

Climatology of the United States

No. 20

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

Station: SIDNEY, MT

1971-2000

COOP ID: 247560

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47°44N

Lon: 104°09W

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	24.5	2.7	13.6	58+	1962	2	27.3	1992	-47	1912	11	-3.2	1982	1594	0	.0	.0	.6	19.6	30.7	13.7
Feb	33.0	10.7	21.9	68+	1992	29	33.6	1998	-44	1917	2	4.6	1979	1207	0	.0	.0	3.7	12.1	27.6	7.5
Mar	45.6	20.6	33.1	81	1999	26	42.7	1986	-29+	1951	5	22.0	1996	989	0	.0	.0	13.3	5.7	28.1	2.5
Apr	60.9	31.6	46.3	95	1980	20	53.8	1987	-17	1975	1	37.0	1975	564	2	.0	.2	23.9	.6	17.7	.1
May	72.6	43.3	58.0	102	1980	22	64.8	1988	17	1967	4	51.8	1974	255	36	.1	1.5	30.2	.0	4.3	.0
Jun	80.6	52.1	66.4	105+	1988	21	78.5	1988	28	1915	8	61.8	1998	84	124	.4	4.3	30.0	.0	.1	.0
Jul	86.3	56.1	71.2	110	1917	27	76.4	1989	34	1921	12	64.7	1992	24	217	.8	10.0	31.0	.0	.0	.0
Aug	85.9	54.6	70.3	105+	1995	7	77.0	1983	30	1994	31	63.0	1977	48	211	.6	10.7	31.0	.0	@	.0
Sep	74.0	44.0	59.0	101	1994	9	65.5	1998	15	1961	30	53.0	1984	221	42	.1	2.0	29.0	.0	2.7	.0
Oct	60.3	33.6	47.0	92	1953	1	49.7	1979	-7	1919	26	42.5	1972	560	0	.0	.1	25.3	.5	14.2	@
Nov	40.0	19.4	29.7	77	1999	12	41.2	1999	-24+	1996	25	16.1	1985	1060	0	.0	.0	7.8	8.3	27.3	2.8
Dec	28.1	7.5	17.8	68	1979	4	30.1	1999	-40	1983	23	-.6	1983	1463	0	.0	.0	1.3	17.1	30.6	10.0
Ann	57.7	31.4	44.5	110	Jul 1917	27	78.5	Jun 1988	-47	Jan 1912	11	-3.2	Jan 1982	8069	632	2.0	28.8	227.1	63.9	183.3	36.6

+ 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/normal/usnormals.html

Issue Date: February 2004

(1) From the 1971-2000 Monthly Normals

(2) Derived from station's available digital record: 1910-2001

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

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Station: SIDNEY, MT

COOP ID: 247560

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47°44N

Lon: 104°09W

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	.41	.36	.70	1995	16	1.00	1995	.04	1981	6.8	1.2	@	.0	.05	.08	.14	.20	.26	.32	.40	.50	.62	.83	1.04
Feb	.36	.28	.83	1998	25	1.66	1998	.06	1983	5.8	1.2	@	.0	.05	.08	.13	.18	.23	.29	.36	.44	.55	.74	.92
Mar	.56	.50	.80	1963	25	1.78	1982	.03	1977	6.7	1.8	.1	.0	.07	.11	.19	.27	.35	.45	.56	.69	.87	1.17	1.46
Apr	1.07	.86	1.75	1912	13	3.76	1992	.04	1983	7.1	3.0	.5	.1	.08	.15	.28	.43	.60	.79	1.01	1.30	1.71	2.38	3.05
May	2.02	1.67	1.94	1911	26	6.14	1978	.27	1980	10.8	5.4	1.0	.3	.44	.62	.92	1.19	1.46	1.74	2.06	2.45	2.96	3.77	4.53
Jun	2.80	2.49	2.97	1973	18	6.48	1994	.50	1985	10.2	6.0	2.0	.5	.96	1.22	1.61	1.93	2.25	2.57	2.92	3.33	3.86	4.67	5.43
Jul	2.14	1.65	2.45	1916	16	9.12	1993	.33	1971	8.8	4.9	1.3	.3	.28	.45	.76	1.05	1.37	1.71	2.11	2.61	3.28	4.37	5.43
Aug	1.31	1.13	2.94	1914	24	3.29	1976	.10	1994	7.2	3.2	.6	.2	.15	.25	.43	.62	.81	1.03	1.29	1.60	2.04	2.75	3.44
Sep	1.50	1.11	2.92	1991	8	6.41	1991	.26+	1976	7.4	3.1	.7	.3	.14	.24	.44	.65	.88	1.14	1.44	1.82	2.35	3.23	4.09
Oct	1.02	.64	1.75	1989	27	3.91	1998	.06	1978	5.1	2.3	.6	.2	.06	.11	.24	.38	.53	.72	.95	1.24	1.64	2.34	3.03
Nov	.63	.43	1.60	2000	1	2.61	2000	.07	1999	6.4	2.0	.2	@	.08	.13	.21	.30	.39	.50	.62	.77	.97	1.30	1.62
Dec	.49	.50	.62	1975	31	1.05	1982	.00	1997	7.5	1.4	@	.0	.07	.13	.21	.28	.35	.42	.50	.60	.73	.93	1.12
Ann	14.31	14.35	2.97	Jun 1973	18	9.12	Jul 1993	.00	Dec 1997	89.8	35.5	7.0	1.9	8.93	9.92	11.21	12.21	13.12	14.00	14.92	15.95	17.21	19.07	20.70

+ 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: 1910-2001

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

Complete documentation available from:
www.ncdc.noaa.gov/oa/climate/normals/usnormals.html

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Station: SIDNEY, MT

COOP ID: 247560

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 47°44N

Lon: 104°09W

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	6.9	5.3	6	5	8.0	1995	16	17.0	1982	19	1976	2	15	1976	5.8	2.9	.4	.1	.0	23.1	18.5	13.0	5.4
Feb	6.1	5.4	5	3	6.0	1998	27	19.9	1972	25	1979	16	20	1979	4.9	2.5	.7	.2	.0	15.8	11.2	7.7	3.4
Mar	5.2	4.6	2	1	8.0	1975	23	22.9	1975	23	1979	2	12	1979	3.8	2.1	.4	.2	.0	6.3	3.9	3.1	2.0
Apr	3.0	2.0	1	#	10.0	1979	12	18.6	1979	18	1975	1	8	1975	1.2	.9	.4	.2	@	1.5	.8	.5	.4
May	.5	.0	#	0	13.0	1983	12	14.0	1983	10	1983	12	1	1983	.1	.1	@	@	@	.1	.1	.1	@
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	.5	.0	#	0	9.0	1984	24	11.0	1984	4	1984	24	#+	1984	.1	.1	.1	@	.0	.1	.1	.0	.0
Oct	1.8	.0	#	0	9.0	1985	7	16.0	1985	10	1985	8	1	1996	.8	.6	.2	.1	.0	.8	.3	.2	@
Nov	6.1	3.9	2	1	8.0	1986	17	20.5	1986	16	1986	18	6	2000	4.0	2.6	.9	.2	.0	7.8	4.9	2.9	.3
Dec	7.9	8.3	4	3	7.0	1975	31	14.8	1977	15	1978	31	10	1996	6.7	3.4	.7	.1	.0	19.5	14.6	9.0	.7
Ann	38.0	29.5	N/A	N/A	13.0	May 1983	12	22.9	Mar 1975	25	Feb 1979	16	20	Feb 1979	27.4	15.2	3.8	1.1	@	75.0	54.4	36.5	12.2

+ 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

Complete documentation available from:

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No. 20 1971-2000

Station: SIDNEY, MT

COOP ID: 247560

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet

Lat: 47° 44N

Lon: 104° 09W

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	6/10	6/04	5/31	5/27	5/24	5/20	5/17	5/13	5/07
32	5/27	5/23	5/19	5/17	5/14	5/11	5/09	5/05	5/01
28	5/17	5/13	5/11	5/08	5/06	5/04	5/01	4/28	4/24
24	5/10	5/05	5/01	4/28	4/26	4/23	4/20	4/16	4/11
20	4/26	4/21	4/17	4/14	4/11	4/08	4/05	4/02	3/28
16	4/15	4/11	4/08	4/05	4/03	3/31	3/29	3/26	3/22
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	8/27	9/01	9/04	9/07	9/10	9/12	9/15	9/19	9/23
32	9/08	9/12	9/15	9/18	9/20	9/22	9/25	9/28	10/02
28	9/18	9/22	9/26	9/28	10/01	10/03	10/06	10/09	10/14
24	9/24	9/29	10/03	10/06	10/09	10/12	10/15	10/19	10/24
20	10/01	10/07	10/12	10/15	10/18	10/22	10/25	10/30	11/04
16	10/12	10/18	10/22	10/25	10/29	11/01	11/05	11/09	11/15
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	127	121	116	112	108	105	101	96	90
32	145	139	135	132	128	125	121	117	111
28	165	159	155	151	147	144	140	135	129
24	184	178	173	169	166	162	158	153	147
20	211	203	198	194	190	185	181	176	168
16	227	221	216	212	208	204	200	196	189

* 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:

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COOP ID: 247560

Climate Division: MT 6

NWS Call Sign:

Elevation: 1,920 Feet Lat: 47° 44N Lon: 104° 09W

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	1594	1207	989	564	255	84	24	48	221	560	1060	1463	8069
60	1439	1067	834	422	151	32	6	17	122	406	910	1308	6714
57	1346	992	743	342	103	16	1	7	77	315	820	1215	5977
55	1285	940	688	292	76	9	0	4	53	257	760	1153	5517
50	1137	808	543	185	30	1	0	0	16	134	623	1003	4480
32	640	400	161	10	0	0	0	0	0	3	216	511	1941

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	69	117	196	437	804	1030	1216	1186	811	466	146	71	6549
55	1	12	9	29	167	349	503	477	174	7	0	0	1728
57	0	8	2	19	132	296	441	418	138	3	0	0	1457
60	0	0	0	9	87	222	354	335	93	1	0	0	1101
65	0	0	0	2	36	124	217	211	42	0	0	0	632
70	0	0	0	0	11	55	115	117	15	0	0	0	313

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	6	49	226	544	778	951	918	554	251	30	0	0	6	55	281	825	1603	2554	3472	4026	4277	4307	4307
45	0	0	14	130	397	628	796	763	410	139	10	0	0	0	14	144	541	1169	1965	2728	3138	3277	3287	3287
50	0	0	2	62	264	478	641	608	273	65	1	0	0	0	2	64	328	806	1447	2055	2328	2393	2394	2394
55	0	0	0	23	152	331	486	454	164	21	0	0	0	0	0	23	175	506	992	1446	1610	1631	1631	1631
60	0	0	0	6	74	195	334	302	80	3	0	0	0	0	0	6	80	275	609	911	991	994	994	994
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	0	10	58	190	363	493	606	584	364	186	28	0	0	10	68	258	621	1114	1720	2304	2668	2854	2882	2882

(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/normal/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
- 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">a. Temperature/ Precipitation Tables<ol style="list-style-type: none">1. 1971-2000 Monthly Normals2. Cooperative Summary of the Day3. National Weather Service station records4. 1971-2000 serially complete daily datab. Degree Day Table<ol style="list-style-type: none">1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data | <ol style="list-style-type: none">c. Snow Tables<ol style="list-style-type: none">1. Snow Climatology2. Cooperative Summary of the Dayd. Freeze Data Table
1971-2000 serially complete daily data |
|---|---|

References

U.S. Climate Normals 1971-2000, www.ncdc.noaa.gov/normal.html
U.S. Climate Normals 1971-2000-Products Clim20, www.ncdc.noaa.gov/oa/climate/normal/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