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: MODENA, UT **COOP ID: 425752**

Climate Division: UT 1 **NWS Call Sign:** **Elevation: 5,460 Feet** **Lat: 37˚48N** **Lon: 113˚56W**

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	42.5	15.0	28.8	70	1990	10	36.8	1986	-23	1962	23	21.0	1973	1123	0	.0	.0	7.1	4.4	30.4	3.5
Feb	48.3	20.3	34.3	77	1986	25	41.9	1995	-29	1989	7	26.6	1989	860	0	.0	.0	12.5	1.7	27.0	1.1
Mar	56.0	25.1	40.6	78	1966	31	46.1	1972	-5	1966	4	34.7	1977	758	0	.0	.0	22.5	.2	26.4	@
Apr	64.6	29.6	47.1	88	1977	13	53.5	2000	9	1970	4	39.9	1975	538	1	.0	.0	27.2	.0	19.7	.0
May	73.9	37.5	55.7	97	2001	23	61.7	2000	15	1975	21	50.6	1995	302	14	.0	.8	30.8	.0	7.6	.0
Jun	85.5	45.1	65.3	104	1954	23	69.7	1994	27+	1962	3	60.3	1998	84	92	.1	9.6	30.0	.0	.7	.0
Jul	91.2	52.8	72.0	105	1985	5	75.5	1996	34	1978	6	68.7	1983	6	222	1.0	20.5	31.0	.0	.0	.0
Aug	88.8	51.6	70.2	103	1958	11	73.5	1994	32	1968	23	67.0	1976	11	172	.3	14.5	31.0	.0	.0	.0
Sep	80.9	43.4	62.2	99+	1948	2	68.5	1979	20+	1948	26	56.3	1986	131	45	.0	2.8	30.0	.0	2.2	.0
Oct	68.5	31.9	50.2	89+	1963	1	56.2	1988	-12	1971	30	44.6	1971	459	1	.0	.0	29.5	.1	16.0	.0
Nov	53.3	22.0	37.7	79	1980	6	43.8	1999	-7	1956	20	28.1	1994	821	0	.0	.0	18.9	.6	27.3	.4
Dec	44.1	15.1	29.6	70	1977	3	38.1	1977	-28	1990	23	19.7	1990	1099	0	.0	.0	9.1	3.6	30.2	2.0
Ann	66.5	32.5	49.5	105	Jul 1985	5	75.5	Jul 1996	-29	Feb 1989	7	19.7	Dec 1990	6192	547	1.4	48.2	279.6	10.6	187.5	7.0

\+ 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: 1948-2001

(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	.88	.55	.95	1990	17	4.38	1993	.03	1972
Feb	.96	.72	1.34	1978	10	2.94	1993	.00	1972
Mar	1.18	.90	1.25	1954	23	4.67	1992	.00+	1997
Apr	.78	.66	1.52	1988	17	4.48	1988	.04	1974
May	.81	.59	1.32	1975	20	2.51	1977	.00+	1984
Jun	.37	.28	.92	1949	4	2.29	1995	.00+	1996
Jul	1.14	.78	1.58	1984	22	6.99	1984	.06	2000
Aug	1.22	1.21	2.04	1970	14	2.93	1986	.00+	1985
Sep	1.06	.47	1.85	1997	3	4.86	1997	.00+	1993
Oct	1.22	1.09	1.80	1985	9	3.48	1985	.00+	1999
Nov	.82	.55	1.57	1963	7	3.59	1994	.00+	1995
Dec	.50	.37	1.50	1949	10	1.84	1984	.00+	2000
Ann	10.94	10.74	2.04	Aug 1970	14	6.99	Jul 1984	.00+	Dec 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	4.7	2.9	.2	.0
Feb	5.4	2.8	.4	.1
Mar	6.8	3.6	.5	.1
Apr	5.1	2.8	.2	.1
May	5.5	2.7	.2	.1
Jun	3.0	1.4	.1	.0
Jul	5.0	2.9	.5	.2
Aug	5.5	3.0	.9	.2
Sep	4.2	2.4	.7	.2
Oct	4.9	3.3	.6	.2
Nov	3.6	2.3	.4	.1
Dec	3.8	1.7	.2	@
Ann	57.5	31.8	4.9	1.3

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	.04	.08	.18	.29	.43	.59	.79	1.06	1.43	2.08	2.73
Feb	.04	.12	.27	.40	.56	.73	.93	1.17	1.52	2.08	2.64
Mar	.00	.08	.26	.44	.64	.86	1.13	1.46	1.92	2.69	3.45
Apr	.05	.10	.20	.31	.43	.57	.73	.95	1.25	1.76	2.26
May	.00	.00	.22	.36	.50	.65	.82	1.03	1.30	1.75	2.18
Jun	.00	.00	.00	.11	.19	.27	.36	.48	.63	.88	1.12
Jul	.09	.17	.32	.48	.65	.85	1.08	1.38	1.79	2.48	3.16
Aug	.00	.09	.29	.47	.68	.91	1.17	1.50	1.96	2.73	3.48
Sep	.00	.00	.10	.24	.41	.63	.90	1.26	1.78	2.68	3.60
Oct	.00	.19	.43	.62	.81	1.02	1.25	1.52	1.89	2.48	3.05
Nov	.00	.03	.14	.26	.39	.55	.75	1.00	1.35	1.95	2.55
Dec	.00	.00	.09	.19	.28	.38	.49	.64	.83	1.13	1.44
Ann	6.61	7.39	8.43	9.23	9.96	10.67	11.42	12.26	13.29	14.81	16.14

\+ 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

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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	9.1	6.0	2	1
Feb	5.6	4.0	1	#
Mar	3.6	1.5	#	0
Apr	2.2	.0	#	0
May	1.2	.0	0	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	#	.0	0	0
Oct	1.1	.0	#	0
Nov	3.1	.2	#	0
Dec	4.5	1.5	1	#
Ann	30.4	13.2	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	14.0	1993	31	29.1	1993	20	1993	31	9	1988
Feb	13.0	1989	4	19.3	1993	14	1989	9	4	1993
Mar	10.0	1987	22	19.0	1987	6	1998	6	4	1980
Apr	6.0	1972	13	8.0	1971	4	1972	13	#+	1998
May	25.0	1975	20	25.0	1975	14	1975	20	1	1975
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	#	1971	30	#	1971	0	0	0	0	0
Oct	12.0	1971	28	16.0	1971	12	1971	28	1	1971
Nov	18.0	1994	3	33.3	1994	12	1994	3	4	1994
Dec	10.0	1971	28	18.0	1971	12	1984	19	4	1972
Ann	25.0	May 1975	20	33.3	Nov 1994	20	Jan 1993	31	9	Jan 1988

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	2.5	1.9	1.1	.4	.1
Feb	2.1	1.2	.5	.2	@
Mar	1.6	1.2	.4	.2	@
Apr	.7	.4	.2	.1	.0
May	.1	.1	.1	@	@
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	.4	.3	.1	@	@
Nov	.9	.6	.3	.2	@
Dec	2.1	1.3	.4	.2	@
Ann	10.4	7.0	3.1	1.3	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	9.6	5.7	3.1	.9
Feb	3.7	2.0	1.5	.6
Mar	.4	@	.0	.0
Apr	.2	.1	.0	.0
May	@	@	@	@
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	.2	.2	.2	.1
Nov	1.5	.8	.5	@
Dec	3.8	2.2	1.4	.0
Ann	19.4	11.0	6.7	1.6

+ 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	6/28	6/22	6/18	6/14	6/11	6/08	6/04	5/31	5/25
32	6/16	6/10	6/06	6/02	5/30	5/27	5/23	5/19	5/13
28	6/01	5/26	5/23	5/19	5/16	5/13	5/10	5/06	5/01
24	5/21	5/13	5/07	5/02	4/27	4/22	4/17	4/11	4/03
20	5/08	5/01	4/25	4/20	4/16	4/12	4/07	4/02	3/25
16	4/26	4/15	4/08	4/01	3/26	3/20	3/14	3/06	2/24

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	9/01	9/07	9/10	9/14	9/17	9/20	9/23	9/27	10/02
32	9/13	9/17	9/20	9/23	9/25	9/27	9/30	10/03	10/07
28	9/18	9/24	9/27	10/01	10/04	10/07	10/10	10/14	10/19
24	9/27	10/03	10/07	10/11	10/14	10/18	10/22	10/26	11/01
20	10/14	10/19	10/23	10/26	10/29	11/02	11/05	11/09	11/14
16	10/23	10/28	10/31	11/03	11/06	11/09	11/12	11/15	11/20

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	121	113	107	102	97	92	87	81	73
32	136	130	125	121	117	113	109	105	98
28	162	154	149	144	140	135	130	125	117
24	202	191	183	176	169	163	156	148	137
20	224	214	207	201	196	190	184	177	167
16	259	247	238	231	224	217	210	201	189

***** 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)

Base	Heating Degree Days (1)												
Below	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
65	1123	860	758	538	302	84	6	11	131	459	821	1099	6192
60	968	720	603	396	179	30	0	1	54	312	671	944	4878
57	875	636	511	316	122	13	0	0	27	233	581	851	4165
55	813	580	451	266	91	7	0	0	15	186	521	789	3719
50	658	442	307	162	36	1	0	0	3	92	379	634	2714
32	198	75	18	5	0	0	0	0	0	0	47	179	522

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	98	139	283	458	735	999	1239	1184	905	565	216	104	6925
55	0	0	3	29	113	316	526	471	230	38	1	0	1727
57	0	0	1	19	82	262	464	409	181	23	0	0	1441
60	0	0	0	9	47	189	372	317	118	9	0	0	1061
65	0	0	0	1	14	92	222	172	45	1	0	0	547
70	0	0	0	0	2	33	99	64	10	0	0	0	208

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	3	26	95	241	492	770	997	943	664	342	68	7	3	29	124	365	857	1627	2624	3567	4231	4573	4641	4648
45	0	2	33	127	345	620	842	788	515	209	15	0	0	2	35	162	507	1127	1969	2757	3272	3481	3496	3496
50	0	0	2	50	210	470	687	633	368	99	0	0	0	0	2	52	262	732	1419	2052	2420	2519	2519	2519
55	0	0	0	13	102	323	532	478	232	33	0	0	0	0	0	13	115	438	970	1448	1680	1713	1713	1713
60	0	0	0	0	32	190	379	323	112	4	0	0	0	0	0	0	32	222	601	924	1036	1040	1040	1040
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	25	52	120	230	376	511	618	598	466	305	98	26	25	77	197	427	803	1314	1932	2530	2996	3301	3399	3425

(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

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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