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: SUFFOLK LAKE KILBY, VA **COOP ID: 448192**

Climate Division: VA 1 **NWS Call Sign:** **Elevation: 22 Feet** **Lat: 36˚44N** **Lon: 76˚36W**

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	48.8	30.3	39.6	77+	1970	29	48.9	1974	-5	1985	21	28.7	1977	790	0	.0	.0	13.9	2.2	18.6	.1
Feb	52.3	32.1	42.2	81+	1997	27	50.3	1976	4	1996	5	31.2	1978	637	0	.0	.0	16.4	1.2	15.6	.0
Mar	60.5	38.8	49.7	88+	1990	13	54.1	1990	14+	1980	3	45.6	1996	476	0	.0	.0	25.6	.1	8.1	.0
Apr	69.5	46.7	58.1	94+	1990	27	62.0	1977	24	1950	14	54.5	1975	217	10	.0	.4	29.4	.0	.9	.0
May	77.1	56.1	66.6	98	1991	31	72.5	1991	30	1956	9	62.3	1992	54	104	.0	1.1	31.0	.0	.0	.0
Jun	84.2	64.1	74.2	105	1952	26	77.8	1981	42	1966	3	70.1	1979	3	277	.0	5.6	30.0	.0	.0	.0
Jul	88.1	68.9	78.5	103	1952	29	82.4	1993	52	1978	13	76.1	1984	0	418	.1	12.6	31.0	.0	.0	.0
Aug	86.2	67.4	76.8	101	1948	29	80.1	1975	46	1952	26	72.6	1982	0	365	@	9.0	31.0	.0	.0	.0
Sep	80.6	61.9	71.3	100+	1954	7	74.9	1998	39	1950	25	66.5	1982	11	197	.0	2.2	30.0	.0	.0	.0
Oct	70.7	50.1	60.4	98	1954	6	66.2	1971	23	1952	30	54.6	1988	194	51	.0	.2	30.8	.0	.4	.0
Nov	61.8	41.0	51.4	85	1950	1	58.9	1985	18+	1951	21	44.7	1976	412	5	.0	.0	26.6	.0	5.8	.0
Dec	53.0	33.7	43.4	80	1991	3	50.5	1971	4	1983	25	32.4	1989	673	0	.0	.0	18.7	.7	14.9	.0
Ann	69.4	49.3	59.4	105	Jun 1952	26	82.4	Jul 1993	-5	Jan 1985	21	28.7	Jan 1977	3467	1427	.1	31.1	314.4	4.2	64.3	.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/normals/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

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

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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	4.07	3.67	3.07	1967	8	9.05	1987	.67	1981
Feb	3.57	3.55	4.18	1998	4	7.93	1998	.75	1991
Mar	4.41	4.08	3.08	1994	2	11.18	1994	.93	1986
Apr	3.32	2.97	4.32	1991	20	7.22	1984	.38	1976
May	3.86	3.81	3.09	1958	6	7.92	1979	.90	1986
Jun	4.02	3.52	3.61	1963	2	10.13	1989	.29	1980
Jul	4.99	4.18	3.61	1994	19	12.21	1975	1.49	1974
Aug	5.49	5.42	6.25	1982	11	19.22	1992	.75	1972
Sep	4.96	3.59	9.19	1999	15	23.06	1999	.86	1986
Oct	3.64	3.34	5.77	1999	17	8.74	1971	.02	2000
Nov	3.11	2.94	3.22	1997	7	7.40	1997	.92	1981
Dec	3.27	3.24	2.20	1992	10	7.03	1973	.52	1988
Ann	48.71	48.54	9.19	Sep 1999	15	23.06	Sep 1999	.02	Oct 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.6	7.5	2.9	1.0
Feb	9.5	6.4	2.6	.8
Mar	10.5	7.3	3.3	1.2
Apr	9.2	6.1	2.4	.7
May	10.7	7.3	3.0	.9
Jun	9.4	6.1	2.6	1.4
Jul	11.3	7.5	3.2	1.6
Aug	9.8	6.7	3.5	1.5
Sep	8.2	5.8	3.0	1.4
Oct	7.0	5.0	2.4	1.1
Nov	8.1	5.5	2.6	.8
Dec	10.1	6.5	2.3	.6
Ann	114.4	77.7	33.8	13.0

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	1.50	1.88	2.43	2.89	3.33	3.77	4.26	4.82	5.54	6.64	7.65
Feb	1.33	1.67	2.15	2.55	2.92	3.31	3.73	4.22	4.84	5.80	6.68
Mar	1.65	2.06	2.65	3.15	3.61	4.09	4.61	5.21	5.98	7.15	8.23
Apr	.86	1.18	1.66	2.08	2.50	2.94	3.43	4.01	4.76	5.96	7.07
May	1.52	1.88	2.39	2.80	3.20	3.60	4.04	4.54	5.18	6.16	7.05
Jun	.80	1.17	1.76	2.30	2.84	3.43	4.09	4.89	5.95	7.64	9.25
Jul	1.52	2.00	2.71	3.32	3.91	4.52	5.19	5.98	7.01	8.60	10.08
Aug	1.22	1.73	2.54	3.26	3.99	4.76	5.63	6.67	8.03	10.21	12.26
Sep	.97	1.42	2.15	2.82	3.49	4.22	5.04	6.04	7.35	9.46	11.46
Oct	.56	.87	1.40	1.90	2.42	2.99	3.65	4.45	5.52	7.27	8.94
Nov	.98	1.28	1.72	2.09	2.45	2.83	3.24	3.72	4.34	5.31	6.20
Dec	.97	1.28	1.74	2.15	2.54	2.95	3.40	3.93	4.61	5.68	6.68
Ann	33.74	36.61	40.30	43.11	45.61	48.04	50.55	53.34	56.72	61.64	65.91

\+ 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
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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	1.5	.0	#	0
Feb	3.3	.0	#	#
Mar	1.3	.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	.1	.0	#	0
Dec	.6	.0	#	0
Ann	6.8	.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	8.0	1973	8	8.0	1973	8+	2000	25	1+	2000
Feb	17.0	1980	6	23.5	1989	17	1980	6	4	1980
Mar	10.0	1980	1	16.0	1980	16	1980	2	1	1980
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	1.5	1987	11	1.5	1987	2	1987	11	#+	2000
Dec	3.5	2000	3	3.5+	2000	4	2000	3	#+	2000
Ann	17.0	Feb 1980	6	23.5	Feb 1989	17	Feb 1980	6	4	Feb 1980

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	.9	.6	.3	.1	.0
Feb	.9	.7	.4	.2	.1
Mar	.4	.3	.2	.1	@
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	.1	@	.0	.0	.0
Dec	.5	.2	@	.0	.0
Ann	2.8	1.8	.9	.4	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	1.0	.5	.2	.0
Feb	1.2	.8	.5	.2
Mar	.2	.2	.1	.1
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
Dec	.2	@	.0	.0
Ann	2.6	1.5	.8	.3

+ 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	4/24	4/20	4/16	4/14	4/11	4/09	4/06	4/03	3/29
32	4/16	4/10	4/06	4/03	3/30	3/27	3/24	3/20	3/14
28	4/01	3/26	3/22	3/18	3/15	3/11	3/08	3/03	2/25
24	3/19	3/11	3/05	2/28	2/23	2/18	2/13	2/07	1/30
20	3/05	2/25	2/19	2/14	2/10	2/05	1/31	1/24	1/15
16	2/20	2/12	2/07	2/02	1/28	1/23	1/16	1/04	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	10/10	10/16	10/20	10/23	10/27	10/30	11/03	11/07	11/13
32	10/19	10/26	10/30	11/03	11/07	11/11	11/15	11/20	11/26
28	11/10	11/17	11/22	11/26	11/29	12/03	12/07	12/12	12/19
24	11/22	11/29	12/04	12/08	12/12	12/16	12/21	12/26	1/02
20	12/09	12/16	12/22	12/26	12/30	1/04	1/09	1/14	1/23
16	12/21	12/30	1/07	1/13	1/19	1/26	2/05	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	223	214	208	203	198	193	188	182	173
32	247	238	232	226	221	216	210	204	194
28	283	275	269	264	259	254	249	243	235
24	324	313	305	298	292	285	278	270	259
20	>365	343	332	326	320	314	309	302	294
16	>365	>365	>365	>365	363	348	338	328	315

***** 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.

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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	790	637	476	217	54	3	0	0	11	194	412	673	3467
60	644	504	328	105	13	0	0	0	2	105	278	526	2505
57	557	424	245	58	4	0	0	0	0	67	208	439	2002
55	501	373	196	36	1	0	0	0	0	47	167	384	1705
50	370	258	100	7	0	0	0	0	0	16	87	261	1099
32	69	28	1	0	0	0	0	0	0	0	0	26	124

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	302	315	548	784	1072	1264	1441	1388	1177	880	583	376	10130
55	21	16	30	129	361	574	728	675	487	214	60	21	3316
57	15	11	17	92	301	514	666	613	427	172	41	15	2884
60	9	6	7	48	217	424	573	520	338	118	21	8	2289
65	0	0	0	10	104	277	418	365	197	51	5	0	1427
70	0	0	0	1	34	145	263	215	83	16	0	0	757

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	160	325	553	828	1034	1203	1148	946	640	362	180	122	282	607	1160	1988	3022	4225	5373	6319	6959	7321	7501
45	60	91	201	406	673	884	1048	993	796	487	236	97	60	151	352	758	1431	2315	3363	4356	5152	5639	5875	5972
50	27	46	115	266	518	734	893	838	646	338	136	48	27	73	188	454	972	1706	2599	3437	4083	4421	4557	4605
55	8	18	54	157	364	584	738	683	496	206	72	20	8	26	80	237	601	1185	1923	2606	3102	3308	3380	3400
60	0	4	24	80	230	434	583	528	346	107	29	3	0	4	28	108	338	772	1355	1883	2229	2336	2365	2368
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	72	100	193	331	526	712	841	804	636	385	207	104	72	172	365	696	1222	1934	2775	3579	4215	4600	4807	4911

(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.
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