U.S. Department of Commerce
National Oceanic & Atmospheric Administration
National Environmental Satellite, Data,
and Information Service

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: SAINT LEO, FL **COOP ID: 087851**

Climate Division: FL 3 **NWS Call Sign:** **Elevation: 190 Feet** **Lat: 28˚20N** **Lon: 82˚16W**

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	72.3	48.4	60.4	87+	1991	1	71.4	1974	18	1985	21	51.3	1977	220	61	.0	.0	30.7	.0	1.7	.0
Feb	74.6	49.9	62.3	90+	1971	26	68.4	1990	22	1996	5	53.5	1978	140	63	.0	@	28.1	.0	1.1	.0
Mar	79.4	54.4	66.9	94	1949	29	72.7	1997	24	1980	3	62.4	1996	66	125	.0	.6	31.0	.0	.2	.0
Apr	83.8	58.3	71.1	98	1945	28	75.3	1994	38	1987	1	65.9	1987	12	193	.0	4.0	30.0	.0	.0	.0
May	89.3	64.3	76.8	102	1945	31	81.3	1995	46	1992	8	73.9	1992	0	366	.0	16.0	31.0	.0	.0	.0
Jun	91.6	69.9	80.8	103	1985	7	86.4	1998	54	1984	1	78.1	1974	0	472	.5	22.6	30.0	.0	.0	.0
Jul	92.3	71.6	82.0	101	1932	10	84.3	1998	64+	1981	1	79.4	1974	0	526	@	26.9	31.0	.0	.0	.0
Aug	92.2	71.7	82.0	99+	1987	8	83.7	1987	62	1968	13	79.7	1992	0	525	.0	26.3	31.0	.0	.0	.0
Sep	90.6	70.0	80.3	98	1983	7	81.4	1995	53	1981	20	78.7	1976	0	458	.0	21.4	30.0	.0	.0	.0
Oct	85.4	62.9	74.2	96+	1986	3	78.4	1985	39+	1989	21	69.3	1987	6	289	.0	6.2	31.0	.0	.0	.0
Nov	79.3	56.2	67.8	92	1989	6	74.1	1986	27+	1970	25	62.5	1976	50	132	.0	.1	30.0	.0	.0	.0
Dec	73.7	50.3	62.0	88+	1991	2	68.8	1971	18	1962	13	55.7	1989	154	61	.0	.0	30.8	.0	1.2	.0
Ann	83.7	60.7	72.2	103	Jun 1985	7	86.4	Jun 1998	18+	Jan 1985	21	51.3	Jan 1977	648	3271	.5	124.1	364.6	.0	4.2	.0

\+ 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/normals/usnormals.html

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1931-2001

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

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Precipitation (inches)

Precipitation Totals

Month	Means/ Medians(1) Mean	Means/ Medians(1) Median	Extremes Highest Daily(2)	Year	Day	Highest Monthly(1)	Year	Lowest Monthly(1)	Year
Jan	3.41	3.23	2.85	1941	24	6.13	1982	.64	1972
Feb	3.38	2.94	4.37	1998	16	11.04	1998	.14	1999
Mar	4.06	3.07	6.45	1960	15	16.50	1987	.55	2000
Apr	2.35	1.86	9.17	1953	13	7.02	1997	.06	1981
May	3.89	2.11	11.08	1979	8	16.81	1979	.03	2000
Jun	7.13	5.68	13.12	1934	15	19.08	1974	.08	1998
Jul	7.69	7.64	4.25	1959	17	11.46	1994	2.09	1979
Aug	7.47	6.56	3.85	1965	11	16.99	1979	2.72	1980
Sep	6.54	5.81	8.78	1933	5	13.33	1982	.75	1990
Oct	2.75	2.28	6.28	1944	19	6.42	1995	.03	2000
Nov	2.52	1.96	9.27	1988	23	12.48	1988	.02	1978
Dec	2.65	1.57	4.39	1981	27	13.99	1997	.13	1984
Ann	53.84	50.96	13.12	Jun 1934	15	19.08	Jun 1974	.02	Nov 1978

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	8.6	5.1	2.2	1.1
Feb	7.9	4.6	2.1	1.0
Mar	8.1	5.3	2.6	1.4
Apr	6.0	3.3	1.7	.9
May	7.4	4.3	2.4	1.1
Jun	12.8	8.7	4.3	2.2
Jul	16.2	11.5	5.4	2.5
Aug	16.4	11.6	5.1	2.3
Sep	12.9	9.0	4.1	1.9
Oct	7.0	4.0	1.8	.9
Nov	7.1	3.9	1.6	.6
Dec	7.7	3.8	1.6	.8
Ann	118.1	75.1	34.9	16.7

Precipitation Probabilities (1)

Probability that the monthly/annual precipitation will be equal to or less than the indicated amount

Monthly/Annual Precipitation vs Probability Levels
These values were determined from the incomplete gamma distribution

Month	.05	.10	.20	.30	.40	.50	.60	.70	.80	.90	.95
Jan	.90	1.22	1.72	2.15	2.58	3.03	3.52	4.11	4.88	6.09	7.22
Feb	.35	.59	1.06	1.53	2.03	2.61	3.28	4.12	5.27	7.17	9.03
Mar	.62	.96	1.55	2.11	2.69	3.33	4.06	4.96	6.16	8.11	9.99
Apr	.22	.39	.71	1.03	1.39	1.79	2.27	2.87	3.69	5.05	6.39
May	.24	.47	.95	1.48	2.08	2.78	3.63	4.71	6.23	8.80	11.36
Jun	1.19	1.81	2.85	3.83	4.83	5.93	7.18	8.70	10.73	14.02	17.16
Jul	3.70	4.36	5.27	5.99	6.67	7.34	8.06	8.88	9.91	11.46	12.85
Aug	3.24	3.91	4.85	5.61	6.33	7.06	7.83	8.73	9.85	11.57	13.12
Sep	1.18	1.76	2.72	3.61	4.52	5.50	6.62	7.97	9.78	12.68	15.45
Oct	.20	.37	.72	1.10	1.52	2.01	2.60	3.34	4.37	6.11	7.83
Nov	.18	.34	.66	1.01	1.39	1.84	2.38	3.06	4.00	5.59	7.17
Dec	.16	.32	.65	1.01	1.42	1.89	2.47	3.21	4.24	6.00	7.74
Ann	39.85	42.60	46.10	48.74	51.08	53.33	55.64	58.19	61.27	65.72	69.55

\+ 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: 1931-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	.0	.0	0	0
Feb	.0	.0	0	0
Mar	.0	.0	0	0
Apr	.0	.0	0	0
May	.0	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.0	.0	0	0
Oct	.0	.0	0	0
Nov	.0	.0	0	0
Dec	.0	.0	0	0
Ann	.0	.0	N/A	N/A

Extremes (2)

Month	Highest Daily Snow Fall	Year	Day	Highest Monthly Snow Fall	Year	Highest Daily Snow Depth	Year	Day	Highest Monthly Mean Snow Depth	Year
Jan	1.0	1977	19	1.0	1977	0	0	0	0	0
Feb	.0	0	0	.0	0	0	0	0	0	0
Mar	.0	0	0	.0	0	0	0	0	0	0
Apr	.0	0	0	.0	0	0	0	0	0	0
May	.0	0	0	.0	0	0	0	0	0	0
Jun	.0	0	0	.0	0	0	0	0	0	0
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	.0	0	0	.0	0	0	0	0	0	0
Oct	.0	0	0	.0	0	0	0	0	0	0
Nov	.0	0	0	.0	0	0	0	0	0	0
Dec	.0	0	0	.0	0	0	0	0	0	0
Ann	1.0	Jan 1977	19	1.0	Jan 1977	0	0	0	0	0

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	@	@	.0	.0	.0
Feb	.0	.0	.0	.0	.0
Mar	.0	.0	.0	.0	.0
Apr	.0	.0	.0	.0	.0
May	.0	.0	.0	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.0	.0	.0	.0	.0
Oct	.0	.0	.0	.0	.0
Nov	.0	.0	.0	.0	.0
Dec	.0	.0	.0	.0	.0
Ann	@	@	.0	.0	.0

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	.0	.0	.0	.0
Feb	.0	.0	.0	.0
Mar	.0	.0	.0	.0
Apr	.0	.0	.0	.0
May	.0	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.0	.0	.0	.0
Nov	.0	.0	.0	.0
Dec	.0	.0	.0	.0
Ann	.0	.0	.0	.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	3/08	3/02	2/25	2/21	2/17	2/13	2/09	2/04	1/29
32	3/01	2/20	2/14	2/08	2/03	1/28	1/22	1/15	1/04
28	2/12	2/02	1/25	1/18	1/09	12/28	0/00	0/00	0/00
24	2/03	1/20	1/04	0/00	0/00	0/00	0/00	0/00	0/00
20	12/27	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	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	11/21	11/29	12/05	12/10	12/15	12/19	12/24	12/30	1/07
32	12/08	12/18	12/25	12/31	1/06	1/12	1/19	1/27	2/08
28	12/20	1/01	1/10	1/18	1/28	2/11	0/00	0/00	0/00
24	1/07	1/24	2/17	0/00	0/00	0/00	0/00	0/00	0/00
20	1/15	0/00	0/00	0/00	0/00	0/00	0/00	0/00	0/00
16	0/00	0/00	0/00	0/00	0/00	0/00	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	329	317	310	304	298	293	287	280	271
32	>365	>365	352	340	331	324	317	309	299
28	>365	>365	>365	>365	>365	>365	356	338	325
24	>365	>365	>365	>365	>365	>365	>365	>365	359
20	>365	>365	>365	>365	>365	>365	>365	>365	>365
16	>365	>365	>365	>365	>365	>365	>365	>365	>365

***** 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

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Degree Days to Selected Base Temperatures (˚F)

Heating Degree Days (1)

Base Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	220	140	66	12	0	0	0	0	0	6	50	154	648
60	145	69	20	1	0	0	0	0	0	0	13	75	323
57	102	39	8	0	0	0	0	0	0	0	5	42	196
55	77	26	4	0	0	0	0	0	0	0	2	27	136
50	35	8	0	0	0	0	0	0	0	0	0	8	51
32	0	0	0	0	0	0	0	0	0	0	0	0	0

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	879	847	1082	1171	1389	1462	1549	1548	1448	1307	1072	930	14684
55	243	229	373	481	676	772	836	835	758	594	384	244	6425
57	206	186	316	421	614	712	774	773	698	532	327	197	5756
60	156	133	234	332	521	622	681	680	608	439	246	137	4789
65	61	63	125	193	366	472	526	525	458	289	132	61	3271
70	39	21	50	86	216	322	371	370	308	157	56	19	2015

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	654	666	856	951	1164	1244	1317	1313	1224	1080	857	706	654	1320	2176	3127	4291	5535	6852	8165	9389	10469	11326	12032
45	503	521	701	801	1009	1094	1162	1158	1074	925	707	553	503	1024	1725	2526	3535	4629	5791	6949	8023	8948	9655	10208
50	359	386	548	651	854	944	1007	1003	924	770	557	405	359	745	1293	1944	2798	3742	4749	5752	6676	7446	8003	8408
55	233	257	397	502	699	794	852	848	774	615	412	277	233	490	887	1389	2088	2882	3734	4582	5356	5971	6383	6660
60	130	152	260	354	544	644	697	693	624	460	275	160	130	282	542	896	1440	2084	2781	3474	4098	4558	4833	4993
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	412	424	567	638	798	855	903	903	856	751	572	450	412	836	1403	2041	2839	3694	4597	5500	6356	7107	7679	8129

(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.
Compete documentation for the 1971-2000 Normals is available on the internet from:
www.ncdc.noaa.gov/oa/climate/normals/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 are 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/normals.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normals/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