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: DICKINSON AP, ND **COOP ID: 322183**

Climate Division: ND 7 **NWS Call Sign: DIK** **Elevation: 2,585 Feet** **Lat: 46˚48N** **Lon: 102˚48W**

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	23.7	4.6	14.2	63	1981	23	27.7	1992	-35+	1966	29	-.2	1982	1576	0	.0	.0	.8	19.9	30.5	12.2
Feb	30.7	11.6	21.2	68+	1992	29	34.3	1984	-35	1962	28	6.1	1989	1227	0	.0	.0	3.3	13.9	26.9	7.0
Mar	40.9	19.9	30.4	78	1993	24	39.0	1986	-28	1962	1	19.0	1996	1072	0	.0	.0	8.9	8.3	28.1	2.8
Apr	54.9	30.6	42.8	94	1980	21	50.0	1980	-10	1975	1	33.7	1975	668	1	.0	.1	20.2	1.5	17.2	.1
May	67.1	41.9	54.5	99	1980	22	60.9	1977	4	1967	3	48.5	1974	341	16	.0	.5	29.1	.0	4.0	.0
Jun	76.0	50.8	63.4	104	1979	13	75.9	1988	30+	1992	6	58.1	1993	129	81	.3	2.3	30.0	.0	.2	.0
Jul	83.2	55.6	69.4	109	1981	7	74.6	1989	35	1967	3	61.2	1993	53	189	1.0	7.1	31.0	.0	.0	.0
Aug	82.8	54.5	68.7	108	1949	7	77.4	1983	32	1950	19	61.9	1977	75	187	.5	8.2	31.0	.0	.0	.0
Sep	70.6	43.8	57.2	104	1978	5	64.2	1998	17	1974	30	51.8	1986	272	38	.2	1.9	28.6	.0	2.7	.0
Oct	57.6	33.0	45.3	94+	1963	4	48.7	1983	-7	1991	30	40.2	1972	611	0	.0	.1	22.4	.9	14.4	.1
Nov	38.7	19.3	29.0	80	1999	7	40.9	1999	-18+	1985	29	16.9	1985	1081	0	.0	.0	6.9	10.0	27.0	2.7
Dec	27.9	8.4	18.2	67	1979	4	29.6	1979	-34	1989	22	.9	1983	1453	0	.0	.0	1.8	17.5	30.4	9.5
Ann	54.5	31.2	42.9	109	Jul 1981	7	77.4	Aug 1983	-35+	Jan 1966	29	-.2	Jan 1982	8558	512	2.0	20.2	214.0	72.0	181.4	34.4

\+ 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: 1938-2001

(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	.37	.32	.70	1949	8	.98	1972	.05	1985
Feb	.43	.34	.96	1958	26	2.31	1998	.01+	1985
Mar	.69	.55	1.07	1987	20	2.50	1975	.10	1981
Apr	1.76	1.64	2.29	1989	26	4.77	1975	.00	1988
May	2.28	1.93	2.67	1970	8	5.47	1995	.12	1980
Jun	3.31	2.83	3.12	1998	18	6.51	1998	1.46	1987
Jul	2.11	1.91	2.55	1997	1	5.65	1997	.34	1984
Aug	1.51	1.25	2.95	1995	23	4.22	1982	.01+	1973
Sep	1.62	1.29	1.94	1978	11	6.25	1977	.16	1997
Oct	1.34	.76	2.31	1998	4	5.77	1982	.04	1993
Nov	.59	.42	1.82	2000	1	2.70	2000	.05	1990
Dec	.34	.30	.44	1972	29	.96	1985	.00	1991
Ann	16.35	15.97	3.12	Jun 1998	18	6.51	Jun 1998	.00+	Dec 1991

Mean Number of Days (3)

Daily Precipitation

Month	>= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.5	1.0	@	.0
Feb	5.4	1.2	.1	.0
Mar	6.7	1.7	.2	@
Apr	8.4	4.1	1.0	.3
May	10.1	5.4	1.2	.3
Jun	12.1	6.9	2.3	.8
Jul	8.8	4.7	1.3	.4
Aug	6.6	3.0	.8	.3
Sep	6.5	3.5	.9	.3
Oct	5.4	2.5	1.0	.3
Nov	6.3	1.6	.1	@
Dec	6.4	.8	.0	.0
Ann	89.2	36.4	8.9	2.7

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	.05	.08	.13	.18	.24	.30	.37	.45	.57	.76	.95
Feb	.02	.04	.09	.14	.21	.29	.39	.52	.70	1.01	1.33
Mar	.08	.13	.23	.33	.43	.54	.67	.84	1.06	1.43	1.78
Apr	.10	.27	.55	.81	1.08	1.38	1.74	2.17	2.77	3.74	4.69
May	.36	.56	.89	1.20	1.53	1.88	2.29	2.79	3.46	4.54	5.58
Jun	1.43	1.73	2.15	2.49	2.81	3.13	3.47	3.87	4.37	5.13	5.82
Jul	.36	.54	.85	1.14	1.44	1.76	2.13	2.58	3.17	4.14	5.06
Aug	.04	.10	.24	.43	.65	.94	1.30	1.78	2.48	3.70	4.94
Sep	.19	.32	.54	.77	1.01	1.28	1.59	1.97	2.50	3.36	4.20
Oct	.05	.12	.26	.43	.64	.89	1.20	1.60	2.17	3.16	4.16
Nov	.04	.08	.16	.24	.33	.43	.56	.71	.93	1.29	1.65
Dec	.02	.05	.10	.14	.20	.26	.33	.41	.53	.73	.92
Ann	10.02	11.17	12.69	13.87	14.93	15.97	17.06	18.28	19.78	21.99	23.93

\+ 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: 1938-2001
(3) Derived from 1971-2000 serially complete daily data

Complete documentation available from:
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Climate Division: ND 7 **NWS Call Sign: DIK** **Elevation: 2,585 Feet** **Lat: 46°48N** **Lon: 102°48W**

Snow (inches)

Snow Totals

Means/Medians (1)

Month	Snow Fall Mean	Snow Fall Median	Snow Depth Mean	Snow Depth Median
Jan	5.0	3.9	4	3
Feb	5.1	4.4	3	2
Mar	6.3	3.9	2	2
Apr	4.9	3.4	1	1
May	.5	.0	#	0
Jun	#	.0	#	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.4	.0	0	0
Oct	2.0	.9	#	0
Nov	5.4	4.2	1	1
Dec	4.8	5.2	2	2
Ann	34.4	25.9	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	6.3	1997	4	11.4	1999	16+	1982	26	10+	1997
Feb	5.7	1998	25	21.5	1998	20+	1978	17	15	1978
Mar	9.9	1975	27	26.4	1975	26+	1975	30	10	1998
Apr	11.2	1984	27	17.8	1997	25	1975	1	11	1975
May	4.5	1983	12	7.5	1983	7	1983	12	#	2000
Jun	#	1998	2	#	1998	#	1989	13	#	1991
Jul	.0	0	0	.0	0	0	0	0	0	0
Aug	.0	0	0	.0	0	0	0	0	0	0
Sep	6.6	1984	23	8.0	1984	#+	1983	20	0	0
Oct	7.9	1991	28	11.2	1991	8+	1991	31	1	1991
Nov	7.0	1993	25	16.4	1986	15	1993	26	6	1978
Dec	5.9	1988	26	13.0	1985	12+	1985	20	9	1985
Ann	11.2	Apr 1984	27	26.4	Mar 1975	26+	Mar 1975	30	15	Feb 1978

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.9	1.6	.3	.1	.0
Feb	5.4	1.8	.4	.1	.0
Mar	5.0	1.9	.6	.3	.0
Apr	2.8	1.3	.5	.4	.1
May	.3	.1	.1	.0	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.2	.1	@	@	.0
Oct	1.4	.6	.1	.1	.0
Nov	4.8	1.9	.5	.1	.0
Dec	6.1	2.0	.1	@	.0
Ann	31.9	11.3	2.6	1.1	.1

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	20.7	16.1	11.0	2.7
Feb	15.4	9.2	6.3	3.2
Mar	10.9	7.5	4.5	1.4
Apr	4.2	2.8	1.7	.9
May	.3	.1	.1	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	.0	.0	.0	.0
Oct	1.3	.4	.1	.0
Nov	9.6	4.7	2.7	.3
Dec	17.6	9.9	4.7	.6
Ann	80.0	50.7	31.1	9.1

+ 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	6/11	6/05	6/01	5/28	5/25	5/21	5/17	5/13	5/07
32	5/28	5/23	5/19	5/16	5/13	5/10	5/06	5/03	4/27
28	5/17	5/13	5/10	5/07	5/04	5/02	4/29	4/26	4/21
24	5/08	5/04	4/30	4/27	4/25	4/22	4/19	4/16	4/11
20	4/25	4/19	4/16	4/12	4/09	4/06	4/03	3/30	3/25
16	4/16	4/11	4/07	4/04	4/01	3/30	3/27	3/23	3/18

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	9/02	9/06	9/09	9/11	9/14	9/16	9/19	9/22	9/26
32	9/10	9/14	9/17	9/20	9/22	9/24	9/27	9/30	10/04
28	9/19	9/24	9/27	9/30	10/03	10/06	10/09	10/12	10/17
24	9/24	10/01	10/06	10/10	10/14	10/18	10/22	10/27	11/03
20	10/02	10/08	10/13	10/17	10/21	10/25	10/29	11/02	11/09
16	10/11	10/17	10/22	10/26	10/30	11/02	11/06	11/11	11/18

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	133	126	120	116	112	107	103	97	90
32	154	146	141	136	132	127	122	117	109
28	171	164	159	155	151	147	143	138	131
24	194	186	181	176	172	167	163	157	149
20	220	211	205	199	194	189	183	177	168
16	235	227	221	215	211	206	200	194	186

***** 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	1576	1227	1072	668	341	129	53	75	272	611	1081	1453	8558
60	1421	1087	917	524	218	59	18	31	167	457	931	1298	7128
57	1328	1009	824	441	158	32	9	17	116	366	841	1205	6346
55	1266	958	762	388	124	20	4	11	87	306	781	1143	5850
50	1117	827	617	268	59	5	0	2	36	175	642	996	4744
32	618	412	194	29	0	0	0	0	0	5	226	505	1989

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	65	109	145	352	698	942	1160	1135	756	416	136	76	5990
55	0	11	1	21	109	272	450	433	153	5	0	0	1455
57	0	6	0	13	81	224	393	377	122	2	0	0	1218
60	0	0	0	6	48	161	309	298	83	1	0	0	906
65	0	0	0	1	16	81	189	187	38	0	0	0	512
70	0	0	0	0	3	30	103	104	14	0	0	0	254

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	7	38	172	463	709	922	898	525	231	36	2	0	7	45	217	680	1389	2311	3209	3734	3965	4001	4003
45	0	1	9	94	320	559	767	743	385	132	13	0	0	1	10	104	424	983	1750	2493	2878	3010	3023	3023
50	0	0	2	43	199	410	612	588	258	65	3	0	0	0	2	45	244	654	1266	1854	2112	2177	2180	2180
55	0	0	0	14	107	270	458	435	155	27	0	0	0	0	0	14	121	391	849	1284	1439	1466	1466	1466
60	0	0	0	5	47	148	309	293	81	7	0	0	0	0	0	5	52	200	509	802	883	890	890	890
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	9	40	130	286	436	584	570	326	162	31	1	0	9	49	179	465	901	1485	2055	2381	2543	2574	2575

(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