



**NOAA TECHNICAL MEMORANDUM
NWS WR-262**

CLIMATE OF MILES CITY, MONTANA

**David A. Spector
Mark H. Strobin
Weather Forecast Office
Billings, Montana**

April 2000

**U.S. DEPARTMENT
OF COMMERCE**

National Oceanic and
Atmospheric Administration

National Weather
Service



NOAA TECHNICAL MEMORANDA
National Weather Service, Western Region Subseries

The National Weather Service (NWS) Western Region (WR) Subseries provides an informal medium for the documentation and quick dissemination of results not appropriate, or not yet ready, for formal publication. The series is used to report on work in progress, to describe technical procedures and practices, or to relate progress to a limited audience. These Technical Memoranda will report on investigations devoted primarily to regional and local problems of interest mainly to personnel, and hence will not be widely distributed.

Papers 1 to 25 are in the former series, ESSA Technical Memoranda, Western Region Technical Memoranda (WRTM); papers 24 to 59 are in the former series, ESSA Technical Memoranda, Weather Bureau Technical Memoranda (WBTM). Beginning with 60, the papers are part of the series, NOAA Technical Memoranda NWS. Out-of-print memoranda are not listed.

Papers 2 to 22, except for 5 (revised edition), are available from the National Weather Service Western Region, Scientific Services Division, 125 South State Street - Rm 1311, Salt Lake City, Utah 84138-1102. Paper 5 (revised edition), and all others beginning with 25 are available from the National Technical Information Service, U.S. Department of Commerce, Sillis Building, 5285 Port Royal Road, Springfield, Virginia 22161. Prices vary for all paper copies; microfiche are \$3.50. Order by accession number shown in parentheses at end of each entry.

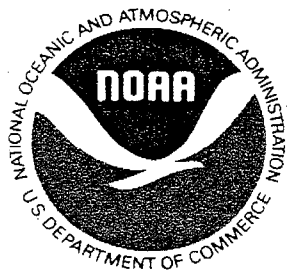
ESSA Technical Memoranda (WRTM)

- 2 Climatological Precipitation Probabilities. Compiled by Lucianne Miller, December 1965.
- 3 Western Region Pre- and Post-FP-3 Program, December 1, 1965, to February 20, 1966. Edward D. Diemer, March 1966.
- 5 Station Descriptions of Local Effects on Synoptic Weather Patterns. Philip Williams, Jr., April 1966 (Revised November 1967, October 1969). (PB-17800)
- 8 Interpreting the RAREP. Herbert P. Benner, May 1966 (Revised January 1967).
- 11 Some Electrical Processes in the Atmosphere. J. Latham, June 1966.
- 17 A Digitalized Summary of Radar Echoes within 100 Miles of Sacramento, California. J. A. Youngberg and L. B. Overaas, December 1966.
- 21 An Objective Aid for Forecasting the End of East Winds in the Columbia Gorge, July through October. D. John Coparanis, April 1967.
- 22 Derivation of Radar Horizons in Mountainous Terrain. Roger G. Pappas, April 1967.

ESSA Technical Memoranda, Weather Bureau Technical Memoranda (WBTM)

- 25 Verification of Operation Probability of Precipitation Forecasts, April 1966-March 1967. W. W. Dickey, October 1967. (PB-176240)
- 26 A Study of Winds in the Lake Mead Recreation Area. R. P. Augulis, January 1968. (PB-177830)
- 28 Weather Extremes. R. J. Schmidli, April 1968 (Revised March 1986). (PB86 177672/AS). (Revised October 1991 - PB92-115062/AS)
- 29 Small-Scale Analysis and Prediction. Philip Williams, Jr., May 1968. (PB178425)
- 30 Numerical Weather Prediction and Synoptic Meteorology. CPT Thomas D. Murphy, USAF, May 1968. (AD 673365)
- 31 Precipitation Detection Probabilities by Salt Lake ARTC Radars. Robert K. Belesky, July 1968. (PB 179084)
- 32 Probability Forecasting—A Problem Analysis with Reference to the Portland Fire Weather District. Harold S. Ayer, July 1968. (PB 179289)
- 36 Temperature Trends in Sacramento—Another Heat Island. Anthony D. Lentini, February 1969. (PB 183055)
- 37 Disposal of Logging Residues Without Damage to Air Quality. Owen P. Cramer, March 1969. (PB 183057)
- 39 Upper-Air Lows Over Northwestern United States. A.L. Jacobson, April 1969. PB 184296)
- 40 The Man-Machine Mix in Applied Weather Forecasting in the 1970s. L.W. Snellman, August 1969. (PB 185068)
- 43 Forecasting Maximum Temperatures at Helena, Montana. David E. Olsen, October 1969. (PB 185762)
- 44 Estimated Return Periods for Short-Duration Precipitation in Arizona. Paul C. Kangieser, October 1969. (PB 187763)
- 46 Applications of the Net Radiometer to Short-Range Fog and Stratus Forecasting at Eugene, Oregon. L. Yee and E. Bates, December 1969. (PB 190478)
- 47 Statistical Analysis as a Flood Routing Tool. Robert J.C. Burnash, December 1969. (PB 188744)
- 48 Tsunami. Richard P. Augulis, February 1970. (PB 190157)
- 49 Predicting Precipitation Type. Robert J.C. Burnash and Floyd E. Hug, March 1970. (PB 190962)
- 50 Statistical Report on Aeroallergens (Pollens and Molds) Fort Huachuca, Arizona, 1969. Wayne S. Johnson, April 1970. (PB 191743)
- 51 Western Region Sea State and Surf Forecaster's Manual. Gordon C. Shields and Gerald B. Burdwell, July 1970. (PB 193102)
- 52 Sacramento Weather Radar Climatology. R.G. Pappas and C. M. Veliquette, July 1970. (PB 193347)
- 54 A Refinement of the Vorticity Field to Delineate Areas of Significant Precipitation. Barry B. Aronovitch, August 1970.
- 55 Application of the SSARR Model to a Basin without Discharge Record. Vail Schermerhorn and Donal W. Kuehl, August 1970. (PB 194394)
- 56 Areal Coverage of Precipitation in Northwestern Utah. Philip Williams, Jr., and Werner J. Heck, September 1970. (PB 194389)
- 57 Preliminary Report on Agricultural Field Burning vs. Atmospheric Visibility in the Willamette Valley of Oregon. Earl M. Bates and David O. Chilcote, September 1970. (PB 194710)
- 58 Air Pollution by Jet Aircraft at Seattle-Tacoma Airport. Wallace R. Donaldson, October 1970. (COM 71 00017)
- 59 Application of PE Model Forecast Parameters to Local-Area Forecasting. Leonard W. Snellman, October 1970. (COM 71 00016)
- 60 An Aid for Forecasting the Minimum Temperature at Medford, Oregon, Arthur W. Fritz, October 1970. (COM 71 00120)
- 63 700-mb Warm Air Advection as a Forecasting Tool for Montana and Northern Idaho. Norris E. Woerner, February 1971. (COM 71 00349)
- 64 Wind and Weather Regimes at Great Falls, Montana. Warren B. Price, March 1971.
- 65 Climate of Sacramento, California. Laura Masters-Bevan. NWSO Sacramento, November 1998 (6th Revision. (PB99-118424)
- 66 A Preliminary Report on Correlation of ARTCC Radar Echoes and Precipitation. Wilbur K. Hall, June 1971. (COM 71 00829)
- 69 National Weather Service Support to Soaring Activities. Ellis Burton, August 1971. (COM71 00956)
- 71 Western Region Synoptic Analysis-Problems and Methods. Philip Williams, Jr., February 1972. (COM 72 10433)
- 74 Thunderstorms and Hail Days Probabilities in Nevada. Clarence M. Sakamoto, April 1972. (COM 72 10554)
- 75 A Study of the Low Level Jet Stream of the San Joaquin Valley. Ronald A. Willis and Philip Williams, Jr., May 1972. (COM 72 10707)
- 76 Monthly Climatological Charts of the Behavior of Fog and Low Stratus at Los Angeles International Airport. Donald M. Gates, July 1972. (COM 72 11140)
- 77 A Study of Radar Echo Distribution in Arizona During July and August. John E. Hales, Jr., July 1972. (COM 72 11136)
- 78 Forecasting Precipitation at Bakersfield, California, Using Pressure Gradient Vectors. Earl T. Riddiough, July 1972. (COM 72 11146)

- 79 Climate of Stockton, California. Robert C. Nelson, July 1972. (COM 72 10920)
- 80 Estimation of Number of Days Above or Below Selected Temperatures. Clarence M. Sakamoto, October 1972. (COM 72 10021)
- 81 An Aid for Forecasting Summer Maximum Temperatures at Seattle, Washington. Edgar G. Johnson, November 1972. (COM 73 10150)
- 82 Flash Flood Forecasting and Warning Program in the Western Region. Philip Williams, Jr., Chester L. Glenn, and Roland L. Raetz, December 1972, (Revised March 1978). (COM 73 10251)
- 83 A comparison of Manual and Semiautomatic Methods of Digitizing Analog Wind Records. Glenn E. Rasch, March 1973. (COM 73 10669)
- 86 Conditional Probabilities for Sequences of Wet Days at Phoenix, Arizona. Paul C. Kangieser, June 1973. (COM 73 11264)
- 87 A Refinement of the Use of K-Values in Forecasting Thunderstorms in Washington and Oregon. Robert Y.G. Lee, June 1973. (COM 73 11276)
- 89 Objective Forecast Precipitation Over the Western Region of the United States. Julia N. Paegle and Larry P. Kierulff, September 1973. (COM 73 11946/3AS)
- 91 Arizona "Eddy" Tomatoes. Robert S. Ingram, October 1973. (COM 73 10465)
- 92 Smoke Management in the Willamette Valley. Earl M. Bates, May 1974. (COM 74 11277/AS)
- 93 An Operational Evaluation of 500-mb Type Regression Equations. Alexander E. MacDonald, June 1974. (COM 74 11407/AS)
- 94 Conditional Probability of Visibility Less than One-Half Mile in Radiation Fog at Fresno, California. John D. Thomas, August 1974. (COM 74 11555/AS)
- 95 Climate of Flagstaff, Arizona. Paul W. Sorenson, and updated by Reginald W. Preston, January 1987. (PB87 143160/AS)
- 96 Map type Precipitation Probabilities for the Western Region. Glenn E. Rasch and Alexander E. MacDonald, February 1975. (COM 75 10428/AS)
- 97 Eastern Pacific Cut-Off Low of April 21-28, 1974. William J. Alder and George R. Miller, January 1976. (PB 250 711/AS)
- 98 Study on a Significant Precipitation Episode in Western United States. Ira S. Brenner, April 1976. (COM 75 10719/AS)
- 99 A Study of Flash Flood Susceptibility-A Basin in Southern Arizona. Gerald Williams, August 1975. (COM 75 11360/AS)
- 102 A Set of Rules for Forecasting Temperatures in Napa and Sonoma Counties. Wesley L. Tuft, October 1975. (PB 246 902/AS)
- 103 Application of the National Weather Service Flash-Flood Program in the Western Region. Gerald Williams, January 1976. (PB 253 053/AS)
- 104 Objective Aids for Forecasting Minimum Temperatures at Reno, Nevada, During the Summer Months. Christopher D. Hill, January 1976. (PB 252 866/AS)
- 105 Forecasting the Mono Wind. Charles P. Ruscha, Jr., February 1976. (PB 254 650)
- 106 Use of MOS Forecast Parameters in Temperature Forecasting. John C. Plankinton, Jr., March 1976. (PB 254 649)
- 107 Map Types as Aids in Using MOS PoPs in Western United States. Ira S. Brenner, August 1976. (PB 259 594)
- 108 Other Kinds of Wind Shear. Christopher D. Hill, August 1976. (PB 260 437/AS)
- 109 Forecasting North Winds in the Upper Sacramento Valley and Adjoining Forests. Christopher E. Fontana, September 1976. (PB 273 677/AS)
- 110 Cool Inflow as a Weakening Influence on Eastern Pacific Tropical Cyclones. William J. Denney, November 1976. (PB 264 655/AS)
- 112 The MAN/MOS Program. Alexander E. MacDonald, February 1977. (PB 265 941/AS)
- 113 Winter Season Minimum Temperature Formula for Bakersfield, California, Using Multiple Regression. Michael J. Oard, February 1977. (PB 273 694/AS)
- 114 Tropical Cyclone Kathleen. James R. Fors, February 1977. (PB 273 676/AS)
- 116 A Study of Wind Gusts on Lake Mead. Bradley Colman, April 1977. (PB 268 847)
- 117 The Relative Frequency of Cumulonimbus Clouds at the Nevada Test Site as a Function of K-Value. R.F. Quiring, April 1977. (PB 272 831)
- 118 Moisture Distribution Modification by Upward Vertical Motion. Ira S. Brenner, April 1977. (PB 268 740)
- 119 Relative Frequency of Occurrence of Warm Season Echo Activity as a Function of Stability Indices Computed from the Yucca Flat, Nevada, Rawlinsonde. Darryl Randerson, June 1977. (PB 271 290/AS)
- 121 Climatological Prediction of Cumulonimbus Clouds in the Vicinity of the Yucca Flat Weather Station. R.F. Quiring, June 1977. (PB 271 704/AS)
- 122 A Method for Transforming Temperature Distribution to Normality. Morris S. Webb, Jr., June 1977. (PB 271 742/AS)
- 124 Statistical Guidance for Prediction of Eastern North Pacific Tropical Cyclone Motion - Part I. Charles J. Neumann and Preston W. Leftwich, August 1977. (PB 272 661)
- 125 Statistical Guidance on the Prediction of Eastern North Pacific Tropical Cyclone Motion - Part II. Preston W. Leftwich and Charles J. Neumann, August 1977. (PB 273 155/AS)
- 126 Climate of San Francisco. E. Jan Null, February 1978. (Revised by George T. Pericht, April 1988 and January 1995). (PB88 208624/AS)
- 127 Development of a Probability Equation for Winter-Type Precipitation Patterns in Great Falls, Montana. Kenneth B. Mielke, February 1978. (PB 281 387/AS)
- 128 Hand Calculator Program to Compute Parcel Thermal Dynamics. Dan Gudgeal, April 1978. (PB 283 080/AS)
- 129 Fire whirls. David W. Goens, May 1978. (PB 283 866/AS)
- 130 Flash-Flood Procedure. Ralph C. Hatch and Gerald Williams, May 1978. (PB 286 014/AS)
- 131 Automated Fire-Weather Forecasts. Mark A. Mollner and David E. Olsen, September 1978. (PB 289 916/AS)
- 132 Estimates of the Effects of Terrain Blocking on the Los Angeles WSR-74C Weather Radar. R.G. Pappas, R.Y. Lee, B.W. Finke, October 1978. (PB 289767/AS)
- 133 Spectral Techniques in Ocean Wave Forecasting. John A. Jannuzzi, October 1978. (PB291317/AS)
- 134 Solar Radiation. John A. Jannuzzi, November 1978. (PB291195/AS)
- 135 Application of a Spectrum Analyzer in Forecasting Ocean Swell in Southern California Coastal Waters. Lawrence P. Kierulff, January 1979. (PB292716/AS)
- 136 Basic Hydrologic Principles. Thomas L. Dietrich, January 1979. (PB292247/AS)
- 137 LFM 24-Hour Prediction of Eastern Pacific Cyclones Refined by Satellite Images. John R. Zimmerman and Charles P. Ruscha, Jr., January 1979. (PB294324/AS)
- 138 A Simple Analysis/Diagnosis System for Real Time Evaluation of Vertical Motion. Scott Heflick and James R. Fors, February 1979. (PB294216/AS)
- 139 Aids for Forecasting Minimum Temperature in the Wenatchee Frost District. Robert S. Robinson, April 1979. (PB298339/AS)
- 140 Influence of Cloudiness on Summertime Temperatures in the Eastern Washington Fire Weather district. James Holcomb, April 1979. (PB298674/AS)
- 141 Comparison of LFM and MFM Precipitation Guidance for Nevada During Doreen. Christopher Hill, April 1979. (PB298613/AS)
- 142 The Usefulness of Data from Mountaintop Fire Lookout Stations in Determining Atmospheric Stability. Jonathan W. Corey, April 1979. (PB298899/AS)
- 143 The Depth of the Marine Layer at San Diego as Related to Subsequent Cool Season Precipitation Episodes in Arizona. Ira S. Brenner, May 1979. (PB298817/AS)
- 144 Arizona Cool Season Climatological Surface Wind and Pressure Gradient Study. Ira S. Brenner, May 1979. (PB298900/AS)
- 146 The BART Experiment. Morris S. Webb, October 1979. (PB80 155112)
- 147 Occurrence and Distribution of Flash Floods in the Western Region. Thomas L. Dietrich, December 1979. (PB80 160344)
- 149 Misinterpretations of Precipitation Probability Forecasts. Allan H. Murphy, Sarah Lichtenstein, Baruch Fischhoff, and Robert L. Winkler, February 1980. (PB80 174576)
- 150 Annual Data and Verification Tabulation - Eastern and Central North Pacific Tropical Storms and Hurricanes 1979. Emil B. Gunther and Staff, EPHC, April 1980. (PB80 220486)



**NOAA TECHNICAL MEMORANDUM
NWS WR-262**

CLIMATE OF MILES CITY, MONTANA

**David A. Spector
Mark H. Strobin
Weather Forecast Office
Billings, Montana**

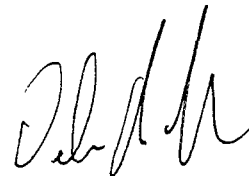
April 2000

**U.S. DEPARTMENT
OF COMMERCE**

National Oceanic and
Atmospheric Administration

National Weather
Service

This publication has been reviewed
and is approved for publication by
Scientific Services Division,
Western Region



Delain A. Edman, Chief
Scientific Services Division
Salt Lake City, Utah

TABLE OF CONTENTS

I. INTRODUCTION	1
II. STATION HISTORY	1
MONTHLY NORMALS	3
MONTHLY EXTREMES	4

MONTHLY NORMALS, EXTREMES (1936 TO 1999) AND DEGREE DAYS

JANUARY	6
FEBRUARY	7
MARCH	8
APRIL	9
MAY	10
JUNE	11
JULY	12
AUGUST	13
SEPTEMBER	14
OCTOBER	15
NOVEMBER	16
DECEMBER	17

MONTHLY NORMALS, EXTREMES (ALL TIME) AND DEGREE DAYS

JANUARY	18
FEBRUARY	19
MARCH	20
APRIL	21
MAY	22
JUNE	23
JULY	24
AUGUST	25
SEPTEMBER	26
OCTOBER	27
NOVEMBER	28
DECEMBER	29

TEMPERATURE DATA (1936 TO 1999)

THE 20 HIGHEST DAILY MAXIMUM TEMPERATURES 30
THE 20 LOWEST DAILY MAXIMUM TEMPERATURES 31
THE 20 LOWEST DAILY MINIMUM TEMPERATURES 32
THE 20 HIGHEST DAILY MINIMUM TEMPERATURES 33
THE 20 HIGHEST ANNUAL MEAN TEMPERATURES 34
THE 20 LOWEST ANNUAL MEAN TEMPERATURES 35

PRECIPITATION DATA

MONTHLY PRECIPITATION 36
MONTHLY PRECIPITATION EXTREMES 39
HIGHEST MONTHLY AND ANNUAL PRECIPITATION 40
THE 20 WETTEST YEARS 41
THE 20 WETTEST MONTHS 42
THE 20 GREATEST PRECIPITATION EVENTS 43
THE 20 DRIEST YEARS 44

SNOWFALL DATA

MONTHLY SNOWFALL IN INCHES 45
HIGHEST MONTHLY AND ANNUAL SNOWFALL 48
THE 20 HIGHEST ANNUAL SNOWFALLS 49
THE 20 HIGHEST MONTHLY SNOWFALLS 50
THE 20 HIGHEST DAILY SNOWFALLS 51
THE 20 LOWEST ANNUAL SNOWFALLS 52

WIND DATA

MEAN WIND SPEED AND DIRECTIONS 53

MISCELLANEOUS

ACKNOWLEDGMENTS 67
REFERENCES 68

CLIMATE OF MILES CITY, MONTANA

*David A. Spector and Mark H. Strobin
National Weather Service - Billings, Montana*

I. INTRODUCTION

Miles City is located on the western edge of the northern Great Plains in a shallow part of the Yellowstone River Valley. The Tongue River runs south of the city. To the north, the river bluffs are from 200 to 300 feet above the valley floor. There are no nearby mountain ranges to influence climatic conditions. Temperatures range from very cold in the winter to hot in the summer, which is characteristic of continental climates. The climate of Miles City is classified as semi-arid with less than 10 inches of liquid precipitation about one year in seven.

Cold waves accompanied by temperatures of zero or lower, occur frequently during the winter, are usually accompanied by northerly winds and snow, and last from two to four days. Periods of several days with minimums of zero degrees or lower can be expected during the winter months. Spring and fall are cool with maximum temperatures of 90°F or above rarely occurring as early as April or as late as October. Maximum temperatures of 90°F or more occur frequently in July and August, but as to be expected in a semi-arid region, humidity is low and the heat is not as oppressive as would be expected from such hot temperatures.

About 70% of the precipitation falls during the growing season, April through September, with greatest monthly amounts usually falling during May and June. Precipitation during the spring and summer often falls during periods of shower or thunderstorm activity; however, general rains also are frequent in late spring and early summer. Measurable snowfall can be expected as late as May and as early as September.

Killing freezes generally do not occur after the last week in April or earlier than the first week of October. The growing season averages about 158 days. Sunny growing seasons, with May and June rainfall being the heaviest of the year, encourage rapid crop development. Crops grown in this area seldom have difficulty in reaching maturity, although hail sometimes causes local damage during summer.

II. STATION HISTORY

Weather records actually began being taken three miles southwest of Miles City at Fort Keogh on October 1, 1877. Records at Fort Keogh continued until December 31, 1899. The observations were actually taken at five different locations on Fort Keogh during that period. Weather records were taken at five different locations inside the city

between October 1, 1891 and January 15, 1943. Observations at Wiley Field began on January 1, 1933, first at the terminal, then at the Radio Range Station beginning March 1, 1936. Observations have been taken at the present location, The Radio Watch House on the southeast corner of the airport, since November 7, 1936 when full airway observations began. Most of the records mentioned in this publication only include observations taken from November 7, 1936 through December 31, 1999.

Monthly Normals

Miles City, Montana

Period of Record: 1961-1990

Month	MAX	MIN	AVG	HDD	CDD	PCPN	SNOW
Jan.	25.7	6.3	16.0	1519	0	0.55	6.0
Feb.	33.4	13.0	23.3	1168	0	0.45	4.7
Mar.	44.3	22.2	33.3	983	0	0.62	4.9
Apr.	58.1	33.8	46.0	570	0	1.36	3.9
May	69.1	44.6	56.9	266	15	2.27	0.8
Jun.	79.9	54.1	67.0	84	144	2.77	0.0
Jul.	88.8	60.7	74.7	55	306	1.55	0.0
Aug.	86.5	58.5	72.5	39	271	1.15	0.0
Sep.	73.0	46.5	59.8	228	72	1.27	0.4
Oct.	60.4	35.5	48.0	527	0	0.90	0.7
Nov.	42.4	21.7	32.1	987	0	0.54	4.0
Dec.	29.0	9.4	19.2	1420	0	0.64	6.2
Annual	57.6	33.9	45.7	7796	808	14.07	31.6

All Temperatures are in Degrees Fahrenheit
Heating and Cooling Degree Days are Based on a 65 Degree Standard
Precipitation and Snowfall are in Inches

Monthly Extremes

Miles City, Montana

Period of Record: 1936-1999

Month	High Max	Last Occ'd	Low Max	Last Occ'd	Low Min	Last Occ'd	High Min	Last Occ'd
Jan.	72	1992	-18	1954	-37	1996	39	1974
Feb.	73	1992	-22	1989	-37	1939	40	1991
Mar.	83	1943	-6	1951	-28	1996	46	1961
Apr.	92	1980	20	1954	5	1986	60	1952
May	100	1988	28	1953	15	1954	70	1980
Jun.	106	1988	40	1951	32	1951	78	1988
Jul.	109	1980	57	1972	41	1971	77	1988
Aug.	110	1995	52	1992	35	1966	77	1983
Sep.	106	1983	34	1984	19	1995	74	1960
Oct.	94	1997	15	1991	-8	1991	57	1957
Nov.	80	1999	-7	1985	-25	1985	45	1990
Dec.	69	1939	-25	1983	-40	1989	41	1980

Monthly Extremes

Miles City, Montana

All Time

Month	High Max	Last Occ'd	Low Min	Last Occ'd
Jan.	72	1992	-65	1888
Feb.	73	1992	-49	1887
Mar.	88	1910	-45	1891
Apr.	94	1908	-7	1899
May	101	1934	6	1908
Jun.	108	1910	32	1951
Jul.	112	1886	40	1915
Aug.	112	1886	34	1910
Sep.	106	1983	17	1926
Oct.	94	1997	-8	1991
Nov.	80	1999	-31	1880
Dec.	69	1939	-52	1880

January

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	25/06	57/1964	-5/1942	-29/1942	32/1998	49	0	1
2	25/06	50/1962	-8/1968	-23/1991	37/1939	49	0	2
3	25/06	55/1962	-10/1950	-23/1977	39/1962	49	0	3
4	25/06	49/1954	-8/1979	-27/1979	29/1984	49	0	4
5	25/06	50/1958	-6/1982	-27/1988	33/1954	49	0	5
6	25/05	53/1954	-6/1991	-24/1996	32/1963	50	0	6
7	25/05	55/1963	-9/1976	-23/1970	34/1948	50	0	7
8	25/05	54/1958	-11/1970	-26/1977	35/1990	50	0	8
9	25/05	60/1953	-5/1965	-21/1973	31/1990	50	0	9
10	25/05	54/1995	-15/1982	-29/1982	30/1995	50	0	10
11	25/05	55/1987	-12/1997	-27/1974	31/1987	50	0	11
12	25/05	62/1953	-8/1997	-35/1998	36/1983	50	0	12
13	25/06	56/1944	-10/1950	-25/1972	31/1991	49	0	13
14	25/06	55/1944	-12/1950	-28/1979	33/1973	49	0	14
15	25/06	50/1974	-7/1950	-29/1950	38/1974	49	0	15
16	25/06	56/1961	-9/1954	-27/1937	39/1974	49	0	16
17	25/06	56/1946	-14/1943	-28/1943	31/1986	49	0	17
18	25/06	51/1981	-8/1963	-32/1943	35/1944	49	0	18
19	25/06	60/1944	-10/1943	-30/1954	37/1986	49	0	19
20	26/06	56/1992	-18/1954	-36/1954	30/1967	49	0	20
21	26/06	53/1981	-10/1949	-30/1949	32/1968	49	0	21
22	26/07	59/1981	-9/1982	-30/1982	34/1990	48	0	22
23	26/07	58/1981	-10/1949	-32/1982	35/1947	48	0	23
24	26/07	56/1981	-17/1969	-32/1969	35/1968	48	0	24
25	27/07	52/1992	-14/1972	-37/1969	34/1984	48	0	25
26	27/07	51/1992	-17/1972	-33/1957	29/1984	48	0	26
27	27/08	55/1992	-15/1972	-27/1972	32/1984	47	0	27
28	27/08	57/1992	-12/1969	-25/1969	34/1984	47	0	28
29	28/08	58/1992	-13/1996	-27/1996	35/1992	47	0	29
30	28/08	57/1992	-11/1996	-37/1996	36/1989	47	0	30
31	28/09	72/1992	-1/1985	-26/1956	38/1995	46	0	31

Numbers in bold indicate monthly extremes

February

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	29/09	61/1995	-12/1989	-30/1996	34/1995	46	0	1
2	29/09	61/1962	-22/1989	-35/1996	36/1962	46	0	2
3	29/10	65/1962	-18/1989	-36/1982	39/1962	45	0	3
4	30/10	57/1992	-12/1989	-31/1989	35/1963	45	0	4
5	30/10	56/1963	-3/1982	-24/1982	35/1965	45	0	5
6	30/11	61/1987	3/1971	-26/1971	32/1963	44	0	6
7	31/11	59/1954	-6/1994	-31/1971	34/1963	44	0	7
8	31/11	65/1954	-18/1939	-33/1939	37/1945	44	0	8
9	32/11	53/1984	-17/1939	-30/1937	33/1976	43	0	9
10	32/12	66/1961	-7/1939	-37/1939	34/1961	43	0	10
11	32/12	59/1987	6/1944	-24/1944	36/1990	43	0	11
12	33/12	57/1991	-7/1949	-18/1958	33/1991	42	0	12
13	33/13	57/1999	0/1949	-25/1949	34/1971	42	0	13
14	33/13	57/1981	-2/1938	-17/1938	32/1996	42	0	14
15	34/13	55/1992	-8/1979	-25/1958	36/1981	41	0	15
16	34/13	60/1981	-2/1993	-25/1956	35/1991	41	0	16
17	34/14	62/1995	0/1942	-28/1938	37/1977	41	0	17
18	35/14	63/1948	0/1966	-19/1959	37/1983	40	0	18
19	35/14	69/1995	-3/1959	-26/1959	36/1996	40	0	19
20	35/15	66/1995	6/1957	-29/1959	40/1991	40	0	20
21	36/15	70/1995	-1/1957	-17/1949	37/1995	39	0	21
22	36/15	62/1992	0/1957	-18/1993	32/1998	39	0	22
23	36/16	64/1954	-1/1955	-18/1993	35/1976	39	0	23
24	37/16	72/1995	3/1993	-23/1993	33/1986	38	0	24
25	37/16	67/1995	7/1962	-16/1993	39/1986	38	0	25
26	37/16	62/1988	2/1962	-20/1962	35/1999	38	0	26
27	38/17	73/1992	2/1962	-24/1960	35/1992	37	0	27
28	38/17	69/1992	-2/1962	-27/1962	42/1999	37	0	28
29	38/17	72/1992	11/1972	-13/1960	29/1992	37	0	29

Numbers in bold indicate monthly extremes

March

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	38/17	70/1992	2/1989	-19/1960	34/1994	37	0	1
2	39/18	66/1946	2/1962	-17/1960	36/1994	36	0	2
3	39/18	68/1992	2/1978	-25/1960	35/1994	36	0	3
4	39/18	68/1987	1/1989	-24/1989	38/1991	36	0	4
5	40/18	73/1987	0/1995	-24/1947	40/1992	36	0	5
6	40/19	70/1987	-2/1951	-27/1947	37/1992	35	0	6
7	40/19	65/1977	-6/1951	-22/1951	36/1992	35	0	7
8	41/19	64/1941	-2/1951	-28/1996	37/1986	35	0	8
9	41/20	65/1954	6/1948	-9/1949	34/1986	34	0	9
10	42/20	69/1954	7/1998	-15/1949	37/1995	34	0	10
11	42/20	72/1990	9/1950	-22/1951	35/1995	34	0	11
12	42/21	66/1945	12/1950	-17/1951	38/1983	33	0	12
13	43/21	70/1994	10/1944	-7/1962	40/1972	33	0	13
14	43/21	72/1999	8/1949	-18/1947	36/1972	33	0	14
15	44/22	72/1992	4/1943	-13/1947	38/1999	32	0	15
16	44/22	78/1994	7/1943	-5/1943	41/1992	32	0	16
17	44/22	70/1974	4/1965	-7/1965	41/1972	32	0	17
18	45/23	70/1972	13/1965	-12/1965	37/1972	31	0	18
19	45/23	76/1997	8/1965	-8/1965	39/1975	31	0	19
20	46/23	77/1997	11/1965	-11/1965	39/1997	30	0	20
21	46/24	72/1939	23/1952	-5/1965	41/1973	30	0	21
22	47/24	75/1963	14/1965	-2/1952	39/1986	29	0	22
23	47/25	78/1993	7/1965	-7/1965	43/1945	29	0	23
24	48/25	78/1993	9/1955	-13/1964	46/1961	28	0	24
25	48/25	76/1999	13/1955	-10/1937	43/1993	28	0	25
26	49/26	80/1999	21/1975	-6/1937	45/1997	27	0	26
27	49/26	82/1946	14/1975	-3/1937	43/1960	27	0	27
28	50/27	80/1986	14/1954	0/1954	44/1946	26	0	28
29	50/27	83/1943	25/1996	-5/1954	42/1986	26	0	29
30	51/27	79/1986	20/1938	2/1989	42/1986	26	0	30
31	51/28	75/1964	26/1975	6/1954	40/1946	25	0	31

Numbers in bold indicate monthly extremes

April

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	52/28	76/1991	23/1975	10/1967	40/1959	25	0	1
2	52/29	80/1943	20/1954	7/1954	40/1985	24	0	2
3	53/29	81/1992	21/1982	9/1982	45/1991	24	0	3
4	53/29	78/1991	24/1982	10/1982	47/1992	24	0	4
5	54/30	84/1991	25/1979	6/1982	51/1991	23	0	5
6	54/30	84/1969	25/1997	14/1997	46/1972	23	0	6
7	55/31	77/1977	27/1997	9/1997	47/1988	22	0	7
8	55/31	80/1977	28/1997	6/1997	50/1943	22	0	8
9	55/31	84/1996	27/1997	16/1973	48/1943	22	0	9
10	56/32	78/1985	27/1997	12/1997	47/1970	21	0	10
11	56/32	84/1949	26/1940	8/1940	42/1968	21	0	11
12	57/33	79/1976	31/1979	13/1957	46/1976	20	0	12
13	57/33	78/1969	30/1986	15/1986	53/1976	20	0	13
14	58/33	84/1942	24/1986	10/1986	50/1942	19	0	14
15	58/34	81/1981	37/1970	5/1986	49/1963	19	0	15
16	59/34	82/1994	35/1970	14/1951	46/1946	18	0	16
17	59/34	88/1994	36/1989	19/1953	53/1979	18	0	17
18	59/35	83/1980	28/1941	15/1953	50/1994	18	0	18
19	60/35	86/1962	26/1951	12/1951	51/1990	17	0	19
20	60/36	90/1980	32/1951	19/1966	54/1946	17	0	20
21	60/36	92/1980	27/1967	15/1967	55/1989	17	0	21
22	61/36	87/1994	34/1967	8/1967	54/1994	16	0	22
23	61/37	86/1943	40/1958	19/1967	53/1990	16	0	23
24	62/37	89/1962	38/1960	24/1958	51/1969	15	0	24
25	62/37	89/1974	36/1988	25/1959	52/1962	15	0	25
26	62/38	88/1952	32/1994	20/1995	52/1946	15	0	26
27	63/38	85/1992	32/1956	20/1956	53/1978	14	0	27
28	63/38	91/1952	32/1950	21/1984	60/1952	14	0	28
29	63/39	88/1939	34/1970	19/1966	59/1980	14	0	29
30	64/39	88/1968	32/1967	20/1966	57/1980	13	0	30

Numbers in bold indicate monthly extremes

May

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	64/39	89/1981	39/1954	24/1954	58/1987	13	0	1
2	64/40	90/1985	35/1967	18/1954	53/1981	13	0	2
3	65/40	89/1986	37/1950	15/1954	60/1985	12	0	3
4	65/41	88/1966	39/1950	24/1967	56/1939	12	0	4
5	65/41	89/1966	51/1950	27/1967	52/1993	12	0	5
6	66/41	90/1992	46/1965	28/1946	56/1970	11	0	6
7	66/42	90/1992	40/1950	25/1984	53/1992	11	0	7
8	66/42	90/1987	38/1950	18/1945	56/1977	11	0	8
9	67/42	89/1987	33/1996	27/1996	57/1977	10	0	9
10	67/43	89/1961	40/1996	23/1979	59/1977	10	0	10
11	67/43	92/1958	28/1953	23/1953	60/1958	10	0	11
12	68/43	96/1960	33/1983	24/1953	59/1977	9	0	12
13	68/44	90/1977	44/1995	28/1967	62/1977	9	0	13
14	68/44	88/1987	37/1945	30/1945	60/1969	9	0	14
15	69/44	94/1984	48/1942	32/1945	64/1984	8	0	15
16	69/45	89/1979	44/1942	31/1986	57/1949	8	0	16
17	69/45	92/1972	46/1974	32/1943	60/1972	8	0	17
18	70/45	98/1948	46/1977	34/1971	62/1948	7	0	18
19	70/46	94/1992	48/1959	28/1968	65/1948	7	0	19
20	70/46	99/1964	47/1969	31/1968	63/1964	7	0	20
21	71/46	96/1980	47/1974	29/1963	63/1980	6	0	21
22	71/47	99/1980	51/1971	36/1969	68/1980	6	0	22
23	72/47	96/1980	50/1949	30/1947	70/1980	5	0	23
24	72/47	95/1985	48/1996	33/1947	64/1977	5	0	24
25	72/48	90/1969	52/1989	33/1995	59/1952	5	0	25
26	73/48	98/1969	48/1965	34/1965	59/1942	4	0	26
27	73/48	96/1969	48/1959	30/1965	60/1979	4	0	27
28	73/49	95/1937	50/1947	24/1947	62/1949	4	0	28
29	74/49	100/1988	50/1982	31/1947	68/1988	3	0	29
30	74/49	98/1984	50/1978	36/1982	64/1988	3	0	30
31	74/49	92/1986	42/1951	32/1982	62/1944	3	0	31

Numbers in bold indicate monthly extremes

June

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	75/50	96/1948	40/1951	32/1951	61/1997	2	0	1
2	75/50	96/1986	49/1951	32/1951	62/1991	2	0	2
3	75/50	95/1988	46/1943	32/1943	64/1991	2	0	3
4	76/51	101/1988	44/1944	38/1944	68/1988	1	0	4
5	76/51	105/1988	47/1945	38/1944	75/1988	1	0	5
6	76/51	102/1988	53/1945	37/1944	68/1988	1	0	6
7	77/52	104/1988	51/1950	39/1982	64/1988	0	0	7
8	77/52	99/1988	42/1950	32/1950	66/1997	0	0	8
9	78/52	100/1956	49/1995	35/1950	65/1977	0	0	9
10	78/53	104/1988	59/1947	39/1969	75/1988	0	1	10
11	78/53	99/1992	62/1967	36/1969	70/1956	0	1	11
12	79/53	97/1992	48/1969	35/1969	67/1953	0	1	12
13	79/53	103/1979	61/1967	34/1969	66/1979	0	1	13
14	79/54	99/1959	57/1990	39/1945	66/1995	0	2	14
15	80/54	97/1987	61/1968	38/1945	66/1987	0	2	15
16	80/54	94/1995	59/1998	41/1945	63/1996	0	2	16
17	80/55	102/1988	55/1949	43/1954	65/1996	0	3	17
18	81/55	98/1986	53/1973	38/1973	69/1996	0	3	18
19	81/55	101/1974	62/1972	43/1946	65/1988	0	3	19
20	82/55	105/1988	62/1948	43/1978	78/1988	0	4	20
21	82/56	101/1988	55/1947	40/1942	75/1988	0	4	21
22	82/56	103/1954	59/1944	42/1942	67/1938	0	4	22
23	83/56	104/1988	57/1967	43/1942	68/1988	0	5	23
24	83/56	102/1986	64/1989	46/1953	72/1983	0	5	24
25	83/57	100/1974	59/1969	37/1958	69/1990	0	5	25
26	84/57	106/1988	55/1969	40/1950	76/1988	0	6	26
27	84/57	102/1970	56/1999	42/1985	72/1988	0	6	27
28	84/58	102/1966	55/1945	43/1951	70/1988	0	6	28
29	85/58	104/1961	59/1968	43/1959	71/1961	0	7	29
30	85/58	101/1990	59/1968	41/1995	74/1937	0	7	30

Numbers in bold indicate monthly extremes

July

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	86/58	102/1990	61/1992	41/1945	73/1981	0	7	1
2	86/59	104/1990	62/1951	46/1973	70/1990	0	8	2
3	86/59	102/1961	65/1972	44/1972	72/1949	0	8	3
4	87/59	104/1937	63/1993	44/1972	72/1996	0	8	4
5	87/59	109/1937	70/1993	48/1960	73/1937	0	8	5
6	87/60	106/1937	68/1958	44/1958	77/1981	0	9	6
7	87/60	102/1983	66/1944	42/1952	70/1989	0	9	7
8	88/60	107/1983	70/1944	46/1996	76/1983	0	9	8
9	88/60	104/1970	62/1951	49/1959	74/1963	0	9	9
10	88/60	105/1939	61/1951	45/1951	77/1974	0	9	10
11	88/60	103/1939	59/1987	42/1951	73/1973	0	9	11
12	89/61	104/1954	63/1993	44/1987	72/1954	0	10	12
13	89/61	102/1940	67/1993	46/1943	73/1957	0	10	13
14	89/61	108/1983	63/1962	48/1977	70/1982	0	10	14
15	89/61	102/1947	63/1983	49/1976	72/1960	0	10	15
16	89/61	108/1966	65/1993	44/1999	74/1960	0	10	16
17	90/61	104/1977	72/1987	48/1993	72/1977	0	11	17
18	90/61	105/1955	64/1987	48/1968	72/1955	0	11	18
19	90/61	108/1960	61/1972	44/1948	73/1960	0	11	19
20	90/61	109/1960	57/1972	47/1972	77/1960	0	11	20
21	90/61	105/1964	65/1992	50/1950	75/1960	0	11	21
22	90/61	105/1985	74/1992	52/1978	76/1982	0	11	22
23	90/62	109/1980	72/1946	49/1950	74/1960	0	11	23
24	90/62	108/1976	73/1993	52/1996	74/1966	0	11	24
25	90/62	102/1983	69/1982	51/1985	74/1959	0	11	25
26	90/62	104/1959	64/1993	41/1971	71/1988	0	11	26
27	90/62	104/1998	70/1993	51/1969	77/1988	0	11	27
28	90/62	108/1999	72/1971	52/1971	75/1951	0	11	28
29	90/62	106/1995	70/1985	48/1971	73/1984	0	11	29
30	90/62	104/1988	59/1985	50/1992	76/1946	0	11	30
31	90/62	104/1989	67/1950	47/1995	75/1994	0	11	31

Numbers in bold indicate monthly extremes

August

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	90/62	101/1994	73/1974	47/1950	76/1989	0	11	1
2	90/61	103/1947	65/1978	49/1937	71/1959	0	11	2
3	90/61	106/1947	66/1972	44/1978	74/1958	0	11	3
4	90/61	105/1964	73/1977	47/1952	77/1966	0	11	4
5	90/61	104/1971	72/1976	47/1977	74/1983	0	11	5
6	89/61	107/1949	70/1996	48/1959	75/1988	0	10	6
7	89/61	110/1995	70/1966	47/1939	77/1983	0	10	7
8	89/61	105/1958	67/1939	42/1939	74/1971	0	10	8
9	89/61	104/1940	60/1939	46/1985	70/1941	0	10	9
10	89/60	104/1969	67/1952	46/1939	73/1940	0	10	10
11	89/60	104/1984	70/1985	42/1952	73/1983	0	10	11
12	88/60	103/1965	68/1985	47/1964	73/1940	0	9	12
13	88/60	107/1937	60/1977	47/1992	74/1970	0	9	13
14	88/59	104/1971	61/1944	45/1985	71/1984	0	9	14
15	87/59	102/1994	67/1968	45/1974	71/1971	0	8	15
16	87/59	101/1973	63/1997	48/1968	73/1961	0	8	16
17	87/59	104/1958	70/1985	45/1985	73/1958	0	8	17
18	86/59	103/1964	62/1956	48/1987	69/1958	0	8	18
19	86/58	100/1992	67/1956	40/1950	69/1984	0	7	19
20	86/58	100/1969	60/1966	37/1950	71/1973	0	7	20
21	85/58	102/1995	56/1966	41/1966	70/1957	0	7	21
22	85/57	103/1971	65/1966	35/1966	73/1995	0	6	22
23	84/57	100/1969	52/1992	40/1966	71/1995	0	6	23
24	84/56	103/1953	58/1992	43/1992	70/1991	0	5	24
25	84/56	103/1952	61/1987	36/1992	75/1969	0	5	25
26	83/56	102/1939	61/1987	43/1967	74/1955	0	5	26
27	83/55	103/1996	64/1977	44/1988	70/1939	0	4	27
28	82/55	100/1971	66/1974	43/1960	72/1971	0	4	28
29	82/54	101/1995	59/1964	41/1965	69/1939	0	3	29
30	81/54	105/1948	58/1956	40/1992	71/1961	0	3	30
31	81/53	101/1983	64/1974	42/1994	75/1991	0	2	31

Numbers in bold indicate monthly extremes

September

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	80/53	106/1983	59/1986	38/1974	72/1991	0	2	1
2	79/52	100/1940	53/1973	32/1974	67/1991	0	1	2
3	79/52	101/1978	53/1999	37/1962	72/1940	0	1	3
4	78/51	105/1950	53/1965	30/1962	74/1960	0	0	4
5	78/51	100/1978	55/1986	37/1965	68/1978	0	0	5
6	77/50	97/1980	57/1965	35/1943	63/1998	1	0	6
7	77/50	101/1947	53/1946	37/1986	70/1991	1	0	7
8	76/49	99/1958	39/1962	31/1962	67/1983	2	0	8
9	76/49	100/1998	57/1962	36/1962	64/1998	2	0	9
10	75/49	94/1958	51/1989	34/1955	65/1998	3	0	10
11	75/48	98/1971	49/1974	28/1989	68/1966	3	0	11
12	74/48	95/1990	44/1970	29/1970	68/1958	4	0	12
13	74/47	97/1959	38/1970	28/1989	62/1940	4	0	13
14	73/47	99/1948	45/1982	30/1993	61/1996	5	0	14
15	73/46	101/1948	48/1973	32/1970	64/1946	5	0	15
16	72/46	96/1998	42/1965	28/1965	62/1998	6	0	16
17	72/46	94/1998	45/1965	25/1965	65/1976	6	0	17
18	72/45	95/1984	48/1957	28/1991	61/1998	6	0	18
19	71/45	99/1937	35/1983	29/1965	58/1969	7	0	19
20	71/45	95/1937	49/1995	28/1983	57/1966	7	0	20
21	70/44	94/1938	46/1995	19/1995	61/1937	8	0	21
22	70/44	97/1938	44/1946	27/1995	55/1967	8	0	22
23	70/43	98/1992	39/1984	26/1965	56/1990	8	0	23
24	69/43	94/1938	34/1984	27/1984	61/1938	9	0	24
25	69/43	91/1990	37/1972	24/1942	55/1967	9	0	25
26	69/42	93/1956	44/1946	20/1942	56/1990	9	0	26
27	68/42	91/1963	35/1941	22/1951	56/1979	10	0	27
28	68/42	90/1980	35/1985	26/1984	60/1962	10	0	28
29	68/42	94/1989	40/1985	26/1939	52/1991	10	0	29
30	67/41	93/1989	38/1950	21/1985	56/1967	11	0	30

Numbers in bold indicate monthly extremes

October

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	67/41	93/1953	36/1950	27/1950	55/1963	11	0	1
2	67/41	94/1997	39/1950	29/1999	57/1957	11	0	2
3	66/40	90/1992	44/1994	24/1999	56/1992	12	0	3
4	66/40	93/1963	43/1991	27/1954	54/1948	12	0	4
5	66/40	87/1993	35/1941	15/1952	53/1962	12	0	5
6	65/39	88/1960	40/1946	14/1952	51/1980	13	0	6
7	65/39	88/1980	31/1946	23/1946	52/1963	13	0	7
8	64/39	86/1980	30/1985	19/1985	52/1980	13	0	8
9	64/38	90/1955	37/1987	20/1985	49/1942	14	0	9
10	64/38	90/1942	32/1959	19/1959	52/1963	14	0	10
11	63/38	89/1995	33/1969	18/1959	53/1942	14	0	11
12	63/37	84/1958	33/1969	22/1986	53/1963	15	0	12
13	62/37	84/1964	35/1969	24/1969	53/1950	15	0	13
14	62/36	84/1958	40/1975	22/1969	51/1973	16	0	14
15	61/36	83/1958	34/1992	20/1976	54/1953	16	0	15
16	61/36	90/1991	36/1951	19/1976	49/1991	16	0	16
17	60/35	81/1997	39/1976	18/1969	46/1941	17	0	17
18	60/35	82/1955	33/1969	21/1976	44/1994	17	0	18
19	59/35	86/1947	29/1949	15/1976	48/1958	18	0	19
20	59/34	80/1947	29/1949	13/1987	49/1974	18	0	20
21	58/34	80/1992	37/1951	19/1949	45/1962	19	0	21
22	58/33	78/1954	38/1975	18/1981	47/1989	19	0	22
23	57/33	77/1973	31/1991	17/1981	45/1989	20	0	23
24	57/32	81/1948	29/1957	10/1942	44/1973	20	0	24
25	56/32	78/1955	33/1969	9/1942	49/1979	21	0	25
26	55/31	82/1960	29/1969	19/1970	45/1940	22	0	26
27	55/31	79/1983	33/1975	16/1991	44/1994	22	0	27
28	54/31	82/1937	16/1991	10/1991	47/1998	22	0	28
29	53/30	76/1968	15/1991	-2/1991	46/1938	23	0	29
30	53/30	78/1950	18/1991	-8/1991	43/1974	23	0	30
31	52/29	82/1999	25/1951	0/1984	48/1987	24	0	31

Numbers in bold indicate monthly extremes

November

MLS Daily Normals/Temperature Extremes/Degree Days - 1937 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	51/29	75/1965	14/1991	-2/1984	43/1987	25	0	1
2	51/28	71/1959	13/1991	-4/1995	45/1988	25	0	2
3	50/28	70/1981	22/1991	-7/1991	44/1989	26	0	3
4	49/27	75/1945	20/1951	8/1961	45/1983	27	0	4
5	49/27	72/1969	20/1959	5/1959	42/1954	27	0	5
6	48/26	73/1999	17/1991	5/1959	43/1980	28	0	6
7	47/26	75/1999	16/1973	2/1966	41/1980	28	0	7
8	47/25	78/1999	16/1966	-3/1966	42/1980	29	0	8
9	46/25	65/1953	6/1986	-8/1986	42/1937	29	0	9
10	45/24	71/1989	5/1940	-13/1986	45/1990	30	0	10
11	45/24	65/1987	3/1940	-10/1966	42/1967	30	0	11
12	44/23	80/1999	8/1986	-16/1955	40/1999	31	0	12
13	44/23	66/1942	1/1959	-23/1955	40/1991	31	0	13
14	43/22	70/1999	5/1955	-11/1959	40/1987	32	0	14
15	42/22	72/1953	1/1955	-17/1959	40/1963	33	0	15
16	42/21	66/1999	2/1959	-18/1959	39/1954	33	0	16
17	41/21	65/1976	10/1955	-20/1955	37/1981	34	0	17
18	41/20	67/1995	16/1937	-5/1955	35/1992	34	0	18
19	40/20	70/1989	1/1978	-9/1985	44/1989	35	0	19
20	40/20	63/1968	-1/1985	-18/1985	33/1999	35	0	20
21	39/19	58/1974	-2/1978	-19/1978	37/1974	36	0	21
22	38/19	68/1954	0/1985	-12/1985	38/1968	36	0	22
23	38/18	62/1957	1/1985	-19/1985	34/1988	37	0	23
24	37/18	63/1986	0/1993	-18/1993	39/1986	37	0	24
25	37/17	70/1960	5/1985	-18/1977	39/1960	38	0	25
26	36/17	67/1963	-6/1985	-16/1985	38/1963	38	0	26
27	36/16	72/1949	-7/1985	-16/1955	36/1963	39	0	27
28	36/16	57/1997	-3/1985	-25/1985	35/1949	39	0	28
29	35/15	60/1951	-2/1985	-21/1985	35/1956	40	0	29
30	35/15	61/1995	-3/1985	-12/1985	32/1999	40	0	30

Numbers in bold indicate monthly extremes

December

MLS Daily Normals/Temperature Extremes/Degree Days - 1936 to 1999								
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low Max./Year (deg. F)	Low/Year (deg. F)	High Min./Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	34/14	64/1998	-6/1985	-22/1985	35/1994	41	0	1
2	34/14	63/1949	-1/1978	-33/1985	38/1956	41	0	2
3	33/14	60/1943	0/1972	-12/1972	33/1998	41	0	3
4	33/13	67/1979	-5/1972	-21/1972	34/1975	42	0	4
5	32/13	69/1939	-4/1972	-25/1972	32/1939	42	0	5
6	32/12	68/1939	-8/1972	-27/1972	34/1991	43	0	6
7	31/12	56/1939	-9/1972	-23/1972	34/1987	43	0	7
8	31/12	59/1957	-11/1972	-28/1977	31/1938	43	0	8
9	31/11	66/1957	-5/1977	-35/1977	37/1939	44	0	9
10	30/11	61/1956	1/1961	-15/1966	37/1987	44	0	10
11	30/11	58/1980	3/1949	-15/1961	34/1939	44	0	11
12	30/10	55/1953	1/1961	-22/1985	32/1988	45	0	12
13	29/10	54/1997	-2/1963	-25/1985	31/1988	45	0	13
14	29/10	56/1979	-3/1963	-24/1963	33/1977	45	0	14
15	29/09	66/1980	-2/1951	-26/1945	41/1980	46	0	15
16	29/09	61/1980	-20/1964	-27/1964	40/1939	46	0	16
17	28/09	64/1998	-9/1983	-29/1964	36/1982	47	0	17
18	28/08	62/1979	-11/1983	-25/1983	34/1966	47	0	18
19	28/08	54/1954	-11/1990	-19/1990	33/1966	47	0	19
20	27/08	57/1954	-16/1990	-31/1951	34/1965	47	0	20
21	27/08	55/1954	-15/1990	-30/1990	32/1950	47	0	21
22	27/07	60/1954	-13/1990	-40/1989	32/1985	48	0	22
23	27/07	51/1963	-19/1983	-33/1983	33/1950	48	0	23
24	27/07	54/1963	-25/1983	-38/1983	35/1993	48	0	24
25	26/07	53/1963	-14/1983	-32/1983	30/1943	48	0	25
26	26/07	54/1976	-2/1965	-26/1996	31/1976	48	0	26
27	26/06	55/1956	3/1965	-17/1965	41/1980	49	0	27
28	26/06	58/1999	-4/1988	-20/1990	35/1956	49	0	28
29	26/06	60/1956	-18/1968	-28/1990	36/1945	49	0	29
30	25/06	53/1980	-15/1978	-28/1968	35/1956	49	0	30
31	25/06	57/1963	-6/1951	-30/1978	32/1963	49	0	31

Numbers in bold indicate monthly extremes

January

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	25/06	57/1964	-33/1928	49	0	1
2	25/06	50/1962	-28/1879	49	0	2
3	25/06	55/1962	-33/1879	49	0	3
4	25/06	50/1906	-27/1979	49	0	4
5	25/06	52/1921	-36/1887	49	0	5
6	25/05	53/1954	-42/1888	50	0	6
7	25/05	55/1963	-50/1888	50	0	7
8	25/05	54/1958	-46/1887	50	0	8
9	25/05	60/1953	-32/1881	50	0	9
10	25/05	54/1995	-29/1982	50	0	10
11	25/05	55/1987	-30/1909	50	0	11
12	25/05	62/1953	-35/1998	50	0	12
13	25/06	56/1944	-65/1888	49	0	13
14	25/06	55/1944	-41/1988	49	0	14
15	25/06	50/1974	-50/1885	49	0	15
16	25/06	56/1961	-31/1930	49	0	16
17	25/06	58/1919	-42/1886	49	0	17
18	25/06	60/1919	-45/1892	49	0	18
19	25/06	60/1944	-41/1892	49	0	19
20	26/06	56/1992	-42/1888	49	0	20
21	26/06	56/1900	-45/1886	49	0	21
22	26/07	59/1981	-44/1886	48	0	22
23	26/07	64/1919	-32/1982	48	0	23
24	26/07	56/1981	-32/1969	48	0	24
25	27/07	52/1992	-37/1969	48	0	25
26	27/07	52/1934	-33/1957	48	0	26
27	27/08	55/1992	-30/1915	47	0	27
28	27/08	60/1931	-30/1929	47	0	28
29	28/08	66/1931	-32/1929	47	0	29
30	28/08	58/1931	-37/1996	47	0	30
31	28/09	72/1992	-36/1887	46	0	31

February

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	29/09	64/1934	-45/1893	46	0	1
2	29/09	61/1962	-42/1893	46	0	2
3	29/10	65/1962	-38/1883	45	0	3
4	30/10	57/1992	-38/1899	45	0	4
5	30/10	56/1963	-30/1914	45	0	5
6	30/11	61/1987	-30/1884	44	0	6
7	31/11	59/1954	-38/1884	44	0	7
8	31/11	65/2000	-37/1939	44	0	8
9	32/11	59/2000	-30/1937	43	0	9
10	32/12	66/1961	-49/1887	43	0	10
11	32/12	59/1987	-45/1887	43	0	11
12	33/12	65/1921	-40/1899	42	0	12
13	33/13	62/1934	-32/1936	42	0	13
14	33/13	66/1921	-37/1936	42	0	14
15	34/13	62/1921	-45/1936	41	0	15
16	34/13	60/1981	-42/1936	41	0	16
17	34/14	62/1995	-32/1936	41	0	17
18	35/14	65/1930	-31/1936	40	0	18
19	35/14	69/1995	-30/1890	40	0	19
20	35/15	66/1995	-36/1918	40	0	20
21	36/15	70/1995	-26/1918	39	0	21
22	36/15	62/1992	-29/1910	39	0	22
23	36/16	64/1954	-25/1917	39	0	23
24	37/16	72/1995	-30/1922	38	0	24
25	37/16	68/1896	-47/1890	38	0	25
26	37/16	68/1932	-47/1890	38	0	26
27	38/17	73/1992	-32/1922	37	0	27
28	38/17	69/1992	-34/1922	37	0	28
29	38/17	72/1992	-13/1960	37	0	29

March

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	38/17	70/1992	-38/1888	37	0	1
2	39/18	74/1905	-17/1960	36	0	2
3	39/18	72/1905	-45/1891	36	0	3
4	39/18	68/1987	-25/1891	36	0	4
5	40/18	73/1987	-35/1895	36	0	5
6	40/19	70/1987	-37/1891	35	0	6
7	40/19	66/1890	-29/1891	35	0	7
8	41/19	64/1941	-27/1891	35	0	8
9	41/20	65/1954	-25/1888	34	0	9
10	42/20	69/1954	-15/1949	34	0	10
11	42/20	74/1900	-22/1951	34	0	11
12	42/21	70/1916	-17/1951	33	0	12
13	43/21	70/1994	-35/1890	33	0	13
14	43/21	75/1935	-25/1880	33	0	14
15	44/22	72/1992	-19/1897	32	0	15
16	44/22	78/1994	-12/1906	32	0	16
17	44/22	74/1910	-12/1892	32	0	17
18	45/23	70/1972	-14/1893	31	0	18
19	45/23	76/1997	-8/1965	31	0	19
20	46/23	82/1910	-11/1965	30	0	20
21	46/24	78/1910	-21/1913	30	0	21
22	47/24	88/1910	-13/1898	29	0	22
23	47/25	78/1993	-7/1965	29	0	23
24	48/25	78/1993	-13/1964	28	0	24
25	48/25	76/1999	-10/1937	28	0	25
26	49/26	80/1999	-8/1904	27	0	26
27	49/26	82/1946	-3/1937	27	0	27
28	50/27	80/1986	-2/1894	26	0	28
29	50/27	83/1943	-5/1954	26	0	29
30	51/27	79/1986	2/1989	26	0	30
31	51/28	76/1882	-5/1899	25	0	31

April

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	52/28	76/1991	-7/1899	25	0	1
2	52/29	84/1882	2/1936	24	0	2
3	53/29	82/1921	2/1899	24	0	3
4	53/29	79/1927	5/1936	24	0	4
5	54/30	84/1991	0/1936	23	0	5
6	54/30	84/1969	14/1997	23	0	6
7	55/31	85/1877	9/1997	22	0	7
8	55/31	81/1930	6/1997	22	0	8
9	55/31	85/1910	11/1893	22	0	9
10	56/32	82/1912	12/1997	21	0	10
11	56/32	84/1949	8/1940	21	0	11
12	57/33	82/1886	13/1957	20	0	12
13	57/33	89/1915	15/1986	20	0	13
14	58/33	85/1913	10/1986	19	0	14
15	58/34	85/1915	5/1986	19	0	15
16	59/34	84/1926	14/1951	18	0	16
17	59/34	88/1994	19/1953	18	0	17
18	59/35	83/1980	12/1884	18	0	18
19	60/35	86/1962	12/1951	17	0	19
20	60/36	91/1908	15/1880	17	0	20
21	60/36	92/1980	15/1967	17	0	21
22	61/36	94/1908	8/1967	16	0	22
23	61/37	90/1906	16/1931	16	0	23
24	62/37	89/1962	21/1890	15	0	24
25	62/37	89/1974	25/1959	15	0	25
26	62/38	88/1952	20/1995	15	0	26
27	63/38	85/1992	20/1956	14	0	27
28	63/38	91/1952	21/1984	14	0	28
29	63/39	88/1939	18/1907	14	0	29
30	64/39	88/1968	20/1966	13	0	30

May

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	64/39	89/1981	20/1909	13	0	1
2	64/40	90/1985	18/1954	13	0	2
3	65/40	89/1986	15/1954	12	0	3
4	65/41	88/1966	24/1967	12	0	4
5	65/41	93/1934	23/1905	12	0	5
6	66/41	90/1992	21/1885	11	0	6
7	66/42	97/1891	17/1885	11	0	7
8	66/42	97/1891	18/1945	11	0	8
9	67/42	91/1887	27/1996	10	0	9
10	67/43	89/1961	23/1979	10	0	10
11	67/43	92/1958	23/1953	10	0	11
12	68/43	96/1960	24/1953	9	0	12
13	68/44	90/1977	28/1967	9	0	13
14	68/44	96/1903	19/1890	9	0	14
15	69/44	94/1984	32/1945	8	0	15
16	69/45	98/1907	30/1925	8	0	16
17	69/45	100/1901	32/1943	8	0	17
18	70/45	98/1948	27/1890	7	0	18
19	70/46	94/1992	28/1968	7	0	19
20	70/46	99/1964	29/1908	7	0	20
21	71/46	96/1980	29/1963	6	0	21
22	71/47	99/1980	6/1908	6	0	22
23	72/47	96/1980	30/1947	5	0	23
24	72/47	101/1886	33/1947	5	0	24
25	72/48	95/1931	33/1995	5	0	25
26	73/48	100/1934	34/1965	4	0	26
27	73/48	98/1934	30/1965	4	0	27
28	73/49	95/1937	24/1947	4	0	28
29	74/49	101/1934	31/1947	3	0	29
30	74/49	98/1984	32/1917	3	0	30
31	74/49	92/1986	32/1982	3	0	31

June

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	75/50	96/1948	32/1951	2	0	1
2	75/50	96/1986	32/1951	2	0	2
3	75/50	95/1988	32/1943	2	0	3
4	76/51	101/1988	37/1910	1	0	4
5	76/51	105/1988	33/1888	1	0	5
6	76/51	102/1988	36/1888	1	0	6
7	77/52	104/1988	35/1885	0	0	7
8	77/52	99/1988	32/1950	0	0	8
9	78/52	100/1956	35/1950	0	0	9
10	78/53	104/1988	39/1969	0	1	10
11	78/53	99/1992	36/1969	0	1	11
12	79/53	98/1918	35/1969	0	1	12
13	79/53	103/1979	34/1969	0	1	13
14	79/54	99/1959	39/1945	0	2	14
15	80/54	100/1919	36/1885	0	2	15
16	80/54	107/1931	40/1880	0	2	16
17	80/55	104/1933	33/1912	0	3	17
18	81/55	98/1986	38/1973	0	3	18
19	81/55	102/1898	43/1946	0	3	19
20	82/55	108/1910	36/1902	0	4	20
21	82/56	106/1900	36/1902	0	4	21
22	82/56	104/1910	42/1942	0	4	22
23	83/56	106/1900	40/1893	0	5	23
24	83/56	104/1936	42/1906	0	5	24
25	83/57	107/1887	37/1958	0	5	25
26	84/57	106/1988	40/1950	0	6	26
27	84/57	106/1936	42/1985	0	6	27
28	84/58	107/1919	43/1951	0	6	28
29	85/58	104/1961	43/1959	0	7	29
30	85/58	104/1881	39/1878	0	7	30

July

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	86/58	105/1907	41/1945	0	7	1
2	86/59	104/1990	42/1915	0	8	2
3	86/59	105/1936	40/1915	0	8	3
4	87/59	104/1937	45/1890	0	8	4
5	87/59	109/1937	48/1960	0	8	5
6	87/60	107/1936	42/1934	0	9	6
7	87/60	106/1886	42/1952	0	9	7
8	88/60	107/1983	42/1895	0	9	8
9	88/60	108/1886	40/1893	0	9	9
10	88/60	110/1886	41/1890	0	9	10
11	88/60	107/1886	42/1951	0	9	11
12	89/61	112/1886	44/1987	0	10	12
13	89/61	110/1886	41/1883	0	10	13
14	89/61	108/1983	46/1893	0	10	14
15	89/61	103/1930	44/1912	0	10	15
16	89/61	108/1966	41/1883	0	10	16
17	90/61	104/1977	48/1993	0	11	17
18	90/61	106/1936	45/1912	0	11	18
19	90/61	108/1960	44/1948	0	11	19
20	90/61	110/1892	43/1898	0	11	20
21	90/61	109/1893	50/1950	0	11	21
22	90/61	110/1893	50/1891	0	11	22
23	90/62	109/1980	45/1896	0	11	23
24	90/62	108/1976	44/1911	0	11	24
25	90/62	102/1983	46/1918	0	11	25
26	90/62	106/1933	40/1887	0	11	26
27	90/62	106/1917	48/1883	0	11	27
28	90/62	108/1999	41/1890	0	11	28
29	90/62	106/1995	43/1880	0	11	29
30	90/62	104/1988	41/1890	0	11	30
31	90/62	111/1901	44/1890	0	11	31

August

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	90/62	108/1905	45/1890	0	11	1
2	90/61	104/1900	39/1884	0	11	2
3	90/61	106/1947	44/1978	0	11	3
4	90/61	105/1964	47/1952	0	11	4
5	90/61	104/1971	45/1917	0	11	5
6	89/61	108/1882	48/1959	0	10	6
7	89/61	110/1995	46/1921	0	10	7
8	89/61	105/1958	42/1939	0	10	8
9	89/61	104/1940	43/1893	0	10	9
10	89/60	107/1935	42/1895	0	10	10
11	89/60	104/1984	42/1952	0	10	11
12	88/60	103/1965	42/1893	0	9	12
13	88/60	107/1937	44/1908	0	9	13
14	88/59	107/1892	43/1893	0	9	14
15	87/59	103/1909	41/1890	0	8	15
16	87/59	103/1883	45/1893	0	8	16
17	87/59	104/1958	45/1985	0	8	17
18	86/59	103/1964	34/1890	0	8	18
19	86/58	103/1891	40/1950	0	7	19
20	86/58	106/1916	37/1950	0	7	20
21	85/58	102/1995	36/1883	0	7	21
22	85/57	107/1886	35/1966	0	6	22
23	84/57	112/1886	40/1966	0	6	23
24	84/56	103/1953	40/1879	0	5	24
25	84/56	103/1952	34/1910	0	5	25
26	83/56	109/1882	38/1910	0	5	26
27	83/55	103/1996	40/1893	0	4	27
28	82/55	103/1924	37/1893	0	4	28
29	82/54	101/1995	36/1886	0	3	29
30	81/54	105/1948	37/1886	0	3	30
31	81/53	101/1983	42/1994	0	2	31

September

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	80/53	106/1983	30/1936	0	2	1
2	79/52	102/1916	32/1974	0	1	2
3	79/52	101/1978	28/1879	0	1	3
4	78/51	105/1950	30/1962	0	0	4
5	78/51	100/1978	25/1879	0	0	5
6	77/50	99/1927	35/1943	1	0	6
7	77/50	106/1908	33/1929	1	0	7
8	76/49	102/1893	31/1962	2	0	8
9	76/49	100/1998	36/1962	2	0	9
10	75/49	94/1958	34/1955	3	0	10
11	75/48	98/1971	28/1989	3	0	11
12	74/48	95/1990	25/1890	4	0	12
13	74/47	97/1959	25/1879	4	0	13
14	73/47	99/1948	30/1993	5	0	14
15	73/46	101/1948	30/1879	5	0	15
16	72/46	96/1998	28/1965	6	0	16
17	72/46	96/1926	25/1965	6	0	17
18	72/45	95/1984	22/1879	6	0	18
19	71/45	99/1937	26/1879	7	0	19
20	71/45	95/1937	24/1927	7	0	20
21	70/44	96/1922	19/1995	8	0	21
22	70/44	97/1938	24/1895	8	0	22
23	70/43	98/1992	18/1879	8	0	23
24	69/43	99/1885	19/1926	9	0	24
25	69/43	91/1990	17/1926	9	0	25
26	69/42	93/1956	20/1942	9	0	26
27	68/42	91/1963	20/1893	10	0	27
28	68/42	98/1890	26/1984	10	0	28
29	68/42	96/1892	22/1895	10	0	29
30	67/41	94/1890	18/1879	11	0	30

October

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	67/41	93/1953	22/1892	11	0	1
2	67/41	94/1997	18/1883	11	0	2
3	66/40	91/1902	24/1999	12	0	3
4	66/40	93/1963	21/1878	12	0	4
5	66/40	91/1920	15/1952	12	0	5
6	65/39	90/1892	14/1952	13	0	6
7	65/39	90/1890	23/1946	13	0	7
8	64/39	87/1889	19/1985	13	0	8
9	64/38	90/1955	20/1985	14	0	9
10	64/38	90/1942	10/1910	14	0	10
11	63/38	89/1995	18/1959	14	0	11
12	63/37	84/1958	13/1881	15	0	12
13	62/37	84/1964	15/1883	15	0	13
14	62/36	84/1958	19/1890	16	0	14
15	61/36	83/1958	19/1890	16	0	15
16	61/36	90/1991	19/1976	16	0	16
17	60/35	86/1927	16/1930	17	0	17
18	60/35	87/1884	17/1885	17	0	18
19	59/35	86/1947	7/1905	18	0	19
20	59/34	83/1921	9/1905	18	0	20
21	58/34	85/1927	15/1885	19	0	21
22	58/33	78/1954	11/1887	19	0	22
23	57/33	77/1973	-5/1887	20	0	23
24	57/32	81/1948	0/1887	20	0	24
25	56/32	78/1955	-1/1919	21	0	25
26	55/31	82/1960	-4/1919	22	0	26
27	55/31	80/1891	-2/1925	22	0	27
28	54/31	87/1891	-8/1925	22	0	28
29	53/30	87/1891	-4/1925	23	0	29
30	53/30	78/1950	-8/1991	23	0	30
31	52/29	82/1999	0/1984	24	0	31

November

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	51/29	75/1965	-2/1984	25	0	1
2	51/28	76/1931	-10/1893	25	0	2
3	50/28	76/1909	-7/1991	26	0	3
4	49/27	75/1945	1/1935	27	0	4
5	49/27	73/1891	-1/1933	27	0	5
6	48/26	73/1999	4/1936	28	0	6
7	47/26	75/1999	-7/1895	28	0	7
8	47/25	78/1999	-3/1966	29	0	8
9	46/25	67/1885	-8/1986	29	0	9
10	45/24	71/1989	-13/1986	30	0	10
11	45/24	72/1894	-14/1911	30	0	11
12	44/23	80/1999	-20/1911	31	0	12
13	44/23	70/1931	-23/1955	31	0	13
14	43/22	71/1894	-11/1959	32	0	14
15	42/22	72/1953	-17/1959	33	0	15
16	42/21	67/1905	-18/1959	33	0	16
17	41/21	68/1908	-20/1955	34	0	17
18	41/20	70/1908	-12/1888	34	0	18
19	40/20	76/1897	-15/1921	35	0	19
20	40/20	66/1917	-23/1880	35	0	20
21	39/19	68/1878	-20/1896	36	0	21
22	38/19	68/1954	-24/1884	36	0	22
23	38/18	62/1957	-31/1880	37	0	23
24	37/18	63/1986	-23/1880	37	0	24
25	37/17	70/1960	-21/1883	38	0	25
26	36/17	67/1963	-24/1887	38	0	26
27	36/16	72/1949	-22/1882	39	0	27
28	36/16	65/1914	-26/1897	39	0	28
29	35/15	60/1951	-21/1985	40	0	29
30	35/15	61/1995	-25/1896	40	0	30

December

MLS Daily Normals/Temperature Extremes/Degree Days - All Time						
Date	Normal Hi/Lo (Deg. F)	High/Year (deg. F)	Low/Year (deg. F)	Heating Deg. Day	Cooling Deg. Day	Date
1	34/14	64/1998	-22/1985	41	0	1
2	34/14	69/1885	-33/1985	41	0	2
3	33/14	60/1943	-31/1897	41	0	3
4	33/13	67/1979	-33/1880	42	0	4
5	32/13	69/1939	-37/1880	42	0	5
6	32/12	68/1939	-27/1972	43	0	6
7	31/12	58/1900	-23/1972	43	0	7
8	31/12	59/1957	-28/1977	43	0	8
9	31/11	66/1957	-35/1977	44	0	9
10	30/11	61/1956	-15/1966	44	0	10
11	30/11	58/1980	-30/1879	44	0	11
12	30/10	64/1924	-26/1922	45	0	12
13	29/10	60/1877	-25/1985	45	0	13
14	29/10	56/1979	-24/1963	45	0	14
15	29/09	66/1980	-26/1945	46	0	15
16	29/09	61/1980	-27/1964	46	0	16
17	28/09	64/1998	-33/1879	47	0	17
18	28/08	62/1979	-40/1924	47	0	18
19	28/08	54/1954	-43/1924	47	0	19
20	27/08	57/1954	-31/1951	47	0	20
21	27/08	55/1954	-42/1884	47	0	21
22	27/07	60/1954	-40/1989	48	0	22
23	27/07	53/1885	-48/1884	48	0	23
24	27/07	54/1963	-52/1879	48	0	24
25	26/07	53/1963	-43/1879	48	0	25
26	26/07	54/1976	-26/1996	48	0	26
27	26/06	55/1956	-38/1880	49	0	27
28	26/06	58/1999	-48/1880	49	0	28
29	26/06	60/1956	-52/1880	49	0	29
30	25/06	53/1980	-43/1880	49	0	30
31	25/06	57/1963	-42/1884	49	0	31

The 20 Highest Daily Maximum Temperatures in Miles City, MT (1936-1999)

1. 110°F Aug. 7, 1995
2. 110°F Aug. 7, 1949
3. 109°F Jul. 23, 1980
4. 109°F Jul. 20, 1960
5. 109°F Jul. 5, 1937
6. 108°F Jul. 28, 1999
7. 108°F Jul. 14, 1983
8. 108°F Jul. 24, 1976
9. 108°F Jul. 16, 1966
10. 108°F Jul. 19, 1960
11. 108°F Jul. 28, 1947
12. 108°F Jul. 28, 1947
13. 107°F Jul. 8, 1983
14. 107°F Aug. 6, 1949
15. 107°F Aug. 13, 1937
16. 106°F Jul. 24, 1999
17. 106°F Jul. 29, 1995
18. 106°F Jun. 26, 1988
19. 106°F Sep 1, 1983
20. 106°F Jul. 28, 1975

The 20 Lowest Daily Maximum Temperatures in Miles City, MT (1936-1999)

1. -25°F Dec. 24, 1983
2. -22°F Feb. 2, 1989
3. -20°F Dec. 16, 1964
4. -19°F Dec. 23, 1983
5. -18°F Feb. 3, 1989
6. -18°F Dec. 29, 1968
7. -18°F Jan. 20, 1954
8. -18°F Feb. 8, 1939
9. -17°F Dec. 29, 1990
10. -17°F Jan. 26, 1972
11. -17°F Jan. 24, 1969
12. -17°F Feb. 9, 1939
13. -16°F Dec. 20, 1990
14. -15°F Dec. 21, 1990
15. -15°F Jan. 10, 1982
16. -15°F Dec. 30, 1978
17. -15°F Jan. 27, 1972
18. -14°F Dec. 25, 1983
19. -14°F Feb. 3, 1982
20. -14°F Jan. 25, 1972

The 20 Lowest Daily Minimum Temperatures in Miles City, MT (1936-1999)

1. -40°F Dec. 22, 1989
2. -38°F Dec. 24, 1983
3. -37°F Jan. 30, 1996
4. -37°F Jan. 25, 1969
5. -37°F Jan. 25, 1957
6. -37°F Feb. 10, 1939
7. -36°F Feb. 3, 1982
8. -36°F Jan. 20, 1954
9. -35°F Jan. 12, 1998
10. -35°F Feb. 2, 1996
11. -35°F Dec. 9, 1977
12. -34°F Feb. 3, 1996
13. -34°F Dec. 22, 1990
14. -33°F Feb. 3, 1989
15. -33°F Dec. 2, 1985
16. -33°F Dec. 23, 1983
17. -33°F Jan. 26, 1957
18. -33°F Jan. 25, 1949
19. -33°F Feb. 8, 1939
20. -32°F Dec. 25, 1983

The 20 Highest Daily Minimum Temperatures in Miles City, MT (1936-1999)

1. 78°F Jun. 20, 1988
2. 77°F Jul. 27, 1988
3. 77°F Aug. 7, 1983
4. 77°F Jul. 6, 1981
5. 77°F Jul.10, 1974
6. 77°F Aug. 4, 1966
7. 77°F Jul. 20, 1960
8. 77°F Aug. 7, 1949
9. 76°F Aug. 1, 1989
10. 76°F Jun. 26, 1988
11. 76°F Jul. 8, 1983
12. 76°F Jul. 22, 1982
13. 76°F Jul. 30, 1946
14. 75°F Jul. 31, 1994
15. 75°F Aug. 31, 1991
16. 75°F Aug. 6, 1988
17. 75°F Jun. 21, 1988
18. 75°F Jun. 10, 1988
19. 75°F Jun. 5, 1988
20. 75°F Aug. 25, 1969

The 20 Highest Annual Mean Temperatures in Miles City, MT (1936-1999)

1. 49.5°F 1987
2. 49.3°F 1999
3. 49.2°F 1981
4. 48.8°F 1988
5. 48.8°F 1992
6. 48.4°F 1990
7. 48.3°F 1939
8. 48.0°F 1991
9. 47.9°F 1963
10. 47.7°F 1961
11. 47.6°F 1998
12. 47.5°F 1980
13. 47.5°F 1976
14. 47.5°F 1986
15. 47.3°F 1974
16. 47.2°F 1994
17. 47.0°F 1941
18. 47.0°F 1946
19. 46.9°F 1983
20. 46.9°F 1973

The 20 Lowest Annual Mean Temperatures in Miles City, MT (1936-1999)

1. 41.2°F 1950
2. 41.5°F 1951
3. 42.1°F 1978
4. 42.7°F 1982
5. 42.8°F 1996
6. 43.2°F 1965
7. 43.5°F 1985
8. 43.4°F 1972
9. 43.5°F 1993
10. 43.7°F 1979
11. 43.9°F 1949
12. 44.2°F 1966
13. 44.2°F 1975
14. 44.3°F 1969
15. 44.6°F 1945
16. 44.6°F 1955
17. 44.6°F 1959
18. 44.7°F 1971
19. 44.8°F 1970
20. 44.8°F 1968

Miles City, MT Monthly Precipitation

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann
1936	M	M	M	M	M	M	M	M	M	M	0.37	0.35	0.72*
1937	0.38	0.23	0.66	0.79	0.81	2.00	1.76	1.33	0.77	1.00	0.27	0.42	10.42
1938	0.33	0.21	1.04	0.27	2.06	2.50	0.97	1.17	0.49	1.25	0.35	0.20	10.84
1939	0.19	0.12	0.08	0.82	1.67	4.04	0.92	0.46	0.56	0.08	0.04	0.18	9.16
1940	0.42	0.26	0.71	1.86	1.62	2.82	1.97	1.04	0.42	2.70	0.24	0.34	14.40
1941	0.09	0.19	0.25	1.60	2.47	2.39	1.78	2.15	4.67	1.24	0.51	0.73	18.07
1942	0.22	0.30	0.36	1.06	3.27	5.13	1.41	1.58	1.22	0.78	0.26	0.07	15.66
1943	0.55	0.26	0.27	0.29	1.38	6.12	1.04	2.57	0.31	1.65	0.55	0.02	15.01
1944	0.65	0.31	0.96	1.53	1.49	9.78	0.68	2.09	0.87	T	0.35	0.24	18.95
1945	0.43	0.08	0.89	0.59	2.95	2.01	1.53	1.23	1.91	0.46	0.19	0.33	12.60
1946	0.15	0.08	0.50	0.63	3.32	2.17	1.22	1.00	4.60	3.20	0.41	0.52	17.80
1947	0.34	0.19	1.10	1.84	0.66	3.87	0.75	1.83	0.31	0.40	0.31	0.28	11.88
1948	0.42	0.74	0.61	1.09	1.79	4.91	4.58	0.69	0.45	T	0.49	0.31	16.08
1949	0.76	0.91	0.51	0.29	1.32	0.92	0.95	0.11	0.37	2.43	0.02	0.20	8.79
1950	0.29	0.62	1.83	1.10	0.94	3.99	1.05	0.48	2.09	0.40	0.52	0.35	13.66
1951	0.08	0.28	0.15	0.67	1.54	3.05	1.56	4.00	1.42	0.70	0.32	1.14	14.91
1952	0.42	0.92	0.59	0.10	1.68	2.06	1.48	0.95	0.93	0.01	0.61	0.11	9.86
1953	0.71	0.53	0.53	2.54	4.06	2.43	2.40	1.37	0.23	1.57	0.02	0.22	16.61
1954	0.47	0.08	0.90	0.80	0.82	2.52	0.82	2.40	1.03	0.35	0.14	0.05	10.38
1955	0.17	0.63	0.38	1.47	5.33	1.96	0.73	0.17	0.31	0.63	0.75	0.53	13.06
1956	0.52	0.13	0.08	0.43	2.43	0.98	1.83	1.52	0.26	0.54	0.61	0.22	9.55
1957	0.58	0.35	0.90	1.92	1.89	3.01	0.38	1.24	0.58	0.50	1.25	0.02	12.62
1958	0.32	0.47	0.64	1.61	0.24	2.85	3.58	0.45	0.14	1.16	1.26	0.50	13.22
1959	0.81	1.30	0.07	1.02	1.34	1.59	0.22	0.40	1.26	0.53	0.91	0.03	9.48
1960	0.51	0.37	0.68	0.72	1.32	1.25	0.33	0.78	T	0.22	0.12	0.69	6.99
1961	0.08	0.77	0.38	0.97	2.34	0.84	0.47	0.36	2.83	0.09	0.56	0.28	9.97
1962	0.35	0.41	0.65	0.57	4.97	4.59	4.51	0.37	1.07	0.61	0.43	0.47	19.00
1963	0.80	0.66	0.28	2.69	1.68	4.78	1.19	1.11	1.92	T	0.18	0.66	15.95
1964	0.72	0.57	0.93	1.25	1.42	4.72	0.54	2.33	0.23	0.25	1.33	0.62	14.91

1965	0.96	0.53	0.75	2.12	1.41	3.46	3.59	0.22	1.77	T	0.39	0.40	15.60
1966	0.67	0.53	0.77	0.85	1.07	3.26	1.61	0.62	0.52	0.34	0.80	0.54	11.58
1967	0.33	0.87	1.78	2.11	1.79	5.23	0.86	T	2.35	0.47	0.38	1.33	15.18
1968	0.84	0.77	0.29	0.48	1.64	5.18	0.93	3.88	0.48	0.63	0.72	1.78	17.62
1969	0.70	0.24	0.73	2.82	1.99	2.63	3.40	0.17	0.05	1.09	0.03	1.33	15.18
1970	0.69	1.06	0.83	2.59	3.18	2.01	1.06	0.03	1.43	0.99	0.88	0.43	15.18
1971	1.78	0.76	0.56	1.26	1.55	2.12	0.10	1.61	1.01	6.31	0.42	1.24	18.72
1972	1.48	0.73	0.60	0.45	2.83	3.62	1.97	3.34	0.68	0.66	0.15	1.03	17.54
1973	0.14	0.33	0.16	4.22	1.92	3.30	0.27	1.72	4.02	0.57	0.17	0.82	17.64
1974	0.22	0.19	0.72	1.17	4.13	1.29	1.35	1.44	0.32	2.24	0.23	0.34	13.64
1975	0.81	0.33	1.23	2.70	4.77	3.68	1.66	0.67	0.44	2.31	0.91	0.56	20.07
1976	0.23	0.18	0.36	1.43	1.00	3.41	1.11	0.78	1.06	0.75	0.19	0.27	10.77
1977	0.68	0.10	0.97	0.24	2.45	1.38	1.91	2.26	1.91	1.16	1.50	1.23	15.79
1978	0.51	1.19	0.12	0.47	6.81	1.39	2.51	0.81	3.40	0.27	2.17	0.63	20.28
1979	0.33	1.14	0.26	0.76	1.36	0.77	2.79	0.67	0.03	0.32	0.20	0.05	8.86
1980	0.33	0.33	0.28	0.66	0.28	3.04	0.53	2.04	0.73	1.61	0.29	0.33	10.45
1981	0.05	0.06	0.28	0.20	2.87	2.57	0.36	1.12	0.72	1.39	0.78	0.23	10.63
1982	0.96	0.20	0.73	0.53	2.61	5.10	0.69	0.61	2.23	1.61	0.10	1.01	16.38
1983	0.26	0.09	0.95	0.02	1.36	1.56	1.89	0.33	1.36	0.26	0.43	0.28	8.79
1984	0.13	0.13	0.27	1.34	0.90	3.55	0.18	0.89	0.58	0.11	0.20	0.53	8.81
1985	0.23	0.02	0.97	0.86	1.16	1.12	3.13	1.86	1.45	0.64	0.72	0.54	12.70
1986	0.49	0.72	0.21	1.18	3.31	2.14	1.64	2.05	3.38	0.19	0.54	0.14	15.99
1987	0.05	0.09	0.86	0.16	4.28	1.04	3.99	1.83	0.82	0.01	0.12	0.08	13.33
1988	0.25	0.14	0.27	0.11	0.56	0.70	T	0.33	1.10	0.82	0.39	0.60	5.27
1989	0.93	0.35	1.16	3.81	1.43	2.79	1.29	0.65	0.07	0.62	0.66	M	13.76*
1990	0.37	0.02	0.15	2.84	1.05	1.76	0.91	0.44	0.23	0.71	0.46	0.22	9.16
1991	0.59	0.39	0.13	3.96	2.70	6.44	0.29	0.73	3.77	0.47	0.39	0.08	19.94
1992	0.07	0.01	0.47	2.46	1.16	2.47	2.93	1.67	1.28	1.18	0.58	0.39	14.67
1993	0.62	0.31	0.68	2.22	1.04	4.71	6.32	1.04	0.13	1.13	0.34	0.09	18.63
1994	0.93	0.31	0.47	1.36	1.23	1.00	0.62	0.52	1.24	1.79	0.25	0.05	9.77
1995	0.09	0.26	1.33	1.13	2.97	2.95	1.59	0.53	0.27	0.93	0.58	0.27	12.90
1996	1.19	0.32	1.06	0.93	4.83	0.84	0.61	0.05	0.92	1.04	0.84	0.48	13.11

1997	0.23	0.07	0.43	1.54	1.31	1.50	2.65	0.62	0.27	1.07	0.13	0.02	9.84
1998	0.34	0.29	1.21	0.62	0.81	2.86	2.27	1.93	0.39	2.38	0.55	0.56	14.21
1999	0.57	0.13	0.13	2.58	1.69	2.11	0.56	2.16	0.87	0.23	0.26	0.22	11.28
Mean	0.49	0.40	0.62	1.31	2.10	2.89	1.56	1.18	1.16	0.95	0.49	0.46	13.59
Normal	0.55	0.45	0.62	1.36	2.27	2.77	1.55	1.15	1.27	0.90	0.54	0.64	14.07

Miles City, MT Monthly Precipitation Extremes								
	Mean	High	Low	1 Day Max	Number of Days			
					>=0.01"	>=0.10"	>=0.50"	>=1.00"
January	0.49"	1.78" 1971	0.05" 1981	0.76" 3 rd - 1996	8	2	0	0
February	0.40"	1.30" 1959	0.01" 1992	0.77" 18 th - 1952	6	1	0	0
March	0.62"	1.83" 1950	0.07" 1959	0.83" 12 nd - 1995	8	2	0	0
April	1.31"	4.22" 1973	0.02" 1983	2.06" 27 th - 1989	8	4	1	0
May	2.10"	6.81" 1978	0.24" 1958	2.30" 17 st - 1978	11	6	1	0
June	2.89"	9.78" 1944	0.70" 1988	2.71" 18 th - 1964	11	7	2	0
July	1.56"	6.32" 1993	0.00" 1988	2.22" 29 rd - 1985	8	4	1	0
August	1.18"	4.00" 1951	0.00" 1967	1.66" 23 th - 1968	6	3	1	0
September	1.16"	4.67" 1941	0.00" 1960	2.67" 7 th - 1941	6	3	1	0
October	0.95"	6.31" 1971	0.00" 1944	2.11" 1 st - 1971	6	2	0	0
November	0.49"	2.17" 1978	0.02" 1949	1.17" 1 st - 1957	6	2	0	0
December	0.46"	1.78" 1968	0.02" 1943	0.48" 6 th - 1971	7	2	0	0
Annual	13.59"	20.28" 1978	5.27" 1988	2.71" 06/18/64	90	36	6	1
Winter	1.64"	3.45" 1972	0.16" 1992	0.77" 02/18/22	21	4	0	0
Spring	4.25"	8.70" 1975	0.94" 1988	2.30" 5/17/78	26	11	2	0
Summer	5.47"	12.28" 1944	1.03" 1988	2.71" 06/18/64	25	13	3	1
Fall	2.71"	8.21" 1946	0.34" 1960	2.67" 09/07/41	18	7	1	0

Seasons are climatological not calendar seasons
 Winter = Dec., Jan., and Feb. Spring = Mar., Apr., and May
 Summer = Jun., Jul., and Aug. Fall = Sep., Oct., and Nov.

Miles City, MT Highest Monthly and Annual Precipitation

Rank	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Ann.
1	1.78" 1971	1.30" 1959	1.83" 1950	4.22" 1973	6.81" 1978	9.78" 1944	6.32" 1993	4.00" 1951	4.67" 1941	6.31" 1971	2.17" 1978	1.78" 1968	20.28" 1978
2	1.48" 1972	1.19" 1978	1.78" 1967	3.96" 1991	5.33" 1955	6.44" 1991	4.58" 1948	3.88" 1968	4.60" 1946	3.20" 1946	1.50" 1977	1.33" 1969	20.07" 1975
3	1.19" 1996	1.14" 1979	1.33" 1995	3.81" 1989	4.97" 1962	6.12" 1943	4.51" 1962	3.34" 1972	4.02" 1973	2.70" 1940	1.33" 1964	1.33" 1967	19.94" 1991
4	0.96" 1982	1.06" 1970	1.23" 1975	2.84" 1990	4.83" 1996	5.23" 1967	3.99" 1987	2.57" 1943	3.77" 1991	2.43" 1949	1.26" 1958	1.24" 1971	19.00" 1962
5	0.96" 1965	0.92" 1952	1.21" 1998	2.82" 1969	4.77" 1975	5.18" 1968	3.59" 1965	2.40" 1954	3.40" 1978	2.38" 1998	1.25" 1957	1.23" 1977	18.72" 1971
6	0.93" 1994	0.91" 1949	1.16" 1989	2.70" 1975	4.28" 1987	5.13" 1942	3.58" 1958	2.33" 1964	3.38" 1986	2.31" 1975	0.91" 1975	1.14" 1951	18.63" 1993
7	0.93" 1989	0.87" 1967	1.10" 1947	2.69" 1963	4.13" 1974	5.10" 1982	3.40" 1969	2.26" 1977	2.83" 1961	2.24" 1974	0.91" 1959	1.03" 1972	18.11" 1941
8	0.84" 1968	0.77" 1968	1.06" 1996	2.59" 1970	4.06" 1953	4.91" 1948	3.13" 1985	2.16" 1999	2.35" 1967	1.79" 1994	0.88" 1970	1.01" 1982	18.07" 1946
9	0.81" 1975	0.77" 1961	1.04" 1938	2.58" 1999	3.32" 1946	4.78" 1963	2.93" 1992	2.15" 1941	2.23" 1982	1.61" 1982	0.84" 1996	0.82" 1973	17.91" 1942
10	0.81" 1959	0.76" 1971	0.97" 1977	2.54" 1953	3.31" 1986	4.72" 1964	2.79" 1979	2.09" 1944	2.09" 1950	1.61" 1980	0.80" 1966	0.73" 1941	17.64" 1973

The 20 Wettest Years in Miles City, MT

1. 20.28" 1978
2. 20.07" 1975
3. 19.94" 1991
4. 19.00" 1962
5. 18.72" 1971
6. 18.63" 1993
7. 18.11" 1941
8. 18.07" 1946
9. 17.91" 1942
10. 17.64" 1973
11. 17.62" 1968
12. 17.54" 1972
13. 17.50" 1967
14. 16.61" 1953
15. 16.38" 1982
16. 16.17" 1948
17. 15.99" 1986
18. 15.95" 1963
19. 15.79" 1977
20. 15.60" 1965

The 20 Wettest Months in Miles City, MT

1. 9.78" Jun. 1944
2. 6.81" May 1978
3. 6.44" Jun. 1991
4. 6.32" Jun. 1993
5. 6.31" Oct. 1971
6. 6.12" Jun. 1943
7. 5.33" May 1955
8. 5.23" May 1967
9. 5.18" Jun. 1968
10. 5.13" Jun. 1942
11. 5.10" Jun. 1982
12. 4.97" May 1962
13. 4.91" Jun. 1948
14. 4.83" May 1996
15. 4.78" Jun. 1963
16. 4.77" May 1975
17. 4.72" Jun. 1964
18. 4.71" Jun. 1993
19. 4.67" Sep. 1941
20. 4.60" Sep. 1946

The 20 Greatest Precipitation Events in Miles City, MT

1. 2.71" Jun. 18, 1964
2. 2.67" Sep. 7, 1941
3. 2.45" Jun. 7, 1993
4. 2.30" May 17, 1978
5. 2.23" Jun. 1, 1962
6. 2.22" Jul. 29, 1985
7. 2.17" May 3, 1955
8. 2.12" Jul. 25, 1979
9. 2.11" Oct. 1, 1971
10. 2.06" Apr. 27, 1989
11. 2.04" Sep. 15, 1991
12. 1.94" Jun. 3, 1944
13. 1.92" Jun. 17, 1944
14. 1.88" Oct. 18, 1971
15. 1.82" Jun. 22, 1944
16. 1.77" Apr. 19, 1973
17. 1.77" Jun. 2, 1943
18. 1.75" Jun. 29, 1982
19. 1.75" Oct. 2, 1971
20. 1.75" Jun. 13, 1967

The 20 Driest Years in Miles City, MT

1. 5.27" 1988
2. 6.99" 1960
3. 8.79" 1983
4. 8.79" 1949
5. 8.81" 1984
6. 8.86" 1979
7. 9.16" 1990
8. 9.16" 1939
9. 9.48" 1959
10. 9.55" 1956
11. 9.77" 1994
12. 9.84" 1997
13. 9.86" 1952
14. 9.97" 1961
15. 10.42" 1937
16. 10.45" 1980
17. 10.63" 1981
18. 10.77" 1976
19. 10.84" 1938
20. 11.28" 1999

Miles City, MT Monthly Snowfall In Inches

Years	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Ann
1936-37	M	M	M	M	M	M	2.0	2.0	5.0	2.3	0.0	0.0	9.3*
1937-38	0.0	0.0	0.0	T	14.6	6.9	14.5	1.6	23.2	0.1	T	0.0	60.9
1938-39	0.0	0.0	0.0	0.3	10.2	13.8	2.8	4.6	2.2	0.4	0.0	0.0	34.3
1939-40	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	2.3	0.0	0.0	0.0	2.7
1940-41	0.0	0.0	0.0	0.0	1.2	4.6	4.9	3.7	0.6	2.7	0.0	0.0	17.7
1941-42	0.0	0.0	3.0	5.5	8.4	33.9	1.9	11.3	7.3	T	0.0	0.0	71.3
1942-43	0.0	0.0	T	2.0	9.0	1.4	4.3	7.3	7.9	0.0	0.9	T	32.8
1943-44	0.0	0.0	0.0	1.2	2.0	T	7.1	6.4	3.4	T	T	0.0	20.1
1944-45	0.0	0.0	T	T	1.4	3.0	4.9	1.2	1.3	1.9	1.2	0.0	14.9
1945-46	0.0	0.0	0.0	T	4.0	12.2	2.3	2.0	2.3	0.0	0.0	0.0	22.8
1946-47	0.0	0.0	0.0	8.2	2.7	19.5	5.7	3.0	11.0	12.2	0.0	0.0	62.3
1947-48	0.0	0.0	0.0	T	2.8	4.9	18.9	3.9	6.4	0.7	0.2	0.0	37.8
1948-49	0.0	0.0	0.0	T	1.5	7.7	14.7	19.0	5.6	T	T	0.0	48.5
1949-50	0.0	0.0	T	12.6	0.0	4.1	3.3	6.5	16.0	5.2	1.4	T	49.1
1950-51	T	0.0	0.7	0.6	5.9	4.3	3.1	4.1	1.9	3.7	0.0	T	24.3
1951-52	0.0	T	0.0	4.2	5.0	15.0	4.4	7.5	6.1	0.8	0.0	0.0	43.0
1952-53	0.0	0.0	0.0	0.0	1.4	1.0	7.8	7.1	5.3	8.2	2.0	T	32.8
1953-54	T	0.0	0.0	T	T	1.6	7.4	0.3	10.4	1.3	T	T	21.0
1954-55	0.0	0.0	T	1.7	1.2	0.6	2.7	8.4	3.8	1.0	0.0	0.0	19.4
1955-56	T	0.0	T	0.6	14.6	6.5	5.3	1.1	0.5	4.1	T	0.0	32.7
1956-57	0.0	0.0	0.0	T	4.0	1.5	5.6	3.8	8.6	2.0	0.0	0.0	25.5
1957-58	0.0	0.0	0.0	3.0	1.9	0.1	2.8	4.4	1.7	T	0.0	0.0	13.9
1958-59	0.0	0.0	0.0	T	8.9	10.8	10.3	11.8	0.6	3.5	0.0	0.0	45.9
1959-60	0.0	0.0	T	T	7.0	T	6.0	4.3	3.1	1.0	0.0	0.0	21.4
1960-61	0.0	0.0	0.0	T	2.0	6.0	1.4	6.0	3.0	T	0.0	0.0	18.4
1961-62	0.0	0.0	T	T	4.0	3.0	5.9	4.5	2.5	T	0.0	0.0	19.9
1962-63	0.0	0.0	T	T	1.4	3.1	9.6	6.0	0.4	9.0	0.0	0.0	29.5
1963-64	0.0	0.0	0.0	0.0	0.2	6.1	11.2	5.5	11.1	4.8	0.0	0.0	38.9
1964-65	0.0	0.0	0.0	0.0	14.4	7.3	13.4	3.5	6.9	4.0	T	0.0	49.5

1965-66	0.0	0.0	T	0.0	3.0	4.2	8.3	5.9	4.0	0.9	T	0.0	26.3
1966-67	0.0	0.0	0.0	T	7.9	3.7	2.4	5.8	17.8	16.6	8.6	0.0	62.8
1967-68	0.0	0.0	0.0	T	2.5	12.6	7.5	7.3	0.6	3.9	T	0.0	34.4
1968-69	0.0	0.0	0.0	T	2.2	18.0	6.9	2.4	6.0	1.9	0.0	0.1	37.5
1969-70	0.0	0.0	0.0	2.6	T	10.5	6.3	10.7	5.2	12.6	T	0.0	47.9
1970-71	0.0	0.0	0.6	0.3	3.3	3.4	17.2	6.6	5.1	T	0.1	0.0	36.6
1971-72	0.0	0.0	0.0	2.5	4.6	12.6	14.8	6.0	2.9	T	0.1	0.0	43.5
1972-73	0.0	0.0	7.1	3.3	T	10.0	1.7	3.3	0.4	5.1	0.0	T	30.9
1973-74	0.0	0.0	T	T	1.7	8.6	2.1	1.9	5.8	2.9	2.8	0.0	25.8
1974-75	0.0	0.0	T	0.1	0.7	3.4	5.6	3.3	12.3	10.6	T	0.0	36.0
1975-76	0.0	0.0	0.0	2.8	6.8	4.8	1.4	0.9	3.5	1.6	0.0	0.0	21.8
1976-77	0.0	0.0	0.0	4.4	1.7	2.6	6.4	0.8	5.4	T	0.0	0.0	21.3
1977-78	0.0	0.0	0.0	T	19.4	14.8	5.3	11.9	0.2	T	0.0	0.0	51.6
1978-79	0.0	0.0	T	0.0	16.8	6.7	3.3	11.8	2.2	3.5	T	0.0	44.3
1979-80	0.0	0.0	0.0	T	2.2	0.8	3.7	2.7	2.2	T	0.0	0.0	11.6
1980-81	0.0	0.0	0.0	3.0	0.9	2.0	T	1.0	T	T	0.0	0.0	6.9
1981-82	0.0	0.0	0.0	T	2.0	2.0	7.2	1.9	5.8	2.6	0.0	0.0	21.5
1982-83	0.0	0.0	T	T	1.0	10.4	1.5	0.4	4.3	T	12.0	0.0	29.6
1983-84	0.0	0.0	1.0	0.0	2.1	2.7	1.1	1.6	3.2	12.1	0.0	0.0	23.8
1984-85	0.0	0.0	3.3	0.6	0.8	8.8	4.4	2.0	12.1	1.1	0.0	0.0	33.1
1985-86	0.0	0.0	T	2.5	13.7	3.7	1.5	16.7	1.5	6.7	1.0	0.0	47.3
1986-87	0.0	0.0	0.0	T	7.1	1.6	1.2	0.2	8.6	T	0.0	0.0	18.7
1987-88	0.0	0.0	0.0	T	T	0.1	3.5	3.0	T	T	0.0	0.0	6.6
1988-89	0.0	0.0	0.0	T	4.2	5.8	16.6	5.2	10.6	15.6	T	0.0	58.0
1989-90	0.0	0.0	0.0	T	2.0	M	4.2	T	2.0	0.6	T	0.0	8.8*
1990-91	0.0	0.0	0.0	T	T	6.3	14.0	1.3	1.0	10.0	1.0	T	33.6
1991-92	0.0	0.0	0.0	7.7	4.6	1.1	1.0	0.1	0.9	1.0	0.0	0.0	16.4
1992-93	1.0	0.0	0.0	1.8	2.2	6.3	9.5	6.8	2.2	2.9	0.0	T	32.7
1993-94	0.0	T	0.0	1.2	4.1	0.5	9.9	3.7	4.0	5.5	0.0	T	28.9
1994-95	0.0	0.0	0.0	0.0	1.4	0.4	0.7	1.8	2.8	5.5	3.5	T	16.1
1995-96	T	T	0.3	2.1	4.7	5.6	19.2	7.9	16.9	0.7	7.1	T	64.5
1996-97	0.0	0.0	0.0	4.6	9.4	13.4	4.2	0.9	4.0	10.9	0.0	0.0	47.4

1997-98	T	0.0	0.0	0.6	0.8	0.5	4.4	2.2	5.5	0.0	T	0.0	14.0
1998-99	T	0.0	0.0	0.0	3.0	5.3	8.6	0.9	0.4	4.1	2.7	0.0	25.0
Mean	0.0	0.0	0.3	1.3	3.9	5.1	5.9	4.5	4.8	3.3	0.7	0.0	29.8
Normal	0.0	0.0	0.4	0.7	4.0	6.2	6.0	4.7	4.9	3.9	0.9	0.0	31.6

Miles City, MT Highest Monthly and Annual Snowfall

Rank	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Ann
1	7.1" 1972	12.6" 1949	19.4" 1977	33.9" 1941	19.2" 1996	19.0" 1949	23.2" 1938	16.6" 1967	12.0" 1983	71.3" 1941-42
2	3.3" 1984	8.2" 1946	16.8" 1978	19.5" 1946	18.9" 1948	16.7" 1986	17.8" 1967	15.6" 1989	8.6" 1967	64.5" 1995-96
3	3.0" 1941	7.7" 1991	14.6" 1955	18.0" 1968	17.2" 1971	11.9" 1978	16.9" 1996	12.6" 1970	7.1" 1996	62.8" 1966-67
4	1.0" 1983	5.5" 1941	14.6" 1937	15.0" 1951	16.6" 1989	11.8" 1979	16.0" 1950	12.2" 1974	3.5" 1995	62.3" 1946-47
5	0.7" 1950	4.6" 1996	14.4" 1964	14.8" 1977	14.8" 1972	11.8" 1959	12.3" 1975	12.1" 1984	2.8" 1974	58.0" 1988-89
6	0.6" 1970	4.4" 1976	13.7" 1985	13.8" 1938	14.7" 1949	11.3" 1942	12.1" 1985	10.9" 1997	2.7" 1999	51.6" 1977-78
7	0.3" 1995	4.2" 1951	10.2" 1938	13.4" 1996	14.5" 1938	10.7" 1970	11.1" 1964	10.6" 1975	2.0" 1953	49.5" 1964-65
8	T 1985	3.3" 1972	9.0" 1942	12.6" 1971	14.0" 1991	8.4" 1955	11.0" 1947	10.0" 1991	1.4" 1950	49.1" 1949-50
9	T 1982	3.0" 1980	8.9" 1958	12.6" 1968	13.4" 1965	7.9" 1996	10.6" 1989	9.0" 1963	1.2" 1945	48.5" 1948-49
10	T 1978	3.0" 1957	8.4" 1941	12.2" 1945	11.2" 1964	7.5" 1952	10.4" 1954	8.2" 1953	1.0" 1991	47.9" 1969-70

The 20 Highest Annual Snowfalls in Miles City, MT

1. 71.3" 1941-1942
2. 64.5" 1995-1996
3. 62.8" 1966-1967
4. 62.3" 1946-1947
5. 60.9" 1937-1938
6. 58.0" 1988-1989
7. 51.6" 1977-1978
8. 49.5" 1964-1965
9. 49.1" 1949-1950
10. 48.5" 1948-1949
11. 47.9" 1969-1970
12. 47.4" 1996-1997
13. 47.3" 1978-1979
14. 45.9" 1971-1972
15. 44.3" 1978-1979
16. 43.5" 1971-1972
17. 43.0" 1951-1952
18. 38.9" 1963-1964
19. 37.8" 1947-1948
20. 37.5" 1968-1969

The 20 Highest Monthly Snowfalls in Miles City, MT

1. 33.9" Dec. 1941
2. 23.2" Mar. 1938
3. 19.5" Dec. 1946
4. 19.4" Nov. 1977
5. 19.2" Jan. 1996
6. 19.0" Feb. 1949
7. 18.9" Jan. 1948
8. 18.0" Dec. 1968
9. 17.8" Mar. 1967
10. 17.2" Jan. 1971
11. 16.9" Mar. 1996
12. 16.8" Nov. 1978
13. 16.7" Feb. 1986
14. 16.6" Jan. 1989
15. 16.6" Apr. 1967
16. 16.0" Mar. 1950
17. 15.6" Apr. 1989
18. 15.0" Dec. 1951
19. 14.8" Dec. 1977
20. 14.8" Jan. 1972

The 20 Highest Daily Snowfalls in Miles City, MT

1. 19.0" Dec. 31, 1941
2. 15.0" Apr. 27, 1989
3. 14.0" Dec. 26, 1941
4. 14.0" Jan. 29, 1938
5. 10.4" Oct. 20, 1949
6. 10.0" Jan. 12, 1948
7. 10.0" Dec. 13 1946
8. 10.0" Nov. 28, 1937
9. 9.6" Feb. 18, 1949
10. 9.0" Dec. 13, 1945
11. 9.0" Dec. 30, 1938
12. 9.0" Mar. 30, 1998
13. 8.4" Jan. 1, 1991
14. 8.0" Nov. 19, 1977
15. 8.0" May 10, 1967
16. 8.0" Nov 14, 1964
17. 7.9" Apr. 4, 1947
18. 7.7" Apr. 5, 1997
19. 7.5" Jan. 23, 1964
20. 7.1" Sep. 25, 1972

The 20 Lowest Annual Snowfalls in Miles City, MT

1. 2.7" 1939-1940
2. 6.6" 1987-1988
3. 6.9" 1980-1981
4. 11.6" 1979-1980
5. 13.9" 1957-1958
6. 14.0" 1997-1998
7. 14.9" 1944-1945
8. 16.1" 1994-1995
9. 16.4" 1991-1992
10. 17.7" 1940-1941
11. 18.4" 1960-1961
12. 18.7" 1986-1987
13. 19.4" 1954-1955
14. 19.9" 1961-1962
15. 20.1" 1943-1944
16. 21.0" 1953-1954
17. 21.3" 1976-1977
18. 21.4" 1959-1960
19. 21.5" 1981-1982
20. 21.8" 1975-1976

Miles City, MT Mean Wind Speed and Direction

Month	Speed (mph)	Direction
Jan.	9.6	NW
Feb.	9.7	NW
Mar.	10.8	NW
Apr.	11.8	NW
May	11.2	SE
Jun.	10.3	SE
Jul.	9.7	SE
Aug.	9.8	SE
Sep.	10.0	NW
Oct.	9.8	S
Nov.	9.7	S
Dec.	9.8	S
Annual	10.2	NW

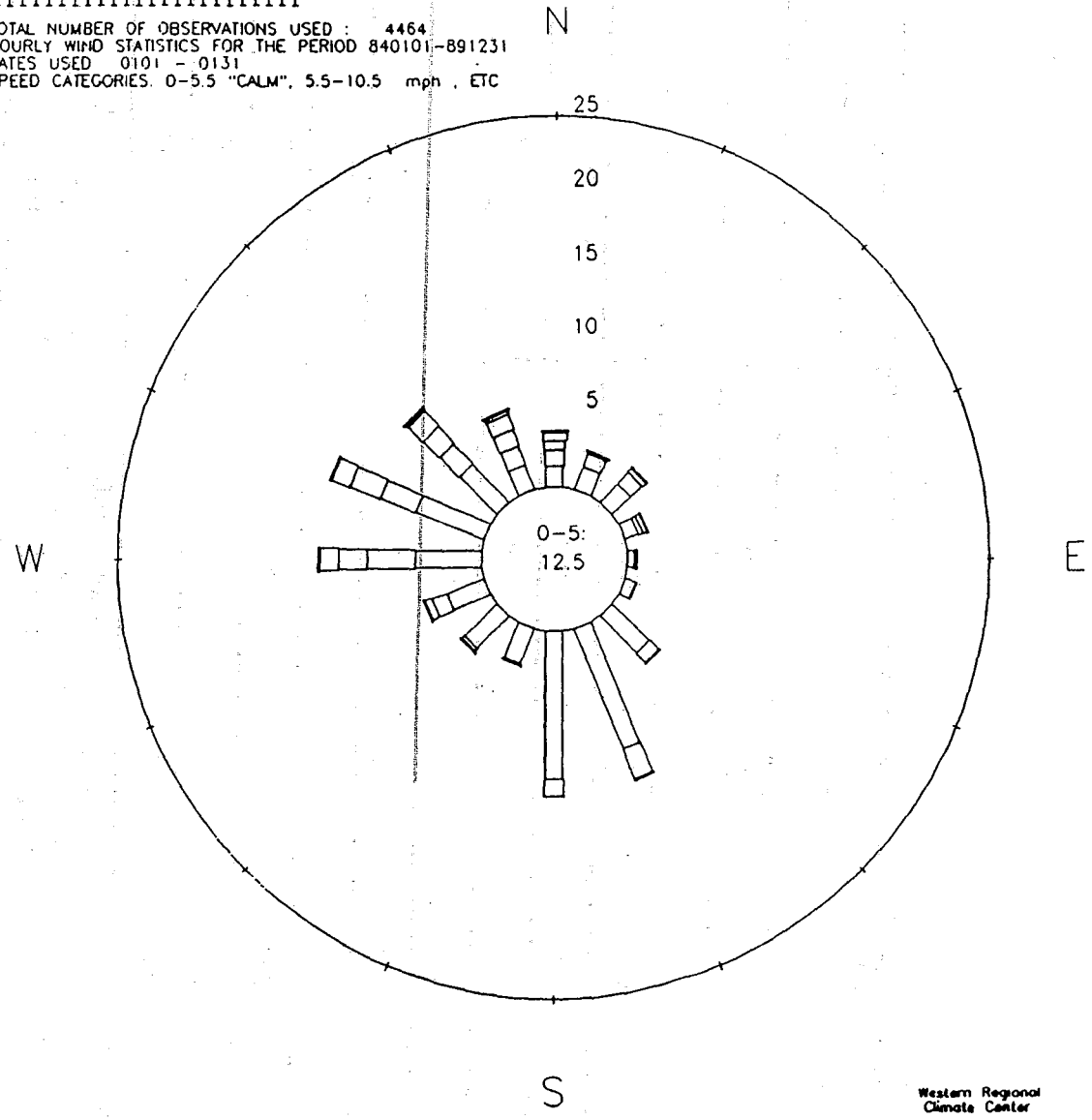
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0 6 12 18 23 (L.S.T.)

|||||

TOTAL NUMBER OF OBSERVATIONS USED : 4464
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED 0101 - 0131
SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph, ETC



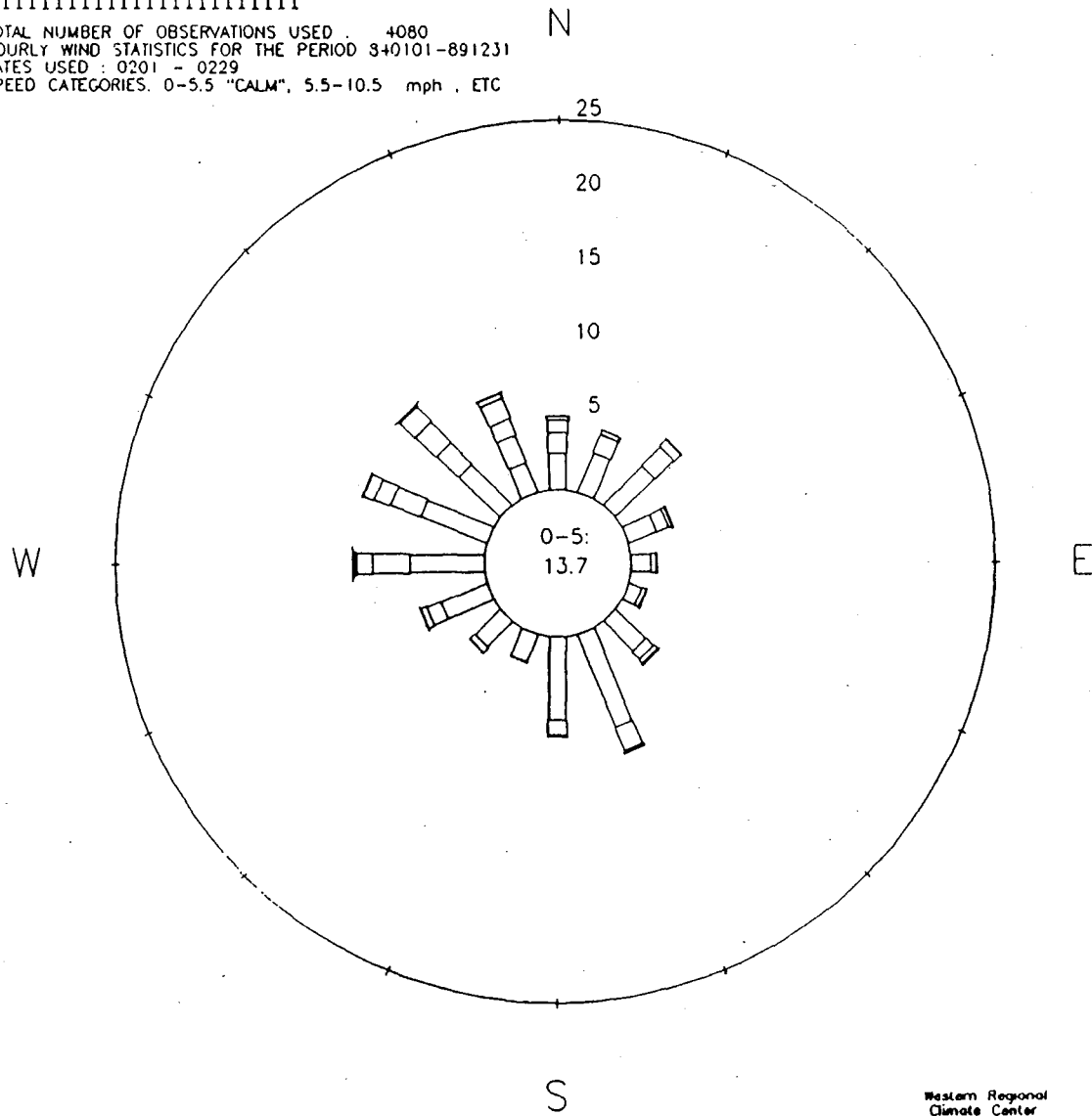
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED).

0 6 12 18 23 (L.S.T.)

|||||

TOTAL NUMBER OF OBSERVATIONS USED . . . 4080
 HOURLY WIND STATISTICS FOR THE PERIOD 340101-891231
 DATES USED : 0201 - 0229
 SPEED CATEGORIES. 0-5.5 "CALM", 5.5-10.5 mph , ETC



Western Regional
Climate Center

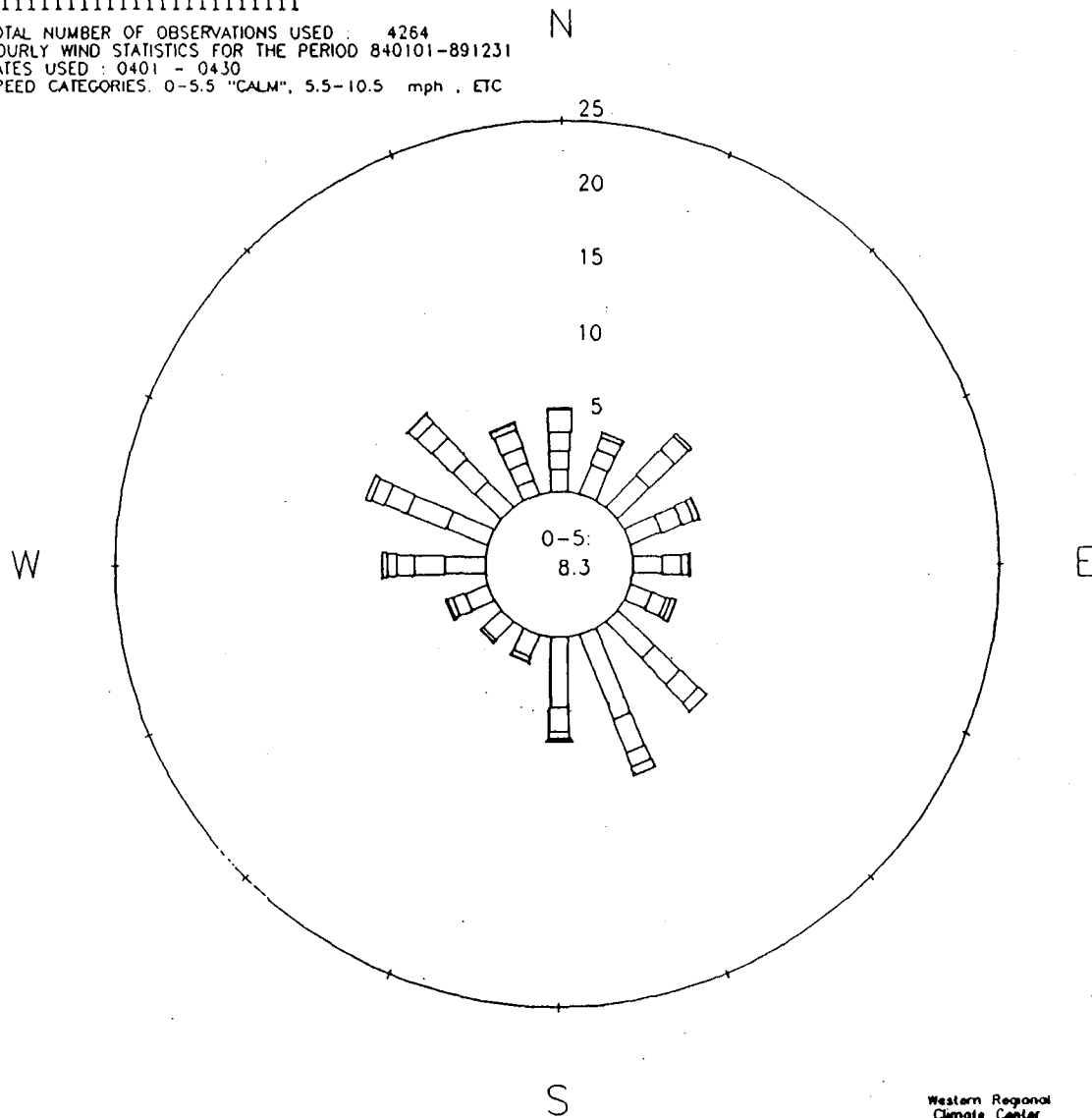
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0	6	12	18	23	(L.S.T.)
1	1	1	1	1	1

11111111111111111111111111111111111111

TOTAL NUMBER OF OBSERVATIONS USED : 4264
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED : 0401 - 0430
SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph , ETC



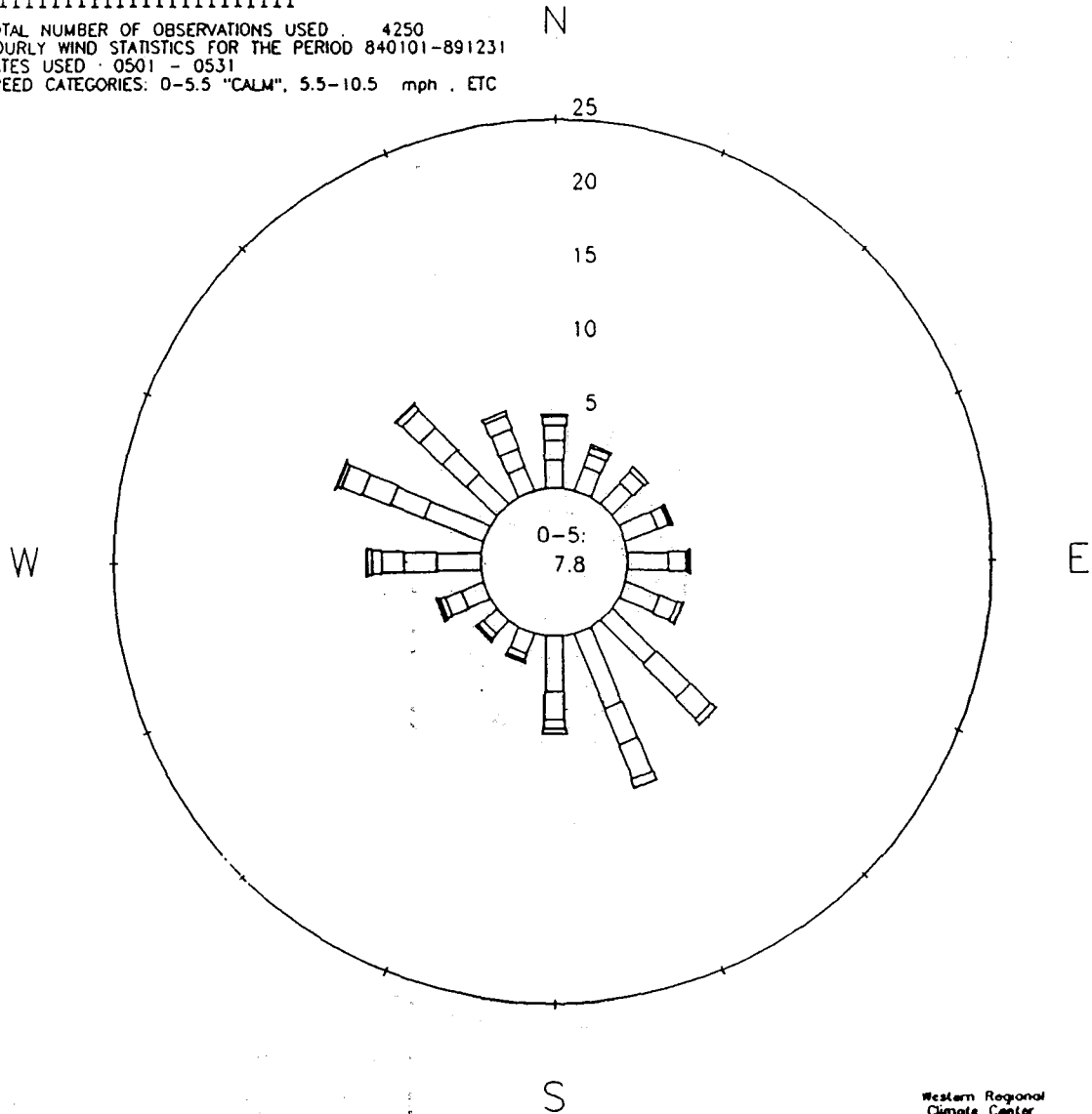
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED):

0 6 12 18 23 (L.S.T.)

1111111111111111111111111111111111

TOTAL NUMBER OF OBSERVATIONS USED . 4250
 HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
 DATES USED . 0501 - 0531
 SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph . ETC



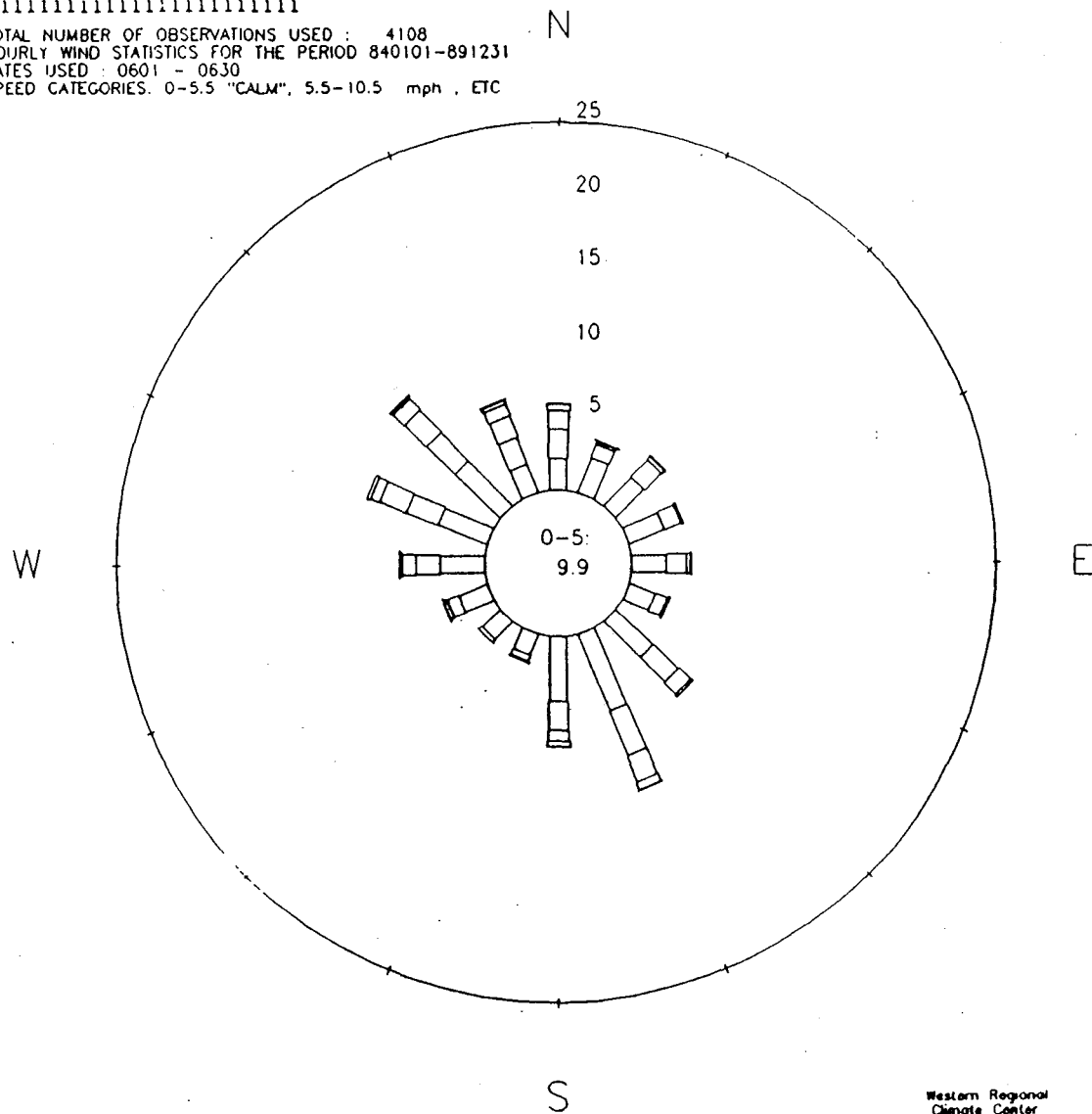
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0 6 12 18 23 (L.S.T.)

|||||

TOTAL NUMBER OF OBSERVATIONS USED : 4108
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED : 0601 - 0630
SPEED CATEGORIES. 0-5.5 "CALM", 5.5-10.5 mph , ETC



Western Regional
Climate Center

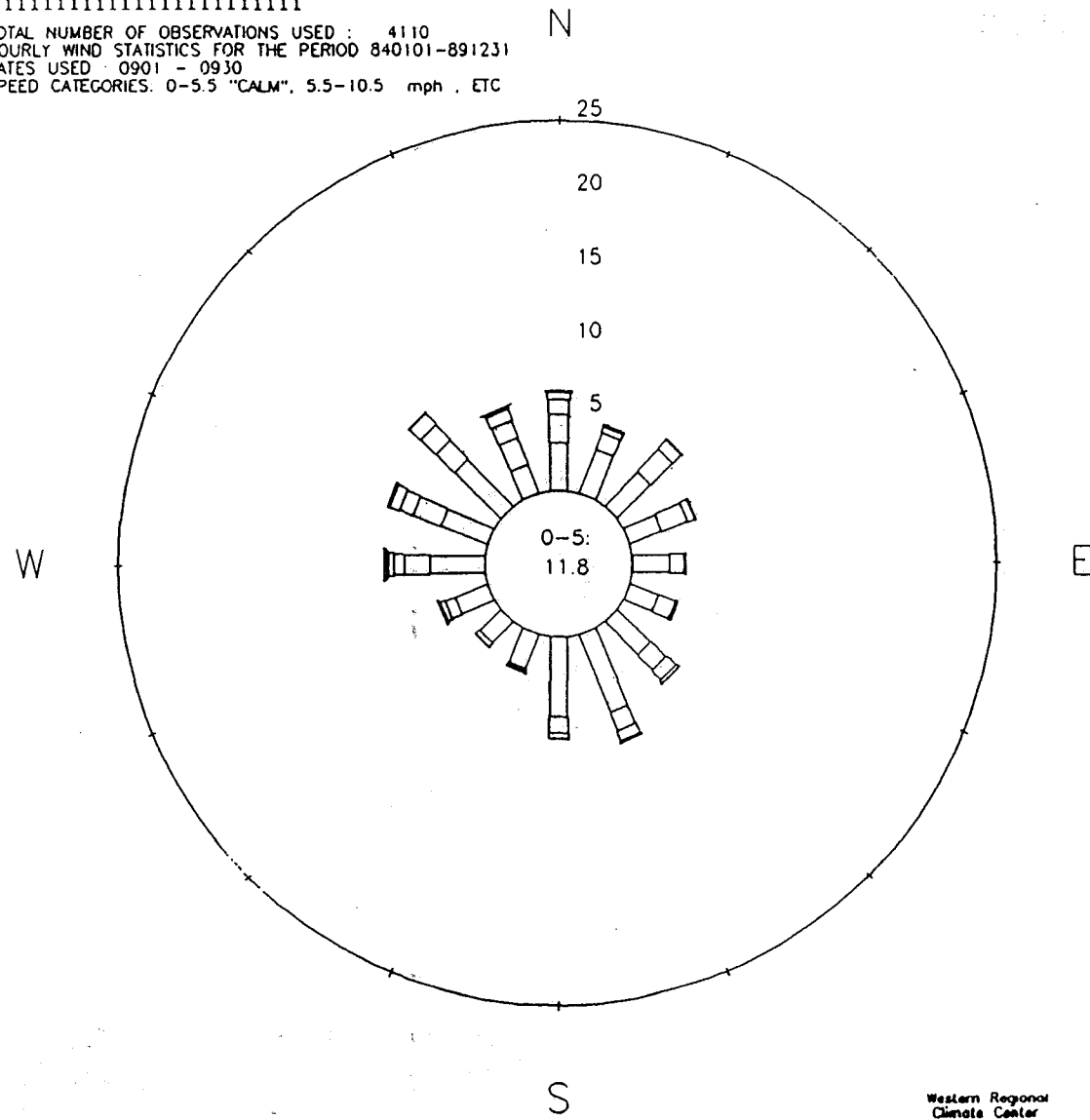
Miles City MT Airport. Wind Rose. 1984-1989 All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0 6 12 18 23 (L.S.T.)

|||||

TOTAL NUMBER OF OBSERVATIONS USED : 4110
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED : 0901 - 0930
SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph , ETC



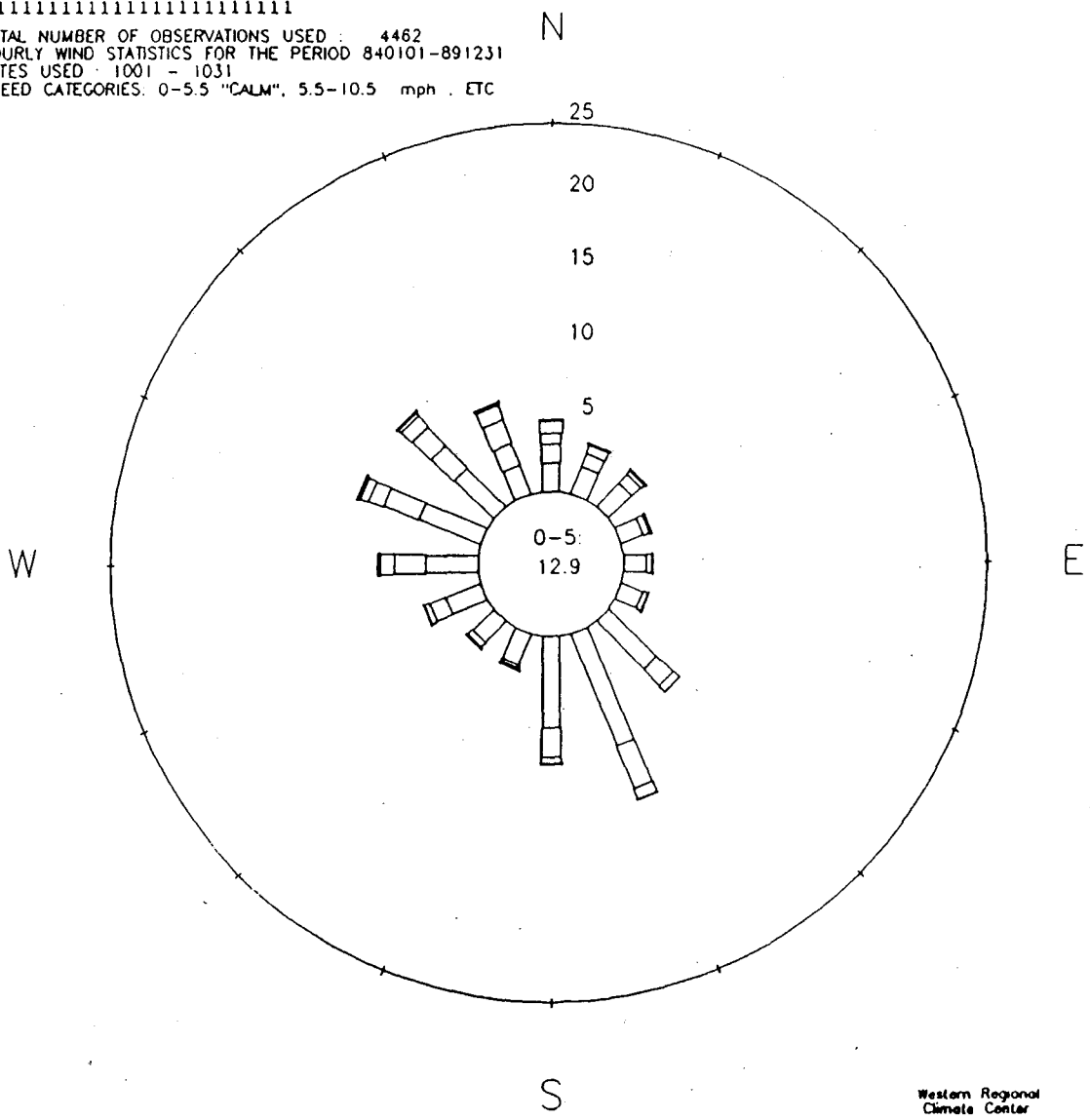
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0 6 12 18 23 (L.S.T.)

111111111111111111111111111111

TOTAL NUMBER OF OBSERVATIONS USED : 4462
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED : 1001 - 1031
SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph . ETC



Western Regional
Climate Center

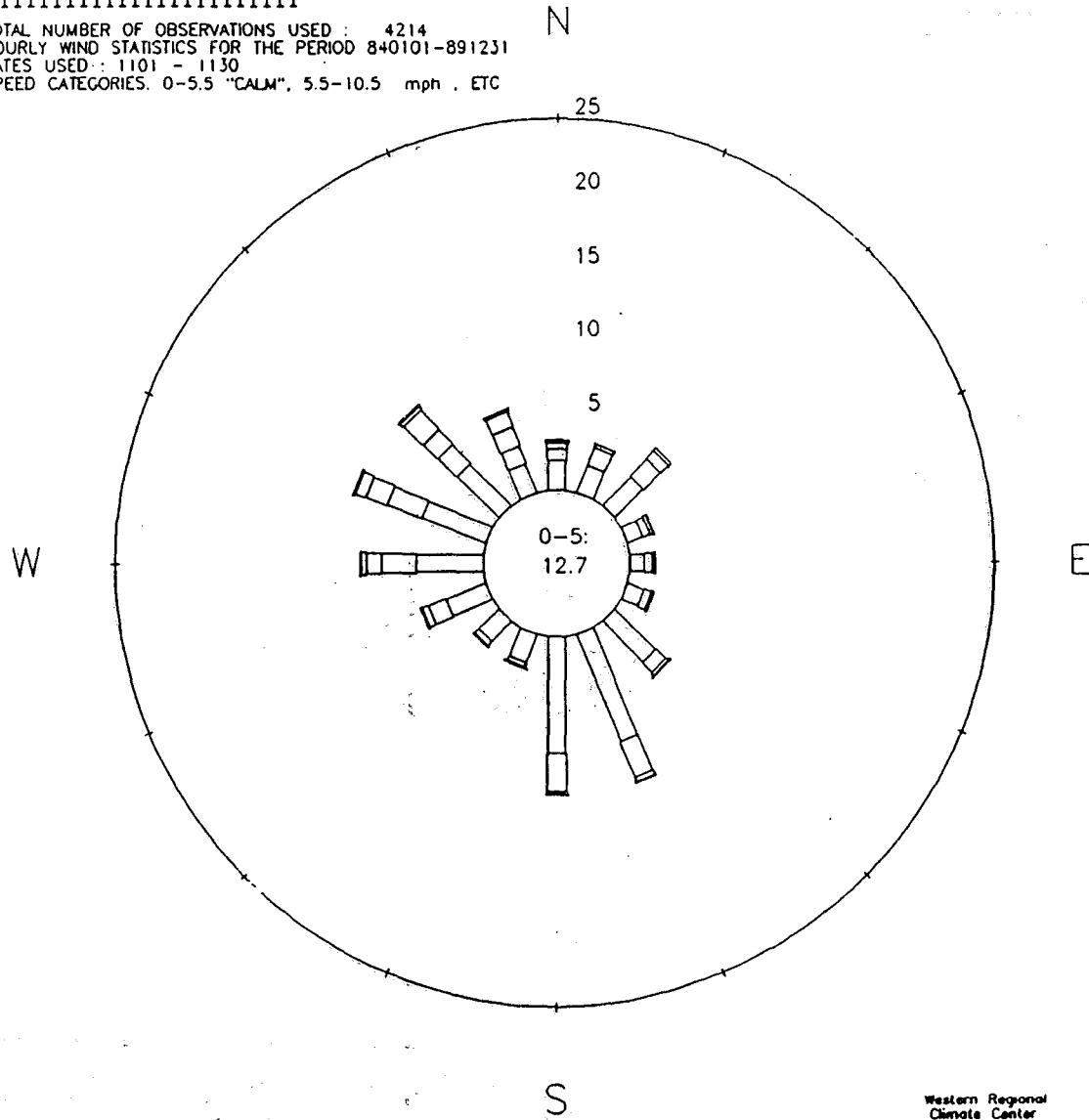
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED)

0	6	12	18	23	(L.S.T.)
---	---	----	----	----	------------

 11111111111111111111111111111111

TOTAL NUMBER OF OBSERVATIONS USED : 4214
 HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
 DATES USED : 1101 - 1130
 SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph, ETC



Western Regional
Climate Center

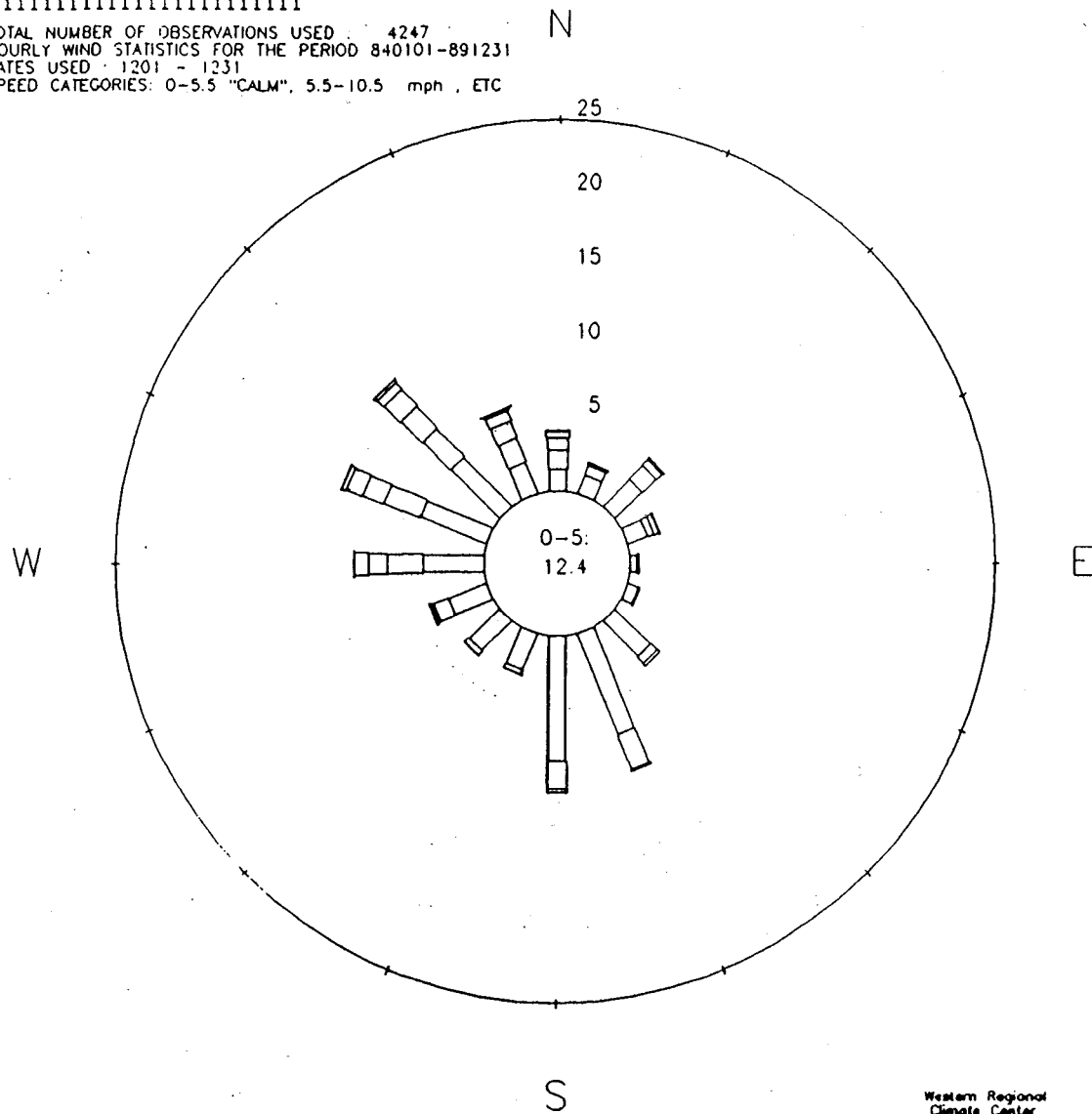
Miles City MT Airport. Wind Rose. 1984-1989. All hours. Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED):

0 6 12 18 23 (L.S.T.)

|||||

TOTAL NUMBER OF OBSERVATIONS USED : 4247
HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
DATES USED : 1201 - 1231
SPEED CATEGORIES: 0-5.5 "CALM", 5.5-10.5 mph , ETC



Western Regional
Climate Center

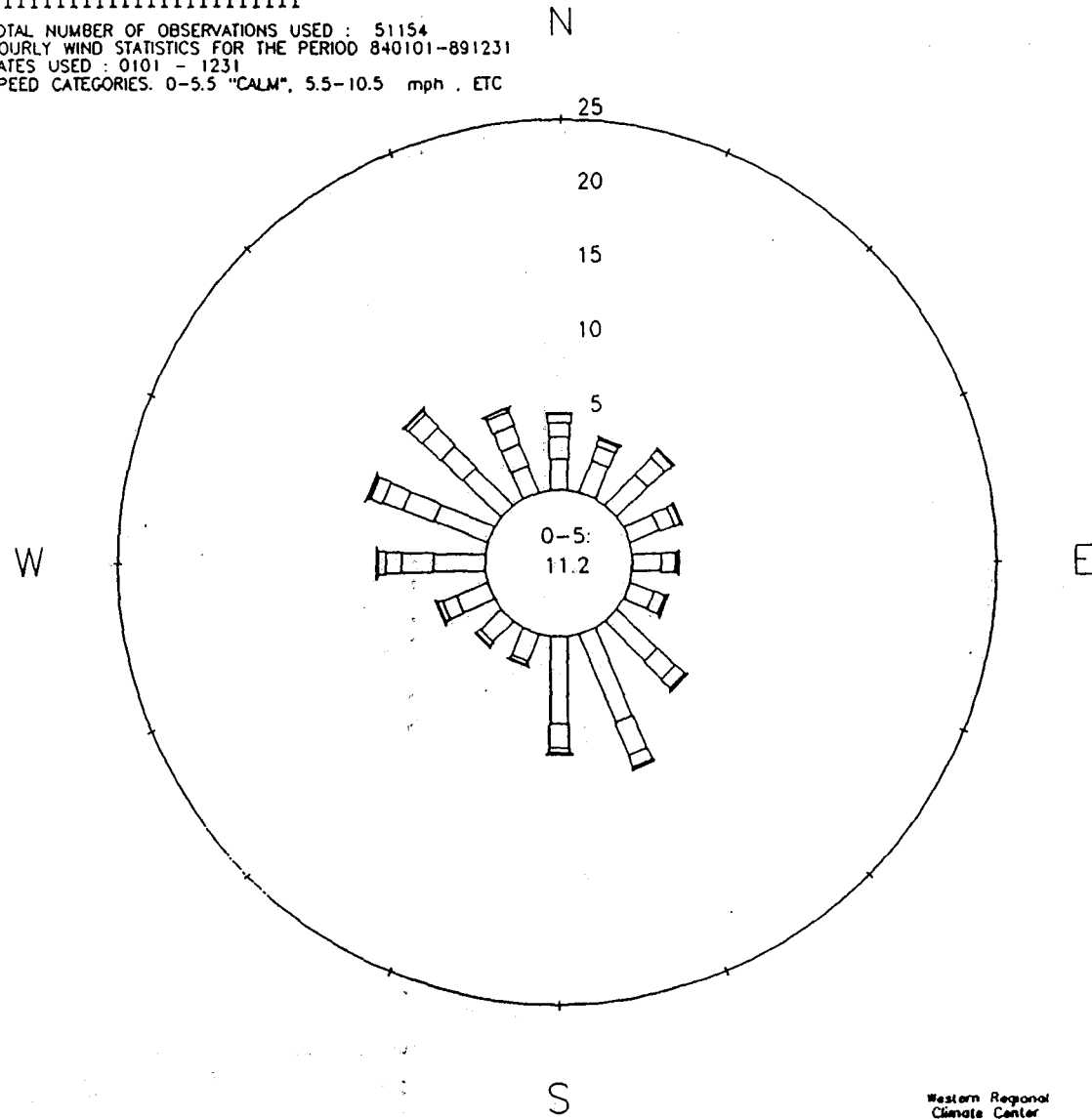
Miles City MT Airport. Wind Rose. 1984-1989. All hours Elev 2628 ft.

HOURS USED FOR WIND ROSE ("1" - USED, "0" - NOT USED):

0 6 12 18 23 (L.S.T.)

11111111111111111111111111111111

TOTAL NUMBER OF OBSERVATIONS USED : 51154
 HOURLY WIND STATISTICS FOR THE PERIOD 840101-891231
 DATES USED : 0101 - 1231
 SPEED CATEGORIES. 0-5.5 "CALM", 5.5-10.5 mph . ETC



ACKNOWLEDGMENTS

The authors would like to thank Keith Meier, Steve Kuhl and Carolyn Gurney at the National Weather Service Office in Billings for their review, input and advice for this manuscript.

REFERENCES

- Evans, T. and Halvorson, D., 1998: Climate of San Diego, California, NOAA Technical Memorandum NWS WR-256, National Weather Service Office, San Diego, CA.
- Felton, D., 1998: Climate of Seattle, Washington, NOAA Technical Memorandum NWS WR-257, National Weather Service Forecast Office, Seattle, WA.
- Rockey, C., 1997: Climate of Eugene, Oregon, NOAA Technical Memorandum NWS WR-248, National Weather Service Forecast Office, Portland, OR.
- Skrbac, P., 1999: Climate of Las Vegas, Nevada, NOAA Technical Memorandum NWS WR-260, National Weather Service Forecast Office, Las Vegas, NV.

- 151 NMC Model Performance in the Northeast Pacific. James E. Overland, PMEL-ERL, April 1980. (PB80 196033)
- 152 Climate of Salt Lake City, Utah. William J. Alder, Sean T. Buchanan, William Cole (Retired), James A. Cisco, Craig C. Schmidt, Alexander R. Smith (Retired), Wilbur E. Figgins (Retired), February 1998 - Seventh Revision (PB98-130727)
- 153 An Automatic Lightning Detection System in Northern California. James E. Rea and Chris E. Fontana, June 1980. (PB80 225592)
- 154 Regression Equation for the Peak Wind Gust 6 to 12 Hours in Advance at Great Falls During Strong Downslope Wind Storms. Michael J. Oard, July 1980. (PB91 108367)
- 155 A Raininess Index for the Arizona Monsoon. John H. Ten Harkel, July 1980. (PB81 106494)
- 156 The Effects of Terrain Distribution on Summer Thunderstorm Activity at Reno, Nevada. Christopher Dean Hill, July 1980. (PB81 102501)
- 157 An Operational Evaluation of the Scofield/Oliver Technique for Estimating Precipitation Rates from Satellite Imagery. Richard Ochoa, August 1980. (PB81 108227)
- 158 Hydrology Practicum. Thomas Dietrich, September 1980. (PB81 134033)
- 159 Tropical Cyclone Effects on California. Arnold Court, October 1980. (PB81 133779)
- 160 Eastern North Pacific Tropical Cyclone Occurrences During Intraseasonal Periods. Preston W. Leftwich and Gail M. Brown, February 1981. (PB81 205494)
- 161 Solar Radiation as a Sole Source of Energy for Photovoltaics in Las Vegas, Nevada, for July and December. Darryl Randerson, April 1981. (PB81 224503)
- 162 A Systems Approach to Real-Time Runoff Analysis with a Deterministic Rainfall-Runoff Model. Robert J.C. Burnash and R. Larry Ferral, April 1981. (PB81 224495)
- 163 A Comparison of Two Methods for Forecasting Thunderstorms at Luke Air Force Base, Arizona. LTC Keith R. Cooley, April 1981. (PB81 225393)
- 164 An Objective Aid for Forecasting Afternoon Relative Humidity Along the Washington Cascade East Slopes. Robert S. Robinson, April 1981. (PB81 23078)
- 165 Annual Data and Verification Tabulation, Eastern North Pacific Tropical Storms and Hurricanes 1980. Emil B. Gunther and Staff, May 1981. (PB82 230336)
- 166 Preliminary Estimates of Wind Power Potential at the Nevada Test Site. Howard G. Booth, June 1981. (PB82 127036)
- 167 ARAP User's Guide. Mark Mathewson, July 1981, Revised September 1981. (PB82 196783)
- 168 Forecasting the Onset of Coastal Gales Off Washington-Oregon. John R. Zimmerman and William D. Burton, August 1981. (PB82 127051)
- 169 A Statistical-Dynamical Model for Prediction of Tropical Cyclone Motion in the Eastern North Pacific Ocean. Preston W. Leftwich, Jr., October 1981. (PB82195298)
- 170 An Enhanced Plotter for Surface Airways Observations. Andrew J. Spry and Jeffrey L. Anderson, October 1981. (PB82 153883)
- 171 Verification of 72-Hour 500-MB Map-Type Predictions. R.F. Quiring, November 1981. (PB82-158098)
- 172 Forecasting Heavy Snow at Wenatchee, Washington. James W. Holcomb, December 1981. (PB82-177783)
- 173 Central San Joaquin Valley Type Maps. Thomas R. Crossan, December 1981. (PB82 196064)
- 174 ARAP Test Results. Mark A. Mathewson, December 1981. (PB82 198103)
- 176 Approximations to the Peak Surface Wind Gusts from Desert Thunderstorms. Darryl Randerson, June 1982. (PB82 253089)
- 177 Climate of Phoenix, Arizona. Robert J. Schmidli and Austin Jamison, April 1969 (Revised July 1996). (PB96-191614)
- 178 Annual Data and Verification Tabulation, Eastern North Pacific Tropical Storms and Hurricanes 1982. E.B. Gunther, June 1983. (PB85 106078)
- 179 Stratified Maximum Temperature Relationships Between Sixteen Zone Stations in Arizona and Respective Key Stations. Ira S. Brenner, June 1983. (PB83 249904)
- 180 Standard Hydrologic Exchange Format (SHEF) Version I. Phillip A. Pasteris, Vernon C. Bissel, David G. Bennett, August 1983. (PB85 106052)
- 181 Quantitative and Spatial Distribution of Winter Precipitation along Utah's Wasatch Front. Lawrence B. Dunn, August 1983. (PB85 106912)
- 182 500 Millibar Sign Frequency Teleconnection Charts - Winter. Lawrence B. Dunn, December 1983. (PB85 106276)
- 183 500 Millibar Sign Frequency Teleconnection Charts - Spring. Lawrence B. Dunn, January 1984. (PB85 111367)
- 184 Collection and Use of Lightning Strike Data in the Western U.S. During Summer 1983. Glenn Rasch and Mark Mathewson, February 1984. (PB85 110534)
- 185 500 Millibar Sign Frequency Teleconnection Charts - Summer. Lawrence B. Dunn, March 1984. (PB85 111359)
- 186 Annual Data and Verification Tabulation eastern North Pacific Tropical Storms and Hurricanes 1983. E.B. Gunther, March 1984. (PB85 109635)
- 187 500 Millibar Sign Frequency Teleconnection Charts - Fall. Lawrence B. Dunn, May 1984. (PB85-110930)
- 188 The Use and Interpretation of Isentropic Analyses. Jeffrey L. Anderson, October 1984. (PB85-132694)
- 189 Annual Data & Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1984. E.B. Gunther and R.L. Cross, April 1985. (PB85 187887AS)
- 190 Great Salt Lake Effect Snowfall: Some Notes and An Example. David M. Carpenter, October 1985. (PB86 119153AS)
- 191 Large Scale Patterns Associated with Major Freeze Episodes in the Agricultural Southwest. Ronald S. Hamilton and Glenn R. Lusk, December 1985. (PB86 144474AS)
- 192 NWR Voice Synthesis Project - Phase I. Glen W. Sampson, January 1986. (PB86 145604AS)
- 193 The MCC - An Overview and Case Study on its Impact in the Western United States. Glenn R. Lusk, March 1986. (PB86 170851AS)
- 194 Annual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1985. E.B. Gunther and R.L. Cross, March 1986. (PB86 170941AS)
- 195 Radid Interpretation Guidelines. Roger G. Pappas, March 1986. (PB86 177680AS)
- 196 A Mesoscale Convective Complex Type Storm over the Desert Southwest. Darryl Randerson, April 1986. (PB86 190998AS)
- 197 The Effects of Eastern North Pacific Tropical Cyclones on the Southwestern United States. Walter Smith, August 1986. (PB87 106258AS)
- 198 Preliminary Lightning Climatology Studies for Idaho. Christopher D. Hill, Carl J. Gorski, and Michael C. Conger, April 1987. (PB87 180196AS)
- 199 Heavy Rains and Flooding in Montana: A Case for Slantwise Convection. Glenn R. Lusk, April 1987. (PB87 185229AS)
- 200 Annual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1986. Roger L. Cross and Kenneth B. Mielke, September 1987. (PB88 110895AS)
- 201 An Inexpensive Solution for the Mass Distribution of Satellite Images. Glen W. Sampson and George Clark, September 1987. (PB88 114038AS)
- 202 Annual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1987. Roger L. Cross and Kenneth B. Mielke, September 1988. (PB88-101935AS)
- 203 An Investigation of the 24 September 1986 "Cold Sector" Tornado Outbreak in Northern California. John P. Monteverdi and Scott A. Braun, October 1988. (PB89 121297AS)
- 204 Preliminary Analysis of Cloud-To-Ground Lightning in the Vicinity of the Nevada Test Site. Carven Scott, November 1988. (PB89 128649AS)
- 205 Forecast Guidelines For Fire Weather and Forecasters - How Nighttime Humidity Affects Wildland Fuels. David W. Goens, February 1989. (PB89 162549AS)
- 206 A Collection of Papers Related to Heavy Precipitation Forecasting. Western Region Headquarters, Scientific Services Division, August 1989. (PB89 230833AS)
- 207 The Las Vegas McCarran International Airport Microburst of August 8, 1989. Carven A. Scott, June 1990. (PB90-240268)
- 208 Meteorological Factors Contributing to the Canyon Creek Fire Blowup, September 6 and 7, 1988. David W. Goens, June 1990. (PB90-245085)
- 209 Stratus Surge Prediction Along the Central California Coast. Peter Felsch and Woodrow Whittatch, December 1990. (PB91-129239)
- 210 Hydrotools. Tom Egger, January 1991. (PB91-151787AS)
- 211 A Northern Utah Soaker. Mark E. Struthwolf, February 1991. (PB91-168716)
- 212 Preliminary Analysis of the San Francisco Rainfall Record: 1849-1990. Jan Null, May 1991. (PB91-208439)
- 213 Idaho Zone Preformat, Temperature Guidance, and Verification. Mark A. Mollner, July 1991. (PB91-227405AS)
- 214 Emergency Operational Meteorological Considerations During an Accidental Release of Hazardous Chemicals. Peter Mueller and Jerry Gait, August 1991. (PB91-235424)
- 215 WeatherTools. Tom Egger, October 1991. (PB93-184950)
- 216 Creating MOS Equations for RAW'S Stations Using Digital Model Data. Dennis D. Gettman, December 1991. (PB92-131473AS)
- 217 Forecasting Heavy Snow Events in Missoula, Montana. Mike Richmond, May 1992. (PB92-196104)
- 218 NWS Winter Weather Workshop in Portland, Oregon. Various Authors, December 1992. (PB93-146785)
- 219 A Case Study of the Operational Usefulness of the Sharp Workstation in Forecasting a Mesocyclone-Induced Cold Sector Tornado Event in California. John P. Monteverdi, March 1993. (PB93-178697)
- 220 Climate of Pendleton, Oregon. Claudia Bell, August 1993. (PB93-227536)
- 221 Utilization of the Bulk Richardson Number, Helicity and Sounding Modification in the Assessment of the Severe Convective Storms of 3 August 1992. Eric C. Evenson, September 1993. (PB94-131943)
- 222 Convective and Rotational Parameters Associated with Three Tornado Episodes in Northern and Central California. John P. Monteverdi and John Quadros, September 1993. (PB94-131943)
- 223 Climate of San Luis Obispo, California. Gary Ryan, February 1994. (PB94-162062)
- 224 Climate of Wenatchee, Washington. Michael W. McFarland, Roger G. Buckman, and Gregory E. Matzen, March 1994. (PB94-164308)
- 225 Climate of Santa Barbara, California. Gary Ryan, December 1994. (PB95-173720)
- 226 Climate of Yakima, Washington. Greg DeVoir, David Hogan, and Jay Neher, December 1994. (PB95-173688)
- 227 Climate of Kalispell, Montana. Chris Maier, December 1994. (PB95-169488)
- 228 Forecasting Minimum Temperatures in the Santa Maria Agricultural District. Wilfred Pi and Peter Felsch, December 1994. (PB95-171088)
- 229 The 10 February 1994 Oroville Tornado--A Case Study. Mike Staudenmaier, Jr., April 1995. (PB95-241873)
- 230 Santa Ana Winds and the Fire Outbreak of Fall 1993. Ivory Small, June 1995. (PB95-241865)
- 231 Washington State Tornadoes. Tresté Huse, July 1995. (PB96-107024)
- 232 Fog Climatology at Spokane, Washington. Paul Frisbie, July 1995. (PB96-106604)
- 233 Storm Relative Isentropic Motion Associated with Cold Fronts in Northern Utah. Kevin B. Baker, Kathleen A. Hadley, and Lawrence B. Dunn, July 1995. (PB96-106596)
- 234 Some Climatological and Synoptic Aspects of Severe Weather Development in the Northwestern United States. Eric C. Evenson and Robert H. Johns, October 1995. (PB96-112958)
- 235 Climate of Las Vegas, Nevada. Paul H. Skrbac and Scott Cordero, December 1995. (PB96-135553)
- 236 Climate of Astoria, Oregon. Mark A. McInemey, January 1996.
- 237 The 6 July 1995 Severe Weather Events in the Northwestern United States: Recent Examples of SSWEs. Eric C. Evenson, April 1996.
- 238 Significant Weather Patterns Affecting West Central Montana. Joe Lester, May 1996. (PB96-178751)
- 239 Climate of Portland, Oregon. Clinton C. D. Rockey, May 1996. (PB96-17603) - First Revision, October 1999
- 240 Downslope Winds of Santa Barbara, CA. Gary Ryan, July 1996. (PB96-191697)
- 241 Operational Applications of the Real-time National Lightning Detection Network Data at the NWSO Tucson, AZ. Darren McCollum, David Bright, Jim Meyer, and John Glueck, September 1996. (PB97-108450)
- 242 Climate of Pocatello, Idaho. Joe Heim, October 1996. (PB97-114540)
- 243 Climate of Great Falls, Montana. Matt Jackson and D. C. Williamson, December 1996. (PB97-126684)
- 244 WSR-88D VAD Wind Profile Data Influenced by Bird Migration over the Southwest United States. Jesus A. Haro, January 1997. (PB97-135263)
- 245 Climatology of Cape for Eastern Montana and Northern Wyoming. Heath Hockenberry and Keith Meier, January 1997. (PB97-133425)
- 246 A Western Region Guide to the Eta-29 Model. Mike Staudenmaier, Jr., March 1997. (PB97-144075)
- 247 The Northeast Nevada Climate Book. Edwin C. Clark, March 1997. (First Revision - January 1998 - Andrew S. Gorelow and Edwin C. Clark - PB98-123250)
- 248 Climate of Eugene, Oregon. Clinton C. D. Rockey, April 1997. (PB97-155303)
- 249 Climate of Tucson, Arizona. John R. Glueck, October 1997.
- 250 Northwest Oregon Daily Extremes and Normals. Clinton C. D. Rockey, October 1997.
- 251 A Composite Study Examining Five Heavy Snowfall Patterns for South-Central Montana. Jonathan D. Van Ausdall and Thomas W. Humphrey, February 1998. (PB98-125255)
- 252 Climate of Eureka, California. Alan H. Puffer, February 1998. (PB98-130735)
- 253 Inferred Oceanic Kelvin/Rossby Wave Influence on North American West Coast Precipitation. Martin E. Lee and Dudley Chelton. April 1998. (PB98-139744)
- 254 Conditional Symmetric Instability--Methods of Operational Diagnosis and Case Study of 23-24 February 1994 Eastern Washington/Oregon Snowstorm. Gregory A. DeVoir, May 1998. (PB98-144680)
- 255 Creation and Maintenance of a Comprehensive Climate Data Base. Eugene Petrescu. August 1998. (PB98-173529)
- 256 Climate of San Diego, California. Thomas E. Evans, III and Donald A. Halverson. October 1998. (PB99-109381)
- 257 Climate of Seattle, Washington. Dana Felton. November 1998. (PB99-113482)
- 258 1985-1998 North Pacific Tropical Cyclones Impacting the Southwestern United States and Northern Mexico: An Updated Climatology. Armando L. Garza. January 1999. (PB99-130502)
- 259 Climate of San Jose, California. Miguel Miller. April 1999. (PB99-145633)
- 260 Climate of Las Vegas, Nevada. Paul H. Skrbac. December 1999.
- 261 Climate of Los Angeles, California. David Bruno, Gary Ryan, with assistance from Curt Kaplan and Jonathan Stiemmer. January 2000.

NOAA SCIENTIFIC AND TECHNICAL PUBLICATIONS

The National Oceanic and Atmospheric Administration was established as part of the Department of Commerce on October 3, 1970. The mission responsibilities of NOAA are to assess the socioeconomic impact of natural and technological changes in the environment and to monitor and predict the state of the solid Earth, the oceans and their living resources, the atmosphere, and the space environment of the Earth.

The major components of NOAA regularly produce various types of scientific and technical information in the following kinds of publications.

PROFESSIONAL PAPERS--Important definitive research results, major techniques, and special investigations.

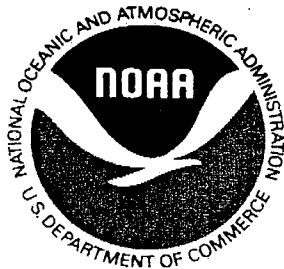
CONTRACT AND GRANT REPORTS--Reports prepared by contractors or grantees under NOAA sponsorship.

ATLAS--Presentation of analyzed data generally in the form of maps showing distribution of rainfall, chemical and physical conditions of oceans and atmosphere, distribution of fishes and marine mammals, ionospheric conditions, etc.

TECHNICAL SERVICE PUBLICATIONS -- Reports containing data, observations, instructions, etc. A partial listing includes data serials; prediction and outlook periodicals; technical manuals, training papers, planning reports, and information serials; and miscellaneous technical publications.

TECHNICAL REPORTS--Journal quality with extensive details, mathematical developments, or data listings.

TECHNICAL MEMORANDUMS--Reports of preliminary, partial, or negative research or technology results, interim instructions, and the like.



Information on availability of NOAA publications can be obtained from:

NATIONAL TECHNICAL INFORMATION SERVICE

U. S. DEPARTMENT OF COMMERCE

5285 PORT ROYAL ROAD

SPRINGFIELD, VA 22161