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: CASTLEFORD 2 N, ID **COOP ID: 101551**

Climate Division: ID 7 **NWS Call Sign:** **Elevation: 3,825 Feet** **Lat: 42˚33N** **Lon: 114˚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	35.3	20.2	27.8	62	1971	31	36.3	1998	-23	1984	18	16.2	1979	1155	0	.0	.0	1.8	9.7	28.5	1.8
Feb	42.8	24.8	33.8	69	1992	29	40.2	1992	-14+	1989	7	23.1	1985	874	0	.0	.0	8.6	3.2	23.9	.8
Mar	52.8	29.8	41.3	80	1978	29	47.7	1986	0	1976	2	33.8	1985	734	0	.0	.0	21.0	.2	22.1	@
Apr	62.6	34.9	48.8	89+	2000	27	55.6	1987	14	1997	6	41.3	1975	492	4	.0	.0	27.6	.0	11.3	.0
May	71.2	41.4	56.3	95+	1964	19	62.6	1992	22	1972	1	52.1	1975	280	10	.0	.4	30.7	.0	3.3	.0
Jun	80.3	48.3	64.3	103	1974	16	69.8	1986	30	1995	7	59.9	1995	101	80	.1	4.8	30.0	.0	.2	.0
Jul	87.3	53.6	70.5	105	1978	14	74.8	1998	34	1981	8	63.2	1993	22	192	.1	14.3	31.0	.0	.0	.0
Aug	85.7	52.3	69.0	102	1979	4	72.4	1971	33	1964	30	63.9	1976	32	156	.2	9.3	31.0	.0	.0	.0
Sep	76.1	44.5	60.3	96+	2000	14	66.5	1990	15	1985	29	53.9	1985	179	38	.0	1.0	30.0	.0	1.9	.0
Oct	63.9	35.8	49.9	89	1992	1	57.3	1988	11	1971	29	45.2	1984	470	1	.0	.0	28.6	@	10.5	.0
Nov	46.6	27.0	36.8	79	1980	7	44.2	1999	-5	1985	23	26.2	1985	846	0	.0	.0	12.3	2.2	22.3	.2
Dec	36.1	20.3	28.2	64	1981	6	36.3	1995	-26	1990	23	13.3	1985	1141	0	.0	.0	3.0	8.6	28.5	2.0
Ann	61.7	36.1	48.9	105	Jul 1978	14	74.8	Jul 1998	-26	Dec 1990	23	13.3	Dec 1985	6326	481	.4	29.8	255.6	23.9	152.5	4.8

\+ 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: 1963-2001

(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	1.32	1.22	1.02	1974	12	2.92	1972	.22	1977
Feb	.87	.67	.63	1998	4	2.97	1986	.01	1997
Mar	1.08	.88	1.10	1993	17	3.48	1989	.02	1992
Apr	.97	.88	.89	1994	25	2.51	1997	.19	1985
May	1.36	1.37	2.04	1983	1	3.62	1996	.00	1992
Jun	.81	.64	1.70	1984	10	3.11	1984	.00+	1994
Jul	.22	.07	.66	1965	1	1.11	1982	.00+	2000
Aug	.34	.15	.69	1968	18	2.01	1983	.00+	1999
Sep	.62	.46	.98	1978	5	2.78	1978	.00+	1999
Oct	.67	.57	.88	1989	25	2.05	1975	.00+	1988
Nov	1.10	.98	.93	1967	19	2.90	1988	.00+	1993
Dec	.94	.60	3.01	1970	8	2.79	1996	.00+	1999
Ann	10.30	9.78	3.01	Dec 1970	8	3.62	May 1996	.00+	Jul 2000

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	7.1	4.1	.6	@
Feb	7.3	3.5	.2	.0
Mar	7.8	4.0	.4	@
Apr	6.1	3.5	.3	.0
May	6.7	4.3	.7	.1
Jun	4.5	2.6	.3	@
Jul	1.6	.7	@	.0
Aug	2.1	1.0	.2	.0
Sep	2.9	1.7	.4	.0
Oct	3.7	2.2	.2	.0
Nov	6.6	3.7	.5	.0
Dec	6.2	3.2	.1	.0
Ann	62.6	34.5	3.9	.1

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	.28	.40	.60	.77	.95	1.14	1.35	1.60	1.94	2.48	2.98
Feb	.10	.16	.28	.40	.53	.68	.85	1.06	1.35	1.83	2.29
Mar	.13	.21	.37	.52	.68	.86	1.06	1.32	1.67	2.25	2.80
Apr	.21	.30	.44	.57	.70	.84	.99	1.17	1.41	1.80	2.16
May	.15	.32	.54	.74	.94	1.15	1.39	1.68	2.06	2.67	3.26
Jun	.00	.11	.26	.39	.52	.66	.82	1.01	1.27	1.69	2.09
Jul	.00	.00	.00	.00	.00	.06	.15	.26	.41	.67	.91
Aug	.00	.00	.00	.00	.07	.16	.27	.41	.61	.94	1.28
Sep	.00	.00	.00	.10	.24	.39	.56	.78	1.08	1.58	2.07
Oct	.00	.00	.12	.25	.37	.51	.66	.85	1.11	1.51	1.92
Nov	.00	.13	.33	.51	.69	.88	1.11	1.37	1.74	2.33	2.91
Dec	.00	.00	.15	.32	.49	.68	.90	1.18	1.56	2.18	2.79
Ann	6.27	7.00	7.96	8.71	9.38	10.04	10.73	11.51	12.46	13.87	15.10

\+ 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: 1963-2001
(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	4.5	3.7	1	1	6.0	1979	10	11.8	1979	8	1982	3	4	1982	2.8	1.8	.5	.2	.0	9.3	4.1	1.6	.0
Feb	2.8	1.0	1	#	6.0	1972	24	14.8	1976	9	1996	5	4	1985	1.4	1.0	.4	.1	.0	3.1	1.4	.1	.0
Mar	.8	.0	#	0	6.1	1974	2	6.1+	1974	4+	1996	23	#+	1996	.7	.4	.1	@	.0	.5	.1	.0	.0
Apr	.4	.0	#	0	3.2	1982	1	7.2	1975	#+	1975	6	#+	1975	.3	.1	.1	.0	.0	.0	.0	.0	.0
May	.3	.0	0	0	6.5	1971	21	6.5	1971	0	0	0	0	0	.2	.1	@	@	.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	.1	.0	#	0	2.0	1971	31	2.0	1971	#	1971	31	#	1971	@	@	.0	.0	.0	.0	.0	.0	.0
Nov	1.7	.0	#	0	6.0	1985	9	28.0	1985	14	1985	29	5	1985	1.0	.6	.2	@	.0	1.1	.8	.6	.1
Dec	2.5	1.5	1	#	8.0	1994	5	9.4	1981	14	1985	1	10	1985	1.8	1.1	.4	.1	.0	3.0	1.3	.3	.0
Ann	13.1	6.2	N/A	N/A	8.0	Dec 1994	5	28.0	Nov 1985	14+	Dec 1985	1	10	Dec 1985	8.2	5.1	1.7	.4	.0	17.0	7.7	2.6	.1

+ 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	6/25	6/19	6/14	6/10	6/06	6/03	5/30	5/25	5/18
32	6/07	5/31	5/26	5/22	5/18	5/14	5/10	5/05	4/29
28	5/17	5/11	5/07	5/04	5/01	4/27	4/24	4/20	4/15
24	4/30	4/23	4/19	4/15	4/11	4/08	4/04	3/30	3/24
20	4/17	4/08	3/31	3/25	3/20	3/14	3/08	3/01	2/19
16	3/14	3/07	3/02	2/25	2/21	2/17	2/13	2/08	2/01

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	9/03	9/08	9/11	9/14	9/16	9/19	9/21	9/24	9/29
32	9/08	9/13	9/17	9/20	9/23	9/26	9/29	10/03	10/08
28	9/22	9/28	10/02	10/06	10/09	10/13	10/16	10/21	10/27
24	10/03	10/09	10/13	10/16	10/20	10/23	10/26	10/30	11/05
20	10/17	10/23	10/28	11/01	11/04	11/08	11/12	11/16	11/23
16	10/29	11/04	11/08	11/12	11/16	11/20	11/24	11/28	12/04

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	124	116	110	105	101	96	92	86	78
32	150	142	137	132	127	123	118	112	104
28	185	177	171	166	161	156	151	145	137
24	218	208	202	196	191	186	180	173	164
20	265	253	244	236	229	222	214	205	193
16	297	287	279	273	267	261	255	247	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	1155	874	734	492	280	101	22	32	179	470	846	1141	6326
60	1000	734	579	353	157	38	4	6	89	321	696	986	4963
57	907	650	488	276	101	17	1	2	51	240	606	893	4232
55	845	594	427	230	72	10	0	1	33	191	547	831	3781
50	695	464	287	136	24	1	0	0	8	93	407	682	2797
32	241	109	16	3	0	0	0	0	0	1	67	229	666

Base — Cooling Degree Days (1)

Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	109	159	305	505	753	969	1193	1147	849	554	211	112	6866
55	0	0	3	42	112	288	480	435	192	31	1	0	1584
57	0	0	1	28	79	236	419	374	150	18	0	0	1305
60	0	0	0	14	42	167	329	285	97	6	0	0	940
65	0	0	0	4	10	80	192	156	38	1	0	0	481
70	0	0	0	0	1	28	92	65	10	0	0	0	196

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	2	36	112	276	508	732	958	913	617	329	65	9	2	38	150	426	934	1666	2624	3537	4154	4483	4548	4557
45	0	5	41	160	359	582	803	758	467	199	24	0	0	5	46	206	565	1147	1950	2708	3175	3374	3398	3398
50	0	0	8	77	224	433	648	603	327	97	3	0	0	0	8	85	309	742	1390	1993	2320	2417	2420	2420
55	0	0	0	29	115	293	494	448	198	35	0	0	0	0	0	29	144	437	931	1379	1577	1612	1612	1612
60	0	0	0	7	49	170	341	299	100	7	0	0	0	0	0	7	56	226	567	866	966	973	973	973
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	28	95	202	342	468	607	587	414	238	47	3	0	28	123	325	667	1135	1742	2329	2743	2981	3028	3031

(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