

# Climatography of the United States No. 20

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

Station: FORT DUCHESNE, UT

1971-2000

COOP ID: 422996

Climate Division: UT 6

NWS Call Sign:

Elevation: 5,050 Feet Lat: 40° 17N

Lon: 109° 52W

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	30.0	4.8	17.4	60	1959	19	29.5	2000	-40	1937	9	.7	1973	1476	0	.0	.0	.5	18.0	31.0	11.5
Feb	37.0	10.2	23.6	67	1972	29	36.8	2000	-35	1933	10	8.4	1985	1159	0	.0	.0	3.3	10.2	27.8	6.2
Mar	52.2	24.1	38.2	84	1998	27	45.7	1986	-15	1962	1	29.7	1984	833	0	.0	.0	18.0	1.5	27.1	.3
Apr	63.8	31.3	47.6	87+	1934	30	53.4	1992	3	1975	3	41.4	1975	524	0	.0	.0	27.3	@	16.8	.0
May	73.7	40.2	57.0	92+	1947	3	62.6	2000	17	1997	3	51.1	1999	264	14	.0	.3	30.8	.0	4.0	.0
Jun	85.2	47.3	66.3	103	1954	23	71.4	1977	21+	1998	8	58.1	1998	84	121	.3	9.7	30.0	.0	.7	.0
Jul	91.9	54.0	73.0	105+	1989	8	75.5+	1998	30	1968	1	68.6	1993	4	249	1.1	20.0	31.0	.0	.0	.0
Aug	89.7	51.9	70.8	106+	1994	18	75.1	1994	30	1964	30	66.6	1975	14	194	.4	15.7	31.0	.0	.0	.0
Sep	79.2	42.4	60.8	98	1933	5	65.5	1998	20	1988	19	55.0	1971	161	35	.0	2.7	30.0	.0	2.4	.0
Oct	65.3	32.0	48.7	89+	1963	1	56.7	1999	-1	1971	30	43.9	1984	508	1	.0	.0	28.8	.2	16.4	@
Nov	46.4	21.0	33.7	72+	1958	10	38.8	1998	-19+	1931	24	24.8	1971	939	0	.0	.0	12.1	3.0	28.1	.3
Dec	33.5	9.0	21.3	61+	1958	6	31.1	1980	-39	1990	24	9.8	1972	1358	0	.0	.0	.9	13.6	30.9	5.9
Ann	62.3	30.7	46.5	106+	Aug 1994	18	75.5+	Jul 1998	-40	Jan 1937	9	.7	Jan 1973	7324	614	1.8	48.4	243.7	46.5	185.2	24.2

+ 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: 1928-2001

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

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**Station: FORT DUCHESNE, UT**

**COOP ID: 422996**

**Climate Division: UT 6**

**NWS Call Sign:**

**Elevation: 5,050 Feet Lat: 40°17N**

**Lon: 109°52W**

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	.38	.34	.60	1950	3	1.11	1980	.00+	1981	5.1	1.3	.0	.0	.00	.00	.08	.14	.21	.28	.37	.47	.61	.85	1.08
Feb	.34	.31	1.05	1983	28	1.14	1983	.00+	1982	3.9	1.1	.1	@	.00	.04	.10	.15	.21	.27	.34	.42	.53	.72	.89
Mar	.44	.27	1.50	1929	23	1.64	1975	.00	1974	4.2	1.3	.1	@	.01	.03	.08	.14	.21	.29	.39	.52	.71	1.03	1.35
Apr	.55	.49	.90	1932	21	1.85	1986	.00	1992	4.6	1.7	.2	.0	.02	.06	.14	.22	.30	.41	.53	.68	.89	1.24	1.59
May	.73	.57	1.51	1945	6	2.43	1995	.01	1974	6.4	2.5	.2	.0	.06	.11	.21	.31	.42	.55	.70	.89	1.14	1.58	2.00
Jun	.45	.31	1.30	1965	11	1.73	1975	.00+	1982	3.2	1.5	.1	@	.00	.00	.08	.15	.23	.32	.42	.56	.75	1.06	1.37
Jul	.54	.27	1.12	1984	23	2.13	1975	.00+	1994	4.9	1.5	.2	.1	.00	.01	.06	.13	.21	.32	.46	.64	.90	1.36	1.84
Aug	.68	.48	3.06	1978	14	3.55	1978	.00	2000	5.4	2.0	.2	@	.01	.05	.13	.22	.33	.46	.62	.82	1.11	1.61	2.11
Sep	.69	.41	1.25	1980	11	2.90	1997	.00+	1979	5.0	2.1	.3	@	.00	.03	.13	.23	.34	.48	.64	.85	1.14	1.63	2.12
Oct	.98	.61	1.43	1961	9	3.77	1994	.00	1999	5.2	2.9	.6	.0	.04	.11	.25	.40	.55	.73	.93	1.20	1.56	2.16	2.75
Nov	.31	.24	1.20	1953	18	1.06	1978	.00+	1999	3.4	1.1	@	.0	.00	.02	.06	.11	.16	.22	.29	.38	.50	.71	.92
Dec	.31	.29	1.15	1951	30	.83	1971	.00+	1980	3.7	1.1	.1	.0	.00	.02	.07	.12	.17	.23	.30	.38	.50	.70	.89
Ann	6.40	6.18	3.06	Aug 1978	14	3.77	Oct 1994	.00+	Aug 2000	55.0	20.1	2.1	.1	2.95	3.51	4.28	4.91	5.49	6.08	6.70	7.41	8.31	9.67	10.89

+ 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

Complete documentation available from:

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Station: FORT DUCHESNE, UT

COOP ID: 422996

Climate Division: UT 6

NWS Call Sign:

Elevation: 5,050 Feet

Lat: 40° 17N

Lon: 109° 52W

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	1.6	-99.9	3	0	4.0	1988	18	6.5	1975	15	1979	26	15	1979	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Feb	2.6	1.5	#	0	5.5	1994	11	6.8	1975	4	1977	3	1	1989	1.4	.7	.2	.1	.0	.0	.0	.0	.0
Mar	.8	.0	#	0	3.5	1988	10	4.2	1988	2	1978	3	1	1993	.8	.3	.1	.0	.0	.0	.0	.0	.0
Apr	.3	.0	0	0	3.0	1991	11	3.0	1991	0	0	0	0	0	.2	.2	.1	.0	.0	.0	.0	.0	.0
May	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Jun	.0	.0	0	0	.0	0	0	.0	0	0	0	0	0	0	.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	.2	.0	#	0	1.0	1973	23	1.5	1973	3	1980	24	#	1980	.2	.1	.0	.0	.0	.0	.0	.0	.0
Dec	1.3	.0	1	0	3.0	1973	30	4.0	1973	8	1978	1	8	1978	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9
Ann	6.8	-9.9	N/A	N/A	5.5	Feb 1994	11	6.8	Feb 1975	15	Jan 1979	26	15	Jan 1979	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9	-9.9

+ 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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## No. 20 1971-2000

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**COOP ID: 422996**

**Climate Division: UT 6**

**NWS Call Sign:**

**Elevation: 5,050 Feet**

**Lat: 40° 17N**

**Lon: 109° 52W**

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	6/23	6/15	6/10	6/06	6/01	5/28	5/24	5/18	5/11
32	6/11	6/04	5/30	5/25	5/21	5/17	5/12	5/07	4/30
28	5/31	5/22	5/16	5/11	5/06	5/01	4/26	4/20	4/11
24	5/12	5/05	5/01	4/27	4/23	4/19	4/15	4/10	4/03
20	4/27	4/19	4/14	4/09	4/04	3/30	3/26	3/20	3/12
16	4/18	4/09	4/03	3/28	3/23	3/18	3/12	3/06	2/25
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	9/08	9/12	9/15	9/17	9/20	9/22	9/24	9/27	10/01
32	9/15	9/19	9/22	9/25	9/27	9/30	10/02	10/06	10/10
28	9/21	9/26	9/30	10/04	10/07	10/10	10/14	10/18	10/23
24	10/01	10/07	10/11	10/15	10/18	10/21	10/25	10/29	11/04
20	10/14	10/19	10/23	10/27	10/30	11/02	11/05	11/09	11/15
16	10/24	10/29	11/02	11/05	11/08	11/11	11/14	11/17	11/22
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	132	124	119	114	109	105	100	94	87
32	154	145	139	134	129	124	118	112	103
28	181	171	165	159	153	148	142	135	126
24	203	194	188	183	178	172	167	161	152
20	240	229	221	214	208	202	195	187	176
16	261	250	242	235	229	223	216	208	197

\* 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:

[www.ncdc.noaa.gov/oa/climate/normal/usnormals.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormals.html)

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**COOP ID: 422996**

**Climate Division: UT 6      NWS Call Sign:      Elevation: 5,050 Feet    Lat: 40°17N      Lon: 109°52W**

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	1476	1159	833	524	264	84	4	14	161	508	939	1358	7324
60	1321	1025	678	381	146	33	0	2	73	359	789	1203	6010
57	1231	948	587	299	91	16	0	0	39	276	699	1110	5296
55	1172	895	529	249	63	9	0	0	24	225	639	1048	4853
50	1026	766	387	145	20	1	0	0	5	121	491	893	3855
32	542	374	69	3	0	0	0	0	0	1	95	388	1472

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	89	139	259	468	773	1027	1269	1203	864	517	146	53	6807
55	6	16	6	25	123	347	556	490	198	28	0	0	1795
57	3	13	2	15	89	293	494	428	154	16	0	0	1507
60	0	6	0	7	50	220	401	337	97	6	0	0	1124
65	0	0	0	0	14	121	249	194	35	1	0	0	614
70	0	0	0	0	2	53	116	82	7	0	0	0	260

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	0	4	73	245	528	784	1016	958	629	295	27	0	0	4	77	322	850	1634	2650	3608	4237	4532	4559	4559
45	0	0	24	136	379	634	861	803	482	168	5	0	0	0	24	160	539	1173	2034	2837	3319	3487	3492	3492
50	0	0	4	60	237	487	706	648	336	75	0	0	0	0	4	64	301	788	1494	2142	2478	2553	2553	2553
55	0	0	0	21	127	346	551	494	205	22	0	0	0	0	0	21	148	494	1045	1539	1744	1766	1766	1766
60	0	0	0	5	53	212	396	342	99	1	0	0	0	0	0	5	58	270	666	1008	1107	1108	1108	1108
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	11	82	209	365	507	624	603	437	253	41	0	0	11	93	302	667	1174	1798	2401	2838	3091	3132	3132

(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](http://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.  
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.

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## 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)