

# Climatology of the United States

No. 20

1971-2000

Station: OSMOND, NE

COOP ID: 256395

Climate Division: NE 3

NWS Call Sign:

Elevation: 1,650 Feet Lat: 42° 21N

Lon: 97° 36W

## 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	30.2	8.8	19.5	72	1981	24	32.2	1992	-32	1970	19	4.4	1979	1410	0	.0	.0	2.7	15.6	30.5	8.9
Feb	36.8	15.3	26.1	75	1982	21	35.6	1992	-35	1962	28	12.2	1979	1091	0	.0	.0	6.4	10.9	26.3	4.8
Mar	48.1	25.3	36.7	89	1968	30	42.6	2000	-22	1960	4	27.6	1984	877	0	.0	.0	14.3	3.9	24.0	.8
Apr	62.1	36.3	49.2	95+	1980	22	57.0	1981	-3	1975	3	41.5	1983	479	6	.0	.5	25.4	.2	10.9	@
May	73.2	48.2	60.7	102	1967	25	68.0	1977	20	1967	2	55.2	1995	191	58	.0	.9	30.8	.0	1.0	.0
Jun	83.4	58.0	70.7	106	1979	14	77.6	1988	35+	1985	3	65.0	1982	27	198	.5	7.9	30.0	.0	.0	.0
Jul	87.1	62.5	74.8	110	1954	11	79.2	1974	38	1971	30	68.5	1992	4	308	1.4	13.7	31.0	.0	.0	.0
Aug	84.9	60.4	72.7	108	1983	16	77.9	1983	32	1987	31	67.8	1992	19	257	.5	9.8	31.0	.0	@	.0
Sep	76.8	50.2	63.5	101	1976	6	70.1	1998	22	1984	29	58.4	1987	121	77	.1	4.1	29.8	.0	.8	.0
Oct	64.1	37.7	50.9	93	1963	1	54.5	1973	10	1972	19	43.0	1987	438	2	.0	.2	27.9	.1	8.8	.0
Nov	44.4	23.9	34.2	80	1999	8	44.9	1999	-21	1959	14	22.9	1985	926	0	.0	.0	11.6	5.0	24.8	.7
Dec	32.8	12.8	22.8	70	1962	16	30.4	1979	-28	1989	22	3.6	1983	1307	0	.0	.0	3.1	13.4	30.5	5.1
Ann	60.3	36.6	48.5	110	Jul 1954	11	79.2	Jul 1974	-35	Feb 1962	28	3.6	Dec 1983	6890	906	2.5	37.1	244.0	49.1	157.6	20.3

+ 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](http://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: 1948-2001

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

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**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: OSMOND, NE**

**COOP ID: 256395**

**Climate Division: NE 3**

**NWS Call Sign:**

**Elevation: 1,650 Feet Lat: 42°21N**

**Lon: 97°36W**

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	.44	.41	.79	1973	21	1.28	1975	.00+	1987	3.2	1.5	.2	.0	.00	.07	.16	.23	.29	.37	.45	.54	.67	.88	1.08
Feb	.77	.63	1.93	1971	19	3.51	1971	.00+	1996	3.6	2.4	.4	.1	.00	.00	.21	.34	.48	.62	.78	.98	1.24	1.67	2.08
Mar	1.83	1.22	2.30	1979	22	7.10	1987	.20	1994	5.8	4.3	1.1	.3	.16	.29	.53	.78	1.06	1.38	1.75	2.22	2.88	3.96	5.03
Apr	2.73	2.21	2.17	1985	30	8.59	1984	.22	1981	7.2	5.4	1.9	.7	.46	.70	1.09	1.47	1.85	2.27	2.75	3.33	4.10	5.36	6.56
May	3.77	3.33	5.17	1949	21	9.92	1982	1.26	1994	8.5	6.7	2.7	.9	1.36	1.72	2.23	2.65	3.06	3.48	3.94	4.47	5.14	6.18	7.14
Jun	3.85	3.37	3.53	1985	26	8.62	1999	.71	1980	7.8	6.0	2.6	1.3	1.25	1.61	2.15	2.61	3.05	3.51	4.01	4.60	5.36	6.53	7.62
Jul	3.22	2.62	3.36	1987	24	10.39	1993	.88	1980	6.9	5.3	2.4	.8	.69	.98	1.45	1.88	2.31	2.77	3.29	3.91	4.73	6.04	7.28
Aug	2.88	3.05	4.41	1960	28	5.66	1995	.66	2000	6.3	5.0	2.0	.8	.81	1.09	1.50	1.86	2.21	2.58	2.98	3.46	4.08	5.06	5.96
Sep	2.32	1.92	2.93	1994	4	7.86	1973	.19	1998	5.1	4.0	1.7	.5	.31	.50	.83	1.15	1.49	1.87	2.30	2.84	3.56	4.75	5.90
Oct	1.66	1.50	3.62	1968	16	4.33	1998	.00+	1988	4.4	3.5	1.2	.4	.00	.21	.53	.79	1.06	1.35	1.69	2.08	2.61	3.48	4.32
Nov	1.39	1.08	2.27	1959	4	3.78	1996	.00+	1980	3.9	2.6	.8	.4	.00	.15	.40	.62	.85	1.10	1.39	1.74	2.21	2.99	3.75
Dec	.52	.51	1.65	1953	3	1.41	1972	.00+	1986	3.7	1.7	.2	@	.00	.06	.15	.24	.32	.42	.52	.65	.83	1.12	1.40
Ann	25.38	26.57	5.17	May 1949	21	10.39	Jul 1993	.00+	Feb 1996	66.4	48.4	17.2	6.2	15.90	17.65	19.93	21.70	23.29	24.85	26.48	28.29	30.52	33.80	36.67

+ 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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**Station: OSMOND, NE**

**COOP ID: 256395**

**Climate Division: NE 3**

**NWS Call Sign:**

**Elevation: 1,650 Feet**

**Lat: 42°21N**

**Lon: 97°36W**

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	4.6	4.0	2	1	11.0	1982	22	11.0	1982	18	1982	24	10	1979	2.2	1.8	.6	.2	.1	7.3	4.9	3.9	.9
Feb	5.7	3.5	3	1	16.0	1984	18	17.5+	1984	18	1984	19	13	1979	2.1	1.7	.6	.3	.1	5.1	3.4	1.9	.2
Mar	4.2	2.8	1	#	8.0	1999	9	14.5	1998	17	1979	4	6	1979	1.9	1.7	.5	.2	.0	4.4	2.7	1.6	.2
Apr	2.4	.0	#	0	9.0	1994	29	15.0	1994	8	1997	12	1	1997	.7	.7	.3	.2	.0	.4	.3	.1	.0
May	.0	.0	#	0	.0	0	0	.0	0	#	1994	1	#	1994	.0	.0	.0	.0	.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	#	1985	30	#+	1985	0	0	0	0	0	.0	.0	.0	.0	.0	.0	.0	.0	.0
Oct	.6	.0	#	0	6.0	1982	20	6.0	1982	2	1995	23	#+	1997	.2	.2	.1	@	.0	.1	.0	.0	.0
Nov	4.9	3.0	1	#	17.0	1983	27	22.0	1983	20	1983	30	5	1983	1.8	1.4	.6	.3	.1	3.1	1.7	1.0	.1
Dec	5.7	5.0	3	1	8.0	1972	30	12.0	1972	20	1983	25	18	1983	2.9	2.2	.6	.2	.0	10.2	6.0	3.0	.3
Ann	28.1	18.3	N/A	N/A	17.0	Nov 1983	27	22.0	Nov 1983	20+	Dec 1983	25	18	Dec 1983	11.8	9.7	3.3	1.4	.3	30.6	19.0	11.5	1.7

+ 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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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	5/25	5/20	5/16	5/13	5/11	5/08	5/05	5/01	4/26
32	5/12	5/08	5/05	5/03	4/30	4/28	4/26	4/23	4/19
28	5/07	5/03	4/29	4/26	4/23	4/20	4/17	4/14	4/09
24	4/26	4/20	4/17	4/13	4/10	4/07	4/04	3/31	3/26
20	4/15	4/11	4/07	4/04	4/01	3/30	3/27	3/23	3/19
16	4/06	4/01	3/28	3/25	3/22	3/19	3/15	3/12	3/06
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	9/09	9/13	9/16	9/18	9/20	9/22	9/25	9/28	10/02
32	9/13	9/19	9/23	9/27	9/30	10/04	10/07	10/11	10/17
28	9/23	9/28	10/02	10/05	10/08	10/12	10/15	10/19	10/24
24	10/07	10/12	10/15	10/18	10/21	10/24	10/27	10/31	11/05
20	10/12	10/18	10/22	10/26	10/29	11/02	11/06	11/10	11/16
16	10/20	10/27	11/01	11/05	11/09	11/13	11/17	11/22	11/29
Freeze Free Period									
Temp (F)	Probability of longer than indicated freeze free period (Days)								
	.10	.20	.30	.40	.50	.60	.70	.80	.90
36	149	143	139	135	132	128	125	121	115
32	171	165	160	156	152	149	145	140	133
28	185	179	175	171	168	164	160	156	150
24	213	206	201	197	193	189	185	180	173
20	233	225	220	215	210	206	201	195	187
16	258	249	242	237	232	226	221	214	205

\* 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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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	1410	1091	877	479	191	27	4	19	121	438	926	1307	6890
60	1255	951	722	343	104	6	0	4	52	294	776	1152	5659
57	1162	869	630	270	66	2	0	1	26	219	687	1059	4991
55	1101	820	572	226	47	1	0	0	15	174	629	997	4582
50	955	688	430	133	16	0	0	0	3	88	491	846	3650
32	470	294	85	4	0	0	0	0	0	1	125	368	1347

Base	Cooling Degree Days (1)												
Above	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
32	83	127	231	520	889	1161	1327	1261	945	588	189	84	7405
55	1	9	4	52	223	471	614	548	271	48	3	0	2244
57	0	2	1	36	181	413	552	487	221	31	1	0	1925
60	0	0	0	20	125	327	459	397	157	13	0	0	1498
65	0	0	0	6	58	198	308	257	77	2	0	0	906
70	0	0	0	1	20	99	171	144	29	0	0	0	464

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	1	25	105	322	666	947	1109	1043	736	387	67	2	1	26	131	453	1119	2066	3175	4218	4954	5341	5408	5410
45	0	4	49	209	511	797	954	888	589	256	26	0	0	4	53	262	773	1570	2524	3412	4001	4257	4283	4283
50	0	0	19	119	367	647	799	733	443	152	9	0	0	0	19	138	505	1152	1951	2684	3127	3279	3288	3288
55	0	0	5	61	236	498	644	578	309	68	0	0	0	0	5	66	302	800	1444	2022	2331	2399	2399	2399
60	0	0	0	29	125	353	489	426	196	26	0	0	0	0	0	29	154	507	996	1422	1618	1644	1644	1644
Base	Growing Degree Units for Corn (Monthly)												Growing Degree Units for Corn (Accumulated Monthly)											
50/86	3	29	84	220	417	619	736	693	476	261	60	4	3	32	116	336	753	1372	2108	2801	3277	3538	3598	3602

(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](http://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](http://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"><li>a. Temperature/ Precipitation Tables<ol style="list-style-type: none"><li>1. 1971-2000 Monthly Normals</li><li>2. Cooperative Summary of the Day</li><li>3. National Weather Service station records</li><li>4. 1971-2000 serially complete daily data</li></ol></li><li>b. Degree Day Table<ol style="list-style-type: none"><li>1. Monthly and Annual Heating and Cooling Degree Days Normals to Selected Bases derived from 1971-2000 Monthly Normals</li><li>2. Daily Normal Growing Degree Units to Selected Base Temperatures derived from 1971-2000 serially complete daily data</li></ol></li></ol> | <ol style="list-style-type: none"><li>c. Snow Tables<ol style="list-style-type: none"><li>1. Snow Climatology</li><li>2. Cooperative Summary of the Day</li></ol></li><li>d. Freeze Data Table<br/>1971-2000 serially complete daily data</li></ol> |
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## References

U.S. Climate Normals 1971-2000, [www.ncdc.noaa.gov/normal.html](http://www.ncdc.noaa.gov/normal.html)  
U.S. Climate Normals 1971-2000-Products Clim20, [www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html](http://www.ncdc.noaa.gov/oa/climate/normal/usnormalsprods.html)  
Snow Climatology Project Description, [www.ncdc.noaa.gov/oa/climate/monitoring/snowclim/mainpage.html](http://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](http://www1.ncdc.noaa.gov/pub/data/special/serialcomplete_jam_0900.pdf)