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: SPANISH FORK PWR HOUSE, UT **COOP ID: 428119**

Climate Division: UT 3 **NWS Call Sign:** **Elevation: 4,720 Feet** **Lat: 40˚05N** **Lon: 111˚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	37.0	20.4	28.7	63	1953	12	36.6	2000	-16+	1937	22	19.1	1984	1126	0	.0	.0	2.6	10.1	28.1	.9
Feb	43.8	24.3	34.1	72+	1972	28	43.4	1995	-20	1989	7	24.7	1984	867	0	.0	.0	7.4	3.7	23.0	.4
Mar	54.6	31.5	43.1	80+	1943	28	50.1	1986	1	1948	11	36.7	1976	681	0	.0	.0	20.7	.3	17.4	.0
Apr	63.8	37.6	50.7	87+	1934	23	57.7	1992	14	1945	3	43.5	1975	435	6	.0	.0	26.6	.0	7.7	.0
May	73.9	45.2	59.6	97+	1994	30	64.2	1994	25	1965	6	54.5	1977	201	33	.0	.6	30.6	.0	1.0	.0
Jun	85.2	52.5	68.9	104	1936	21	74.0	1994	29	1976	14	63.1	1998	46	161	.4	10.6	30.0	.0	@	.0
Jul	92.3	59.4	75.9	108+	1931	21	78.7	1989	41	1982	6	71.4	1993	1	337	1.5	23.1	31.0	.0	.0	.0
Aug	90.1	58.1	74.1	104+	1940	12	77.6	1994	38	1964	30	71.1	1975	2	283	.6	17.7	31.0	.0	.0	.0
Sep	80.2	49.8	65.0	98+	1947	2	70.1	1990	26	1965	18	60.0	1986	83	82	.0	2.9	29.9	.0	.3	.0
Oct	66.5	40.0	53.3	89	1957	1	59.3	1988	13	1971	30	47.5	1984	369	5	.0	.0	28.5	@	4.5	.0
Nov	49.2	29.9	39.6	76+	1931	7	47.6	1999	-6	1955	16	31.9	2000	764	0	.0	.0	14.7	1.7	18.1	.0
Dec	38.0	21.8	29.9	65+	1939	10	36.7	1977	-14	1990	23	22.7	1990	1088	0	.0	.0	3.6	8.0	27.7	.7
Ann	64.6	39.2	51.9	108+	Jul 1931	21	78.7	Jul 1989	-20	Feb 1989	7	19.1	Jan 1984	5663	907	2.5	54.9	256.6	23.8	127.8	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: 1928-2001

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

Issue Date: February 2004

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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	1.87	1.68	1.32	1954	25	4.21	1980	.43	1972
Feb	2.10	2.07	1.49	1983	28	4.77	1998	.30	1988
Mar	2.35	2.37	2.03	1996	23	4.28	1978	.73	1972
Apr	2.28	2.10	1.49	1986	2	4.70	1986	.16	1992
May	2.25	2.03	2.86	1975	20	6.10	1995	.04	1974
Jun	1.09	.77	1.92	1998	4	5.04	1998	.00+	1994
Jul	.91	.71	2.87	1974	16	3.15	1974	.03	1980
Aug	1.03	.79	1.67	1987	24	4.77	1983	.07	1985
Sep	1.52	1.29	1.88	1963	6	8.08	1982	.02	1974
Oct	2.16	2.10	2.54	1979	20	6.76	1981	.04	1999
Nov	2.21	2.00	1.64	1958	15	4.62	1994	.54	1976
Dec	1.78	1.72	1.78	1951	29	6.10	1983	.18+	1989
Ann	21.55	22.16	2.87	Jul 1974	16	8.08	Sep 1982	.00+	Jun 1994

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	10.3	5.4	.9	@
Feb	9.7	5.7	1.1	.3
Mar	10.6	6.3	1.6	.2
Apr	10.0	6.3	1.4	.1
May	9.1	5.2	1.4	.4
Jun	4.9	2.7	.6	.1
Jul	5.3	2.5	.4	.1
Aug	5.9	2.6	.6	.1
Sep	6.4	3.6	1.0	.3
Oct	7.3	4.8	1.3	.4
Nov	9.8	5.6	1.5	.2
Dec	9.2	5.1	.9	.1
Ann	98.5	55.8	12.7	2.3

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	.52	.70	.97	1.20	1.43	1.67	1.94	2.25	2.66	3.30	3.89
Feb	.47	.66	.97	1.25	1.53	1.82	2.15	2.55	3.07	3.90	4.69
Mar	.78	1.00	1.33	1.61	1.87	2.15	2.45	2.80	3.26	3.96	4.61
Apr	.55	.76	1.09	1.39	1.68	1.99	2.34	2.75	3.30	4.16	4.97
May	.29	.47	.79	1.10	1.43	1.80	2.22	2.75	3.46	4.63	5.76
Jun	.00	.00	.18	.36	.55	.77	1.03	1.35	1.80	2.56	3.31
Jul	.05	.10	.21	.34	.48	.64	.84	1.10	1.47	2.08	2.70
Aug	.06	.12	.25	.39	.55	.73	.96	1.24	1.65	2.33	3.01
Sep	.10	.19	.38	.59	.83	1.10	1.42	1.84	2.42	3.40	4.38
Oct	.18	.33	.61	.91	1.24	1.62	2.07	2.63	3.41	4.72	6.00
Nov	.77	.98	1.28	1.54	1.78	2.03	2.31	2.63	3.04	3.67	4.26
Dec	.33	.49	.75	.99	1.24	1.50	1.81	2.17	2.66	3.45	4.20
Ann	13.21	14.73	16.74	18.29	19.69	21.06	22.50	24.11	26.08	28.99	31.55

\+ 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: 1928-2001
(3) Derived from 1971-2000 serially complete daily data

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Snow (inches)

Snow Totals

Means/Medians (1)

Extremes (2)

Mean Number of Days (1)

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	17.6	15.0	5	6	12.0	1980	29	48.5	1993	20	1989	13	14+	1989	6.6	5.5	2.3	1.0	.2	21.4	18.1	13.6	8.8
Feb	13.4	11.5	4	2	12.0	1989	4	36.2	1989	27	1989	5	15	1989	5.5	4.6	1.7	.8	.2	13.6	9.6	7.2	4.2
Mar	7.7	5.5	#	#	10.0	1996	23	22.5	1976	9	1997	1	2	1985	3.0	2.4	1.1	.5	@	2.8	1.6	.8	.0
Apr	3.8	1.3	#	0	8.0	1982	7	15.0	1982	6	1973	1	#+	1999	1.5	1.3	.5	.3	.0	.6	.2	.0	.0
May	.2	.0	#	0	5.0	1975	20	6.0	1975	#+	1999	16	#+	1999	.1	.1	@	@	.0	.0	.0	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	2	1998	4	#	1998	.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	.8	.0	#	0	5.0	1984	27	10.0	1984	8	1971	28	1	1971	.4	.3	.1	@	.0	.2	@	.0	.0
Nov	7.9	5.5	1	#	15.0	1973	3	40.5	1994	18	1975	29	4	1994	3.3	2.7	1.1	.3	@	4.9	2.8	1.6	.1
Dec	13.9	12.0	3	2	13.0	1985	8	45.5	1983	24	1988	29	10	1988	5.6	4.5	2.0	1.0	@	17.8	11.7	6.2	1.9
Ann	65.3	50.8	N/A	N/A	15.0	Nov 1973	3	48.5	Jan 1993	27	Feb 1989	5	15	Feb 1989	26.0	21.4	8.8	3.9	.4	61.3	44.0	29.4	15.0

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

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

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

(2) Derived from 1971-2000 daily data

-9/-9.9 represents missing values

Annual statistics for Mean/Median snow depths are not appropriate

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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	6/06	5/31	5/26	5/22	5/18	5/14	5/10	5/05	4/29
32	5/22	5/15	5/09	5/05	5/01	4/26	4/22	4/17	4/09
28	5/03	4/26	4/21	4/17	4/13	4/09	4/05	3/31	3/24
24	4/18	4/11	4/06	4/02	3/28	3/24	3/20	3/15	3/08
20	4/06	3/29	3/23	3/18	3/14	3/09	3/04	2/27	2/19
16	3/18	3/11	3/05	2/28	2/24	2/20	2/15	2/10	2/02

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	9/16	9/21	9/25	9/28	9/30	10/03	10/06	10/10	10/14
32	9/28	10/04	10/09	10/12	10/16	10/19	10/23	10/27	11/03
28	10/09	10/14	10/18	10/22	10/25	10/28	10/31	11/04	11/10
24	10/25	10/29	11/01	11/04	11/06	11/08	11/11	11/14	11/18
20	10/31	11/04	11/08	11/11	11/13	11/16	11/19	11/22	11/27
16	11/08	11/13	11/17	11/20	11/23	11/26	11/29	12/03	12/08

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	158	150	144	139	135	130	125	119	111
32	200	189	181	174	167	161	154	146	135
28	219	211	204	199	194	189	184	178	169
24	245	237	231	226	222	217	212	206	198
20	273	263	256	250	244	238	232	225	215
16	298	289	282	276	271	266	260	254	244

***** 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	1126	867	681	435	201	46	1	2	83	369	764	1088	5663
60	971	727	527	300	103	13	0	0	29	234	614	933	4451
57	878	643	438	228	62	5	0	0	12	166	526	840	3798
55	816	587	382	187	41	3	0	0	6	127	469	778	3396
50	667	456	250	103	12	0	0	0	1	58	334	623	2504
32	218	101	15	0	0	0	0	0	0	0	38	156	528

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	115	158	357	561	855	1105	1359	1305	990	659	264	91	7819
55	0	0	11	58	183	418	646	592	306	73	5	0	2292
57	0	0	5	39	142	360	584	530	252	50	3	0	1965
60	0	0	1	21	90	278	491	437	178	25	0	0	1521
65	0	0	0	6	33	161	337	283	82	5	0	0	907
70	0	0	0	0	8	76	190	142	26	0	0	0	442

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	7	41	154	334	609	866	1118	1063	754	426	108	13	7	48	202	536	1145	2011	3129	4192	4946	5372	5480	5493
45	0	10	73	208	457	716	963	908	605	288	45	3	0	10	83	291	748	1464	2427	3335	3940	4228	4273	4276
50	0	0	25	110	313	567	808	753	455	170	11	0	0	0	25	135	448	1015	1823	2576	3031	3201	3212	3212
55	0	0	2	47	189	422	653	598	314	79	0	0	0	0	2	49	238	660	1313	1911	2225	2304	2304	2304
60	0	0	0	16	95	285	498	444	186	21	0	0	0	0	0	16	111	396	894	1338	1524	1545	1545	1545
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	24	108	222	390	547	704	682	486	271	62	5	0	24	132	354	744	1291	1995	2677	3163	3434	3496	3501

(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