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: BELCOURT KEYA RADIO, ND **COOP ID: 320626**

Climate Division: ND 2 **NWS Call Sign:** **Elevation: 1,960 Feet** **Lat: 48˚50N** **Lon: 99˚45W**

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	13.9	-10.2	1.9	52	1973	24	16.4	1990	-48	1996	20	-13.0	1982	1959	0	.0	.0	.1	26.9	31.0	21.5
Feb	21.2	-2.7	9.3	54	1958	25	23.6	1998	-46	1996	2	-7.8	1979	1562	0	.0	.0	.3	21.0	28.2	14.4
Mar	32.0	9.1	20.6	70	1963	23	31.5	2000	-43	1962	1	11.6	1996	1378	0	.0	.0	2.5	14.4	30.5	7.1
Apr	49.9	23.8	36.9	95	1980	21	44.9	1998	-22+	1979	6	25.8	1979	845	0	.0	.1	15.9	2.8	23.1	.6
May	64.0	37.8	50.9	95	1980	22	59.1	1977	3	1967	3	42.9	1983	448	11	.0	.2	27.9	.1	8.8	.0
Jun	72.3	47.2	59.8	101	1988	28	70.6	1988	18+	1969	11	54.1	1985	195	38	@	1.1	29.9	.0	.8	.0
Jul	77.7	52.2	65.0	101	1988	29	69.8	1989	34+	1992	11	57.1	1992	92	90	.1	1.7	31.0	.0	.0	.0
Aug	77.1	48.9	63.0	101	1949	7	67.5	1984	27+	1982	27	56.6	1977	145	84	@	2.1	31.0	.0	.2	.0
Sep	65.5	38.4	52.0	97	1976	6	58.7	1998	12	1965	26	47.3	1993	398	6	.0	.5	28.0	.0	5.9	.0
Oct	52.8	26.2	39.5	87	1963	4	44.8	1973	-11	1991	30	34.1	1991	791	0	.0	.0	19.4	1.4	21.9	.2
Nov	32.3	11.5	21.9	71	1975	6	32.9	1999	-37+	1985	30	9.1	1985	1293	0	.0	.0	3.3	15.5	29.1	5.1
Dec	18.5	-3.7	7.4	52	1969	1	22.2	1997	-42	1967	31	-9.0	1983	1787	0	.0	.0	@	25.6	31.0	16.3
Ann	48.1	23.2	35.7	101+	Jul 1988	29	70.6	Jun 1988	-48	Jan 1996	20	-13.0	Jan 1982	10893	229	.1	5.7	189.3	107.7	210.5	65.2

\+ 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/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	.39	.29	.49	1986	3	1.10	1976	.00	1973
Feb	.37	.26	.56	1969	26	1.90	1976	.00+	1997
Mar	.60	.43	2.00	1971	14	2.64	1971	.00+	2000
Apr	1.11	.60	2.10	1976	16	4.44	1976	.00+	1997
May	2.33	1.79	6.00	1999	4	11.35	1999	.01	1997
Jun	3.55	3.30	3.03	1954	7	6.98	1993	1.23	1974
Jul	2.84	2.75	4.30	1965	21	7.83	1993	.02	1985
Aug	2.61	2.29	3.48	1968	24	8.05	1980	.53	1971
Sep	1.95	1.96	2.77	1980	12	5.32	1980	.00	1998
Oct	1.15	.66	2.00	1997	24	3.92	1971	.00+	1999
Nov	.61	.50	1.06	2000	2	2.08	2000	.00	1999
Dec	.44	.27	.83	1982	2	1.61	1977	.00	1999
Ann	17.95	17.50	6.00	May 1999	4	11.35	May 1999	.00+	Mar 2000

Mean Number of Days (3)

Month	Daily Precipitation >= 0.01	>= 0.10	>= 0.50	>= 1.00
Jan	6.1	1.5	.0	.0
Feb	4.6	1.1	.1	.0
Mar	4.6	1.9	.3	.1
Apr	4.4	2.7	.6	.3
May	7.2	4.2	1.2	.5
Jun	9.5	6.1	2.4	1.0
Jul	8.5	5.1	2.1	.6
Aug	8.0	4.6	1.6	.5
Sep	7.3	3.9	1.1	.3
Oct	4.7	2.6	.6	.3
Nov	4.3	1.9	.3	@
Dec	4.8	1.2	.1	.0
Ann	74.0	36.8	10.4	3.6

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	.14	.20	.26	.32	.39	.48	.59	.78	.95
Feb	.00	.02	.07	.12	.19	.26	.34	.45	.60	.86	1.12
Mar	.00	.05	.15	.24	.34	.45	.58	.74	.97	1.33	1.69
Apr	.00	.02	.14	.28	.46	.68	.96	1.32	1.85	2.77	3.71
May	.15	.29	.58	.90	1.26	1.67	2.18	2.82	3.72	5.25	6.76
Jun	1.30	1.63	2.11	2.52	2.90	3.29	3.71	4.21	4.84	5.81	6.70
Jul	.35	.57	.97	1.37	1.79	2.26	2.80	3.47	4.39	5.89	7.35
Aug	.57	.81	1.19	1.54	1.88	2.25	2.67	3.17	3.82	4.87	5.86
Sep	.28	.53	.86	1.13	1.41	1.69	2.02	2.40	2.90	3.70	4.45
Oct	.00	.00	.09	.26	.46	.70	1.00	1.39	1.95	2.90	3.87
Nov	.01	.03	.10	.18	.27	.39	.54	.73	1.01	1.48	1.97
Dec	.02	.06	.12	.18	.25	.33	.43	.54	.70	.97	1.22
Ann	11.08	12.34	13.99	15.27	16.42	17.55	18.74	20.06	21.68	24.07	26.17

\+ 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

Complete documentation available from:
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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	5.9	6.9	7	8
Feb	6.1	6.0	6	6
Mar	6.1	3.0	4	2
Apr	2.7	1.5	1	0
May	.7	.0	#	0
Jun	.0	.0	0	0
Jul	.0	.0	0	0
Aug	.0	.0	0	0
Sep	.2	.0	#	0
Oct	1.4	.1	#	0
Nov	5.3	2.8	1	1
Dec	6.9	6.3	3	3
Ann	35.3	26.6	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	6.0	1980	10	13.3	1980	22	1974	30	14	1993
Feb	9.0	1976	28	24.0	1976	24	1974	5	14	1974
Mar	11.0	1995	23	23.0	1975	25	1976	12	18	1980
Apr	6.0	1999	1	12.5	1979	16	1975	1	7	1975
May	5.0	1974	14	7.0	1974	1	1984	1	#+	1998
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	3.0	1972	26	3.0	1972	1	1984	25	#	1984
Oct	6.0	1980	17	9.0	1980	8	1985	8	1	1985
Nov	8.0	1975	29	17.0	1975	13	1977	28	4	1993
Dec	12.0	1996	29	15.0	1974	13	1974	23	9	1985
Ann	12.0	Dec 1996	29	24.0	Feb 1976	25	Mar 1976	12	18	Mar 1980

Mean Number of Days (1)

Snow Fall >= Thresholds

Month	0.1	1.0	3.0	5.0	10.0
Jan	5.0	2.4	.4	.1	.0
Feb	3.8	2.0	.4	.2	.0
Mar	2.9	1.8	.7	.3	@
Apr	1.3	.9	.3	.1	.0
May	.4	.3	.1	@	.0
Jun	.0	.0	.0	.0	.0
Jul	.0	.0	.0	.0	.0
Aug	.0	.0	.0	.0	.0
Sep	.1	@	@	.0	.0
Oct	.8	.5	.2	.1	.0
Nov	3.2	1.8	.4	.4	.0
Dec	3.4	2.1	.4	.2	@
Ann	20.9	11.8	2.9	1.4	@

Snow Depth >= Thresholds

Month	1	3	5	10
Jan	-9.9	-9.9	-9.9	-9.9
Feb	-9.9	-9.9	-9.9	-9.9
Mar	9.4	5.5	4.3	2.6
Apr	1.9	1.4	1.1	.5
May	.3	.0	.0	.0
Jun	.0	.0	.0	.0
Jul	.0	.0	.0	.0
Aug	.0	.0	.0	.0
Sep	@	.0	.0	.0
Oct	.8	.2	@	.0
Nov	7.2	2.4	1.5	.8
Dec	-9.9	-9.9	-9.9	-9.9
Ann	-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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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	7/10	7/01	6/25	6/19	6/14	6/08	6/03	5/27	5/18
32	6/16	6/09	6/04	5/31	5/27	5/23	5/19	5/14	5/07
28	5/27	5/22	5/19	5/16	5/13	5/10	5/07	5/04	4/29
24	5/17	5/13	5/10	5/07	5/04	5/02	4/29	4/26	4/21
20	5/12	5/06	5/02	4/28	4/25	4/21	4/18	4/13	4/07
16	4/27	4/22	4/19	4/15	4/13	4/10	4/07	4/03	3/29

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	8/08	8/15	8/20	8/24	8/28	9/01	9/05	9/09	9/16
32	8/25	8/31	9/04	9/07	9/10	9/13	9/17	9/21	9/26
28	9/11	9/15	9/18	9/21	9/23	9/26	9/28	10/01	10/05
24	9/21	9/25	9/29	10/02	10/05	10/07	10/10	10/14	10/19
20	9/26	10/01	10/05	10/09	10/12	10/15	10/19	10/23	10/29
16	10/05	10/10	10/14	10/18	10/21	10/24	10/28	11/01	11/07

Freeze Free Period

Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	110	98	89	81	74	67	60	51	39
32	137	127	119	112	106	100	93	85	74
28	153	146	141	137	133	129	124	119	112
24	172	165	160	156	153	149	145	140	134
20	197	188	181	175	170	164	158	152	142
16	217	208	202	196	191	186	180	173	164

***** 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	1959	1562	1378	845	448	195	92	145	398	791	1293	1787	10893
60	1804	1422	1223	698	314	105	30	70	264	636	1143	1632	9341
57	1711	1338	1130	613	245	65	13	40	194	543	1053	1539	8484
55	1649	1282	1068	558	204	44	7	26	152	482	993	1477	7942
50	1494	1142	915	426	120	14	0	7	71	332	843	1322	6686
32	955	666	425	103	5	0	0	0	0	29	362	791	3336

Cooling Degree Days (1)

Base Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	19	28	70	248	591	833	1021	961	598	261	59	27	4716
55	0	0	0	13	78	187	315	275	60	1	0	0	929
57	0	0	0	9	56	148	259	227	42	0	0	0	741
60	0	0	0	4	32	98	183	164	22	0	0	0	503
65	0	0	0	0	11	38	90	84	6	0	0	0	229
70	0	0	0	0	2	11	29	32	1	0	0	0	75

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	0	2	108	375	627	799	744	401	131	10	0	0	0	2	110	485	1112	1911	2655	3056	3187	3197	3197
45	0	0	0	52	246	478	644	589	268	59	0	0	0	0	0	52	298	776	1420	2009	2277	2336	2336	2336
50	0	0	0	21	142	333	489	434	155	16	0	0	0	0	0	21	163	496	985	1419	1574	1590	1590	1590
55	0	0	0	7	71	201	336	286	76	4	0	0	0	0	0	7	78	279	615	901	977	981	981	981
60	0	0	0	0	29	101	193	159	27	0	0	0	0	0	0	0	29	130	323	482	509	509	509	509
Base	**Growing Degree Units for Corn (Monthly)**												**Growing Degree Units for Corn (Accumulated Monthly)**											
50/86	0	0	3	91	250	385	503	469	257	112	11	0	0	0	3	94	344	729	1232	1701	1958	2070	2081	2081

(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