242	238	234	231	226	220
28	299	289	282	276	270	265	258	251	241
24	333	320	313	306	300	294	288	281	271
20	>365	>365	363	346	337	329	321	313	303
16	>365	>365	>365	>365	>365	>365	359	347	336

\* 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	795	655	503	244	65	4	0	0	9	184	410	666	3535
60	641	515	354	130	18	0	0	0	1	96	275	519	2549
57	557	439	270	79	6	0	0	0	0	59	204	432	2046
55	499	387	218	53	3	0	0	0	0	41	164	376	1741
50	364	267	116	14	0	0	0	0	0	13	83	253	1110
32	58	27	1	0	0	0	0	0	0	0	0	22	108

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	285	296	521	757	1049	1256	1442	1402	1188	888	585	379	10048
55	14	12	25	121	339	566	729	689	498	216	58	20	3287
57	10	8	15	86	280	506	667	627	438	172	39	14	2862
60	1	0	6	47	199	416	574	534	349	116	20	7	2269
65	0	0	0	12	92	270	419	379	207	49	4	0	1432
70	0	0	0	1	29	142	265	232	92	15	0	0	776

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	122	156	310	535	825	1045	1227	1182	974	662	376	192	122	278	588	1123	1948	2993	4220	5402	6376	7038	7414	7606
45	60	81	191	388	670	895	1072	1027	824	508	247	105	60	141	332	720	1390	2285	3357	4384	5208	5716	5963	6068
50	27	44	107	258	515	745	917	872	674	359	143	50	27	71	178	436	951	1696	2613	3485	4159	4518	4661	4711
55	7	20	54	150	361	595	762	717	524	225	76	24	7	27	81	231	592	1187	1949	2666	3190	3415	3491	3515
60	0	4	23	76	226	446	607	562	374	116	32	4	0	4	27	103	329	775	1382	1944	2318	2434	2466	2470
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	66	81	160	299	519	727	874	843	663	386	196	93	66	147	307	606	1125	1852	2726	3569	4232	4618	4814	4907

(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:  
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## 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](http://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.

- a. Temperature/ Precipitation Tables
  - 1. 1971-2000 Monthly Normals
  - 2. Cooperative Summary of the Day
  - 3. National Weather Service station records
  - 4. 1971-2000 serially complete daily data
- b. Degree Day Table
  - 1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals
  - 2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data
- c. Snow Tables
  - 1. Snow Climatology
  - 2. Cooperative Summary of the Day
- d. Freeze Data Table  
1971-2000 serially complete daily data

## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)