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: DALHART MUNICIPAL AP, TX **COOP ID: 412240**

Climate Division: TX 1 **NWS Call Sign: DHT** **Elevation: 3,990 Feet** **Lat: 36˚01N** **Lon: 102˚33W**

Temperature (˚F)

Month	Mean (1)			Extremes										Degree Days (1) Base Temp 65		Mean Number of Days (3)					
	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	47.9	19.0	33.5	82	1956	5	41.1	1986	-21	1959	4	24.0	1979	979	0	.0	.0	16.6	4.0	29.6	.9
Feb	52.7	23.3	38.0	85	1963	1	46.0	2000	-19	1951	1	28.6	1978	756	0	.0	.0	18.4	2.5	23.9	.6
Mar	60.3	29.7	45.0	90+	1989	11	51.1	1986	0	1960	3	40.1	1998	619	0	.0	.1	25.8	.5	18.1	.0
Apr	68.1	38.2	53.2	94+	1989	22	59.7	1981	16	1979	4	45.6	1997	366	11	.0	.5	28.1	@	6.7	.0
May	76.6	48.6	62.6	102	1996	15	68.3	2000	27+	1991	1	57.9	1983	136	60	.1	3.1	30.8	.0	.4	.0
Jun	86.3	58.1	72.2	107+	1990	24	77.8	1990	40	1955	10	66.6	1989	19	235	2.0	12.3	30.0	.0	.0	.0
Jul	90.0	62.8	76.4	105+	1994	2	82.3	1980	49	1987	13	73.5	1972	1	353	1.8	19.9	31.0	.0	.0	.0
Aug	87.7	61.5	74.6	103+	1959	3	80.5	2000	43	1988	29	71.5	1992	3	301	.3	15.3	31.0	.0	.0	.0
Sep	80.3	53.1	66.7	103	1995	5	71.8	1998	27	1985	30	61.0	1974	63	112	.2	6.4	29.8	.0	.2	.0
Oct	70.4	40.8	55.6	96	2000	3	58.3+	1979	9	1993	30	50.4	1976	295	4	.0	.6	29.7	.1	3.7	.0
Nov	57.5	28.2	42.9	89	1980	8	48.6	1999	-5	1976	28	35.3	1972	665	0	.0	.0	22.6	.7	19.8	.1
Dec	48.6	20.4	34.5	82+	1955	24	41.5	1980	-12	1961	12	24.3	1983	946	0	.0	.0	16.8	3.2	28.8	1.0
Ann	68.9	40.3	54.6	107+	Jun 1990	24	82.3	Jul 1980	-21	Jan 1959	4	24.0	Jan 1979	4848	1076	4.4	58.2	310.6	11.0	131.2	2.6

\+ 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

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	.52	.39	1.27	1983	21	1.73	1983	.00+	1986
Feb	.40	.27	1.22	1966	27	1.77	1978	.00+	1994
Mar	1.08	.76	2.12	1985	20	3.71	2000	.00	1972
Apr	1.35	1.01	1.61	1993	3	4.52	1997	.01	1996
May	2.72	2.66	2.49	1995	7	5.69	1991	.20	1974
Jun	2.27	2.02	2.96	1975	20	7.00	1993	.01	1990
Jul	3.11	2.39	3.65	1972	16	8.92	1982	.27	1987
Aug	2.99	2.58	4.52	1985	2	9.77	1981	.08	2000
Sep	1.56	1.27	3.39	1985	11	8.38	1985	.00	2000
Oct	1.32	.75	4.02	1953	20	5.66	1998	.03	1975
Nov	.71	.37	1.86	1971	15	3.19	1971	.00+	1999
Dec	.54	.35	1.21	1997	23	2.23	1997	.00+	1985
Ann	18.57	17.92	4.52	Aug 1985	2	9.77	Aug 1981	.00+	Sep 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	3.7	1.5	.2	@
Feb	3.2	1.2	.2	.0
Mar	4.6	2.3	.6	.3
Apr	5.4	3.0	.9	.3
May	7.4	4.6	1.9	.8
Jun	7.8	4.3	1.4	.6
Jul	8.2	5.1	2.2	.9
Aug	8.4	5.4	1.9	.8
Sep	6.1	3.0	1.0	.3
Oct	4.4	2.5	.7	.3
Nov	3.7	1.7	.4	.1
Dec	3.5	1.6	.1	@
Ann	66.4	36.2	11.5	4.4

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	.00	.00	.11	.20	.29	.39	.51	.66	.85	1.17	1.49
Feb	.00	.00	.01	.05	.11	.19	.29	.44	.67	1.08	1.50
Mar	.02	.08	.21	.36	.53	.73	.98	1.31	1.77	2.55	3.34
Apr	.08	.16	.33	.51	.72	.96	1.26	1.63	2.16	3.05	3.93
May	.58	.83	1.23	1.60	1.96	2.35	2.79	3.31	4.00	5.11	6.15
Jun	.20	.36	.66	.97	1.32	1.71	2.18	2.77	3.58	4.93	6.26
Jul	.45	.71	1.16	1.59	2.04	2.53	3.10	3.80	4.74	6.27	7.74
Aug	.33	.55	.97	1.39	1.83	2.34	2.92	3.65	4.65	6.30	7.91
Sep	.03	.11	.30	.52	.77	1.06	1.42	1.89	2.54	3.67	4.79
Oct	.04	.09	.23	.39	.59	.84	1.15	1.56	2.15	3.18	4.23
Nov	.00	.00	.09	.19	.32	.46	.64	.86	1.18	1.73	2.29
Dec	.00	.05	.14	.23	.32	.42	.53	.67	.87	1.19	1.51
Ann	12.27	13.46	15.00	16.18	17.24	18.27	19.34	20.53	21.98	24.11	25.96

\+ 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)

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	4.6	4.3	#	0	12.5	1983	21	15.2	1983	12+	1999	30	2+	1990	2.8	1.7	.3	.1	@	5.3	1.9	.7	.1
Feb	3.0	.8	#	0	7.7	1983	4	16.5	1978	12	1983	5	3+	1983	2.2	1.1	.4	.1	.0	3.1	1.7	1.0	@
Mar	3.1	1.4	#	0	11.8	1999	18	14.5	1999	11	1994	9	1	1994	1.9	1.1	.3	.1	.1	1.4	.3	.1	@
Apr	1.0	.0	#	0	5.0	1993	3	5.0	1993	2+	1994	28	#	1998	.8	.5	.1	@	.0	.5	.0	.0	.0
May	.3	.0	#	0	5.0	1978	3	6.5	1978	4	1978	3	#	2000	.1	.1	.1	@	.0	.1	@	.0	.0
Jun	.0	.0	#	0	.0	0	0	.0	0	0	0	0	#	1978	.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	.5	1984	29	.5	1984	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.4	.0	#	0	4.0	1996	21	5.0	1991	5	1991	31	#	1996	.2	.1	.1	.0	.0	.1	@	@	.0
Nov	1.9	.6	#	0	6.1	1992	24	17.5	1972	8	1972	20	1+	1992	1.2	.7	.2	.1	.0	1.3	.5	.2	.0
Dec	3.4	2.0	#	0	11.7	1997	23	19.9	1997	11	1997	24	2	1997	2.1	1.2	.4	.1	@	3.0	1.3	.6	.1
Ann	17.7	9.1	N/A	N/A	12.5	Jan 1983	21	19.9	Dec 1997	12+	Jan 1999	30	3+	Feb 1983	11.3	6.5	1.9	.5	.1	14.8	5.7	2.6	.2

+ 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	5/14	5/10	5/07	5/05	5/03	5/01	4/29	4/26	4/22
32	5/08	5/03	4/29	4/26	4/23	4/20	4/17	4/13	4/08
28	4/26	4/20	4/17	4/13	4/10	4/07	4/04	3/31	3/26
24	4/11	4/07	4/04	4/01	3/30	3/28	3/25	3/22	3/18
20	4/05	3/30	3/26	3/22	3/19	3/15	3/11	3/07	3/01
16	3/29	3/21	3/15	3/10	3/06	3/01	2/24	2/18	2/10

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	9/28	10/02	10/05	10/07	10/10	10/12	10/15	10/18	10/22
32	10/01	10/06	10/10	10/13	10/16	10/19	10/22	10/26	10/31
28	10/12	10/17	10/21	10/24	10/27	10/30	11/02	11/06	11/11
24	10/26	10/30	11/02	11/05	11/07	11/09	11/11	11/14	11/18
20	11/03	11/08	11/12	11/15	11/18	11/21	11/24	11/28	12/03
16	11/06	11/13	11/17	11/21	11/25	11/29	12/03	12/07	12/14

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	176	170	166	162	159	156	152	148	142
32	194	187	183	179	175	172	168	163	157
28	218	211	207	203	199	195	191	187	180
24	238	232	228	224	221	218	214	210	204
20	267	259	253	248	244	239	234	228	220
16	290	281	275	269	264	258	253	246	237

***** 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	979	756	619	366	136	19	1	3	63	295	665	946	4848
60	824	616	465	240	60	4	0	0	18	160	515	791	3693
57	731	532	374	176	32	1	0	0	7	97	429	698	3077
55	669	480	317	140	19	0	0	0	3	64	373	636	2701
50	516	351	185	68	4	0	0	0	0	18	244	486	1872
32	99	50	3	0	0	0	0	0	0	0	16	86	254

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	143	218	407	635	948	1206	1376	1321	1040	732	340	162	8528
55	0	4	7	85	254	516	663	608	353	83	7	0	2580
57	0	0	3	61	205	457	601	546	296	53	3	0	2225
60	0	0	1	34	140	370	508	453	218	24	0	0	1748
65	0	0	0	11	60	235	353	301	112	4	0	0	1076
70	0	0	0	2	18	128	208	162	45	0	0	0	563

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	52	107	238	444	732	996	1151	1095	833	522	183	64	52	159	397	841	1573	2569	3720	4815	5648	6170	6353	6417
45	17	48	139	307	578	846	996	940	684	375	99	22	17	65	204	511	1089	1935	2931	3871	4555	4930	5029	5051
50	0	15	61	185	427	696	841	785	538	242	39	1	0	15	76	261	688	1384	2225	3010	3548	3790	3829	3830
55	0	0	24	93	284	547	686	630	394	131	9	0	0	0	24	117	401	948	1634	2264	2658	2789	2798	2798
60	0	0	2	34	161	398	532	475	266	56	0	0	0	0	2	36	197	595	1127	1602	1868	1924	1924	1924
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	81	123	210	311	457	639	755	722	533	347	162	87	81	204	414	725	1182	1821	2576	3298	3831	4178	4340	4427

(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