

## NOAA TECHNICAL MEMORANDUM NWS WR-249

## **CLIMATE OF TUCSON**

John R. Glueck National Weather Service Office Tucson, AZ

October 1997

U.S. DEPARTMENT OF COMMERCE National Oceanic and Atmospheric Administration National Weather Service



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- (Revised November 1967, October 1969). (PB-17800) Interpreting the RAREP. Herbert P. Benner, May 1966 (Revised January 1967). 8
- 11
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- 20
- Small-Scale Analysis and Prediction. Philip Williams, Jr., May 1968. (PB178425) Numerical Weather Prediction and Synoptic Meteorology. CPT Thomas D. Murphy, USAF, May 30 1968. (AD 673365)
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- Predicting Precipitation Type. Robert J.C. Burnash and Floyd E. Hug, March 1970. (PB 190962) 49 Statistical Report on Aeroallergens (Pollens and Molds) Fort Huachuca, Arizona, 1969. Wayne S. 50
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- Climate of Sacramento, California. Richard Honton and Tony Martini (Retired), August 1996. (Fifth Revision) (PB89 207781/AS) A Preliminary Report on Correlation of ARTCC Radar Echoes and Precipitation. Wilbur K. Hall, June
- 66 1971. (COM 71 00829) 60
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- 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) A comparison of Manual and Semiautomatic Methods of Digitizing Analog Wind Records. Glenn 9 82
- 83 E. Rasch, March 1973. (COM 73 10669) Conditional Probabilities for Sequences of Wet Days at Phoenix, Arizona. Paul C. Kangieser, June 86
- 1973. (COM 73 11264) A Refinement of the Use of K-Values in Forecasting Thunderstorms in Washington and Oregon. 87
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- and Larry P. Kierulif, September 1973. (COM 73 11946/3AS) Arizona "Eddy" Tornadoes. Robert S. Ingram, October 1973. (COM 73 10465) Smoke Management in the Willamette Valley. Earl M. Bates, May 1974. (COM 74 11277/AS)
- 91
- 92 An Operational Evaluation of 500-mb Type Regression Equations. Alexander E. MacDonald, June 1974. (COM 74 11407/AS) 1974. (COM 74 11407/AS) 93
- 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) Climate of Flagstaff, Arizona. Paul W. Sorenson, and updated by Reginald W. Preston, January 1987. (PB87 143160/AS) 95
- Map type Precipitation Probabilities for the Western Region. Glenn E. Rasch and Alexander E. MacDonald, February 1975. (COM 75 10428/AS) Eastern Pacific Cut-Off Low of April 21-28, 1974. William J. Alder and George R. Miller, January 96
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- 98 (COM 75 10719/AS) 99
- A Study of Flash Flood Susceptibility-A Basin in Southern Arizona. Gerald Williams, August 1975. (COM 75 11360/AS)
- A Set of Rules for Forecasting Temperatures in Napa and Sonoma Counties. Wesley L. Tuft, 102 October 1975. (PB 246 902/AS) Application of the National Weather Service Flash-Flood Program in the Western Region. Gerald
- 103 Williams, January 1976. (PB 253 053/AS)
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- Hand Calculator Program to Compute Parcel Thermal Dynamics. Dan Gudgel, April 1978. (PB 128 283 080/AS)
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UNITED STATES DEPARTMENT OF COMMERCE William M. Daley, Secretary National Oceanic and Atmospheric Administration D. James Baker, Under Secretary and Administrator National Weather Service Robert W. Winokur, Acting Assistant Administrator for Weather Services



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## THE CLIMATE OF TUCSON, ARIZONA

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#### I. INTRODUCTION

This paper presents a climatic history of Tucson, Arizona spanning a 100+ year period of continuous record keeping (1894-1996; unvalidated 1866-1894). Detailed tables of daily, monthly, and yearly records of temperature, precipitation and snowfall are presented for each month.

This paper briefly discusses the geography of the Tucson area, the history of the National Weather Service, the observational history of weather data collection in Tucson, and monthly climatological weather summaries. This text is followed by six appendices to allow easy access to the data. The last five issuances of 30-year climatic normals. issued by the National Climatic Data Center (NCDC) in Asheville, North Carolina, can be found in Appendices A and B. Appendix A shows daily and monthly meteorological records (temperature, precipitation, and for some months, snowfall) for each month of the year. Length of record averages for the 100+ years of continuous record keeping are also presented in this appendix. In addition, decadal averages of observed data for each of the eleven decades on record are presented. Appendix B shows yearly and seasonal records. Included are tables for each season's temperature precipitation. Yearly/monthly and temperature and precipitation records are

presented along with yearly/seasonal snowfall records. Length of record averages are also presented along with decadal averages for each of the 11 decades on record.

Appendix C takes a look at the summer thunderstorm season, otherwise known as the summer monsoon, considered by many to be the fifth season in Tucson. Nearly 46 percent of Tucson's annual rainfall total occurs during the monsoon This season. appendix discusses contributing factors leading to the seasonal change in wind patterns which brings additional moisture into Arizona. Appendix D shows miscellaneous data covering a variety of topics ranging from a statistical look at major holidays to record consecutive days of temperature and precipitation above certain values. Appendix E shows data (temperature, precipitation, and snowfall) gathered for the period October 1894 to December 1996 in tabular form. These tables are broken into two groups, calendar day frequency tables and monthly/annual tables. Finally, Appendix F shows data (temperature and precipitation) that was gathered between 1866 and 1894. These data sets were not included in any monthly or yearly records as no reliable daily data were found to verify them.

II.

### GEOGRAPHICAL AND CLIMATOLOGICAL SUMMARY

Tucson is located in the Sonoran Desert region of southern Arizona about 60 miles north of the Mexican border. The metropolitan area of Tucson is situated in a valley surrounded by spectacular mountain ranges. The Santa Catalina Mountains, elevation up to 9300 feet MSL, border the north-northeast side of Tucson. The Rincon Mountains, elevation up to 9000 feet, border the east side of Tucson while the Tucson Mountains. elevation up to 5000 feet MSL, border the west side of Tucson. About 30 miles south of Tucson lie the Santa Rita Mountains, elevation up to 9500 feet MSL. Within the Tucson Basin, the land is flat or gently rolling with many dry washes. These dry washes can quickly fill up to dangerous proportions when flash floods occur during the summer thunderstorm season. The soil is a mix of Native vegetation is sand and clay. mostly brush, cacti, and small trees which is typical of a low latitude desert climate.

Tucson is well known for its fantastic year-round weather. The annual average high temperature is 82 degrees F and the average low temperature is 54 degrees F. As the geographical position of Tucson is in the desert, the climate is characterized by a long, hot season, beginning in April endina in October. Average and precipitation is twelve inches with the summer thunderstorm season, normally from July 1 through September 15, accounting for 46 percent of the annual rainfall. Sunshine is abundant across Arizona with Tucson receiving around 86 percent of the possible sunshine.

Surface winds in the vallev are influenced, to a considerable extent, by the adjacent mountains and by the slope of the valley floor. Under light pressure gradients, this effect is evident in the frequently noted change in wind direction from the southeast during the night and early morning hours, then veering to the northwest during the warmer portion of the day. The strongest peak wind speed, not associated with thunderstorms but usually driven by synoptic scale systems, is usually from the west to southwest and east to southeast.

#### III. HISTORY OF THE NATIONAL WEATHER SERVICE

In the late 1860s, the need for a national weather service became guite apparent. Congress took up this issue and in 1870 authorized а resolution for the development of a national weather service (Whitnah 1961). President Grant signed this resolution into law on February 9, 1870. The Army Signal Service was selected for the collection of weather data since it had developed a communications system during the Civil War. The first years saw the service covering only the East and Gulf coasts and the Great Lakes regions. Then, in 1872, Congress expanded the area to include the entire country.

In 1891, the Army Signal Service became part of the United States Department of Agriculture and was renamed the Weather Bureau. In 1940, the Weather Bureau was transferred to the Department of Commerce where it remains today. In 1965, the Environmental Science Services

Administration (ESSA) incorporated the Weather Bureau into its operations. In 1970, the Bureau's name was changed to the National Weather Service, and it became an integral part of the National Oceanic and Atmospheric Administration (NOAA).

#### IV. WEATHER HISTORY IN TUCSON

The collection of weather records in Tucson dates back to the territorial days of the 1800's. The first weather station in Tucson was established by the United States Signal Corp at Fort Lowell in November 1866. Weather records were kept at Fort Lowell, even after a move eight miles northeast of Tucson in 1875, until 1890 when the station was discontinued. When the fort was moved in 1875, another weather station was established. This new station began in November 1875 at Main and Congress streets; moved July 23, 1878 to Meyer and Congress streets; moved again on June 30, 1879 to Ott Street, east of the old Cosmopolitan Hotel; moved again on December 1, 1880 to the northwest corner of Court House Square. The Southern Pacific Railroad collected the data at this location for the National Weather Service until September 1891 when the weather observation point moved to the University of Arizona. Only monthly data have been found for the period 1866 to 1891 (See Appendix F).

The University of Arizona continued to be the official location for weather data collection in Tucson until early 1930, although it still continues to collect weather data today as part of the nationwide cooperative network. In early 1930, the official site was moved to the Tucson Municipal Airport (TMA). TMA would later become Davis-Monthan Air Force Base. Official observations were then taken at the TMA by the Civil Aviation Administration (CAA).

The United States Weather Bureau established an office in Tucson on June 17, 1940, but a portion of the responsibility for the observational program was still retained by the CAA. Observation duties were assumed by the Weather Bureau on a part-time basis on July 5, 1940, and completely on a 24hour basis on August 1, 1940. The Weather Bureau office relocated into Building #12 at the new Tucson Municipal Airport, presently Tucson International Airport, on October 14, 1948.

On October 15, 1958, the observation point was moved into the new tower and operations building at Tucson International Airport. This location remained the same until June 4, 1980 when it was moved to a new National Weather Service building near the control tower.

Weather data collection has come a long way since 1866 when humans did all of the collection of observations. The technological revolution has made it possible for a machine to do what humans used to do, that is, collect weather data. So on July 1, 1996, the National Weather Service, in conjunction with a nationwide modernization of the National Weather Service, commissioned its weather machine called ASOS or Automated Surface Observation System.

On February 25, 1997, in accordance with the modernization of the National Weather Service, the Tucson weather office moved the forecast and warning responsibilities into its new location at the University of Arizona. The new office is co-located with the United States Geological Survey (USGS) in the Environment and Natural Resources Building (ENRB) on campus. Hourly observations continue to be collected at the airport.

#### V. MONTHLY CLIMATOLOGIES

#### **January Weather**

The month begins with average highs around 63 degrees F, then warms slowly to 66 degrees F by the end of the month. Average lows for the month are generally around 38 or 39 degrees F. A few outlying areas around the Tucson metropolitan area can see temperatures in the 20's at times. Temperature extremes for the month range from a record high of 88 degrees F set on January 4, 1927, to a record low of 6 degrees F set on January 7, 1914. The low of 6 degrees F is the all-time low temperature for Tucson on record.

January is the middle of the winter wet season with normal precipitation of 0.87 of an inch. Monthly extremes range from 4.81 inches in 1993, to zero inches recorded five times (1972, 1928, 1924, 1912, and 1903). It does snow occasionally in Tucson during the month of January. The last measurable January snow event in Tucson occurred back in 1990 when 1.5 inches and 1.2 inches of snow fell on the 19th and 20th, respectively. The most snowfall recorded on one day occurred on January 16, 1987 when 4.3 inches fell. The monthly snowfall record is 6 inches which occurred back in 1898.

The number of daylight hours increases during the month from 10 hours 5 minutes on the first to10 hours 37 minutes on the 31st, a gain of 32 minutes.

#### February Weather

The month begins with average highs around 66 degrees F and average lows around 40 degrees F, and ends with average highs around 70 degrees F and average lows around 42 degrees F. Temperature extremes for the month range from a record high of 92 degrees F set on February 14, 1957, to a record low of 17 degrees F set on February 7, 1899. Again, as in January, a few outlying areas around the Tucson metropolitan area may have temperatures in the 20's at times.

The end of the winter wet season occurs during February. Normal precipitation for the month is 0.70 of an inch. Monthly extremes range from 4.15 inches in 1905, to zero rainfall recorded three times (1984, 1972, and 1898). The past 100+ years of records for Tucson show that measurable snowfall has been recorded 19 times during February. The last measurable snowfall recorded in Tucson during the month of February was back in 1990 when 1.2 inches fell on the 2nd and a half an inch fell on the 14th. The most snowfall recorded for one day occurred on February 8, 1908 when 4 inches fell. The monthly snowfall record is 4.9 inches which occurred in 1903.

The number of daylight hours increases from 10 hours 36 minutes on the 1st, to 11 hours 29 minutes by the end of the 28th or 29th (leap years). This is a gain of 53 minutes.

#### March Weather

The month begins with average highs around 70 degrees F and average lows around 43 degrees F, and ends with average highs around 77 degrees F and average lows around 47 degrees F. Temperature extremes for the month range from a record high of 99 degrees F set on March 26, 1988, to a record low of 20 degrees F set on March 4, 1965. Although March is the beginning of the spring growing season, a few outlying areas around the Tucson metropolitan area may still have low temperatures in the 20's at times. As a result, some localized areas may still experience a hard freeze.

Normal precipitation during the month of March is 0.72 of an inch. Monthly extremes range from 3.88 inches in 1905, to zero rainfall recorded five times (1984, 1956, 1933, 1928, and 1898). The past 100+ years of records for Tucson show that measurable snowfall has been recorded nine times during the month of March. The last measurable snowfall recorded during March in Tucson was back in 1991 when 0.3" fell on the 16th. The most snowfall recorded for one day occurred on March 12, 1922, when 6 inches fell. This daily snowfall total also is the monthly snowfall record for March.

The number of daylight hours increases from 11 hours 31 minutes on the 1st, to 12 hours 29 minutes on the 31st, a gain of 58 minutes. The vernal equinox, otherwise known as the beginning of spring, begins on about March 20 when the sun crosses the equator into the Northern Hemisphere.

#### **April Weather**

The month begins with average highs around 77 degrees F and average lows around 47 degrees F, and ends with average highs around 85 degrees F and average lows around 54 degrees F. Temperature extremes for the month range from a record high of 104 degrees F set on April 20 and 21, 1989, to a record low of 27 degrees F set on April 4, 1945. Outlying areas around Tucson are still at risk for a late season killing freeze during the first week of April.

April is the beginning of the dry season with normal precipitation of 0.3 of an inch. Monthly extremes range from 3.53 inches in 1905, to zero rainfall recorded ten times with the last occurrence in 1993. The past 100+ years of records for Tucson show that measurable snowfall has been recorded twice during the month. The last measurable April snowfall was recorded back in 1976 when 2 inches fell on the 16th. This daily snowfall record is also the monthly snowfall record for April.

The number of daylight hours increases from 12 hours 31 minutes on the 1st, to 13 hours 25 minutes on the 30th, a gain of 54 minutes.

#### **May Weather**

The month begins with average highs around 85 degrees F and average lows

around 54 degrees F, and ends with average highs around 95 degrees F and average lows around 63 degrees F. Temperature extremes for the month range from a record high of 111 degrees F set on May 29, 1910, to a record low of 32 degrees F set on May 3, 1899.

May is the driest month in Tucson with normal rainfall of only 0.18 of an inch. Monthly extremes range from 1.34 inches in 1931, to zero rainfall recorded 19 times with the last occurrence in 1996.

The number of daylight hours increases from 13 hours 27 minutes on the 1st, to 14 hours 6 minutes on the 31st, a gain of 49 minutes.

#### **June Weather**

The month begins with average highs around 96 degrees F and average lows around 63 degrees F, and ends with average highs around 101 degrees F and average lows around 72 degrees F. Temperature extremes for the month range from a record high of 117 degrees F set on June 26, 1990, (also the Tucson all-time record high temperature on record) to a record low of 43 degrees F set on June 4, 1908.

June is the second driest month and is at the end of the driest part of the year (April through June). Normal rainfall is 0.2 of an inch. Monthly extremes range from 2.07 inches in 1938, to zero rainfall recorded 11 times. The last occurrence of zero June rainfall was June 1983.

The number of daylight hours increases from 14 hours 7 minutes on the 1st, to 14 hours 13 minutes on the 30th, a gain of six minutes. Summer begins during June, usually around the 20th, when the sun reaches its northern most latitude (23.4 degrees North or over the Tropic of Capricorn).

#### July Weather

The month begins with average highs around 101 degrees F and average lows around 72 degrees F and ends with average highs around 98 degrees F and average lows around 74 degrees F. The onset of the summer monsoon season results in higher humidity values as dewpoints rise, making the environment a little more uncomfortable.

Temperatures extremes range from a record high of 114 degrees F set twice, occurring first on July 4, 1989 and then tied on July 28, 1995, to a record low of 49 degrees F set on July 3, 1911.

Rainfall increases dramatically across Tucson in July. This increase coincides with the onset of the summer monsoon season. Normal rainfall is 2.37 inches with monthly extremes ranging from 6.24 inches in 1921, to 0.04 of an inch in 1995.

The number of daylight hours decreases from 14 hours 13 minutes on the 1st, to 13 hours 44 minutes on the 31st, a loss of 29 minutes.

#### August Weather

The month begins with average highs around 98 degrees F and average lows around 74 degrees F, and ends with average highs around 96 degrees F and average lows around 71 degrees F. The monsoon season continues during August with higher humidity values making conditions feel uncomfortable. Temperature extremes range from a record high of 112 degrees F set on August 1, 1993, to a record low of 55 degrees F set on August 20, 1917.

Monsoonal moisture persists during August as the normal rainfall for the month is 2.19 inches. Monthly extremes range from 7.93 inches in 1955, to 0.08 of an inch in 1924.

The number of daylight hours decreases from 13 hours 44 minutes on the 1st, to 12 hours 51 minutes on the 31st, a loss of 53 minutes.

#### September Weather

The month begins with average highs around 96 degrees F and average lows around 71 degrees F, and ends with average highs around 90 degrees F and average lows around 63 degrees F. Temperature extremes range from a record high of 107 degrees F (which occurred nine times, with the last occurrence on September 11, 1990), to a record low of 43 degrees F set on September 26, 1913.

The monsoon season begins to wind down, with September 15 usually marking the end of the summer thunderstorm season. Normal rainfall is 1.67 inches with monthly extremes ranging from 5.11 inches in 1964, to zero inches in 1953. Tucson is susceptible to very heavy rainfall during September due to Eastern Pacific tropical systems moving north along the Mexican coastline. The number of daylight hours decreases from 12 hours 49 minutes on the 1st, to 11 hours 54 minutes on the 30th, a loss of 55 minutes. The autumnal equinox, otherwise known as the beginning of fall, begins generally around September 22nd, when the sun crosses the equator into the Southern Hemisphere.

#### **October Weather**

The month begins with average highs around 90 degrees F and average lows around 63 degrees F and ends with average highs around 79 degrees F and average lows around 51 degrees F. Average lows begin the month in the low 60's and drop into the lower 50's by the 31st. Temperature extremes range from a record high of 102 degrees F set on October 3, 1993, to a record low of 26 degrees F set on October 30, 1971.

Normal rainfall is 1.06 inches with monthly extremes ranging from 4.98 inches in 1983, to zero inches recorded ten times. The last occurrence of zero rainfall in October was in 1982. Tucson is again susceptible to very heavy rainfall during October due to Eastern Pacific tropical systems moving north along the Mexican coastline.

The number of daylight hours decreases from 11 hours 51 minutes on the 1st, to 10 hours 55 minutes on the 31st, a loss of 56 minutes.

#### **November Weather**

The month begins with average highs around 78 degrees F and average lows around 50 degrees F, and ends with average highs around 68 degrees F and

average lows around 42 degrees F. Temperature extremes for the month range from a record high of 94 degrees F set on November 1, 1924, to a record low of 19 degrees F set on November 19, 1921. The average date for the first freezing temperatures of the season is November 23 with outlying areas around Tucson at risk for a hard freeze.

Normal precipitation is 0.67 of an inch with monthly extremes ranging from 4.61 inches in 1905, to zero inches recorded 12 times. The last occurrence of zero rainfall was in 1980. The past 100+ years of records for Tucson show that measurable snowfall has been recorded November. twice durina The last measurable November snowfall in Tucson occurred in 1964 when 0.10 of an inch fell on the 15th. Recently though, a trace of snow fell on November 19, 1994. The most snowfall recorded in one day occurred on November 16, 1958, when 6.4 inches fell. This total is also the monthly snowfall record for November.

The number of daylight hours decreases from 10 hours 53 minutes on the 1st, to 10 hours 13 minutes on the 30th, a loss of 40 minutes.

#### **December Weather**

The month begins with average highs around 67 degrees F and average lows around 42 degrees F, and ends with average highs around 63 degrees F and average lows around 38 degrees F. Temperature extremes range from a record high of 85 degrees F set four times, the last occurring on December 8, 1939, to a record low of 10 degrees F set on December 14, 1901. A hard freeze may also occur during the month, especially if one had not occurred in November.

Normal precipitation is 1.07 inches with monthly extremes ranging from 5.85 inches in 1914, to zero inches recorded six times with the last occurrence in 1981. The past 100+ years of records for Tucson show that measurable snowfall has been recorded 16 times during December. The last measurable December snowfall recorded in Tucson occurred in 1990 when 0.6 of an inch fell on the 22nd. The most snowfall recorded on one day occurred on December 8, 1971 when 6.8 inches fell. This is also the monthly snowfall record for December.

The number of daylight hours decreases from 10 hours 12 minutes on the 1st, to 10 hours 5 minutes on the 31st, a loss of 7 minutes. Winter begins during December, usually around the 21st, when the sun reaches its southern most latitude (23.4 degrees South or over the Tropic of Cancer).

#### VI. REFERENCES

Bryson, R. A., and W. P. Lowry, 1955: Synoptic climatology of the Arizona singularity. *Bulletin of the American Meteorology Society*, **36**, 329-339.

Carleton, A. M., 1986: Synoptic-dynamic character of 'bursts' and 'breaks' in the south-west U.S. summer precipitation singularity. *Journal of Climatology*, **6**, 605-622.

Hales, J. E. Jr., 1972: Surges of maritime tropical air northward over the Gulf of

California. *Monthly Weather Review*, **100**, 298-306.

Hales, J, E. Jr., 1974: Southwestern United States summer monsoon source Gulf of Mexico or Pacific Ocean? *Journal of Applied Meteorology*, **13**, 331-342.

Maddox, R. A., D. M. McCollum, and K. W. Howard, 1995: Large-scale patterns associated with severe thunderstorms over Central Arizona. *Weather and Forecasting*, **10**, 763-778.

Sellers, W. D., 1960: *Arizona Climate*. University of Arizona Press.

Sellers, W. D., R. H. Hill, 1974: *Arizona Climate 1931-1972*. University of Arizona Press, 616 pp.

Sellers, W. D., R. H. Hill, and M. Sanderson-Rae, 1985: *Arizona Climate, The first hundred years*. University of Arizona, 143 pp.

Whitnah, D. R., 1961: A history of the United States Weather Bureau. University of Illinois Press, 267 pp.

U.S. Department of Commerce, Weather Bureau, WB Form 1030, <u>Monthly</u> <u>Meteorological Summary</u>, 1941-1948, Tucson, Arizona.

U.S. Department of Commerce, Weather Bureau, <u>Local Climatological Data,</u> <u>Monthly Summary</u>, 1949-1970, Tucson, Arizona.

U.S. Department of Commerce, National Weather Service, <u>Local Climatological</u> <u>Data, Monthly Summary</u>, 1970-1996, Tucson, Arizona.

Tucson, Arizona, station logs.

Daily data from University of Arizona, 1894-1930.

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# **APPENDIX** A

# **DAILY AND**

# **MONTHLY RECORDS**

#### DAILY RECORDS FOR JANUARY (1895-1996) 102 YEARS

DA	ILY TEMP	MAXIM	UM TEMP	MINIM	UM TEMP	PRECIPI	TATION	SNOW	FALL
F	VERAGES	RE	CORDS	RE	CORDS	RECO	RDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	63 39 51	79	1981	22	1919*	.42	1951	2.0	1906
2	63 39 51	83	1918	19	1911*	.47	1982	1.2	1990
3	63 38 51	87	1896	17	1911	.69	1957	Т	1971
4	63 38 51	88	1927	16	1949	.85	1920		
5	63 38 51	81	1927	17	1949	1.00	1946		
6	63 38 51	83	1927	15	1910	1.08	1935		
7	63 38 51	80	1948	6	1913	1.21	1993	4.0	,1937
8	63 38 51	82	1969*	13	1913	.34	1957*	T	1946
9	63 38 51	81	1948	24	1899	.70	1905		
10	63 38 51	87	1953	24	1937*	1.17	1905		
11	63 38 51	82	1990*	18	1918	1.08	1960	2.7	1898
12	63 38 51	82	1923	18	1964*	.71	1981	1.0	1951
13	64 38 51	78	1928	21	1963*	.46	1993	1.0	1937
14	64 38 51	81	1912	22	1940	.72	1920	1	
15	64 38 51	80	1912	23	1964	.87	1978	.7	1949
16	64 39 51	81	1921	22	1919	.37	1987	4.3	1987 、
17	64 39 51	82	1923	19	1987	.80	1979	Т	1949
18	64 39 51	83	1935	21	1925	1.32	1993	.2	1907
19	64 39 51	85	1971	22	1936*	2.63	1916	1.5	1990
20	64 39 51	84	1971*	22	1936*	.62	1938	.4	1987
21	64 39 51	81	1950	17	1922	.40	1982*	.8	1937
22	64 39 51	80	1986	15	1937*	.39	1977 <sup>°</sup>	T.	1973
23	64 39 52	80	1986	17	1937	.56	1985		
24	65 39 52	81	1953	17	1937	.48	1962	3.3	1898
25	65 39 52	81	1935	17	1898	.41	1949	3.5	1949
26	65 39 52	82	1951	21	1932	.67	1985 ु	Т	1949
27	65 39 52	86	1987	18	1904	.77	1961		
28	65 39 52	83	1906	23	1932	.57	1941		
29	65 39 52	82	1986	19	1932	.93	1936	1.2	1979
30	65 39 52	82	1987	25	1979*	.83	1983		
31	66 39 52	83	1911	22	1949	.96	1986	1	

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD.

NORMAL TEMPERATURE FOR JANUARY	51.3
RECORD HIGH TEMPERATURE FOR JANUARY	88 SET IN 1927 ( 4)
RECORD LOW TEMPERATURE FOR JANUARY	6 SET IN 1913 ( 7)
NORMAL PRECIPITATION FOR JANUARY	0.87 INCHES
RECORD ONE-DAY PRECIPITATION TOTAL	2.63 INCHES SET IN 1916 (19)
RECORD MONTHLY PRECIPITATION TOTAL	4.81 INCHES SET IN 1993
RECORD LOW MONTHLY PRECIPITATION TOTAL	ZERO INCHES SET 5 TIMES
	(19721928192419121903)
RECORD ONE-DAY SNOWFALL TOTAL	4.3 INCHES SET IN 1987 (16)
RECORD MONTHLY SNOWFALL TOTAL	6.0 INCHES SET IN 1898

#### ALL-TIME TUCSON JANUARY TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST	JANUARYS	an a	n an	TOP 10	COLDEST	JANUARYS
1)	58.6	1986	in the second		1)	41.2	1937
2)	56.1	1956	N	· ·	2)	43.0	1949
3)	55.4	1969			3)	43.3	1932
4)	55.2	1993			4)	44.8	1913
5)	54.9	1927			5)	45.4	1904
6)	54.7	1981			6)	46.1	1898
7)	54.6	1911			7)	46.2	1926
8)	54.3	1980			8)	46.6	1899
9)	54.1	1923			9)	46.7	1955
10)	53.9	1953			10)	46.8	1960
			·				
				(1961-1990)			51.3
				(1951-1980)			51.1
				(1941-1970)	•		50.9
		1		(1931-1960)			49.8
	NORMAL TE	MPERATURE	FOR JANUARY	(1921-1950)			49.7
	AVERAGE T	EMPERATURE	FOR ALL YE	ARS ON RECORD			50.6
		·.*					
	AVERAGE T	EMPERATURE	DURING THE	1990's			53.0
			DURING THE				52.7
			DURING THE				50.3
	AVERAGE T	EMPERATURE	DURING THE	1960's			50.4
	AVERAGE T	EMPERATURE	DURING THE	1950's			52.1
	AVERAGE T	EMPERATURE	DURING THE	1940's			50.3
	AVERAGE T	EMPERATURE	DURING THE	1930's			48.5
	AVERAGE T	EMPERATURE	DURING THE	1920's	. •		50.1
	AVERAGE T	EMPERATURE	DURING THE	1910's	·		49.5
	AVERAGE T	EMPERATURE	DURING THE	1900's			50.4

<u>TOP 10</u>	WARMEST	JANUARY DATES	
1)	88	1/ 4/1927	
2)	87	1/10/1953	
	87	1/ 3/1896	
4)	86	1/27/1987	
5)	85	1/19/1971	
6)	84	1/ 4/1994	
	84	1/19/1986	
	84	1/20/1971	
	84	1/20/1951	
	84	1/27/1935	•

AVERAGE TEMPERATURE DURING THE 1890's

TOP 10	COLDEST	JANUARY DATES
1)	6	1/ 7/1913
2)	13 .	1/ 8/1913
3)	15	1/22/1937
	15	1/ 6/1910
	15	1/22/1904
6)	16	1/ 4/1949
	16	1/ 4/1911
8)	17	1/ 6/1971
	17	1/ 6/1950
	17	1/ 5/1949
,	17	1/24/1937
	17	1/23/1937
	17	1/21/1922
	17	1/ 3/1911
	17	1/25/1898

48.6

#### ALL-TIME TUCSON JANUARY PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP	10 WETTEST JAN	UARYS			TOP 10	DRIEST	JANUARYS
1)	4.81	1993			1)	ZERO	1972
2·)	4.00	1916				ZERO	1928
3)	2.94	1979				ZERO	1924
4)	2.37	1957				ZERO	1912
5)	2.29	1920				ZERO	1903
6)	2.25	1905			6)	TRACE	1970
7)	2.22	1946				TRACE	1958
8)	2.05	1978			1	TRACE	1948
9)	2.01	1960			9)	.01	1996
10)	1.92	1917			10)	.02	1994
						• · · · · ·	
	NORMAL PRECIP	ITATION FO	OR JANUARY	(1961-1990)			.87
	NORMAL PRECIP			•=====•			.83
	NORMAL PRECIP	ITATION FO	OR JANUARY	(1941-1970)			.77
	NORMAL PRECIP	ITATION FO	OR JANUARY	(1931-1960)			.82
	NORMAL PRECIP	ITATION FO	OR JANUARY	(1921-1950)			.63
	AVERAGE PRECI	PITATION 1	FOR ALL YEA	ARS ON RECORD			.88
	AVERAGE PRECI	PITATION 1	DURING THE	1990's			1.37
	AVERAGE PRECI	PITATION 1	DURING THE	1980's			1.06
	AVERAGE PRECI	PITATION 1	DURING THE	1970's			.83
	AVERAGE PRECI	PITATION 1	DURING THE	1960's	•		.82
	AVERAGE PRECI	PITATION 1	DURING THE	1950's			.79
	AVERAGE PRECI	PITATION 1	DURING THE	1940's	,		.73
	AVERAGE PRECI	PITATION 1	DURING THE	1930's			.85
	AVERAGE PRECI	PITATION 1	DURING THE	1920's	,		.51
	AVERAGE PRECI	PITATION 1	DURING THE	1910's			1.22
	AVERAGE PRECI	PITATION 1	DURING THE	1900's			.78
	AVERAGE PRECI	PITATION	DURING THE	1890's			.95

<u>TOP 10</u>	ONE-DAY PRECI	PITATION TOTALS
1)	2.63	1/19/1916
2)	1.32	1/18/1993
3)	1.21	1/ 7/1993
4)	1.17	1/10/1905
5) <sup>·</sup>	1.08	1/11/1960
	1.08	1/ 6/1935
7)	1.00	1/ 5/1946
8)	.96	1/31/1986
9)	. 93	1/29/1936
10)	.92	1/ 5/1991

#### ALL-TIME TUCSON JANUARY SNOWFALL RECORDS (1895-1996) 102 YEARS

TOP	10	SNOWIEST	JANUARYS
1)		6.0	1898
2)		5.8	1937
3)		4.7	1949
		4.7	1987
5)		2.8	1951
6)		2.7	1990
7)		2.0	1913
		2.0	1906
9)		1.3	1960
10)		1.2	1979

AVERAGE	SNOWFALL	FOR ALI	L YEA	ARS ON R	ECORD		~	0.3	
AVERAGE	SNOWFALL	DURING	THE	1990's				0.4	
AVERAGE	SNOWFALL	DURING	THE	1980's		;	,	0.5	
AVERAGE	SNOWFALL	DURING	THE	1970's				0.2	
AVERAGE	SNOWFALL	DURING	THE	1960`s				0.1	
AVERAGE	SNOWFALL	DURING	THE	1950`s				0.3	
AVERAGE	SNOWFALL	DURING	THE	1940's				0.5	
AVERAGE	SNOWFALL	DURING	THE	1930's				0.6	
AVERAGE	SNOWFALL	DURING	THE	1920's			÷.	0	
AVERAGE	SNOWFALL	DURING	THE	1910's				0.2	
AVERAGE	SNOWFALL	DURING	THE	1900's				0.3	
AVERAGE	SNOWFALL	DURING	THE	1890's				1.2	
						,			

#### TOP 10 SNOWIEST JANUARY DAYS

4.3	1/16/1987
4.0	1/ 7/1937
3.5	1/25/1949
3.3	1/24/1898
2.7	1/11/1898
2.0	1/11/1913
2.0	1/ 1/1906
1.8	1/ 1/1951
1.5	1/19/1990
1.2	1/ 2/1990
	4.0 3.5 3.3 2.7 2.0 2.0 1.8 1.5

#### DAILY RECORDS FOR FEBRUARY (1895-1996) 102 YEARS

DA	LLY TEMP	MAXIM	UM TEMP	MINIM	UM TEMP	PRECIPI	TATION	SNOW	FALL
	VERAGES	RE	CORDS	RE	CORDS_	RECO	RDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	66 40 53	83	1911	22	1946	.36	1926	İ	
2	66 40 53	82	1934	22	1916	.54	1940	1.2	1990
3	66 40 53	86	1925	21	1910	.45	1927	1.1	1985
4	66 40 53	84	1925	21	1955	.76	1958	1.1	1985
5	66 40 53	85	1963	20	1955	.88	1939	Т	1899
6	67 40 53	86	1963	24	1955	.94	1905	1.3	1899
7	67 40 53	84	1963*	17	1899	1.26	1966	1.0	1933
8	67 40 54	81	1963*	18	1933	.86	1980	1.2	1966
9	67 40 54	82	1996*	23	1933*	.57	1981	1.7	1965
10	67 41 54	86	1951	24	1965	.75	1908	2.2	1965
11	67 41 54	84	1951	22	1933	1.22	1950		
12	67 41 54	86	1988	20	1948	.87	1931	1.1	1946
13	68 41 54	89	1957	21	1948	.97	1992	4.0	1908
14	68 41 54	92	1957	24	1908	.67	1954	.5	1990
15	68 41 54	85	1957	24	1964	.49	1931	3.1	1903
16	68 41 55	85	1994	21	1910	.38	1911	2.0	1928
17	68 41 55	82	1994*	19	1910	.59	1905	1.0	.1956
18	68 41 55	83	1958*	19	1910	.55	1905		
19	68 41 55	85	1981	25	1955	.28	1993	.6	1990
20	69 42 55	89	1943	23	1955	.73	1915	Т	1971*
				•					
21	69 42 55	82	1982*	20	1955	98 .	1973	T	1975*
22	69 42 55	85	1991	20	1955	.74	1941	T	1975*
23	69 42 55	87	1989	25	1975*	.29	1948		
24	69 42 56	91	1904	26	1909	1.23	1930	.5	1953
25	69 42 56	91	1921	24	1960	1.04	1987	Т	1935
26	69 42 56	88	1986	25	1912	.60	1931		
27	70 42 56	88	1986*	26	1937	1.10	1942	1.0	1929
28	70 42 56	85	1986*	25	1939	.74	1918		
29	70 42 56	85	1988	32	1924	.66	1948		

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD.

NORMAL	TEMPERATURE FOR FEBRUARY	54.4
RECORD	HIGH TEMPERATURE FOR FEBRUARY	92 SET IN 1957 (14)
RECORD	LOW TEMPERATURE FOR FEBRUARY	17 SET IN 1899 ( 7)
NORMAL	PRECIPITATION FOR FEBRUARY	0.70 INCHES
RECORD	ONE-DAY PRECIPITATION TOTAL	1.26 INCHES SET IN 1966 ( 7
RECORD	MONTHLY PRECIPITATION TOTAL	4.15 INCHES SET IN 1905
RECORD	LOW MONTHLY PRECIPITATION TOTAL	ZERO INCHES SET 3 TIMES
		(198419721898)
RECORD	ONE-DAY SNOWFALL TOTAL	4.0 INCHES SET IN 1908 (13
RECORD	MONTHLY SNOWFALL TOTAL	4.9 INCHES SET IN 1903

#### ALL-TIME TUCSON FEBRUARY TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST	FEBRUARYS				TOP	10 COLDEST	FEBRUARYS
1)	61.1	1957	•		• •	1)	45.3	1903
2)	60.6	1995	- ,			2)	45.6	1939
ЗĴ	60.3	1954				3)	47.5	1933
4)	59.8	1991				4)	47.7	1964
5)	59.3	1988					47.7	1960
6)	59.1	1968				6)	47.8	1966
7)	58.9	1996				7)	48.1	1919
8)	58.7	1943				8)	48.6	1956
9)	58.4	1976				9)	48.8	1955
10)	58.2	1989				10)	49.3	1899
	NORMAL T	EMPERATURE	FOR FEBR	UARY	(1961-1990)			54.4
	NORMAL T	EMPERATURE	FOR FEBR	UARY	(1951-1980)			53.7
	NORMAL T	EMPERATURE	FOR FEBR	UARY	(1941-1970)			53.5
	NORMAL T	EMPERATURE	FOR FEBR	UARY	(1931-1960)			52.9
	NORMAL T	EMPERATURE	FOR FEBR	UARY	(1921-1950)			53.2
	AVERAGE	TEMPERATURE	FOR ALL	YEA	RS ON RECORD		194 - S.	53.7
	5 × 5							
		TEMPERATURE				· · · · ·	• •	56.9
		TEMPERATURE						55.9
		TEMPERATURE					×	54.4
		TEMPERATURE						52.7
		TEMPERATURE						54.0
		TEMPERATURE						53.4
		TEMPERATURE			1930's			52.9
		TEMPERATURE						54.0
		TEMPERATURE						51.8
		TEMPERATURE						52.2
	AVERAGE	TEMPERATURE	DURING	THE	1890,2			52.7

<u>TOP 10</u>	WARMEST	FEBRUARY DATES		TOP 10	COLDEST P	EBRUARY DATES
1)	92	2/14/1957		1)	17	2/ 7/1899
2)	91	2/25/1921		2)	18	2/ 8/1933
	91	2/24/1904		3)	19	2/18/1910
4)	89	2/24/1989			19	2/17/1910
	89	2/25/1986	ά.	5)	20	2/22/1955
	89	2/13/1957			20	2/21/1955
	89	2/20/1943			20	2/ 5/1955
8)	88	2/27/1986			20	2/12/1948
	88	2/26/1986		9)	21	2/ 4/1955
	88	2/27/1906		10)	21	2/13/1948
				-1	21	2/16/1910
				-	21	2/ 3/1910

•

• •

## ALL-TIME TUCSON FEBRUARY PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP	10 WETTEST	FEBRUARYS			TOP 1	0 DRIEST	FEBRUARYS
1)	4.15	1905			1)	ZERO	1984
2)	2,.95	1931				ZERO	1972
3)	2.90	1980				ZERO	1898
4)	2.43	1935			4)	TRACE	1974
5)	2.27	1941				TRACE	1924
6)	2.25	1966				TRACE	1910
7)	2.08	1908				TRACE	1902
8)	2.00	1948				TRACE	1895
9)	1.92	1942			9)	.01	1961
10)	1.86	1913			10)	.02	1947
	NORMAL PR	ECIPITATION	FOR FEBRUARY	(1961-1990)			.70
	NORMAL PR	ECIPITATION	FOR FEBRUARY	(1951-1980)			.63
	NORMAL PR	ECIPITATION	FOR FEBRUARY	(1941-1970)			.64
	NORMAL PR	ECIPITATION	FOR FEBRUARY	(1931-1960)			.84
	NORMAL PR	ECIPITATION	FOR FEBRUARY	(1921-1950)			. 92
	AVERAGE P	RECIPITATION	FOR ALL YEAR	RS ON RECORD			.81
							·
		RECIPITATION		L990's			1.15
		RECIPITATION	DURING THE 1	L980`s			. 92
	AVERAGE F	RECIPITATION	DURING THE 1	L970's			.53

AVERAGE	PRECIPITATION	DURING	THE	1970's	.53
AVERAGE	PRECIPITATION	DURING	THE	1960`s	.62
AVERAGE	PRECIPITATION	DURING	THE	1950's	.59
AVERAGE	PRECIPITATION	DURING	THE	1940's	1.00
AVERAGE	PRECIPITATION	DURING	THE	1930's	1.21
AVERAGE	PRECIPITATION	DURING	THE	1920's	.51
AVERAGE	PRECIPITATION	DURING	THE	1910's	.86
AVERAGE	PRECIPITATION	DURING	THE	1900's	1.13
AVERAGE	PRECIPITATION	DURING	THE	1890's	.11

<u>TOP 10</u>	ONE-DAY PRECIP	ITATION TOTALS
1)	1.26	2/ 7/1966
2)	1.23	2/24/1930
3)	1.22	2/11/1950
4)	1.10	2/27/1942
5)	1.04	2/25/1987
6)	.98	2/21/1973
7)	.97	2/13/1992
8)	. 94	2/ 6/1905
9)	.91	2/ 7/1941
10)	.88	2/ 5/1939

#### ALL-TIME TUCSON FEBRUARY SNOWFALL RECORDS (1895-1996) 102 YEARS

<u>TOP 10</u>	SNOWIEST	FEBRUARYS
1)	4.9	1903
2)	4.0	1908
3)	3.9	1965
4)	2.3	1990
5)	2.2	1985
6)	2.0	1928
7)	1.3	1899
8)	1.2	1966
9)	1.1	1946
10)	1.0	1956
	1.0	1933
	1.0	1929

...

0.3

0.3 0.2 0.5 0.2 0.1 0.1 0.3 0 0.9 0.3

e de la composition de la comp

#### AVERAGE SNOWFALL FOR ALL YEARS ON RECORD

AVERAGE	SNOWFALL	DURING	THE	1990's	
AVERAGE	SNOWFALL	DURING	THE	1980's	
AVERAGE	SNOWFALL	DURING	THE	1970's	
AVERAGE	SNOWFALL	DURING	THE	1960's	
AVERAGE	SNOWFALL	DURING	THE	1950's	
AVERAGE	SNOWFALL	DURING	THE	1940's	
AVERAGE	SNOWFALL	DURING	THE	1930's	
AVERAGE	SNOWFALL	DURING	THE	1920's	
AVERAGE	SNOWFALL	DURING	THE	1910's	
AVERAGE	SNOWFALL	DURING	THE	1900's	
AVERAGE	SNOWFALL	DURING	THE	1890's	

TOP	10 SNOWIEST	FEBRUARY DAYS
1)	4.0	2/13/1908
2)	3.1	2/15/1903
3)	2.2	2/10/1965
4)	2.0	2/16/1928
5)	1.7	2/ 9/1965
6)	1.3	2/ 6/1899
7)	1.2	2/ 2/1990
	1.2	2/ 8/1966
9)	1.1	2/ 4/1985
	1.1	2/ 3/1985
	1.1	2/12/1946
	1.1	2/ 6/1903

#### DAILY RECORDS FOR MARCH (1895-1996) 102 YEARS

D2	LLY TEMP	MAXIN	UM TEMP	MINIM	UM TEMP	PRECIPI	TATION	SNOW	FALL
2	VERAGES	RI	CORDS	RE	CORDS	RECO	RDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	70 43 56	87	1986	25	1909	.47	1968		
2	70 43 56	91	1910	24	1971*	.68	1981	4.0	1964
3	70 43 56	90	1910	22	1971*	.60	1981	3.8	1976
4	70 43 56	91	1910	20	1965	.91	1943	T	1976*
5	70 43 56	96	.1910	28	1948*	.56	1923	Г	1946*
6	71 43 57	93	1910	27	1896	.66	1905		
7	71 43 57	. 88	1989*	26	1922	.72	1958		
8	71 43 57	90	1989	28	1942*	.47	1905	Т	1964
9	71 43 57	93	1989	24	1922	1.19	1952	3.4	1952
10	71 44 57	97	1989	24	1922	1.07	1927	Т	1935
					× 1		•		
11	71 44 58	92	1989	26	1899	.46	1975	.5	1975
12	72 44 58	93	1989	26	1899	.74	1922	6.0	1922
13	72 44 58	88	: 1989*	26	1956	.97	1982		
14	72 44 58	87	1934	27	1962	.59	1973	Т	1969
15	72 44 58	93	1910	24	1907	.37	1941	]	
16	73 44 59	90	1994	24	1917	1.20	1930	.3	1991
17	73 45 59	88	1994*	24	1917	.65	1986		
18	73 45 59	95	1907	24	1903	.58	1944		
19	73 45 59	95	1907	22	1897	.65	1914		
20	74 45 59	92	1990	29	1903	.36	1957		
					5				
21	74 45 60	90	1910	31	1927	.46	1924		
22	74 45 60	90	1990*	26	1955	.41	1954		
23	74 46 60	92	1896	25	1898	1.05	1920	1	
24	75 46 60	93	1896	25	1897	.41	1902	1.5	1902
25	75 46 61		1896	25	1901	1.42	1903	.1	1949
26	75 46 61		1988	26	1913	.62	1989		
27	75 46 61	94	1988	- 28	1913	.65	1992		
28	76 47 61	91	1943	28	1898	.45	1992	Т	1975
29	76 47 61	91	1943*	27	1907	.68	1926	!	
30	76 47 62	92	1950	31	1901*	.28	1967		
31	77 47 62	91	1989*	25	1897	.41	1905		11

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD.

NORMAL TEMPERATURE FOR MARCH	58.7
RECORD HIGH TEMPERATURE FOR MARCH	99 SET IN 1988 (26)
RECORD LOW TEMPERATURE FOR MARCH	20 SET IN 1965 ( 4)
NORMAL PRECIPITATION FOR MARCH	.72 INCHES
RECORD ONE-DAY PRECIPITATION TOTAL	1.42 INCHES SET IN 1903 (25)
RECORD MONTHLY PRECIPITATION TOTAL	3.88 INCHES SET IN 1905
RECORD LOW MONTHLY PRECIPITATION TOTAL	ZERO SET 5 TIMES
	(19841956193319281895)
RECORD ONE-DAY SNOWFALL TOTAL	6.0 INCHES SET IN 1922 (12)
RECORD MONTHLY SNOWFALL TOTAL	6.0 INCHES SET IN 1922

#### ALL-TIME TUCSON MARCH TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST	MARCHS	TOP 10 COLI	DEST MARCHS
1)	65.0	1989	1) 51.	.5 1973
	65.0	1972	2) 52.	.6 1952
3)	63.9	1934	3) 53.	0 1909
4)	63.8	1986	4) 53.	.3 1962
5)	63.1	1910	5) 53	.6 1917
6)	62.8	1994	6) 53.	.9 1913
7)	62.7	1911	7) 54	.0 1948
	62.7	1900	54	.0 1915
9)	62.0	1967	54	.0 1897
10)	61.8	1990	10) 54	.1 1905
	61.8	1978	54	.1 1902
	61.8	1943		

NORMAL TEMPERATURE FOR MARCH (1941-1990) 58.7 NORMAL TEMPERATURE FOR MARCH (1951-1980) 57.8 NORMAL TEMPERATURE FOR MARCH (1941-1970) 57.6 58.0 NORMAL TEMPERATURE FOR MARCH (1931-1960) NORMAL TEMPERATURE FOR MARCH (1921-1950) 57.9 AVERAGE TEMPERATURE FOR ALL YEARS ON RECORD 58.1 AVERAGE TEMPERATURE DURING THE 1990's 60.4 59.7 AVERAGE TEMPERATURE DURING THE 1980's 58.0 AVERAGE TEMPERATURE DURING THE 1970's 57.5

> 58.2 57.6 58.0 57.2 58.1 57.0 57.4

AVERAGE	TEMPERATURE	DURING	THE	1960`s
AVERAGE	TEMPERATURE	DURING	THE	1950`s
AVERAGE	TEMPERATURE	DURING	THE	1940's
AVERAGE	TEMPERATURE	DURING	THE	1930's
AVERAGE	TEMPERATURE	DURING	THE	1920's
AVERAGE	TEMPERATURE	DURING	THE	1910's
AVERAGE	TEMPERATURE	DURING	THE	1900's
AVERAGE	TEMPERATURE	DURING	THE	1890's

TOP 1	0 WARMEST	MARCH DATES	TOP	10 COLDEST	MARCH DATES
1)	99	3/26/1988	1)	20	3/ 4/1965
2)	97	3/10/1989	2)	22	3/ 3/1971
3)	96	3/ 5/1910		22	3/ 3/1965
4)	95	3/19/1907		22	3/19/1897
	95	3/18/1907	5)	23	3/ 4/1917
6)	94	3/27/1988	6)	24	3/ 2/1971
	94	3/25/1896	,	24	3/ 4/1966
8)	93	3/12/1989		24	3/10/1922
	93	3/ 9/1989		24	3/ 9/1922
	93	3/25/1988		24	3/17/1917
	93	3/15/1910		24	3/16/1917
	93	3/ 6/1910		24	3/ 3/1917
	93	3/26/1896		24	3/15/1907
	93	3/24/1896		24	3/ 2/1906
				24	3/18/1903

#### ALL-TIME TUCSON MARCH PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP 10 DRIEST MARCHS

ZERO

ZERO

ZERO

ZERO

TRACE

.01

.03

.04

TRACE

ZERO

1984

1956

1933

1928

1959

1972

1955

1940

.72 .68 .64

.53

.68

.72

.91 .90 .75 .51 .70 .59 .70 .91 .61 .88 .28

1895

1971

1)

6)

8)

9)

10)

TOP	10 WETTEST	MARCHS	
1)	3.88	1905	
2)	2.32	1930	
3)	2.26	1952	
4)	2.20	1973	
5)	2.12	1992	
	2.12	1912	
7)	1.98	1981	
8)	1.96	1920	
9)	1.82	1958	
10)	1.79	1968	
	÷		
	NORMAL PRI	ECIPITAT	ION
	NORMAL PRI	ECIPITATI	ON
	NORMAL PRI	ECIPITAT	ION

NORMAL PRECIPITATION FOR MARCH (1931-1980) NORMAL PRECIPITATION FOR MARCH (1941-1970) NORMAL PRECIPITATION FOR MARCH (1931-1960) NORMAL PRECIPITATION FOR MARCH (1921-1950) AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD

AVERAGE	PRECIPITATION	DURING	THE	1990's
AVERAGE	PRECIPITATION	DURING	THE	1980's
AVERAGE	PRECIPITATION	DURING	THE	1970's
AVERAGE	PRECIPITATION	DURING	THE	1960's
AVERAGE	PRECIPITATION	DURING	THE	1950's
AVERAGE	PRECIPITATION	DURING	THE	1940's
AVERAGE	PRECIPITATION	DURING	THE	1930's
AVERAGE	PRECIPITATION	DURING	THE	1920's
AVERAGE	PRECIPITATION	DURING	THE	1910's
AVERAGE	PRECIPITATION	DURING	THE	1900's
AVERAGE	PRECIPITATION	DURING	THE	1890's

#### TOP 10 ONE-DAY PRECIPITATION TOTALS

1)	1.42	3/25/1903
2)	1.20	3/16/1930
3)	1.19	3/ 9/1952
4)	1.07	3/10/1927
5)	1.05	3/23/1920
6)	.97	3/13/1982
7)	.91	3/ 4/1943
8)	.90	3/10/1935
9)	.78	3/16/1905
10)	.74	3/12/1922

#### ALL-TIME TUCSON MARCH SNOWFALL RECORDS (1895-1996) 102 YEARS

TOP 1	0 SNOWIEST	MARCHS
1)	6.0	1922
2)	5.7	1964
3)	3.8	1976
4)	3.4	1952
5)	1.5	1902
6)	.5	1975
7)	.3	1991
8)	.1	1949
9)	Trace	1992
(last	of 6 occur	rences)

AVERAGE SNOWFALL	FOR ALL YE	ARS ON RE	ICORD	0.2
AVERAGE SNOWFALL	DURING THE	1990's		>Trace
AVERAGE SNOWFALL	DURING THE	1980`s		0
AVERAGE SNOWFALL	DURING THE	1970's		0.4
AVERAGE SNOWFALL	DURING THE	1960's		0.6
AVERAGE SNOWFALL	DURING THE	1950's		0.3
AVERAGE SNOWFALL	DURING THE	1940's	i t	· · · · · · · · · · · · · · · · · · ·
AVERAGE SNOWFALL	DURING THE	1930's	All and the second s	0
AVERAGE SNOWFALL	DURING THE	1920's		0.6
AVERAGE SNOWFALL	DURING THE	1910's		0
AVERAGE SNOWFALL	DURING THE	1900's		0.2
AVERAGE SNOWFALL	DURING THE	1890's	-	0

#### TOP 10 SNOWIEST MARCH DAYS

1)	6.0	3/12/1922
2)	4.0	3/ 2/1964
3)	3.8	3/ 3/1976
4)	3.4	3/ 9/1952
5)	1.7	3/ 3/1964
6)	1.5	3/24/1902
7)	0.5	3/11/1975.
8)	0.3	3/16/1991
9)	0.1	3/25/1949
10)	Trace	11 times

#### DAILY RECORDS FOR APRIL (1895-1996) 102 YEARS

DA	ILY TEMP	MAXIM	JM TEMP	MINIM	UM TEMP	PRECIPI	TATION	SNOW	FALL
A	VERAGES	RE	CORDS	<u> </u>	CORDS	RECO	RDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	77 47 62	91	1989*	31	1938	.35	1905	İ	
2	77 48 62	93	1959*	28	1917	.60	1922	1.0	1956
3	78 48 63	97	1943	30	1897	.13	1981		
4	78 48 63	94	1943	27	1945	.66	1964	i '.	
5	78 48 63	96	1989	28	1901	.40	1921	ļ.	
6	78 48 63	98	1989	32	1936*	.36	1906		
7	79 49 64	99	1989	30	1909	.42	1951	· ·	
8	79 49 64	99	1989	33	1929	1.03	1919	1	
9	79 49 64	97	1989	34	1928	.67	1926	ĺ	
10	80 49 65	96	1989*	28	1922	.16	1968		
						•			
11	80 49 65	95	1988*	32	1922	.48	1969	<b>.</b> .	
12	80 50 65	96	1988	34	1967	.74	1941	Т	1967
13	81 50 65	96	1963*	33	1912	.60	1905		
14	81 50 66	99	1925	33	1922	.25	1916		
15	81 50 66	97	1937*	35	1945	.68	1988		
16	81 50 66	98	1948	34	1976*	.33	1988	2.0	1976
17	82 51 66	97	1987*	30	1924	.44	1970		
18	82 51 66	98	1989	31	1896	.16	1917		
19	82 51 67	101	1989	33	1933*	.44	1987	1	
20	83 51 67	104	1989	34	1933	.74	1952	· ·	
					s*				
21	83 52 67	104	1989	38	1941*	.30	1932		
22	83 52 67	98	1965	33	1904	.70	1913		
23	83 52 68	96	1949*	37	1923*	.81	1905		
24	84 52 68	99	1996	35	1937	.40	1930		
25	84 52 68	99	1910	34	1960	.32	1963		
26	84 53 68	99	1992	34	1921	.03	1985		
27	84 53 69	101	1992	36	1920	.42	1905		
28	85 53 69	101	1992	38	1932*	.33	1905		
29	85 53 69	102	1992	36	1970	.20	1951		
30	85 54 69	102	1943	36	1899	.40	1981		

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD.

NORMAL TEMPERATURE FOR APRIL RECORD HIGH TEMPERATURE FOR APRIL RECORD LOW TEMPERATURE FOR APRIL

NORMAL PRECIPITATION FOR APRIL RECORD ONE-DAY PRECIPITATION TOTAL RECORD MONTHLY PRECIPITATION TOTAL RECORD LOW MONTHLY PRECIPITATION. TOTAL

RECORD ONE-DAY SNOWFALL TOTAL RECORD MONTHLY SNOWFALL TOTAL

65.8 104 SET IN 1989 (20 & 21) 27 SET IN 1945 ( 4)

.30 INCHES 1.03 INCHES SET IN 1919 ( 8) 3.53 INCHES SET IN 1905 ZERO INCHES SET IN 1993 (last of 10 occurrences)

2.0 INCHES SET IN 1976 (16) 2.0 INCHES SET IN 1976

#### ALL-TIME TUCSON APRIL TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP 1	0 WARMEST	APRILS	TOP 10 COLDEST	APRILS
1)	73.8	1989	1) 57.8	1975
2)	71.4	1954	2) 58.3	1905
3) ·	70.7	1992	3) 58.6	1920
4)	70.6	1946	4) 58.7	1912
5)	70.4	1943	5) 59.1	1900
6)	70.1	1987	6) 59.6	1973
	70.1	1962	7) 59.8	1941
8)	69.7	1990	8) 60.3	1983
9)	69.2	1959	9) 60.6	1933
	69.2	1950	10) 61.1	1970
			61.1	1922

NORMAL TEMPERATURE FOR APRIL (1961-1990) 65.8 NORMAL TEMPERATURE FOR APRIL (1951-1980) 64.9 NORMAL TEMPERATURE FOR APRIL (1941-1970) 65.5 NORMAL TEMPERATURE FOR APRIL (1931-1960) 65.9 NORMAL TEMPERATURE FOR APRIL (1921-1950) 65.0 AVERAGE TEMPERATURE FOR ALL YEARS ON RECORD 65.0 AVERAGE TEMPERATURE DURING THE 1990'S 68.1 AVERAGE TEMPERATURE DURING THE 1980's 67.4 AVERAGE TEMPERATURE DURING THE 1970'S 63.6 AVERAGE TEMPERATURE DURING THE 1960's 65.2 AVERAGE TEMPERATURE DURING THE 1950's 66.4 AVERAGE TEMPERATURE DURING THE 1940's 65.7 AVERAGE TEMPERATURE DURING THE 1930's 65.6 AVERAGE TEMPERATURE DURING THE 1920'S 62.7 AVERAGE TEMPERATURE DURING THE 1910'S 63.7 AVERAGE TEMPERATURE DURING THE 1900'S 62.6 AVERAGE TEMPERATURE DURING THE 1890's 65.6

TOP	10 WARMEST	APRIL DATES	TOP 10 COLDEST	APRIL DATES
l)	104	4/21/1989	1) 27	4/ 4/1945
	104	4/20/1989	2) 28	4/10/1922
3)	102	4/29/1992	28	4/ 2/1917
	102	4/30/1943	28	4/ 5/1901
5)	101	4/28/1992	5) 30	4/17/1924
	101	4/27/1992	30	4/ 7/1909
	101	4/19/1989	30	4/ 3/1897
8)	100	4/30/1992	30	4/ 2/1897
	100	4/27/1910	9) 31	4/ 1/1938
10)	99	4/24/1996	(last of 6 oc	currences)
(1	ast of 8 o	courrences)		

#### ALL-TIME TUCSON APRIL PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP	10 WETTEST A	PRILS					<u>COP 10</u>	DRIEST	APRILS
1)	3.53	1905					1)	ZERO	1993
2)	1.66	1951						ZERO	1991
3)	1.51	1952						ZERO	1989
4)	1.42	1926						ZERO	1972
· 5)	1.15	1988						ZERO	1960
6)	1.12	1900						ZERO	1954
- 7)	1.10	1919 .						ZERO	1914
8)	1.06	1941		·	•			ZERO	1909
9)	1.03	1898						ZERO	1904
. 10)	.80	1987		,	•			ZERO	1903
								•	
	NORMAL PRECI	PITATION F	OR APRIL	(1961-1	990)				.30
	NORMAL PRECI			•	- · ·				.32
	NORMAL PRECI	[PITATION F	OR APRIL	(1941-1	.970)				.35
	NORMAL PRECI	PITATION F	OR APRIL	(1931-1	960)				.27
	NORMAL PRECI	IPITATION F	OR APRIL	(1921-1	950)				.32
	AVERAGE PREC	CIPITATION	FOR ALL 1	YEARS ON	RECORD				.34
	AVERAGE PREC	CIPITATION	DURING TI	HE 1990'	S				.09
	AVERAGE PREC	CIPITATION	DURING TI	HE 1980'	S				.36
	AVERAGE PREC								.24
	AVERAGE PREC								.29
	AVERAGE PREC				-				.42
	AVERAGE PREC				-				.33
	AVERAGE PREC				-				.16
N.	AVERAGE PREC				-	×			.49
/	AVERAGE PREC								.36
	AVERAGE PREC				-	•			.54
	AVERAGE PREC	CIPITATION	DURING TI	HE 1890'	S				.36

ONE-DAY PRECIN	<u>PITATION TOTALS</u>
1.03	4/ 8/1919
.81	4/23/1905
.74	4/20/1952
. 74	4/12/1941
.70	4/22/1913
.68	4/15/1988
.68	4/23/1942
.67	4/ 9/1926
.66	4/ 4/1964
.60	4/ 2/1922
	1.03 .81 .74 .74 .70 .68 .68 .68 .67 .66

#### ALL-TIME TUCSON APRIL SNOWFALL RECORDS (1895-1996) 102 YEARS

#### TOP SNOWIEST APRILS

1)	2.0	1976
2)	1.0	1956
3)	TRACE	1967

#### TOP SNOWIEST APRIL DAYS

1)	2.0	4/16/1976
2)	1.0	4/ 2/1956
3)	TRACE	4/12/1967

...

## DAILY RECORDS FOR MAY (1895-1996) 102 YEARS

DA	ILY TEMP	MAXIM	UM TEMP	MINIM	MINIMUM TEMP PRECIPIT		TATION
A	VERAGES	RE	CORDS	RE	CORDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR
1	85 54 70	100	1943	37	1906	.69	1941
2	86 54 70	102	1947	39	1967	.17	1904
3 .	86 54 70	105	1947	32	1899	.57	1930 -
4	86 55 70	103	1947	35	1899	.18	1918
5	86 55 70	102	1947	38	1950	.45	1969
6	87 55 71	104	1989	39	1917*	.48	1978
7	87 55 71	105	1989	37	1915	.13	1995
8	87 56 72	106	1989	40	1965*	.07	1987
9	87 56 72	101	1934*	40	1896	.32	1912
10	88 56 72	106	1934	39	1930*	.37	1904
11	88 56 72	105	1996	37	1922	.06	1987
12	88 <sub>.</sub> 57 73	107	1996	38	1933	.15	1957
13	89 57 73	105	1988	39	1933	.08	1977
14	89 57 73	104	1988	41	1933	.13	1987
15	89 57 73	104	1934	43	1933	1.34	1931
16	90 58 74	106	1934	44	1911	.12	1989
17	90 58 74	102	1956	44	1911	.11	1975
18	90 58 74	101	1996*	47	1962*	.29	1940
19	<b>91</b> 59 75	104	1925	42	1903	.74	1917
20	91 59 75	102	1986	39	1902	.28	1987
21	91 59 75	105	1914	42	1899	.21	1920
22	92 60 76	105	1989	43	1902	.25	1919
23	92 60 76	106	1984	44	1927	.52	1919
24	93 60 77	104	1984*	42	1909	.50	1967
25	93 61 77	105	1896	43	1980	.08	1967
26	93 61 77	107	1951	44	1916	.44	1926
27	<b>94 61 78</b>	107	1951	44	1917	.06	1992
28	94 62 78	107	1958	45	1905	.89	1943
29	95 62 78	111	1910.	43	1918	.37	1907
30	95 63 79	110	1910	42	1909	.44	1986
31	95 63 79	107	1910	44	1918	.13	1914

#### \* - ALSO IN EARLIER YEARS.

NORMAL TEMPERATURE FOR MAY RECORD HIGH TEMPERATURE FOR MAY RECORD LOW TEMPERATURE FOR MAY	74.0 111 SET IN 1910 (29) 32 SET IN 1899 (3)
NORMAL PRECIPITATION FOR MAY	.18 INCHES
RECORD ONE-DAY PRECIPITATION TOTAL	1.34 INCHES SET IN 1931 (15)
RECORD MONTHLY PRECIPITATION TOTAL	1.34 INCHES SET IN 1931
RECORD LOW MONTHLY PRECIPITATION TOTAL	ZERO INCHES SET IN 1996

27

(last of 19 occurrences)

#### ALL-TIME TUCSON MAY TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARME	ST MAYS		•	5. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1		TOP 1	0 COLDES	<u>t mays</u>
1)	79.9	1984					1)	64.6	1905
2)	79.1	1958			1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -	1	2)	66.5	1917
3)	79.0	1996					3)	67.0	1915
4)	78.3	1934					4)	67.1	1933
5)	78.1	1993					5)	67.6	1935
`    6 )	77.4	1989					6)	67.9	1899
7)	77.2	1963					7)	68.2	1908
8)	76.8	1986 <sup>.</sup>					8)	68.6	1909
	76.8	1947					9)	68.8	1953
10)	76.7	1992					10)	69.0	1921
	76.7	1952							
	NORMAL	TEMPERATURE	FOR	MAY	(1961-1990)			7	74.0
	NORMAL	TEMPERATURE	FOR	MAY	(1951-1980)			7	73.2
	NORMAL	TEMPERATURE	FOR	MAY	(1941-1970)			5	73.6
		and the second second second second second second second second second second second second second second second							

	NORMAL :	TEMPERATURE 1	FOR MAY	(193	31-1960)		•	73.5
	NORMAL 7	TEMPERATURE 1	FOR MAY	(192	21-1950)			73.1
	AVERAGE	TEMPERATURE	FOR ALI	YE?	ARS ON RI	ECORD	Ć.	73.0
	AVERAGE	TEMPERATURE	דארב מיזר	THE	199010	×.,		75.8
		TEMPERATURE					, i	75.1
	AVERAGE	TEMPERATURE	DURING	THE	1970's			72.4
	AVERAGE	TEMPERATURE	DURING	THE	1960's			73.3
	AVERAGE	TEMPERATURE	DURING	THE	1950's			73.7
	AVERAGE	TEMPERATURE	DURING	THE	1940's			74.4
	AVERAGE	TEMPERATURE	DURING	THE	1930's			72.2
	AVERAGE	TEMPERATURE	DURING	THE	1920's			73.1
	AVERAGE	TEMPERATURE	DURING	THE	1910's			70.9
·	AVERAGE	TEMPERATURE	DURING	THE	1900's			70.3
	AVERAGE	TEMPERATURE	DURING	THE	1890's		a ser a composition de la composition de	72.5

TOP	10 WARME	ST MAY DATES			TOP 10	COLDEST	MAY DATES
1)	111	5/29/1910			1)	32	5/ 3/1899
2)	110	5/30/1910		•	2)	35	5/ 4/1899
3)	107	5/12/1996			3)	37	5/11/1922
	107	5/28/1958				37	5/ 7/1915
	107	5/27/1951				37	5/ 4/1915
	107	5/26/1951				37	5/ 1/1906
	107	5/31/1910			7)	38	5/ 5/1950
8)	106	5/ 8/1989	•			38	5/12/1933
	106	5/28/1984				38	5/ 7/1933
	106	5/23/1984				38	5/ 4/1913
	106	5/29/1958	•			38	5/ 4/1912
	106	5/27/1958				¥.4	
	106	5/16/1934					
	106	5/10/1934					

106

106

5/28/1896

5/26/1896

#### ALL-TIME TUCSON MAY PRECIPITATION RECORDS (1895-1996) 102 YEARS .

TOP 10 DRIEST MAYS ZERO

(last of 19

occurrences)

1)

TOP	10	WETTEST	MAYS
1)		1.34	1931
2)		1.11	1992
3)		.93	1930
4)		.89	1943
5)		.82	1919
		.82	1917
7)		.74	1987
		.74	1941
9)		.67	1979
10)		.62	1967

	NODMAT	PRECIPITATION	FOR MAY	(1961 1990)	.18
					. 70
	NORMAL	PRECIPITATION	FOR MAY	(1951-1980)	.14
	NORMAL	PRECIPITATION	FOR MAY	(1941-1970)	.14
·	NORMAL	PRECIPITATION	FOR MAY	(1931-1960)	.13
	NORMAL	PRECIPITATION	FOR MAY	(1931-1960)	.21
	AVERAGE	E PRECIPITATION	I FOR ALI	YEARS ON RECORD	.20
					•

AVERAGE	PRECIPITATION	DURING	THE	1990's	.34	
AVERAGE	PRECIPITATION	DURING	THE	1980's	.22	
AVERAGE	PRECIPITATION	DURING	THE	1970's	.21	
AVERAGE	PRECIPITATION	DURING	THE	1960's	.13	
AVERAGE	PRECIPITATION	DURING	THE	1950's	.09	
AVERAGE	PRECIPITATION	DURING	THE	1940's	.26	
AVERAGE	PRECIPITATION	DURING	THE	1930's	.28	
AVERAGE	PRECIPITATION	DURING	THE	1920's	.11	
AVERAGE	PRECIPITATION	DURING	THE	1910's	.28	
AVERAGE	PRECIPITATION	DURING	THE	1900's	.18	
AVERAGE	PRECIPITATION	DURING	THE	1890's	.02	

TOP :	10 ONE-DAY PRECIE	TATION TOTALS
1)	1.34	5/15/1931
2)	.89	5/28/1943
3)	.74	5/19/1917
4)	.69	5/ 1/1941
5)	.57	5/ 3/1930
6)	. 52	5/23/1919
7)	.50	5/24/1967
8)	.48	5/ 6/1978
9)	.45	5/ 5/1969
10)	.44	5/30/1986
	.44	5/26/1926

### DAILY RECORDS FOR JUNE (1895-1996) 102 YEARS 102 YEARS

D	AILY	TEN	<u>{P</u>	MAX	IMUM 1	EMP	MINI	MUM	TEMP	PRE	CIPI	TATIO	N
·	AVER	AGE:	5		RECORE	s	F	RECOR	DS	l1	RECC	RDS	
DAY	HI	LO	AV	F	YE	AR	F	Y	EAR	INC	HES	YEAR	
1	96	63	80	1 10	5 19	38	44	1	916	į .	12	1914	
2	96	64	80	10	5 19	94*	45	1	895	į .	59	1899	
3	97	64	80	10	7 19	96*	46	1	906		06	1979	*
4	97	64	81	1 11	2 19	90	43	1	908	į .:	15	1979	
5	97	65	81	1 10	8 19	90*	46	l	908	į .	08	1987	
6	98	65	82	10	8 19	12	52	1	917*		08	1987	
7	98	65	82	10	9 19	85	46	1	925	į .:	17	1900	
8	98	66	82	11	1 19	85	46	1	925	i .:	22	1979	
9	99	66	82	10	9 19	85*	50	1	907	i	44	1990	
10	99	66	83	1 11	0 18	96	53	l	941*	į .	54	1914	
				-		•				•	,		
11	99	67	83	11	1 19	33	49	1	913	1 .:	22	1903	
12	100	67	83	1 10	9 19	95*	49	1	913	İ .	38	1973	
13	100	67	84	11	0 19	24	53	l	919		19	1991	
14	100	68	84	1 11	1 19	93	54	1	922*	į .	12	1921	
15	100	68	84	11	0 18	96	48	1	901		01	1905	
16	100	68	84	1 10	9 19	88*	5.0	<b>1</b> ,	962		20	1918	
17	101	69	85	1 10	9 19	89*	52	1	944*	j .	14	1904	
18	101	69	85	11	3 19	89	49	1	921	1 -	12	1967	
19	101	69	85	11	2 19	89	50	1	921		92	1930	
20	101	69	85	1 10	9 19	93*	53	1	920	j .	07	1925	
									#* 5				
21	101	70	85	11	2 19	90*	50	1	923		71	1950	
22	101	70	86	11	4 19	88	55	1	907	1	53	1950	
23	101	70	86	11	3 19	88	57	1	916*	1 .	63	1940	
24	101	70	86	11	3 19	94	57	. 1	907		27	1954	
25	101	71	86	11	5 19	94	56	1	907	} .	66	1984	
26	101	71	86	11	7 19	90	55	1	965		25	1962	
27	101	71	86	11	2 19	90	57	. <b>1</b>	965		54	1909	
28	101	71	86	11	5 19	94	57	i	941*	1 1.	56	1938	
29	101	72	86	11	6 19	94	57	1	906		55	1912	
30	101	72	86	11	2 19	89	58	1	913		55	1925	

.

\* - ALSO IN EARLIER YEARS.

RECORD	TEMPERATURE FOR JUNE HIGH TEMPERATURE FOR JUNE LOW TEMPERATURE FOR JUNE	83.8 117 SET IN 1990 (26) 43 SET IN 1908 ( 4)
RECORD RECORD	PRECIPITATION FOR JUNE ONE-DAY PRECIPITATION TOTAL MONTHLY PRECIPITATION TOTAL LOW MONTHLY PRECIPITATION TOTAL	.20 INCHES 1.56 INCHES SET IN 1938 (28) 2.07 INCHES SET IN 1938 ZERO INCHES SET IN 1983 (last of 11 occurrences)

#### ALL-TIME TUCSON JUNE TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP 1	0 WARMEST JUNES	·	TOP 10 (	COLDEST J	UNES
1)	89.2 1994		1) '	77.6 1	965
2)	88.6 1990		2) '	77.7 1	905
3)	87.4 1996		3) '	78.0 1	907
4)	86.8 1988		4) '	78.2 1	913
	86.8 1974		5) '	78.4 1	923
6)	86.5 1986		6) .	78.9 1	945
7)	86.3 1987		7) .	79.2 1	908
8)	86.2 1956		8) .	79.4 1	901
9)	86.1 1981		9) '	79.5 1	932
10)	85.8 1985		•	79.5 1	921
	85.8 1978				
	NORMAL TEMPERATURE FOR JUNE (1961-1990)	,		83.8	3
	NORMAL TEMPERATURE FOR JUNE (1951-1980)			83.0	)
	NORMAL TEMPERATURE FOR JUNE (1941-1970)			82.1	L
	NORMAL TEMPERATURE FOR JUNE (1931-1960)			82.7	7
	NORMAL TEMPERATURE FOR JUNE (1921-1950)			82.1	L İ
	AVERAGE TEMPERATURE FOR ALL YEARS ON RECO	RD		82.5	5
	AVERAGE TEMPERATURE DURING THE 1990's			85.6	5
	AVERAGE TEMPERATURE DURING THE 1980'S			84.7	7 ·
	AVERAGE TEMPERATURE DURING THE 1970'S			83.2	2
	AVERAGE TEMPERATURE DURING THE 1960'S			81.6	5
	AVERAGE TEMPERATURE DURING THE 1950'S			83.1	
	AVERAGE TEMPERATURE DURING THE 1940'S			82.3	
L 1	AVERAGE TEMEPRATURE DURING THE 1930'S			81.	
	AVERAGE TEMPERATURE DURING THE 1920'S			81.2	
	AVERAGE TEMPERATURE DURING THE 1910's			81.9	
	AVERAGE TEMEPRATURE DURING THE 1900'S			80.4	
	AVERAGE TEMPERATURE DURING THE 1890'S			81.9	9
	0 WARMEST JUNE DATES			ST JUNE D	
1)	117 6/26/1990	1)	43	6/4/	
2)	116 6/29/1994	2)	44	6/ 1/	
3)	115 6/28/1994	3)	45	6/ 1/	
	115 6/25/1994		45	6/2/	
5)	114 6/22/1988	5)	46	6/8/	
6)	113 6/26/1994		46	6/7/	
•	113 6/24/1994		46	6/5/	
4	113 6/26/1993		46	6/3/	
	113 6/28/1990	9)	47	6/2/	
	113 6/25/1990	10)	48	6/ 1/	1936

113

113

6/18/1989

6/23/1988

(last of 7 occurrences)

### ALL-TIME TUCSON JUNE PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP	10 WETTES	T JUNES				TOP	10 DRIEST	JUNES
1)	2.07	1938				1)	ZERO	1983
2)	1.46	1954					ZERO	1975
3)	1.31	1914					ZERO	1969
4)	1.27	1899					ZERO	1968
5)	1.24	1950					ZERO	1945
6)	1.14	1940					ZERO	1942
7)	1.12	1930					ZERO	1923
8)	1.05	1984					ZERO	1917
9)	.86	1925					ZERO	1906
10)	.68	1972					ZERO	1901
					•		ZERO	1897
	NORMAL	PRECIPITATION FO	R JUNE	(1961-1990)				.20

11010-1271	* 2020 2 2 2 2 2 2 2 2 2 0 2 0	FOR DONE	(1)01-1)00		. 20
NORMAL	PRECIPITATION	FOR JUNE	(1951-1980)		.22
NORMAL	PRECIPITATION	FOR JUNE	(1941-1970)		.20
NORMAL	PRECIPITATION	FOR JUNE	(1931-1960)	•	.29
NORMAL	PRECIPITATION	FOR JUNE	(1921-1950)		.30
AVERAGE	E PRECIPITATION	N FOR ALL	YEARS ON RECORD	•	.25

AVERAGE	PRECIPITATION	DURING	THE	1990's				.17
AVERAGE	PRECIPITATION	DURING	THE	1980's				.21
AVERAGE	PRECIPITATION	DURING	THE	1970's				.24
AVERAGE	PRECIPITATION	DURING	THE	1960's			• .	.12
AVERAGE	PRECIPITATION	DURING	THE	1950's				.41
AVERAGE	PRECIPITATION	DURING	THE	1940's				.15
AVERAGE	PRECIPITATION	DURING	THE	1930's		-		.41
AVERAGE	PRECIPITATION	DURING	THE	1920's				.27
AVERAGE	PRECIPITATION	DURING	THE	1910's			<b>.</b> .	.31
AVERAGE	PRECIPITATION	DURING	THE	1900's				.15
AVERAGE	PRECIPITATION	DURING	THE	1890's				.34
	AVERAGE AVERAGE AVERAGE AVERAGE AVERAGE AVERAGE AVERAGE AVERAGE	AVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATIONAVERAGEPRECIPITATION	AVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURINGAVERAGEPRECIPITATIONDURING	AVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHEAVERAGEPRECIPITATIONDURINGTHE	AVERAGEPRECIPITATIONDURINGTHE1990'SAVERAGEPRECIPITATIONDURINGTHE1980'SAVERAGEPRECIPITATIONDURINGTHE1970'SAVERAGEPRECIPITATIONDURINGTHE1960'SAVERAGEPRECIPITATIONDURINGTHE1950'SAVERAGEPRECIPITATIONDURINGTHE1940'SAVERAGEPRECIPITATIONDURINGTHE1930'SAVERAGEPRECIPITATIONDURINGTHE1920'SAVERAGEPRECIPITATIONDURINGTHE1910'SAVERAGEPRECIPITATIONDURINGTHE1900'SAVERAGEPRECIPITATIONDURINGTHE1890'S	AVERAGEPRECIPITATIONDURINGTHE1980'sAVERAGEPRECIPITATIONDURINGTHE1970'sAVERAGEPRECIPITATIONDURINGTHE1960'sAVERAGEPRECIPITATIONDURINGTHE1950'sAVERAGEPRECIPITATIONDURINGTHE1940'sAVERAGEPRECIPITATIONDURINGTHE1930'sAVERAGEPRECIPITATIONDURINGTHE1920'sAVERAGEPRECIPITATIONDURINGTHE1910'sAVERAGEPRECIPITATIONDURINGTHE1900's	AVERAGEPRECIPITATIONDURINGTHE1980'sAVERAGEPRECIPITATIONDURINGTHE1970'sAVERAGEPRECIPITATIONDURINGTHE1960'sAVERAGEPRECIPITATIONDURINGTHE1950'sAVERAGEPRECIPITATIONDURINGTHE1940'sAVERAGEPRECIPITATIONDURINGTHE1930'sAVERAGEPRECIPITATIONDURINGTHE1920'sAVERAGEPRECIPITATIONDURINGTHE1910'sAVERAGEPRECIPITATIONDURINGTHE1900's	AVERAGEPRECIPITATIONDURINGTHE1980'sAVERAGEPRECIPITATIONDURINGTHE1970'sAVERAGEPRECIPITATIONDURINGTHE1960'sAVERAGEPRECIPITATIONDURINGTHE1940'sAVERAGEPRECIPITATIONDURINGTHE1930'sAVERAGEPRECIPITATIONDURINGTHE1920'sAVERAGEPRECIPITATIONDURINGTHE1910'sAVERAGEPRECIPITATIONDURINGTHE1910'sAVERAGEPRECIPITATIONDURINGTHE1900's

TOP 10 ONE-DAY PRECIPITATION TOTALS	<u>TOP 10</u>	ONE-DAY	PRECIPITATIO	<u>N TOTALS</u>
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1)	1.56	6/28/1938
2)	1.27	6/24/1954
3)	. 92	6/19/1930
4)	.71	6/21/1950
5)	.66	6/25/1984
	.66	6/25/1899
7)	.63	6/23/1940
8)	.59	6/ 2/1899
9)	.55	6/30/1925
	.55	6/29/1912

## DAILY RECORDS FOR JULY (1895-1996) 102 YEARS

D	AILY	TEN	(P	MAXIMU	M TEMP	MINIM	UM TEMP	PRECIPI	TATION
	AVER	AGES	5	REC	ORDS	RE	CORDS	RECO	RDS
DAY	HI	ĿО	AV	F	YEAR	F	YEAR	INCHES_	YEAR
1	101	72	86	111	1990	57	1928	.71	1898
2	101	72	86	111	1994*	59	1992	.65	1917
з.	101	72	86	111	1989*	49	1911	1.40	1959
4	100	73	87	114	1989	59	1935	.70	1921
. 5	100	73	87	111	1992*	54	1912	1.03	1952
6	100	73	87 -	109	1989	59	1902	.49	1982
7	100	73	87	110	1942*	58	1938	1.47	1974
· 8	100	73	87	111	1994*	63	1936*	1.29	1897
9	100	73	87	110	1979	58	1926	.74	1932
10	100	74	87	109	1979*	60	1926	.59	1917
			·						
11	100	74	87	111	1958	68	1937*	.90	1919
12	100	74	87	109	1994*	63	1960	1.31	1923
13	100	74	87	110	1994*	62	1936	.62	1912
14	100	74	87	109	1994*	65	1962	1.16	1964
15	99	74	87	108	1988	62	1905	1.12	1990
16	99	74	87	108	1925	64	1905	1.90	1919
17	99	74	87	109	1992	65	1909*	1.84	1908
18	99	74	87	109	1992*	60	1913	.97	1919
19	99	74	87	108	1989*	65	1948*	1.39	1970
20	99	74	87	109	1989	63	1906	1.11	1979
21	99	74	87	107	1931	64	1913	1.35	1910
22	99	74	87	107	1994*	63	1973*	2.12	1955
23	99	74		109	1987	62	1913	. 98	1941
24	99		86	109	1987	62	1913	1.87	1948
25	99	74	86	109	1943	65	1913	1.27	1981
26	99		86	112	1995	59	1913	2.00	1936
27	98	74	86	113	1995	59	1913	1.84	1945
28	98		86	114	1995	62	1913	1.88	1921
29				110	1995.	62	1913	3.93	1958
30	98	74		109	1986*	64	1919*	1.08	1964
31	98	74	86	111	1986	66	1955*	1.43	1955*

#### \* - ALSO IN EARLIER YEARS.

NORMAL TEMPERATURE FOR JULY	86.6
RECORD HIGH TEMPERATURE FOR JULY	114 SET IN 1995 (28) & 1989 (4)
RECORD LOW TEMPERATURE FOR JULY	49 SET IN 1911 ( 3)
NORMAL PRECIPITATION FOR JULY	2.37 INCHES
PECOPD ONE-DAY DEFCIDITATION TOTAL	3 93 INCHES SET IN 1958 (29)

RECORD	ONE-DAY	PREC	CIPITATION	TOTA	L	3.
RECORD	MONTHLY	PREC	CIPITATION	TOTA	T	6
RECORD	LOW MONT	THLY	PRECIPITAT	CION	TOTAL	

2.37 INCHES 3.93 INCHES SET IN 1958 (29) 5.24 INCHES SET IN 1921 .04 INCHES SET IN 1995

### ALL-TIME TUCSON JULY TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP 1	<u>) WARMEST</u>	JULYS	•				TOP 10	COLDI	EST JULYS	
1)	90.4	1994		•			1)	81.4	1912	
2)	89.9	1989					2)	82.8	1950	
3)	89.7	1942		a contra			3)	83.1	1919	
4)	88.8	1951						83.1	1914	
5)	88.6	1996					5)	83.5	1974	
	88.6	1980					•	83.5	1913	
7)	88.4	1995			,		7)	83.6	1911	
	88.4	1931 <sup>`</sup>					8)	83.9	1976	
9)	88.3	1947		·				83.9	1908	
•	88.3	1900	,		· .		10)	84.1	1984	
			× ×	•		•	•	84.1	1975	
								84.1	1921	•
		TEMPERATURE							86.6	
	NORMAL !	<b>FEMPERATURE</b>	FOR JULY (1	L951-1980	)				86.2	
	NORMAL !	TEMPERATURE	FOR JULY (1	L941-1970	)				86.3	
	NORMAL 7	TEMPERATURE	FOR JULY (	1931-1960	)				86.3	
		TEMPERATURE			• •				86.2	
•	AVERAGE	TEMPERATURE	FOR ALL YE	EARS ON R	ECORD			:	86.2	
	-	an an Anna an Anna an Anna. An Anna an Anna Anna Anna Anna Anna Ann								
		TEMPERATURE	1 A A				· · · · ·	191	87.8	
	AVERAGE	TEMPERATURE	DURING THE	E 1980's			-		86.8	
	AVERAGE	TEMPERATURE	DURING THE	E 1970's					86.0	
		TEMPERATURE							85.7	
		TEMPERATURE		*					86.2	
		TEMPERATURE			•				87.1	
		TEMPERATURE					1 · · ·		86.6	,
		TEMPERATURE	1. A 1. A 1. A 1. A 1. A 1. A 1. A 1. A	1.1	•		1. Jan 1. 1.		86.2	
		TEMPERATURE						i s si	84.4	
		TEMPERATURE	and the second second second second second second second second second second second second second second second			*		÷.	85.6	
	AVERAGE	TEMPERATURE	DURING THE	E 1890's			1.1		86.0	
		JULY DATES	· .			TOD -			ULY DATES	
1)	114	7/28/1995		- •		1)	49		7/3/1911	
±/	114	7/ 4/1989				2)	54		7/ 5/1912	
3)	113	7/27/1995			1	3)	55		7/ 5/1904	
4)	112	7/26/1995				4)	57		7/ 1/1928	
5)	111	7/ 8/1994				5)	58		7/ 7/1938	
5,	111	7/ 2/1994				57	58		7/ 9/1926	
	111	7/ 5/1992					58		7/ 1/1913	
	111	7/ 4/1992				8)	59		7/ 2/1992	
	111	7/ 1/1992				07	59		7/ 4/1935	
	111	7/ 3/1989					59		7/27/1913	
	111	7/31/1986					a 59		7/26/1913	
	111	7/ 5/1983	чт				59		7/ 6/1902	
	111	7/11/1958					ر ر		,, 0,1002	
	111	7/ 8/1920							1	
	111	7/ 3/1907								
	***	7/ 3/1907								

111

7/ 2/1907

#### ALL-TIME TUCSON JULY PRECIPITATION RECORDS (1895-1996) 102 YEARS

<u>TOP</u>	10 WETTES	T JULYS					TOP 1	0. DRIESI	JULYS	
1)	6.24	1921					1)	.04	1995	
2)	6.17	1981					2)	.11	1895	
3)	5.53	1919					3)	.25	1920	
4)	5.45	1990					4)	.26	1993	
5)	5.20	1958					5)	.27	1947	
6)	5.10	1955					6)	.37	1987	
7)	4.82	1964					7)	.41	1994	
8)	4.77	1908					8)	.42	1902	
9)	4.44	1974					9)	.44	1991	
10)	4.27	1907					10)	.61	1939	`
	NORMAL I	PRECIPITATION	FOR JULY	Z (19	61-1990)				2.37	
	NORMAL I	RECIPITATION	FOR JULY	Z (19	51-1980)				2.42	
	NORMAL I	PRECIPITATION	FOR JULY	Z (19	41-1970)				2.38	
	NORMAL I	PRECIPITATION	FOR JUL	Y (19	31-1960)				2.06	
	NORMAL I	PRECIPITATION	FOR JUL	Y (19	21-1950)				1.80	
	AVERAGE	PRECIPITATIO	N FOR ALL	L YEA	RS ON RE	CORD			2.16	
	AVERAGE	PRECIPITATIO	N DURING	THE	1990's				1.34	
	AVERAGE	PRECIPITATIO	N DURING	THE	1980's				2.34	
	AVERAGE	PRECIPITATIO	N DURING	$\mathbf{T}\mathbf{H}\mathbf{E}$	1970's				2.15	
	AVERAGE	PRECIPITATIO	N DURING	THE	1960's		÷		2.13	
	AVERAGE	PRECIPITATIO	N DURING	$\mathbf{THE}$	1950's				3.16	
	AVERAGE	PRECIPITATIO	N DURING	THE	1940's		а.		1.69	
,	AVERAGE	PRECIPITATIO	N DURING	THE	1930's				1.46	
	AVERAGE	PRECIPITATIO	N DURING	THE	1920's				1.93	
		PRECIPITATIO							2.84	
	AVERAGE	PRECIPITATIO	N DURING	$\mathbf{THE}$	1900's				2.29	

<u>TOP 10</u>	ONE-DAY PRECIN	PITATION TOTALS
1)	3.93	7/29/1958
2)	2.12	7/22/1955
3)	2.00	7 <u>/</u> 26/1936
4)	1.90	7/16/1919
5)	1.88	7/28/1921
6)	1.87	7/24/1948
7)	1.84	7/27/1945
	1.84	7/17/1908
9)	1.82	7/22/1910
10)	1.64	7/16/1972

AVERAGE PRECIPITATION DURING THE 1890'S

2.13

## DAILY RECORDS FOR AUGUST (1895-1996) 102 YEARS

DA	ILY TE	MP	MAXIMU	M TEMP	MINIM	UM TEMP	PRECIPI	TATION
A	VERAGE	IS	REC	ORDS	RE	CORDS	RECO	RDS
DAY	HI LO	AV	F	YEAR	F	YEAR	INCHES	YEAR
1	98 74	86	112	1993	64	1935	2.88	1935
2	98 74	86	110	1918	59	1917	1.52	1897 -
3	98 73	86	110	1994	63	1955	2.28	1955
4	9873	86	109	1994*	63	1911	.67	1901
5	98 73	86	108	1995*	64	1916	1.12	1916
6	98 73	85	109	1995	63	1928	1.88	1955
7	97 73	85	108	1995	64	1912	1.07	1983
8	97 73	85	107	1995	61	1895	1.40	1895
9	97 73	85	109	1915	61	1925	2.48	1923
10	97 73	85	109	1994*	62	1925*	1.23	1955
11	97 73	85	108	1993	62	1917*	2.07	1995
12	97 72	85	108	1993	57	1900	1.38	1966
13	97·72	85	106	1996*	63	1925*	1.81	1993
14	97 72	85	106	1994*	61	1918	2.25	1940
15	97 72	85	109	1915	63	1918*	1.10	1979
16	97 72	84	108	1992	60	1938	.91	1944
17	97 72	84	107	1992	60	1938	1.27	1955
18	97 72	84	106	1987	61	1918	1.03	1936
19	97 72	84	110	1915	60	1924	.84	1920
.20	96 72	84	110	1915	55	1917	.68	1904
						>		ч.,
21	96 72		108	1930	59	1917	.88	1945
22	96 71	. 84	110	1930	62	1895	2.48	1961
23	96 71		107	1985	60	1900	1.96	1992
24	96 71	. 84 <sub>.</sub>	108	1985	60	1900	.93	1986
25	96 71	. 84	106	1985*	60	1900	.80	1984
26	96 71		106	1901	63	1906	. 99	1903
27	96 71	. 84	106	1930	60	1900	.70	1911
28	96 71		106	1948	59	1900	.81	1969
29	96 71		107	1985*	58	1917	1.73	1910
30	96 71	83	106	1985*	61	1920*	1.35	1914
31	96 71	. 83	108	1950	62	1895	1.66	1957

\* - ALSO IN EARLIER YEARS.

NORMAL	TEMPERATURE FOR AUGUST		84.	. 5				
RECORD	HIGH TEMPERATURE FOR AUGUST		112	SET	IN	1993	(1)	
RECORD	LOW TEMPERATURE FOR AUGUST	·	55	SET	IN	1917	(20)	
NORMAT.	PRECIPITATION FOR AUGUST		2.1	19 TN	JCHF	2.S		

2.19 INCHES 2.88 INCHES SET IN 1935 (1) 7.93 INCHES SET IN 1955 .08 INCHES SET 1924

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#### ALL-TIME TUCSON AUGUST TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST AUGUSTS	<u>TOP 10</u>	COLDEST AUGUSTS
1)	90.2 1994	1)	80.8 1923
2)	87.3 1995	2)	81.2 1968
3)	86.9 1962	3)	81.3 1971
4)	86.8 1915	4)	81.5 1964
5)	86.6 1991	5)	81.7 1959
	86.6 1989	6)	81.8 1961
7)	86.4 1996		81.8 1955 -
	86.4 1981		81.8 1921
	86.4 1977		81.8 1918
	86.4 1953	10)	81.9 1906
	86.4 1944		· .
	NORMAL TEMPERATURE FOR AUGUST (1961-1990)		84.5
	NORMAL TEMPERATURE FOR AUGUST (1951-1980)		84.0
	NORMAL TEMPERATURE FOR AUGUST (1941-1970)	•	83.8
	NORMAL TEMPERATURE FOR AUGUST (1931-1960)		83.1
	NORMAL TEMPERATURE FOR AUGUST (1921-1950)		83.8
	AVERAGE TEMPERATURE FOR ALL YEARS ON RECORD	C	84.2
	AVERAGE TEMPERATURE DURING THE 1990'S		86.2
	AVERAGE TEMPERATURE DURING THE 1980'S		85.1
	AVERAGE TEMPERATURE DURING THE 1970'S		84.2
	AVERAGE TEMPERATURE DURING THE 1960'S		83.6
	AVERAGE TEMPERATURE DURING THE 1950'S		84.1
	AVERAGE TEMPERATURE DURING THE 1940'S		84.4
	AVERAGE TEMPERATURE DURING THE 1930'S		84.2
	AVERAGE TEMPERATURE DURING THE 1920'S		83.7
	AVERAGE TEMPERATURE DURING THE 1910'S		83.9
	AVERAGE TEMPERATURE DURING THE 1900'S		83.6
	AVERAGE TEMPERATURE DURING THE 1890'S		83.8
TOP	10 WARMEST AUGUST DATES	TOP 10 COLDE	ST AUGUST DATES

) 112	8/ 1/1993		1)	55	8/20/1917
) 110	8/ 3/1994		2)	57	8/12/1900
110	8/22/1930		3)	58	8/29/1917
110	8/ 2/1918		4)	59	8/21/1917
110	8/20/1915			59	8/ 2/1917
110	8/19/1915		й. Г	59	8/28/1900
) 109	8/ 6/1995		7)	60	8/17/1938
last of 11	occurrences)		(last	c of 8 d	occurrences)
	) 110 110 110 110 110 110 ) 109	) 110 8/3/1994 110 8/22/1930 110 8/2/1918 110 8/20/1915 110 8/19/1915	) 110 8/3/1994 110 8/22/1930 110 8/2/1918 110 8/20/1915 110 8/19/1915 ) 109 8/6/1995	110    8/3/1994    2)      110    8/22/1930    3)      110    8/22/1918    4)      110    8/20/1915    10      110    8/19/1915    7)	110    8/3/1994    2)    57      110    8/22/1930    3)    58      110    8/22/1918    4)    59      110    8/20/1915    59      110    8/19/1915    59      100    8/19/1915    59      109    8/6/1995    7)    60

#### ALL-TIME TUCSON AUGUST PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP 10 DRIEST AUGUSTS .08

.10

.23

.32

.45

.48

.54

.46

.56

1)

2)

3)

4) 5)

6)

7)

8)

9)

10)

1924

1926

1976

1975

1994

1953

1962

1973

1905

.78 1918

2.19

2.13

2.34

2.06

2.15

2.91

1.48

2.37

2.37 2.52

2.42

1.70

1.97

2.98 ·. . •

1.89

2.66

2.25

TOP	10	WETTEST	AUGUSTS
1)		7.93	1955
2)		5.61	1935
3)		4.93	1993
4)		4.55	1992
5)		4.48	1895
6)		4.31	1945
7)		4.28	1961
8)		4.24	1983
9)		4.19	1984
10)		4.06	1923

NORMAL PRECIPITATION FOR AUGUST (1961-1990) NORMAL PRECIPITATION FOR AUGUST (1951-1980) NORMAL PRECIPITATION FOR AUGUST (1941-1970) NORMAL PRECIPITATION FOR AUGUST (1931-1960) NORMAL PRECIPITATION FOR AUGUST (1921-1950) AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD

AVERAGE PRECIPITATION DURING THE 1990's AVERAGE PRECIPITATION DURING THE 1980's AVERAGE PRECIPITATION DURING THE 1970'S AVERAGE PRECIPITATION DURING THE 1960's AVERAGE PRECIPITATION DURING THE 1950's AVERAGE PRECIPITATION DURING THE 1950'S AVERAGE PRECIPITATION DURING THE 1940'S AVERAGE PRECIPITATION DURING THE 1930'S AVERAGE PRECIPITATION DURING THE 1920'S AVERAGE PRECIPITATION DURING THE 1910'S AVERAGE PRECIPITATION DURING THE 1900's AVERAGE PRECIPITATION DURING THE 1890'S

TOP	10 ONE-DAY PR	RECIPITATION TOTALS
1)	2.88	8/ 1/1935
2)	2.48	· 8/22/1961
	2.48	8/ 9/1923
4)	2.28	8/ 3/1955
.5)	2.25	8/14/1940
6)	2.07	8/11/1995
7)	2.05	8/ 1/1964
8)	1.99	8/22/1898
9)	1.96	8/23/1992
10)	1.88	8/ 6/1955

#### DAILY RECORDS FOR SEPTEMBER (1895-1996) 102 YEARS

DAILY TEMP		MAXIM	IM TEMP	MINIM	UM TEMP	PRECIPI	TATION		
A	VER/	GES	3	REC	ORDS	RE	CORDS	RECO	RDS
DAY	HI	LO	AV	<b>F</b>	YEAR	F	YEAR	INCHES	YEAR
1	96	71	83	107	1950	58	1914	1.28	1954
2	95	70	83	107	1899	57	1914	.70	1988
3	95	70	83	107	1983*	58	1913	1.72	1996
4	95	70	83	106	1945	56	1961	1.90	1970
5	95	70	83	107	1945	53	1921	1.06	1909
6	95	70	83	106	1952	56	1921	.88	1897
7	95	70	82	104	1979*	57	1920	1.13	1950
8	95	70	82	105	1994*	58	1912	.94	1919
9	95	69	82	105	1990	51	1912	.99	1977
10	95	69	82	107	1990	53	1912	2.85	1964
11	94	69	82	107	1990	55	1928*	2.12	1921
12	94	69	81	105	1943	55	1920	1.48	1966
13	94	69	81	107	1895	52	1952	.90	1992
14	94	68	81	103	1956*	50	1900	1.30	1911
15	94	68	81	105	1928	52	1930	1.18	1944
16	94	68	81	104	1928*	50	1903	1.07	1925
17	93	67	80	105	1956	52	1915*	1.33	1991
18	93	67	80	105	1956	53	1906	1.01	1925
19	93	67	80	103	1934*	53	1909	.73	1983
20	93	67	80	104	1926	50	1965	.36	1974
21		66	79	105	1954	47	1965	1.10	1978
22	92	66	79	106	1989	50	1895	.80	1934
23	92	66	79	102	1908*	48	1941	1.32	1929
24	92	65	78	104	1899	49	1923	2.57	1943
25	· 91	65	78	104	1899	48	1913	1.25	1976
26	91	65	78	104	1899	43	1913	2.40	1962
27			78	102	1994	46	1915	1.38	1926
28	91		77 ·	103	1994	44	1936*	2.15	1995
29	90	63	77	101	1917	44	1923*	1.02	1983
30	90	63	76	101	1989	44	1965	.75	1946

\* - ALSO IN EARLIER YEARS.

NORMAL TEMPERATURE FOR SEPTEMBER	80.4
RECORD HIGH TEMPERATURE FOR SEPTEMBER	107 SET IN 1990 (11)
	(last of 8 occurren
RECORD LOW TEMPERATURE FOR SEPTEMBER	43 SET IN 1913 (26)
NORMAL PRECIPITATION FOR SEPTEMBER	1 67 INCHES

NORMAL PRECIPITATION FOR SEPTEMBER RECORD ONE-DAY PRECIPITATION TOTAL RECORD MONTHLY PRECIPITATION TOTAL RECORD LOW MONTHLY PRECIPITATION TOTAL

ences) 1.67 INCHES

2.85 INCHES SET IN 1964 (10) 5.11 INCHES SET IN 1964 ZERO INCHES SET IN 1953

### ALL-TIME TUCSON SEPTEMBER TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST S	EPTEMBERS			TO	P 10 COLDEST	SEPTEMBERS
1)	84.5	1989			1	) 76.3	1964
2)	84.3	1956	· · ·		2	) 76.4	1970
3)	84.2	1994			· 3		1923
4)	84.1	1979				76.7	7 1900
5)	83.5	1992			5)	) 76.8	1965
6)	83.3	1952				76.8	1912
7)	83.2	1951			7	) 76.9	1919
8)	83.0	1947				76.9	1904
9)	82.9	1954			9	) 77.0	) 1961
	82.9	1953			10	) 77.2	2 1920
					·	× 4	
		MPERATURE FOR			-		80.4
		MPERATURE FOR		•	•		80.4
		MPERATURE FOR			•		80.1
		MPERATURE FOR		•	- · · ·		80.4
	NORMAL TE	MPERATURE FOR	R SEPTEMBER	(1931-19	60)	•	80.1
	AVERAGE T	EMPERATURE FO	OR ALL YEAR	S ON RECO	RD	*	80.2
	AVERAGE T	EMPERATURE DU	JRING THE 1	990's			81.8
	AVERAGE T	EMPERATURE DU	JRING THE 1	980's			80.5
	AVERAGE T	EMPERATURE DU	JRING THE 1	970's			79.6
	AVERAGE T	EMPERATURE DI	JRING THE 1	960's			79.6
	AVERAGE T	EMPERATURE DI	JRING THE 1	950's			81.8
	AVERAGE T	EMPERATURE DU	JRING THE 1	940's			81.3
	AVERAGE T	EMPERATURE DU	JRING THE 1:	930's			79.9
	AVERAGE T	EMEPRATURE DI	JRING THE 1	920's			79.4
	AVERAGE T	EMPERATURE DU	JRING THE 1	910's			79.4
	AVERAGE T	EMPERATURE DU	JRING THE 1	900's			78.7
	AVERAGE T	EMEPRATURE DU	JRING THE 1	890's			80.7
TOP	10 WARMEST S	EPTEMBER DAT	ES	1	TOP 10	COLDEST SEP	TEMBER DATES
1)	107	9/11/199	0		1)	43	9/26/1913
	107	9/10/199			2)	44	9/30/1965
	,107	9/ 3/198	3	·. ·		44	9/28/1936
	·						

1)	107	9/11/1990		1)	43	9/26/1913
	107	9/10/1990	х <sup>:</sup>	2)	44	9/30/1965
	.107	9/ 3/1983			44	9/28/1936
	107	9/ 1/1950			44	9/29/1923
	107	9/ 3/1948			44	9/28/1923
	107	9/ 5/1945			44	9/29/1915
	107	9/ 2/1899 <sup>.</sup>			44	9/28/1904
	107	9/13/1895		8)	45	9/29/1934
9)	106	9/22/1989	P.		45	9/30/1915
	106	9/ 6/1952			45	9/30/1907
	106	9/ 3/1952			45	9/30/1905
	106	9/ 2/1948				
	106	9/ 4/1945				- 3

#### ALL-TIME TUCSON SEPTEMBER PRECIPITATION RECORDS (1895-1996) 102 YEARS

<u>TOP 10</u>	WETTEST	SEPTEMBERS	TOP 10 DRIEST	SEPTEMBERS
1)	5.11	1964	1) ZERO	1953
2)	4.28	1983	2) TRACE	1973
	4.28	1929	TRACE	1968
4)	3.68	1996	TRACE	1959
5)	3.59	1943	TRACE	1957
6)	3.58	1970	6) .01	1912
7)	3.53	1966	7) .02	1989
8)	3.05	1954	.02	1979
9)	3.01	1921	9) .03	1899
10)	2.95	1925	10) .05	1955

1.67

1.33

1.37

1.00

1.48

1.33

NORMAL PRECIPITATION FOR SEPTEMBER (1961-1990) NORMAL PRECIPITATION FOR SEPTEMBER (1951-1980) NORMAL PRECIPITATION FOR SEPTEMBER (1941-1970) NORMAL PRECIPITATION FOR SEPTEMBER (1931-1960) NORMAL PRECIPITATION FOR SEPTEMBER (1921-1950) AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD

AVERAGE	PRECIPITATION	DURING	THE	1990's	1.71
AVERAGE	PRECIPITATION	DURING	THE	1980's	1.74
AVERAGE	PRECIPITATION	DURING	THE	1970's	1.41
AVERAGE	PRECIPITATION	DURING	THE	1960's	1.81
AVERAGE	PRECIPITATION	DURING	THE	1950's	.60
AVERAGE	PRECIPITATION	DURING	THE	1940's	1.62
AVERAGE	PRECIPITATION	DURING	THE	1930's	1.01
AVERAGE	PRECIPITATION	DURING	THE	1920's	1.87
AVERAGE	PRECIPITATION	DURING	THE	1910's	. 93
AVERAGE	PRECIPITATION	DURING	THE	1900's	.96
AVERAGE	PRECIPITATION	DURING	THE	1890's	.94

<u>TOP 10</u>	ONE-DAY PRECIP	VITATION TOTALS
1)	2.85	9/10/1964
2)	2.57	9/24/1943
3)	2.40	9/26/1962
4)	2.15	9/28/1995
5)	2.12	9/11/1921
6)	1.90	9/ 4/1970
7)	1.88	9/24/1929
8)	1.72	9/ 3/1996
9)	1.48	9/12/1966

9/26/1919

1.47

10)

#### DAILY RECORDS FOR OCTOBER (1894-1996) 103 YEARS

DAILY TEMP		MAXIMUM TEMP		MINIMUM TEMP		PRECIPITATION		
<b>Z</b>	VERAGES		REC	ORDS	RE	CORDS	RECO	RDS
DAY	HI LO	AV	<b>T</b>	YEAR	F	YEAR	INCHES	YEAR
' 1	90 63	76	101	1955	42	1907	2.96	1983
2	89 62	76	101	1980	42	1927	1.73	1970
3	89 62	75	102	1993	45	1930*	1.18	1914
4	89 61	75	100	1917	40	1908 j	.63	1972
5	88 61	75	101	1917	39	1908	1.09	1989
6	88 61	74	101	1987*	39	1908	1.47	1977
7	88 60	74	101	1987	41	1913	.64	1977
8	87 60	73	101	1910	42	1970	.62	1960
9	87 59	73	100	1996	42	1939*	.55	1933
10	87 59	73	· 99	1996	38	1949	1.10	1933
11	86 59	72	99	1950*	37	1912	.25	1974
12	86 58	72	99	1992	35	1924	.94	1932
13	85·58	72	97	1989*	43	1931	.55	1916
14	.85 57	71	98	1991*	33	1920	. 72	1988
15	85 57	71	98	1991	38	1928*	.35	1994
16		70	100	1991	32	1899	.70	1985
17		70	96	1933	37	1899	. 97	1971
18		70	98	1933*	35	1904	1.01	1972
19		69	99	1921	33	1908	1.75	1972
20	83 55	69	95	1952*	35	1908	. 93	1,988
							· · ·	· ·
21		68	96	1909	33	1920	1.55	1978
22		68	93	1952*	29	1908	.23	1957
23		68	94	1933	29	1906	.66	1896
24		67	96	1959	33	1935	.50	1925
25		27	94	1990*	33	1908	.20	1944
26		67	95	1934	32	1899	1.61	1996
27		66	94	1937	35	1970	. 50	1991
28		66	94	1934*	29	1897	.58	1896
29		65	92	1950*	32	1912	1.64	1902
30		65	91	1990*	26	1971	1.47	1951
31	79 51	65	93	1916	29	1900	.44	1926

#### \* - ALSO IN EARLIER YEARS.

NORMAL TEMPERATURE FOR OCTOBER	70.4
RECORD HIGH TEMPERATURE FOR OCTOBER	102 SET IN 1993 ( 3)
RECORD LOW TEMPERATURE FOR OCTOBER	26 SET IN 1971 (30)

NORMAL	PRECIPITATION FOR OCTOBER
RECORD	ONE-DAY PRECIPITATION TOTAL
RECORD	MONTHLY PRECIPITATION TOTAL
RECORD	LOW MONTHLY PRECIPITATION TOTAL

1.06 INCHES 2.96 INCHES SET IN 1983 (1) 4.98 INCHES SET IN 1983 ZERO INCHES SET IN 1982 (last of 10 occurrences)

.

#### ALL-TIME TUCSON OCTOBER TEMPERATURE RECORDS (1894-1996) 103 YEARS

TOP	10 WARMEST_OCTOBERS	TOP 10	COLDEST	OCTOBERS
1)	76.8 1950	1)	63.8	1908
2)	76.4 1952	2)	64.0	1919
3)	75.3 1988	3)	64.2	1971
4)	75.1 1987	4)	65.0	1920
5)	74.3 1955	5)	65.1	1970
6)	74.2 1992	.6)	65.4	1923
	74.2 1954	7)	65.7	1912
8)	74.0 1991	8)	65.9	1946
9)	73.7 1978	9)	66.2	1916
10)	73.3 1977	10)	66.3	1984
	NORMAL TEMPERATURE FOR OCTOBER (1961-1990)			70.4
	NORMAL TEMPERATURE FOR OCTOBER (1951-1980)		·	70.4
	NORMAL TEMPERATURE FOR OCTOBER (1941-1970)	,		70.1
	NORMAL TEMPERATURE FOR OCTOBER (1931-1960)			70.0
	NORMAL TEMPERATURE FOR OCTOBER (1921-1950)			69.6
	AVERAGE TEMPERATURE FOR ALL YEARS ON RECORD			69.7
	· · · · · · · · · · · · · · · · · · ·			
	AVERAGE TEMPERATURE DURING THE 1990'S			72.4
	AVERAGE TEMPERATURE DURING THE 1980'S			70.1
	AVERAGE TEMPERATURE DURING THE 1970'S			69.3
-	AVERAGE TEMPERATURE DURING THE 1960'S			70.2
	AVERAGE TEMPERATURE DURING THE 1950'S			72.4
	AVERAGE TEMPERATURE DURING THE 1940'S			69.6
	AVERAGE TEMEPRATURE DURING THE 1930'S	н. — — — — — — — — — — — — — — — — — — —		69.2
	AVERAGE TEMPERATURE DURING THE 1920'S			68.6
	AVERAGE TEMPERATURE DURING THE 1910'S			67.5
•	AVERAGE TEMEPRATURE DURING THE 1900'S			68.4
	AVERAGE TEMPERATURE DURING THE 1890'S			68.6
	10 WARMEST OCTOBER DATES	TOP 10 COLD		3 <u>ER DATES</u> )/30/1971

1)	102	10/ 3/1993	
2)	101	10/ 7/1987	
	101	10/ 6/1987	
	101	10/ 2/1980	
	101	10/ 1/1955	
	101	10/ 6/1934	
	101	10/ 6/1929	
	101	10/ 6/1928	
	101	10/ 5/1917	
	101	10/ 8/1910	
		· · ·	

TOP	10	COLDEST	OCTOBER DATES
1)		26	10/30/1971
2)		29	10/22/1908
		29	10/23/1900
		29	10/31/1906
		29	10/28/1897
6)		31	10/31/1912
7)		32	10/30/1929/
		32	10/31/1922
		32	10/29/1912
,		32	10/23/1908
		32	10/22/1906
		32	10/26/1899
		32	10/16/1899

#### ALL-TIME TUCSON OCTOBER PRECIPITATION RECORDS (1894-1996) 103 YEARS

TOP	10 WETTES	T OCTOBERS				TOP	10 DRIEST	OCTOBERS
1)	4.98	1983				1)	ZERO	1982
2)	4.51	1972					ZERO	1973
3)	3.31	1896					ZERO	1952
4)	2.62	1957					ZERO	1938
5)	2.59	1914					ZERO	1935
6)	2.36	1977					ZERO	1923
7)	2.12	1974					ZERO	1915
8)	2.09	1988					ZERO	1909
9)	2.03	1985					ZERO	1903
10)	2.00	1933	•				ZERO	1898
	NORMAL	PRECIPITATION	FOR	OCTOBER	(1961-1990)			1.06

NORMAL PRECIPITATION FOR OCTOBER (1951-1980) .88 NORMAL PRECIPITATION FOR OCTOBER (1941-1970) .66 .64 NORMAL PRECIPITATION FOR OCTOBER (1931-1960) NORMAL PRECIPITATION FOR OCTOBER (1921-1950) .47 AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD .75 AVERAGE PRECIPITATION DURING THE 1990'S .72 AVERAGE PRECIPITATION DURING THE 1980'S 1.28 1.45 AVERAGE PRECIPITATION DURING THE 1970's AVERAGE PRECIPITATION DURING THE 1960's .46 AVERAGE PRECIPITATION DURING THE 1950's .71 AVERAGE PRECIPITATION DURING THE 1940'S .61 AVERAGE PRECIPITATION DURING THE 1930'S .43

AVERAGE	PRECIPITATION	DURING	THE	1920's			
AVERAGE	PRECIPITATION	DURING	THE	1910's	2		
AVERAGE	PRECIPITATION	DURING	THE	1900's			
AVERAGE	PRECIPITATION	DURING	THE	1890's			

.38 .80

.48

.94

TOP	10 ONE-DAY PR	ECIPITATION TOTALS
1)	2.96	10/ 1/1983
2)	1.75	10/19/1972
3)	1.73	10/ 2/1970
4)	1.64	10/29/1902
5)	1.61	10/26/1996
6)	1.55	10/21/1978
7)	1.47	10/ 6/1951
	1.47	10/30/1983
9).	1.21	10/ 2/1983
10)	1.18	10/ 3/1914

#### DAILY RECORDS FOR NOVEMBER (1894-1996) 103 YEARS

D#	DAILY TEMP MAXIMUM TEMP		MINIM	MINIMUM TEMP		PRECIPITATION		SNOWFALL			
₽	VERA	AGES	5	RE	CORDS	RE	CORDS	RECO	RDS	RECO	RDS
DAY	HI	ĿО	AV_	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	78	50	64	94	1924	32	1972*	.42	1987	İ.	
2	78	50	64	93	1916	33	1956	.21	1923*	İ	
3	77	49	63	91	1931	28	1956	.74	1983		
4	77	49	63	91	1909	29	1956*	.07	1994		
5	77	48	62	91	1934	27	1935*	.64	1995*	İ.	
6	76	48	62	93	1934	29	1935*	.87	1915	ļ.	
. 7	76	48	62	89	1934	28	1947*	.54	1963	ĺ	
8	75	48	62	91	1906	27	1924*	.88	1905		
9	75	47	61	92	1906	29	1918*	.45	1969	1	
10	75	47	61	91	1934	27	1919	1.47	1923		
						•				•	
11	74	47	60	91	1894	29	1935*	1.40	1994		
12	74	46	60	89	1906*	25	1898	.76	1931	1	
13	73	46	60	88	1990	21	1898	1.57	1968	1	
14	73	46	59	88	1990	24	1916	.61	1924	1	
15	73	46	59	89	1906	28	1929	. 53	1993	.1	1964
16	72	45	59	89	1906	26	1909	1.07	1952	6.4	1958
17	72	45	59	86	1990	24	1958	1.27	1900		
18	72	45	58	86	1990	24	1911	.60	1941		
19	71	44	58	87	1897	19	1921	1.12	1900	T	1994
20	71	44	58	87	1897	26	1921	.30	1913	1	
21		44		89	1897	22	1898	.84	1905		•
22		44		90	1924	24	1979*	2.09	1931		
23		43		87	1917*	25	1916*	1.83	1895		
24		43	-	86	1981*	. 28	1979*	.91	1895		
25		43	56	86	1894	26	1992	1.25	1935		
26		43		86	1950	27	1938*	.48	1905	!	
27		43	56	85	1950	25	1911	.42	1909		
28		43		85	1945	24	1934	.92	1919		
29		42		83	1970*	23	1934	.58	1981	Т	1975
30	68	42 <sup>.</sup>	55	84	1910	24	1934	.74	1982		

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD.

59.2 NORMAL TEMPERATURE FOR NOVEMBER RECORD HIGH TEMPERATURE FOR NOVEMBER 94 SET IN 1924 ( 1) RECORD LOW TEMPERATURE FOR NOVEMBER 19 SET IN 1921 (19) NORMAL PRECIPITATION FOR NOVEMBER .67 INCHES RECORD ONE-DAY PRECIPITATION TOTAL 2.09 INCHES SET IN 1931 (22) RECORD MONTHLY PRECIPITATION TOTAL 4.61 INCHES SET IN 1905 RECORD LOW MONTHLY PRECIPITATION TOTAL ZERO INCHES SET IN 1980 (last of 12 occurrences) 6.4 INCHES SET IN 1958 (16) RECORD ONE-DAY SNOWFALL TOTAL RECORD MONTHLY SNOWFALL TOTAL 6.4 INCHES SET IN 1958

#### ALL-TIME TUCSON NOVEMBER TEMPERATURE RECORDS (1894-1996) 103 YEARS

TOP 1	O WARMEST	NOVEMBERS			•	TOP 1	0 COLDEST	NOVEMBERS
1)	64.3	1949		,		1)	52.9	1972
2)	64.0	1894	•			2)	53.1	1922
3)	63.2	1942				3)	53.5	1948
4)	63.1	1995				4)	54.0	1938
5)	63.0	1950					54.0	1931
6)	62.9	1967					54.0	1929
7)	62.7	1954				7)	54.1	1947
8)	62.6	1965				8)	54.3	1957
9)	62.1	1981				9)	54.4	1961
	62.1	1939				10)	54.5	1935
							54.5	1898

NORMAL 7	TEMPERATURE I	FOR NOVEMBER	R (1961-1990)				59.2
NORMAL 1	TEMPERATURE I	FOR NOVEMBER	R (1951-1980)			14	58.7
NORMAL	remperature i	FOR NOVEMBER	R (1941-1970)	•			58.5
NORMAL 7	remperature 1	FOR NOVEMBER	R (1931-1960)			*	58.1
NORMAL 1	TEMPERATURE I	FOR NOVEMBER	R (1921-1950)				58.2
AVERAGE	TEMPERATURE	FOR ALL YEA	ARS ON RECORD	in the second second second second second second second second second second second second second second second			58.5
á.			80 80				
AVERAGE	TEMPERATURE	DURING THE	1990's				59.4
AVERAGE	TEMPERATURE	DURING THE	1980's				59.2
AVERAGE	TEMPERATURE	DURING THE	1970's		•	,	58.2
AVERAGE	TEMPERATURE	DURING THE	1960's				59.3
AVERAGE	TEMPERATURE	DURING THE	1950's				58.9
AVERAGE	TEMPERATURE	DURING THE	1940's	6. 			58.3
AVERAGE	TEMPERATURE	DURING THE	1930's				57.8
AVERAGE	TEMPERATURE	DURING THE	1920's	÷ .	•		57.3
AVERAGE	TEMPERATURE	DURING THE	1910's			4.16	57.2
AVERAGE	TEMPERATURE	DURING THE	1900's				58.4
AVERAGE	TEMPERATURE	DURING THE	1890's				58.4

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		14 - 14 - 14 - 14 - 14 - 14 - 14 - 14 -	•					
TOP 10	WARMEST	NOVEMBER DATES	1 - 1 - 1 - 1 		TOP 10	COLDEST	NOVEMBER D	ATES
l)	94	11/ 1/1924			1)	19	11/19/1	.921
2)	93	11/ 6/1934			2)	21	11/13/1	898
	93	11/ 2/1916			3)	22	11/21/1	898
4)	92	11/ 2/1910			4)	23	11/29/1	934
	92	11/ 9/1906			5)	24	11/22/1	979
6)	91	11/ 1/1939		· · ·	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	24	11/17/1	.958
	91	11/10/1934				24	11/30/1	934
	91	11/ 5/1934				24	11/28/1	934
	91	11/ 3/1931			4	24	11/14/1	916
	91	11/ 2/1931				24	11/18/1	.911
	91	11/ 1/1918				24	11/22/1	.898
	91	11/ 1/1916						
	91	11/ 4/1909						
	91	11/ 8/1906						

#### ALL-TIME TUCSON NOVEMBER PRECIPITATION RECORDS (1894-1996) 103 YEARS

TOP 1	0 WETTEST	NOVEMBERS	TOP 10 DRIEST	NOVEMBERS
1)	4.61	1905	1) ZERO	1980
2)	4.30	1895	ZERO	1970
3)	3.72	1931	ZERO	1954
4)	3.43	1923	ZERO	1945
`5)	3.13	1919	ZERO	1943
6)	2.45	1900	ZERO	1932
7)	1.98	1913	ZERO	1917
8)	1.90	1952	ZERO	1916
9)	1.89	1935	ZERO	1912
10)	1.86	1968	ZERO	1903
			ZERO	1897
		. ·	ZERO	1894

NORMAL PRECIPITATION FOR NOVEMBER (1961-1990)	.67
NORMAL PRECIPITATION FOR NOVEMBER (1951-1980)	.62
NORMAL PRECIPITATION FOR NOVEMBER (1941-1970)	. 56
NORMAL PRECIPITATION FOR NOVEMBER (1931-1960)	.62
NORMAL PRECIPITATION FOR NOVEMBER (1921-1950)	.76
AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD	.77
AVERAGE PRECIPITATION DURING THE 1990'S	.70
AVERAGE PRECIPITATION DURING THE 1980'S	.68
AVERAGE PRECIPITATION DURING THE 1970'S	.60
AVERAGE PRECIPITATION DURING THE 1960'S	.72
AVERAGE PRECIPITATION DURING THE 1950'S	.53
AVERAGE PRECIPITATION DURING THE 1940's	.61
AVERAGE PRECIPITATION DURING THE 1930'S	.96
AVERAGE PRECIPITATION DURING THE 1920'S	.71
AVERAGE PRECIPITATION DURING THE 1910'S	.95
AVERAGE PRECIPITATION DURING THE 1900'S	1.10
AVERAGE PRECIPITATION DURING THE 1890'S	1.00

TOP 10	ONE-DAY PRECIN	PITATION TOTALS
1)	2.09	11/22/1931
2)	1.83	11/23/1895
3)	1.57	11/13/1968
4)	1.47	11/10/1923
5)	1.40	11/11/1994
6)	1.27	11/17/1900
7)	1.25	11/25/1935
8)	1.12	11/19/1900
9)	1.09	11/25/1925
10)	1.07	11/16/1952

#### ALL-TIME TUCSON NOVEMBER SNOWFALL RECORDS (1894-1996) 103 YEARS

#### TOP SNOWIEST NOVEMBERS

1)	6.4	1958
2)	0.1	1964
3)	TRACE	1994
	TRACE	1975

#### TOP SNOWIEST NOVEMBER DAYS

1)	6.4	11/16/1958
2)	.1	11/15/1964
3)	TRACE	11/19/1994
	TRACE	11/29/1975

#### DAILY RECORDS FOR DECEMBER (1894-1996) 103 YEARS

DA	ILY TEMP	MAXIM	UM TEMP	MINIM	UM TEMP	PRECIPI	TATION	SNOW	FALL
A	VERAGES	RE	CORDS	RE	CORDS	RECO	RDS	RECO	RDS
DAY	HI LO AV	F	YEAR	F	YEAR	INCHES	YEAR	INCHES	YEAR
1	67 42 54	84	1926	26	1934	.20	1933	т	1982
2	67 42 54	85	<b>1911</b>	28	1905	.99	1906		
3	67 41 54	84	1954	22	1934	2.15	1906		
4	66 41 54	85	1895	21	1909	1.16	1992	T	1971*
5	66 41 54	83	1939*	17	1909	2.10	1994		
б	66 41 53	84	1939	18	1912	.81	1986	· T	1978*
7	66 41 53	82	1970*	20	1960	.21	1926	Т	1978*
8	65 41 53	85	1939	19	1916	.68	1904	6.8	1971
9	65 40 53	84	1933	23	1978*	.94	1965		
10	65 40 53	82	1950*	19	1916	.89	1965	Т	1949
•								,	
11	65 40 52	83	1939	15	1916	1.02	1940	1.0	1928
12	65 40 52	78	1995*	20	1916	.53	1905	Т	1985
13	64 40 52	79	1995*	19	1911	.91	1902	T	1987*
14	64 40 52	79	1939*	10	1901	1.01	1967	Т	1987*
15	64 40 52	81	1969	19	1911	1.22	1967		
16	64 40 52	79	1980*	19	1901	.99	1908	ļ ,	
17	64 39 51	82	1939	19	1911	.70	1987	1.6	1967
18	64 39 51	80	1950	23	1933*	.67	1978	1.0	1911
19	63 39 51	81	1917	19	1895	.46	1967		
20	63 39 51	80	1921	20	1897	1.07	1914	1.4	1949
	`								
21	63 39 51	80	1917	20	1930	.36	1923	.2	1968
22	63 39 51	82	1917	16	1897	1.01	1914	1.5	1932
23	63 39 51	78	1955*	19	1912	.58	1914	.3	1965
24	63 39 51	79	1936	16	1974	1.19	1914	1.2	1941
25	63 39 51	82	1933	21	1903	.71	1944	4.0	1916
26	63 39 51	82	1933	16	1895	.68	1994	Т	1988*
27	63 39 51	82 ·	1928	20	1895	.77	1984	Т	1969
28	63 39 51	82	1922	18	1954	1.11	1906	1	
29	63 39 51	85	1921	20	1988	.80	1960	1	
30	63 39 51	82	1917	14	1895	1.07	1978	T	1982*
31	63 38 51	81	1917	11	1905	1.40	1915	2.0	1915

\* - ALSO IN EARLIER YEARS. T - TRACE, AN AMOUNT TOO SMALL TO MEASURE. BLANK UNDER SNOWFALL INDICATES NO SNOWFALL FOR PERIOD OF RECORD

NORMAL TEMPERATURE FOR DECEMBER RECORD HIGH TEMPERATURE FOR DECEMBER	52.0 85 SET IN 1939 ( 8)
RECORD LOW TEMPERATURE FOR DECEMBER	(last of 4 occurrences) 10 SET IN 1901 (14)
NORMAL PRECIPITATION FOR DECEMBER RECORD ONE-DAY PRECIPITATION TOTAL RECORD MONTHLY PRECIPITATION TOTAL RECORD LOW MONTHLY PRECIPITATION TOTAL	1.07 INCHES 2.15 INCHES SET IN 1906 (3) 5.85 INCHES SET IN 1914 ZERO INCHES SET IN 1981 (last of 6 occurrences)

RECORD ONE-DAY SNOWFALL TOTAL6.8 INCHES SET IN 1971 (8)RECORD MONTHLY SNOWFALL TOTAL6.8 INCHES SET IN 1971

## ALL-TIME TUCSON DECEMBER TEMPERATURE RECORDS (1894-1996) 103 YEARS

TOP	10 WARMEST	DECEMBERS	۰		TOP 10	COLDEST	DECEMBERS
1)	58.1	1980	• *	•	1) <sup>'</sup>	45.0	1911
2)	56.9	1977			2)	45.8	1912
	56.9	1950			3)	47.0	1974
4)	56.3	1940				47.0	1932
	56.3	1939				47.0	1916
6)	55.6	1958			6)	47.1	1971
7)	55.5	1955			•	47.1	1905
	55.5	1946			8)	47.2	1898
9)	55.0	1981			9)	47.3	1920
	55.0	1979			10)	47.5	1914
						47.5	1909
	NORMAL T	EMPERATURE	FOR DECEMBER	(1961-1990)			52.0
	NORMAL T	EMPERATURE	FOR DECEMBER	(1951-1980)			52.0
	NORMAL T	EMPERATURE	FOR DECEMBER	(1941-1970)			52.0
	NORMAL T	EMPERATURE	FOR DECEMBER	2 (1931-1960)			51.9
	NORMAL I	EMPERATURE	FOR DECEMBER	(1921-1950)			52.0
	AVERAGE	TEMPERATURE	FOR ALL YEA	RS ON RECORD			51.5
	AVEDACE	יידי אסביס אייז <b>ד</b> ער	DURING THR	199015			53.1
	•		DURING THE				52.8
			DURING THE				51.4
		TEMPERATURE		1960's			51.5
			DURING THE				53.0

AVERAGE	TEMPERATURE	DURING THE	1950's	53.0
AVERAGE	TEMPERATURE	DURING THE	1940's	52.4
AVERAGE	TEMPERATURE	DURING THE	1930's	51.7
AVERAGE	TEMPERATURE	DURING THE	1920's	50.7
AVERAGE	TEMPERATURE	DURING THE	1910's	48.9
AVERAGE	TEMPERATURE	DURING THE	1900's	50.3
AVERAGE	TEMPERATURE	DURING THE	1890's	50.8

	4				
TOP	10 WARMEST	DECEMBER DATES	TOP	10 COLDEST	DECEMBER DATES
1)	85	12/ 8/1939	1)	10	12/14/1901
	85	12/29/1921	2)	11	12/31/1905
	85	12/ 2/1911	3)	14	12/30/1895
	85	12/ 4/1895	4)	15	12/11/1916
5)	84	12/ 3/1954		16	12/24/1974
	84	12/ 6/1939		16	12/22/1897
	84	12/ 9/1933		16	12/31/1895
	84	12/ 1/1926		16	12/26/1895
9)	83	12/ 8/1981	9)	17	12/ 5/1909
	(last of 7	occurrence)	10)	18	12/28/1954
				.18	12/ 6/1912

#### ALL-TIME TUCSON DECEMBER PRECIPITATION RECORDS (1894-1996) 103 YEARS

TOP	10 WETTESI	DECEMBERS			TOP 1	0 DRIEST	DECEMBERS
1)	5.85	1914			1)	ZERO	1981
2)	5.02	1965				ZERO	1973
3)	4.57	1906		•		ZERO	1958
4)	3.71	. 1994				ZERO	1917
5)	3.47	1992				ZERO	1907
6)	3.44	1967				ZERO	1901
7)	3.30	1984			7)	TRACE	1996
8)	2.82	1940				TRACE	1900
9)	2.73	1978 ·				TRACE	1899
10)	2.64	. 1923			10)	.05	1988
			FOR DECEMBER				1.07
		_	FOR DECEMBER	· · · · · · · ·			. 94
	NORMAL P	RECIPITATION	FOR DECEMBER	(1941-1970)			.94
	NORMAL P	RECIPITATION	FOR DECEMBER	(1931-1960)			. 92
	NORMAL P	RECIPITATION	FOR DECEMBER	(1921-1950)			.94
	AVERAGE	PRECIPITATION	N FOR ALL YEAR	RS ON RECORD			1.02
	AVERAGE	PRECIPITATION	N DURING THE 1	L990's			1.50
	AVERAGE	PRECIPITATION	N DURING THE 1	L980's			.89
	AVERAGE	PRECIPITATION	N DURING THE 1	L970's			.85
	AVERAGE	PRECIPITATION	N DURING THE	L960's			1.41
	AVERAGE	PRECIPITATION	N DURING THE	L950's		•	.56
	AVERAGE	PRECIPITATION	N DURING THE	L940's			1.08
	AVERAGE	PRECIPITATION	N DURING THE	L930's			.91
	AVERAGE	PRECIPITATION	N DURING THE	L920's			.79
	AVERAGE	PRECIPITATIO	N DURING THE	L910's			1.33
	AVERAGE	PRECIPITATION	N DURING THE	L900's			1.23
	AVERAGE	PRECIPITATION	N DURING THE 1	L890's			.71

<u>TOP 10</u>	ONE-DAY PRECI	PITATION TOTALS
1)	2.15	12/ 3/1906
2)	2.10	12/ 5/1994
3)	1.40	12/31/1915
4)	1.22	12/15/1967
5)	1.19	12/24/1914
6)	1.16	12/ 4/1992
7)	1:11	12/28/1906
8)	1.07	12/30/1978
	1.07	12/20/1914
10)	1.02	12/11/1940

## ALL-TIME TUCSON DECEMBER SNOWFALL RECORDS (1894-1996) 103 YEARS

TOP	10	SNOWIEST	DECEMBERS
1)		6.8	1971
2)		4.0	1916
3)		3.6	1987
4)		2.0	1915
5)		1.6	1967
6)		1.5	1911
		1.5	1932
8)		1.4	1949
9)		1.2	1941
10)	)	1.0	1928

0.3

0.1 0.4 0.7 0.2 0 0.3 0.2 0.1 0.8 0 0

AVERAGE	SNOWFALL	FOR ALL	. VEZ	ARS ON RECORD	n	•
AVEICAGE	SHOWERED			NO ON RECORD	5	
	SNOWFALL					
AVERAGE	SNOWFALL	DURING	THE	1980's		
AVERAGE	SNOWFALL	DURING	THE	1970's		
AVERAGE	SNOWFALL	DURING	THE	1960's		
AVERAGE	SNOWFALL	DURING	THE	1950's		 . '
AVERAGE	SNOWFALL	DURING	THE	1940's		
AVERAGE	SNOWFALL	DURING	THE	1930's		
AVERAGE	SNOWFALL	DURING	THE	1920's		
AVERAGE	SNOWFALL	DURING	THE	1910's		 
AVERAGE	SNOWFALL	DURING	THE	1900's		
AVERAGE	SNOWFALL	DURING	THE	1890's		

	DECEMBER DAYS

1)	6.8	12/ 8/1971
2)	4.0	12/25/1916
3)	2.6	12/25/1987
4)	2.0	12/31/1915
5)	1.6	12/17/1967
6)	1.5	12/22/1932
7)	1.4	12/20/1949
8)	1.2	12/24/1941
9)	1.0	12/24/1987
je <sup>1</sup>	1.0	12/11/1928
	1.0	12/18/1911

# **APPENDIX B**

# YEARLY...MONTHLY

# AND

# SEASONAL RECORDS

ALL-TIME TUCSON YEARLY TEMPERATURE RECORDS (1895-1996) 102 YEARS

TOP	10 WARMEST YE	ARS				<u>TOP 10</u>	COLDEST	YEARS
1)	71.4 1	989				1)	65.0	1912
2)	71.0 1	994					65.0	1905
3)	70.6 1	996				3)	65.3	1913
	70.6 1	954				4)	65.7	1920
5)	70.5 1	988	•.				65.7	1919
6)	70.4 1	986				6)	65.8	1909
7)	70.3 1	995				7)	65.9	1908
8)	70.2 1	993				8)	66.1	1971
	70.2 1	943					66.1	1964
10)	69.8 1	992	•				66.1	1903
		TEMPERATURE (					68	.4
		TEMPERATURE (	-				68	.0
	NORMAL YEARLY	TEMPERATURE (	1941-1970)				67	. 8
	NORMAL YEARLY	TEMPERATURE (	1931-1960)				67	.7
	NORMAL YEARLY	TEMPERATURE (	1921-1950)				67	.6
	AVERAGE YEARL	Y TEMPERATURE		ARS ON R	RECORD		67	.9
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1990's			70	.1
		Y TEMPERATURE		4	•		69	. 2
		Y TEMPERATURE					67	.6
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1960's			67	.6
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1950's			68	. 8
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1940's			68	.1
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1930's			67	.4
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1920's			. 67	.1
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1910's			66	<b>.</b> 7 <sup>.</sup>
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1900's			66	.6
	AVERAGE YEARL	Y TEMPERATURE	DURING THE	1890's			67	.3

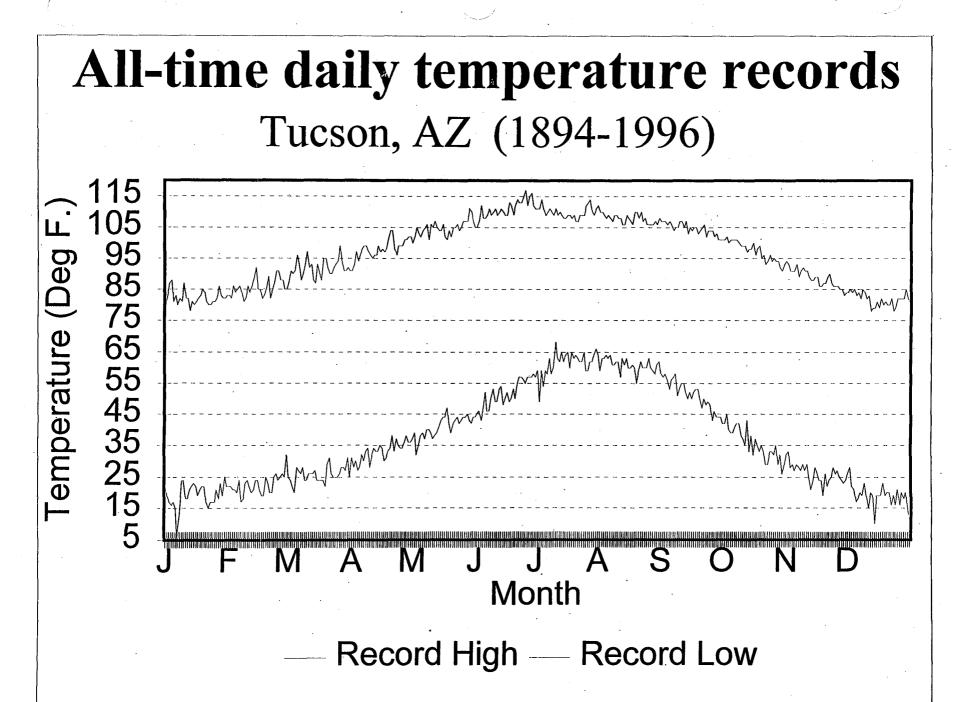
#### ALL-TIME TUCSON MONTHLY & DAILY TEMPERATURE RECORDS (1894-1996) 103 YEARS

TOP :	10 COLDEST	MONTHS/YEAR
1)	41.2	JAN/1937
2)	43.0	JAN/1949
3)	43.3	JAN/1932
4)	44.8	JAN/1913
5)	45.0	DEC/1911
6)	45.3	FEB/1903
7)	45.4	JAN/1904
8)	45.6	FEB/1939
9)	45.8	DEC/1912
10)	46.1	JAN/1898

TOP	10	WARMEST	MONTHS/YEAR
1)		90.4	JUL/1994
2)		90.2	AUG/1994
3)		89.9	JUL/1989
4)		89.7	JUL/1942
5)		89.2	JUN/1994
6)		88.8	JUL/1951
7)		88.6	JUL/1996
		88.6	JUN/1990
		88.6	JUL/1980
10)		88.4	JUL/1995
		88.4	JUL/1931

	TOP	10	COLDE	ST DA	TES	<u>YEAR</u>
	1)		6	JAN	17	1913
	2)		10	DEC	: 14	1901
	3)		11	DEC	31	1905
	4)		13	JAN	18	1913
	5)		14	DEC	30	1895
	6);		15	JAN	1 22	1937
			15	DEC	: 11	1916
			15	JAL	16	1910
			15	JAN	1 22	1904
÷	10)		16	DEC	24	1974
			16	JAN	14	1949
			16	JAN	14	1911
			16	DEC	22	1897
			16	DEC	31	1895
			16	DEC	26	1895

TOP	10	WARM	IEST	DAT	ES/	YEAR
l)		117		JUN	26	1990
2)		116	1	JUN	29	1994
3)		115		JUN	28	1994
		115	1	JUN	25	1994
5)		114	1	JUL	28	1995
		114	I	JUL	4	1989
		114	l	JUN	22	1988
8)		113	l	JUN	27	1995
		113	(	JUN	26	1994
		113	. 1	JUN	24	1994
•		113	1	JUN	26	1993
		113	4	JUN	28	1990
		113	1	JUN	25	1990
		113	ı	JUN	18	1989
		113		JUN	23	1988



#### ALL-TIME TUCSON YEARLY PRECIPITATION RECORDS (1895-1996) 102 YEARS

TOP 15 DRIEST YEARS 5.07

5.34

5.53

6.28

6.48

6.50

6.64

1) 2)

3)

4)

5)

6)

7)

1924

1953

1947

1976 1989

1928

1975

1956 1939 1973

12.00

11.14 11.05

11.00

10.66

11.51

12.92

13.24 10.74

11.39

11.03

10.90

10.17

11.70

12.37

10.87

10.97

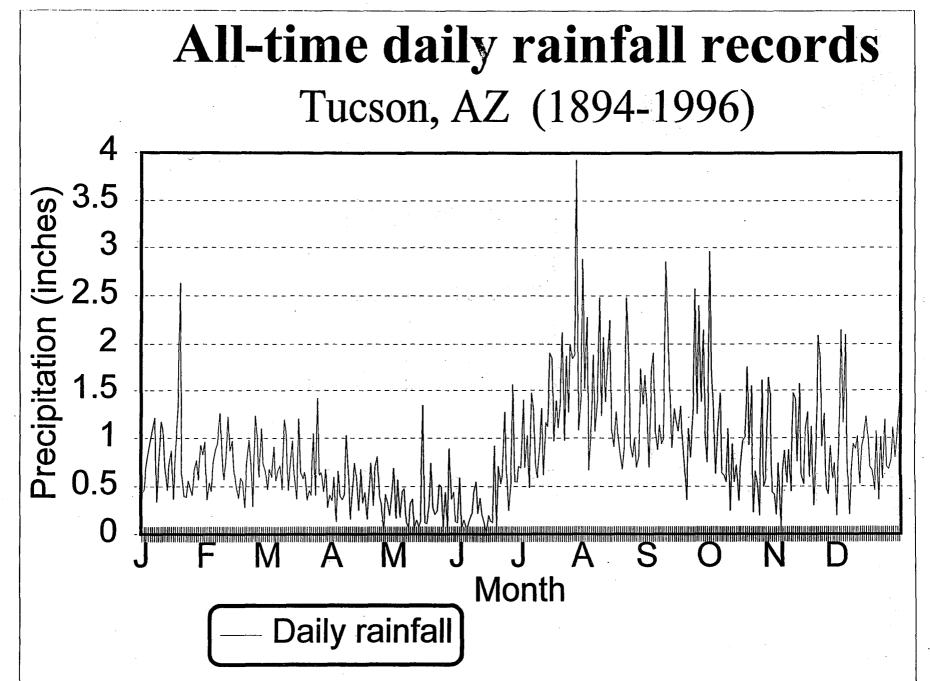
TOP	15	WETTEST	YEARS
1)		24.17	1905
2)		21.86	1983
3)		19.90	1914
4)		18.01	1919
5)		17.99	1964
6)		16.42	1992
7)		16.26	1931
8)		15.90	1955
9)		15.85	1941
10)		15.77	1935

• •				• •	0.01
8)	15.90	1955		8)	7.04
9)	15.85	1941		9)	7.05
	15.77	1935		10)	7.22
1.121					
NORMA	L YEARLY	PRECIPITATION	I (1961-1990)		
NORMA	L YEARLY	PRECIPITATION	1 (1951-1980)		
NORMA	L YEARLY	PRECIPITATION	I (1941-1970)		1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
NORMA	L YEARLY	PRECIPITATION	1 (1931-1960)		an an an Ar
NORMA	L YEARLY	PRECIPITATION	1 (1921-1950)		
AVERA	GE YEARLY	PRECIPITATIO	ON FOR ALL YEARS ON RECORD	D	k Storet
		n de la companya de la			14 - 14 A
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1990's	l,	
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1980's		
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1970's	1	 
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1960's		1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1950's		1. 1. j. v. v.
AVERA	GE YEARLY	Y PRECIPITATIO	N DURING THE 1940's		
AVERA	GE YEARLY	Y PRECIPITATIO	N DURING THE 1930's		
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1920's		4 - C.
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1910's		
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1900's		· · · ·
AVERA	GE YEARLY	PRECIPITATIO	N DURING THE 1890's		

## ALL-TIME TUCSON MONTHLY & DAILY PRECIPITATION RECORDS (1894-1996) 103 YEARS

TOP 1	5 WETTEST	MONTHS/YEAR	TOP 15 DRIEST MONTHS/YEAR
1)	7.93	AUG/1955	1) ZERO MAY/1996
2)	6.24	JUL/1921	(last of 82 occurrences)
3)	6.17	JUL/1981	
4)	5.85	DEC/1914	<pre># of montly occurrences</pre>
5)	5.61	AUG/1935	JAN - 5 JUL - 0
6)	5.53	JUL/1919	FEB - 3 AUG - 0
7)	5.45	JUL/1990	MAR - 5 . SEP - 1
8)	5.20	JUL/1958	APR - 10 OCT - 10
9)	5.11	SEP/1964	MAY - 19 NOV - 12
10)	5.10	JUL/1955	JUN - 11 DEC - 6
11)	5.02	DEC/1965	
12)	4.98	OCT/1983	
13)	4.93	AUG/1993	** NOTE **
14)	4.82	JUL/1964	<u>77 months</u> have only
15)	4.81	JAN/1993	recorded a <b>TRACE</b> also

ALL-TIME	ONE-DAY PREC	IPITATION R	ECORDS
1)	3.93	JUL. 29,	1958
2)	2.96	OCT. 1,	1983
3)	2.88	AUG. 1,	1935
4)	2.85	SEP. 10,	1964
5)	2.63	JAN. 19,	1916
6)	2.57	SEP. 24,	1943
7)	2.48	AUG. 22,	1961
	2.48	AUG. 9,	1923
9)	2.40	SEP. 26,	1962
10)	2.28	AUG. 3,	1955
11)	2.25	AUG. 14,	1940
12)	2.15	SEP. 28,	1995
	2.15	DEC. 3,	1906
14)	2.12	JUL. 22,	1955
	2.12	SEP. 11,	1921



#### ALL-TIME TUCSON SEASONAL PRECIPITATION RECORDS (1894-1996) 103 YEARS

TOP	10 WETTE	ST SEASON	S/YEAR
1)	13.06	SUMMER	1955
2)	10.97	FALL	1983
3)	9.78	WINTER	1992-93
4)	9.01	WINTER	1965-66
5)	8.86	WINTER	1914-15
6)	8.79	SUMMER	1990
7)	8.73	SUMMER	1964
8)	8.25	SUMMER	1921
9)	8.16	SUMMER	1984
10)	7.73	SUMMER	1907

TOP	10	DRIE	ST	SEASO	IS,	YEAR
1)		.01	S	PRING		1959
2)		.03	S	PRING		1933
3)		.06	S	PRING		1955
4)		.09	S	PRING		1895
5)		.12	S	PRING		1928
6)		.13	S	PRING		1897
7)		.18	F	ALL		1953
		.18	S	PRING		1910
9)		.25	S	PRING		1972
		.25	S	PRING		1962

#### ALL-TIME TUCSON YEARLY SNOWFALL RECORDS (1895-1996) 102 YEARS

TOP	10	SNOWIEST	YEARS
1)		8.3	1987
2)	•	6.8	1971
3)		6.4	1958
4)		6.2	1949
5)		6.0	1922
		6.0	1898
7)	1.1	5.8	1976
		5.8	1964
		5.8	1937
10)	)	5.6	1990

AVERAGE	YEARLY	SNOWFALL	FOR ALI	J YEA	RS ON RECORD	1.2
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1990's	0.8
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1980's	1.1
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1970's	1.5
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1960's	1.5
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1950's	1.5
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1940's	0.9
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1930's	0.8
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1920's	1.0
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1910's	1.0
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1900's	1.3
AVERAGE	YEARLY	SNOWFALL	DURING	THE	1890's	1.5

#### ALL-TIME TUCSON MONTHLY & DAILY SNOWFALL RECORDS (1894-1996) 103 YEARS

TOP 10	SNOWIEST	MONTHS/YEAR
1)	6.8	DEC/1971
2)	6.4	NOV/1958
3)	6.0	MAR/1922
	6.0	JAN/1898
5)	5.8	JAN/1937
6)	5.7	MAR/1964
7)	4.9	FEB/1903
8)	4.7	JAN/1987
9)	4.7	JAN/1949
10)	4.0	DEC/1916
	4.0	FEB/1908

•		

TOP	10 SNOWIEST	DATES/YEAR	
1)	6.8	12/ 8/1971	
2)	6.4	11/16/1958	
3)	6.0	3/12/1922	
4)	4.3	1/16/1987	
5)	4.0	3/ 2/1964	
	4.0	1/ 7/1937	
	4.0	12/25/1916	
	4.0	2/13/1908	
9)	3.8	3/ 3/1976	
10)	3.5	1/25/1949	

#### ALL-TIME TUCSON SEASONAL SNOWFALL RECORDS (JULY-JUNE) (1894-1996) 103 YEARS

TOP	10	BIGGEST	SNOWFALL SEASO	NS
1)		6.8	1971-	72
2)		6.4	1958-	59
3)		6.0	1921-2	22
		6.0	1897-	98
5)		5.8	1975-'	76
		5.8	1936-3	37
7)		5.7	1963-0	64
8)		5.0	1989-:	90
9)		4.9	1902-0	03
10)		4.8	1948-4	49

AVERAGE	SNOWFALL	FOR	2 7	ALL YEAR	RS ON RE	ICORI	)	1.2
AVERAGE	SNOWFALL	IN	А	SEASON	DURING	THE	1990's	0.2
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1980's	1.2
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1970's	1.6
AVERAGE	SNOWFALL	IN	Α	SEASON	DURING	THE	1960's	1.5
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1950's	1.7
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1940's	0.8
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1930's	0.8
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1920's	1.1
AVERAGE	SNOWFALL	IN	Α	SEASON	DURING	THE	1910's	1.1
AVERAGE	SNOWFALL	IN	Α	SEASON	DURING	THE	1900's	1.5
AVERAGE	SNOWFALL	IN	A	SEASON	DURING	THE	1890's	1.5

## ALL-TIME TUCSON WINTER SEASON TEMPERATURE RECORDS (1894-1996) 102 YEARS (DECEMBER-FEBRUARY)

TOP	1 <u>0 warmest</u>	WINTERS	TOP	10	COLDEST	WINTERS
1)	56.6	1980-81	1)		46.8	1912-13
2)	56.1	1985-86	2)		47.4	1932-33
3)	55.7	1979-80	3)		47.6	1898-99
4)	55.6	1956-57	4)		48.1	1948-49
5)	55.5	1994-95			48.1	1936-37
6)	55.4	1995-96	6)		48.2	1918-19
7)	55.2	1942-43	7)		48.3	1902-03
8)	55.1	1940-41	8)		48.4	1914-15
9)	54.6	1975-76	. 9)		48.5	1916-17
10)	54.5	1977-78	10)		48.7	1959-60
					48.7	1931-32

NORMAL TEMPERATURE FOR THE WINTER SEASON (1961-1990)52.6NORMAL TEMPERATURE FOR THE WINTER SEASON (1951-1980)52.3NORMAL TEMPERATURE FOR THE WINTER SEASON (1941-1970)52.1NORMAL TEMPERATURE FOR THE WINTER SEASON (1931-1960)51.5NORMAL TEMPERATURE FOR THE WINTER SEASON (1921-1950)51.6AVERAGE TEMPERATURE FOR ALL YEARS ON RECORD51.9

AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1990's	54.5
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1980's	<b>53.8</b> ,
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1970's	51.9
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1960's	51.5
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1950's	53.0
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1940's	52.2
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1930's	50.8
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1920's	51.5
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1910's	49.9
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1900's	51.0
AVERAGE	WINTER	SEASON	TEMPERATURE	DURING	THE	1890's	50.6

## ALL-TIME TUCSON WINTER SEASON PRECIPITATION RECORDS (1894-1996) 102 YEARS (DECEMBER-FEBRUARY)

TOP	10 WETTEST	WINTERS		TOP 10	DRIEST	WINTERS
1)	9.78	1992-93		1)	.31	1958-59
2)	9.01	1965-66	•	2)	.35	1963-64
3)	8.86	1914-15		3).	.36	1966-67
4)	7.33	1904-05		4)	.53	1901-02
5)	7.08	1906-07		5)	.62	1946-47
6)	6.93	1915-16		6)	.69	1895-96
7)	6.52	1940-41		7)	.73	1922-23
8)	6.44	1994-95		8)	.76	1924-25
9)	6.09	1984-85		9)	.82	1974-75
	6.09	1978-79		10)	.93	1973-74

NORMAL PRECIPITATION FOR THE WINTER SEASON (1961-1990)2.64NORMAL PRECIPITATION FOR THE WINTER SEASON (1951-1980)2.40NORNAL PRECIPITATION FOR THE WINTER SEASON (1941-1970)2.41NORMAL PRECIPITATION FOR THE WINTER SEASON (1931-1960)2.58NORMAL PRECIPITATION FOR THE WINTER SEASON (1921-1950)2.49AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD2.72AVERAGE WINTER SEASON PRECIPITATION DURING THE 1990'S4.42

AVERAGE WINTER SEASON PRECIPITATION DURING THE 1980'S 2.86 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1970'S 2.28 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1960's 2.97 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1950's 1.82 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1940'S 2.75 2.95 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1930'S AVERAGE WINTER SEASON PRECIPITATION DURING THE 1920'S 1.86 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1910'S 3.42 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1900'S 3.06 AVERAGE WINTER SEASON PRECIPITATION DURING THE 1890'S 1.92

## ALL-TIME TUCSON SPRING SEASON TEMPERATURE RECORDS (1895-1996) 102 YRS (MARCH-MAY)

TOP	10 WARMEST SPRIN	NGS		TOP 10	COLDEST	SPRINGS
1)	72.0 1	989 <sup>.</sup>		1)	59.0	1905
2)	70.4 19	934		2)	60.7	1917
3)	69.9 1	986		·	60.7	1915
4)	69.7 1	996		4)	61.0	1975
5)	69.5 1	943		5)	61.4	1973
6)	69.3 1	993		6)	61.7	1909
7)	69.0 1	994		7)	61.8	1933
8)	68.9 1	992			61.8	1920
	68.9 1	990			61.8	1912
10)	68.8 1	954		10)	62.4	1903
	NORMAL TEMPERA	ATURE FOR THE SI	PRING SEASON	(1961-1990)		66.2
	NORMAL TEMPERA	ATURE FOR THE SI	PRING SEASON	(1951-1980)		65.3
	NORMAL TEMPERA	ATURE FOR THE SI	PRING SEASON	(1941-1970)		65.6
	NORMAL TEMPERA	ATURE FOR THE SI	PRING SEASON	(1931-1960)		65.8
	NORMAL TEMPERA	ATURE FOR THE SI	PRING SEASON	(1921-1950)		65.3
	AVERAGE TEMPER	RATURE FOR ALL Y	YEARS ON RECO	DRD		65.4
	,					•
	AVERAGE SPRING	SEASON TEMPERA	ATURE DURING	THE 1990's		68.1
	AVERAGE SPRING	SEASON TEMPERA	ATURE DURING	THE 1980's		67.4
	AVERAGE SPRING	G SEASON TEMPERA	ATURE DURING	THE 1970's		64.7
	AVERAGE SPRING	G SEASON TEMPERA	ATURE DURING	THE 1960's		65.3
	AVERAGE SPRING	G SEASON TEMPERA	ATURE DURING	THE 1950's		66.1
	AVERAGE SPRING	SEASON TEMPERA	ATURE DURING	THE 1940's		65.9
	AVERAGE SPRING	G SEASON TEMPERA	ATURE DURING	THE 1930's		65.3
	AVERAGE SPRING	SEASON TEMPERA	ATURE DURING	THE 1920's		64.4 <sup>`</sup>
		SEASON TEMPERA				64.2
	AVERAGE SPRING	S SEASON TEMPERA	ATURE DURING	THE 1900's		63.3

64.8

AVERAGE SPRING SEASON TEMPERATURE DURING THE 1890'S

## ALL-TIME TUCSON SPRING SEASON PRECIPITATION RECORDS (1895-1996) 102 YEARS (MARCH-MAY)

TOP	10 WETTEST	SPRINGS			TOP	10 DRIEST	SPRINGS
l)	7.43	1905	• •		1)	.01	1959
2)	3.82	1930			2)	.03	1933
3)	3.79	1952			3)	.06	1955
4)	3.62	1926			4)	.09	1895
5)	3.42	1992			5)	.12	1928
6)	3.26	1941			6)	.13	1897
7)	2.80	1981			7)	.18	1910
8)	2.72	1912			8)	.25	1972
9)	2.55	1919				.25	1962
10)	2.41	1968			10)	.27	1950
					(1961-1990)		1.20
	NORMAL PR	RECIPITATION	FOR THE SP	RING SEASON	(1951-1980)		1.14
			7		(1941-1970)		1.13
	NORMAL PR	RECIPITATION	FOR THE SP	RING SEASON	(1931-1960)		.93
	NORMAL PR	RECIPITATION	FOR THE SP	RING SEASON	(1921-1950)		1.21
	AVERAGE F	PRECIPITATION	FOR ALL Y	EARS ON REC	ORD		1.25
				· ,			
					THE 1990's	,	1.34
	AVERAGE S	PRING SEASON	PRECIPITA	TION DURING	THE 1980's		1.48
	AVERAGE S	SPRING SEASON	PRECIPITA	TION DURING	THE 1970's		1.19
	AVERAGE S	PRING SEASON	PRECIPITA	TION DURING	THE 1960's		92
	AVERAGE S	SPRING SEASON	PRECIPITA	TION DURING	THE 1950's	*	1.21
	AVERAGE S	PRING SEASON	PRECIPITA	ITON DURING	THE 1940's		1.18
	AVERAGE S	PRING SEASON	PRECIPITA	TION DURING	THE 1930's		1.15
	AVERAGE S	PRING SEASON	PRECIPITA	TION DURING	THE 1920's		1.51
	AVERAGE S	PRING SEASON	PRECIPITA	ITON DURING	THE 1910's	•	1.25
	AVERAGE S	PRING SEASON	PRECIPITA	TION DURING	THE 1900's		1.61
			. <u></u>				

.66

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AVERAGE SPRING SEASON PRECIPITATION DURING THE 1890's

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## ALL-TIME TUCSON SUMMER SEASON TEMPERATURE RECORDS (1895-1996) 102 YEARS (JUNE-AUGUST)

TOP	10 WARMEST	SUMMERS					TC	<u>p 10</u>	COLDEST	SUMMERS	
1)	89.9	1994					1	)	81.3	1923	•
2)	87.4	1996					2	)	81.8	1921	
3)	87.3	1989							81.8	1913	
4)	86.8	1988							81.8	1908	
5)	86.5	1985					5	)	82.2	1965	
6)	86.4	1995					6	)	82.3	1912	
7)	86.2	1987							82.3	1907	
	86.2	1978				•	8	)	82.5	1916	
9)	86.1	1993					9	)	82.7	1906	
	86.1	1980							82.7	1905	
	NORMAL T	EMPERATURE	FOR THE	SUMMER	SEASON	(196	1-1990)			85.0	
	NORMAL T	EMPERATURE	FOR THE	SUMMER	SEASON	(195	1-1980)			84.4	
	NORMAL T	EMPERATURE	FOR THE	SUMMER	SEASON	(194	1-1970)			84.1	
	NORMAL T	EMPERATURE	FOR THE	SUMMER	SEASON	(193	1-1960)			84.0	
	NORMAL T	EMPERATURE	FOR THE	SUMMER	SEASON	(192	1-1950)			84.0	
	AVERAGE	TEMPERATURE	FOR ALL	YEARS	ON RECO	ORD				84.3	
	AVERAGE	SUMMER SEAS	ON TEMPE	TUTTE	DURTNG	тны	1990's			86.6	
		SUMMER SEAS					1980's			85.5	
		SUMMER SEAS								84.5	
		SUMMER SEAS					1960's			83.7	
		SUMMER SEAS								84.7	

AVERAGE	SUMMER	SEASON	TEMEPRATURE	DURING	THE	1950's	· • •	84.7
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1940's		84.7
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1930's	1	84.2
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1920's		83.7
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1910's	:	83.4
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1900's		83.2
AVERAGE	SUMMER	SEASON	TEMPERATURE	DURING	THE	1890's		84.0

## ALL-TIME TUCSON SUMMER SEASON PRECIPITATION RECORDS (1895-1996) 102 YEARS (JUNE-AUGUST)

TOP	10 WETTEST	SUMMERS				1	OP 10	DRIEST	SUMMERS
1)	13.06	1955					1)	.81	1926
2)	8.79	1990					2)	1.12	1994
3)	8.73	1964					3)	1.40	1924
4)	8.25	1921					4)	1.51	1976
5)	8.16	1984					5)	1.58	1942
6)	7.73	1907					6)	1.62	1977
7)	7.70	1914					7)	1.77	1900
8)	7.67	1919				•	8)	1.85	1939
9)	7.36	1898					9)	1.90	1905
10)	7.15	1945				1	.0)	1.92	1902
	NORMAL PRE	CIPITATION	FOR THE	SUMMER	SEASON	(1961-1990	)		4.76

HOLD THE L		TATION 1	OK THE	O OLWITTL	OTHER OTHE	(1)(				4.70
NORMAL I	PRECIPIT	ATION I	FOR THE	SUMMER	SEASON	(195	51-1980)		1. The second second second second second second second second second second second second second second second	4.77
NORMAL I	PRECIPIT	TATION I	FOR THE	SUMMER	SEASON	(194	11-1970)			4.92
NORMAL I	PRECIPIT	TATION É	FOR THE	SUMMER	SEASON	(193	31-1960)		14 - A. 	5.23
NORMAL I	PRECIPIT	TATION H	FOR THE	SUMMER	SEASON	(192	21-1950)			4.25
AVERAGE	PRECIPI	TATION	FOR ALI	L YEARS	ON RECO	ORD			n de la composition Composition	4.65
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1990's			4.43
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1980's			5.20
AVERAGE	SUMMER	SEASON	PRECIPI	TATIÓN	DURING	THE	1970's		5 a.	3.87
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1960's		an an an an an an an an an an an an an a	4.63
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1950's			5.99
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1940's			4.21
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1930's			4.39
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1920's	n n n n N n n n n		3.90
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1910's			5.04
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1900's			4.41
AVERAGE	SUMMER	SEASON	PRECIPI	TATION	DURING	THE	1890's	- 10 - 11 - 11 - 11 - 11 - 11 - 11 - 11		5.45

## ALL-TIME TUCSON FALL SEASON TEMPERATURE RECORDS (1895-1996) 102 YEARS (SEPTEMBER-NOVEMBER)

TOP	10 WARMES	<u>FALLS</u>						TOP	10	COLDEST	FALLS
1)	73.3	1954						1)		66.0	1972
2)	72.7	1995								66.0	1923
•	72.7	1950		•						66.0	1919
4)	72.4	1989						4)		66.4	1920
5)	72.3	1990						5)		66.5	1912
	72.3	1977						6)		66.6	1961
7)	72.1	1952								66.6	1908
8)	71.8	1953						8)	•	66.7	1971
9)	71.7	1988						9)		66.9	1916
	71.7	1967						10)	λ <sup>1</sup>	67.2	1970
										67.2	1946
										67.2	1935
	NORMAL I	EMPERATURE	FOR THE	FALL	SEASON	(196	51-1990)			7	70.0
	NORMAL T	EMPERATURE	FOR THE	FALL	SEASON	(195	51-1980)			e	59.8
	NORMAL I	EMPERATURE	FOR THE	FALL	SEASON	(194	1-1970)			· · · · · · · · · · · · · · · · · · ·	59.6
	NORMAL I	EMPERATURE	FOR THE	FALL	SEASON	(193	31-1960)			e	59.5
	NORMAL I	EMPERATURE	FOR THE	FALL	SEASON	(192	21-1950)			6	59.3
	AVERAGE	TEMPERATURE	FOR ALL	YEAF	as on re	ECORE	) .			e	59.4
					<b>*</b> .					••	
		FALL SEASON			-						71.2
		FALL SEASON									59.9
		FALL SEASON				_					59.0
		FALL SEASON				-					59.7
		FALL SEASON				_					71.1
		FALL SEASON									59.8
		FALL SEASON									59.0
	AVERAGE	FALL SEASON	TEMPERA	TURE	DURING	THE	1920's			6	58.4

AVERAGE FALL SEASON TEMPERATURE DURING THE 1920'S AVERAGE FALL SEASON TEMPERATURE DURING THE 1910'S AVERAGE FALL SEASON TEMPERATURE DURING THE 1900'S AVERAGE FALL SEASON TEMPERATURE DURING THE 1890'S

68.5

68.5

68.7

## ALL-TIME TUCSON FALL SEASON PRECIPITATION RECORDS (1895-1996) 102 YEARS (SEPTEMBER-NOVEMBER)

TOP	10 WETTE	ST FALLS	1	OP 10 I	RIEST	FALLS
1)	10.97	1983	1	) .	18	1953
2)	7.54	1905	2	).	36	1979
3)	6.90	1972	3	).	37	1955
4)	6.70	1964	4	).	47	1973
5)	6.02	1919	5	).	59	1938
6)	5.73	1895	6	).	64	1956
7)	5.61	1996	7	).	88	1928
8)	5.31	1970		•	88	1917
9)	5.27	1925	9	).	93	1904
10)	5.10	1978	10	) .	95	1898

3.40

2.83

2.59

2.26

2.71

2.86

NORMAL PRECIPITATION FOR THE FALL SEASON (1961-1990) NORMAL PRECIPITATION FOR THE FALL SEASON (1951-1980) NORMAL PRECIPITATION FOR THE FALL SEASON (1941-1970) NORMAL PRECIPITATION FOR THE FALL SEASON (1931-1960) NORMAL PRECIPITATION FOR THE FALL SEASON (1921-1950) AVERAGE PRECIPITATION FOR ALL YEARS ON RECORD

AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1990's		3.13	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1980's	1.4	3.70	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1970's		3.46	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1960's		2.99	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1950's		1.83	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1940's		2.84	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1930's	1 J	2.40	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1920's		2.95	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1910's		2.68	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1900's		2.54	
AVERAGE	FALL	SEASON	PRECIPITATION	DURING	THE	1890's		3.19	

# **APPENDIX C**

# THE "SUMMER MONSOON"

#### TUCSON'S FIFTH SEASON, THE SUMMER MONSOON

The summer thunderstorm season, otherwise known as the summer monsoon, is considered to be the fifth season in Tucson and brings needed rainfall as well as spectacular nighttime lightning displays to the Tucson metro area. This fifth season is the period between the hot, dry weather of May and June and cooler, moist days of mid-September and October. The Tucson metro area receives around 46% of its annual rainfall (or about six inches) during the monsoon season.

The word monsoon comes from the Arabic word *mausim* which means season or wind shift. In general terms it means a seasonal directional change of the wind flow across an area or region. Most people consider the monsoon of India to be the true monsoon where as much as 400 inches of rain may fall. In Arizona, it is the change from dry to wet that distinguish the monsoon, not the amount of rainfall.

So what factors lead to this wind shift? Arizona's climate is dominated by westerly winds for most of the year. During late spring and early summer, the subtropical high pressure ridge (the Bermuda high) expands west and north across North America pushing the westerlies north. This process shifts the middle to upper wind pattern from predominately westerly to an east through south direction. At the surface, intense daytime heating of the desert creates rising air and surface low pressure (a thermal low) across northern Baja and the southwestern deserts. The two features combine to transport moisture northward from the eastern tropical Pacific, western Mexico and the Gulf of California. However, some speculation remains about the source of this moisture.

This "source of moisture" topic has been debated for years with early theory indicating the primary moisture source being the Gulf of Mexico. It was hypothesized in the 1950s and 1960s that the Gulf of Mexico moisture was advected across Mexico into the southwestern United States via the easterly middle to high level winds (Bryson and Lowry 1955). In the 1970s, researchers identified the Gulf of California as a role player in advecting moisture (via gulf surges) north across the deserts of the southwest United States (Hales 1972, 1974). Since the early 1990s, the research project *SWAMP* (SW Arizona Monsoon Project) has provided considerable evidence showing the Gulf of California is the moisture source of Arizona's summer thunderstorms.

Monsoon thunderstorms are convective in nature and form as intense surface heating is combined with sufficient moisture. This doesn't mean that thunderstorms occur every day in Tucson. There are peaks and lulls during the summer monsoon which have been dubbed as *bursts* and *breaks* (Carleton 1986). Bursts can last as long as several days while breaks can last for several weeks. Certain synoptic patterns are associated with breaks and bursts (Carleton 1986, Maddox et al. 1995).

Typically in Tucson, thunderstorms will develop over the mountains surrounding the metro area early in the afternoon and move across the city later in the afternoon. The monsoon thunderstorms generally travel from the east-southeast to the west-northwest associated with the mean middle and upper wind flow pattern.

On occasions, a line of thunderstorms will move off the Mogollon Rim and move south-southwest across the Tucson metro area during the late night and/or the early morning hours. Summer monsoon thunderstorms can pack a wallop with very strong gusty winds, heavy downpours, hail, blowing dust and dangerous lightning. Flash flooding associated with intense thunderstorms is fairly common across the Tucson metro area as dry washes tend to fill up quickly.

The monsoon season usually ends abruptly when the middle to upper westerly wind pattern starts to move south, surface pressures rise over the southwest deserts, thus decreasing the northward advection of monsoon moisture from Mexico.

In Arizona the operational criteria for the onset of "monsoon" conditions is a prolonged (three consecutive days or more) period of dew points averaging 55 degrees F of higher. The monsoon in Tucson, on average, begins around July 5th and ends around September 15th.

## ALL-TIME TUCSON MONSOON TEMPERATURE RECORDS (1895-1996) 102 YEARS (JULY 1 THRU SEPTEMBER 15TH)

TOP :	10 WARMEST MONSOC	<u>)NS/YEAR</u>			TOP 1	O COLDEST MONSO	ONS/YEAR
1)	89.2	1994		•	l)	81.1	1912
2)	87.7	1989			2)	82.1	1921
3)	87.4	1995		• •	3)	82.3	1923
4)	86.5	1951	· ·		4)	82.4	1919
5)	86.4	1942			5)	82.6	1908
6)	86.2	1953			6)	82.8	1904
7)	86.0	1993			7)	82.9	1974
	86.0	1988				82.9	1961
	86.0	1977				82.9	1914
	86.0	1948				82.9	1913
	86.0	1944	1			82.9	1989
	86.0	1924					
		1 - A		•		•	

	84.6
AVERAGE TEMPERATURE (MONSOON SEASON) FOR ALL YEARS ON RECORD	
te e la strandar de la Recentra de la sector de la sector de la sector de la sector de la sector de la sector d	
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1990'S	86.2
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1980'S	85.3
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1970'S	84.5
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1960'S	84.0
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1950'S	84.9
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1940'S	85.4
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1930'S	84.6
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1920'S	83.9
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1910'S	83.5
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1900'S	83.9
AVERAGE TEMPERATURE (MONSOON SEASON) DURING THE 1890'S	84.5
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## ALL-TIME TUCSON MONSOON PRECIPITATION RECORDS (1895-1996) 102 YEARS (JULY 1ST THRU SEPTEMBER 15TH)

TOP	10 WETTEST MONS	<u>oons/year</u>	TOP	10 DRIEST MONS	SOONS/YEAR
1)	13.49	1964	1)	1.41	1924
2)	13.03	1955	2)	1.73	1976
3)	10.49	1921	3)	1.82	1900
4)	9.26	1966	4)	2.10	1962
5)	9.20	1990	5)	2.12	1902
6)	8.41	1907	6)	2.23	1926
7)	8.34	1919	7)	2.25	1994
8)	7.83	1897	8)	2.28	1973
9)	7.72	1981	9)	2.34	1989
10)	7.54	1970	10)	2.45	1918

	NORMAL N	MONSOON P	PRECIPITATION	(1961-199	HO)		5.46
	AVERAGE	MONSOON	PRECIPITATION	FOR ALL	YEAI	RS ON RECORD	5.15
	AVERAGE	MONSOON	PRECIPITATION	הזודקוות יו	'ਸਦ -	199010	5.20
•			PRECIPITATION				5.83
	AVERAGE	MONSOON	PRECIPITATION	DURING T	HE :	1970's	4.60
	AVERAGE	MONSOON	PRECIPITATION	DURING T	HE :	1960's	5.94
	AVERAGE	MONSOON	PRECIPITATION	DURING T	HE :	1950's	5.89
	AVERAGE	MONSOON	PRECIPITATION	DURING 1	HE :	1940's	 4.61
	AVERAGE	MONSOON	PRECIPITATION	DURING 1	HE :	1930's	4.57
	AVERAGE	MONSOON	PRECIPITATION	DURING 1	HE 1	1920's	4.44
	AVERAGE	MONSOON	PRECIPITATION	DURING T	THE 1	1910's	5.29
	AVERAGE	MONSOON	PRECIPITATION	DURING T	THE :	1900's	4.82
	AVERAGE	MONSOON	PRECIPITATION	DURING 1	THE 1	1890's	5.79

ALL-TIME	ONE-DAY MONSOON	RAINFALL RE	CORDS
1)	3.93	JUL. 29, 1	958
2)	2.88	AUG. 1, 1	935
3)	2.85	SEP. 10, 1	964
4)	2.48	AUG. 22, 1	961
	2.48	AUG. 9, 1	923
6)	2.28	AUG. 3, 1	955
7)	2.25	AUG. 14, 1	940
8)	2.12	JUL. 22, 1	955
	2.12	SEP. 11, 1	921
10	2.07	AUG. 11, 1	995

Monsoon start and end dates for Tucson, Arizona 1965-1996

YEAR	BEGAN	ENDED	Number of	Avg. monthly	<u>dewpoint (deg F)</u>
			<u>monsoon days</u>	July	August
1965	Jul 7	Sep 13	55	56	<b>; 57</b>
1966	Jun 28	Oct 7	78	58	63
1967	Jun 24	Sep 13	70	62	58
1968	Jul 4	Sep 3	45	56	58
1969	Jul 8	Sep 16	67	59	61
1970	Jul 18	Sep 13	53	56	60
· 1971	Jul 3	Sep 18	66	57	63
1972	Jul 13	Sep 18	49	55	57
1973	Jul 4	Aug 29	38	55	56
1974	Jul 1	Sep 26	51	57	54
1975	Jul 2	Sep 19	54	60	52
1976	Jun 29	Sep 26	53	58	53
1977	Jul 2	Oct 11	74	57	59
1978	Jul 8	Sep 15	51	53	56
1979	Jul 16	Aug 17	27	48	53
1980	Jul 12	Sep 10	46	56	5 <b>7</b>
1981	Jun 27	Sep 23	60	60	56
1982	Jul 6	Sep 25	63	54	60
1983	Jul 7	Oct 10	82	52	60
1984	Jun 25	Sep 27	80.	61	<b>61</b>
1985	Jul 14	Sep 3	39	54	56 T
1986	Jun 29	Sep 2	46	57	63
1987	Jul 25	Sep 6	33	45	5 <b>8</b>
1988	Jul 7	Sep 3	52	57	53
1989	Jul 9	Sep 4	43	53	57
1990	Jun 29	Sep 23	7,5	62	59
1991	Jul 4	Sep 11	48	52	58
1992	Jul 6	Sep 21	57	52	61
1993	Jun 30	Sep 13	54	53	65
1994	Jun 19	Sep 14	59	51	. 59
1995	Jul 11	Sep 18	48	47	61
1996	Jun 30	Sep 13	71	61	61
AVG.	Jul 5	Sep 15	56	55	58 <sup>.</sup>

## (1965-1996 monsoon statistics)

Earliest beginning of monsoon 1967, June 24
Latest beginning of monsoon 1987, July 25
Earliest end of monsoon
Latest end of monsoon
Most monsoon days
80 in 1984
Least monsoon days
33 in 1987
Most consecutive monsoon days 71 in 1984
(June 25th through September 3rd)
Highest average daily dewpoint in July 68 degrees F - July 30 1967
(last of several occurrences)
Highest average daily dewpoint in August 70 degrees F - August 21 1988
Most consecutive days with average daily dewpoints of 60 degrees F or greater
37 in 1966 (July 16th through August 21st)

# **APPENDIX D**

# MISCELLANEOUS DATA

#### RECORD CONSECUTIVE DAYS WITH HIGH TEMPERATURES OF ...:

#### 110 DEGREES\_OR\_BETTER:

1)	6 days	(6/24 - 6/29)	1994	113	115	113	111	115	116
2)	5 days	(6/24 - 6/28)	1990	110	113	117	112	113	

#### 105 DEGREES OR BETTER;

1) 24 days (6/23 - 7/16) 1994 2) 18 days (7/24 - 8/10) 1995

## 100 DEGREES OR BETTER:

1) 39 days (6/7 - 7/15) 1987 2) 32 days (6/13 - 7/14) 1942

#### 95 DEGREES OR BETTER:

1) 63 days (7/17 - 9/17) 1924 2) 59 days (6/1 - 7/29) 1988

## 90 DEGREES OR BETTER:

1) 126 days (6/ 1 - 10/ 4) 1924 2) 103 days (5/29 - 9/ 8) 1946

#### RECORD CONSECUTIVE DAYS WITH LOW TEMPERATURES OF ...:

## 70 DEGREES OR MORE:

1) 74 days (6/24 - 9/ 5) 1977 2) 64 days (6/29 - 8/31) 1996

## 40 DEGREES OR LESS:

52 days (11/ 8 - 12/29) 1929
 45 days 12/ 6/1974 - 1/19/1975

#### 32 DEGREES OR LESS:

## 25 DEGREES OR LESS:

1) 8 days (12/ 8 - 12/15) 1916 8 days (1/25 - 2/ 1) 1904

## 20 DEGREES OR LESS:

1) 5 days (1/4 - 1/8) 1971 18 19 17 20 20

HIGH TEMPERATURE OF 100 DEGREES OR BETTER:

Average first occurrence Earliest first occurrence Latest first occurrence	 April 19, 1989
Average last occurrence	 September 17th
Earliest last occurrence	 August 8, 1966 & August 8, 1961
Latest last occurrence	 October 16, 1991

Normal (1961-90) # of days in a year with highs of 100 degrees or better: 46

71 Avg. # of days during the 1990's with highs of 100 degrees or better: Avg. # of days during the 1980's with highs of 100 degrees or better: 59 Avg. # of days during the 1970's with highs of 100 degrees or better: 39 Avg. # of days during the 1960's with highs of 100 degrees or better: 34 Avg. # of days during the 1950's with highs of 100 degrees or better: 51 Avg. # of days during the 1940's with highs of 100 degrees or better: 52 Avg. # of days during the 1930's with highs of 100 degrees or better: 51 Avg. # of days during the 1920's with highs of 100 degrees or better: 50 Avg. # of days during the 1910's with highs of 100 degrees or better: 49 Avg. # of days during the 1900's with highs of 100 degrees or better: 48 Avg. # of days during the 1890's with highs of 100 degrees or better: 44

Most number of days in a year with highs of 100 degrees or better:

		days			1991
3)	78	days	in	1988	
2)	93	days	in	1989	
1)	99	days	in	1994	

Least number of days in a year with highs of 100 degrees or better: 1) 21 days in 1967

2) 23 days in 1923 and 1897

4) 26 days in 1975..1965 and 1964

#### MONTHLY OCCURRENCES OF 100 DEGREES OR BETTER:

1000 -

MONTH	NORMAL	MOST	LEAST
APRIL	0	4 (1992)	0 (many times)
MAY	2	12 (1988)	0 (many times)
JUNE	15	28 (1946)	3 (1965)
JULY	15	28 (1942/1920)	6 (1919)
AUGUST	9	30 (1994)	0 (1971*)
SEPTEMBER	5	16 (1953)	0 (many times)
OCTOBER	0	4 (1991/1917)	0 (many times)

#### LOW TEMPERATURE OF 32 DEGREES OR LOWER:

Average first freezing date of the season -- November 23rd Earliest first freezing date of the season -- October 16, 1899 Latest first freezing date of the season -- January 25, 1978

Average last freezing date of the season -- March 7th Earliest last freezing date of the season -- December 30, 1979 Latest last freezing date of the season -- May 3, 1899 \*\* note \*\* -- Definition of season (July 1st - June 30th).

Normal(1961-90) # of days in a year with lows of 32 degrees or lower: 18

Avg. # of days during the 1990's with lows of 32 degrees of lower: 11 Avg. # of days during the 1980's with lows of 32 degrees of lower: 11 Avg. # of days during the 1970's with lows of 32 degrees of lower: 18 Avg. # of days during the 1960's with lows of 32 degrees of lower: · 20 Avg. # of days during the 1950's with lows of 32 degrees of lower: 19 Avg. # of days during the 1940's with lows of 32 degrees of lower: 23 Avg. # of days during the 1930's with lows of 32 degrees of lower: 38 Avg. # of days during the 1920's with lows of 32 degrees of lower: 41 Avg. # of days during the 1910's with lows of 32 degrees of lower: 43 Avg. # of days during the 1900's with lows of 32 degrees of lower: 40 Avg. # of days during the 1890's with lows of 32 degrees of lower: 44

Most number of days in a year with lows of 32 degrees of lower:

1) 65 days in 1917 2) 63 days in 1922 3) 62 days in 1912

## Most number of days in a season (July-June) with lows of 32 degrees of lower:

74 days in 1916-17
 66 days in 1898-99
 63 days in 1911-12

#### Least number of days in year with lows of 32 degrees or lower:

1) 2 days in 1980

2) 3 days in 1995

3) 4 days in 1991..1981..1961 and 1957

## Least number of days in a season (July-June) with lows of 32 degrees or lower:

1) 4 days in 1980-81

2) 5 days in 1995-95..1977-78 and 1941-42

#### MONTHLY OCCURRENCES OF 32 DEGREES OR LOWER:

MONTH	NORMAL	MC	ST	LE	AST	
JANUARY	6	27	(1904)	0	(1986*	*)
FEBRUARY	4	21	(1903)	0	(many	times)
MARCH	1	14	(1917)	0		п
APRIL	0	2	(1936*)	0	н	11
MAY	0	1	(1899) ·	0	. 11	n .
OCTOBER	0	2	(1912*)	0	н	11
NOVEMBER	2	14	(1916)	0	11	n
DECEMBER	5	22	(1920/1911)	0	п	н

## FIRST AND LAST OCCURRENCE OF HIGH AND LOW TEMPERATURES

.

## HIGH TEMPERATURE

	F	IRST OCCURRENCE	8 an 1	LAST OCCURRENCE			
High Temp of	Earliest	Latest	Average	Earliest	Latest	Average	
80>	1/ 2/1918	5/ 6/1905	Feb. 13	10/16/1972	12/31/1917	Nov. 24	
85>	1/ 3/1896	5/15/1905	Mar. 17	10/10/1957	12/29/1921	Nov. 7	
90>	2/14/1957	5/16/1933	Apr. 12	9/22/1919	11/22/1924	Oct. 20	
95>	3/ 5/1910	6/ 6/1971	May 3	9/11/1974	10/26/1934	Oct. 4	
100>	4/19/1989	6/22/1905	May 27	8/ 8/1966	10/16/1991	Sep. 17	
105>	5/3/1947	8/ 3/1975	June 13	6/21/1897	9/22/1989	Aug. 6	
110>	5/ 29/1910	8/19/1915	June 28	6/ 8/1995	8/22/1930	July 4	

## LOW TEMPERATURE

	1	FIRST OCCURRENC	B	L	AST OCCURRENCE		
Low temp of	Earliest	Latest	Average	Earliest	Latest	Average	
<40	10/ 4/1908	11/30/1939	Nov. 3	3/ 5/1989	5/20/1902	Apr. 15	
<35	10/12/1924	1/24/1978	Nov. 15	1/23/1992	5/ 4/1899	Mar. 22	
<32	10/16/1899	1/25/1978	Nov. 23	12/30/1979	5/ 3/1899	Mar. 7	
<30	10/22/1908	2/ 2/1956	Dec. 3	11/24/1979	4/17/1924	Feb. 23	
<25	11/12/1898	3/15/1907	Dec. 26	11/17/1958	3/31/1897	Jan. 31	
<20	11/19/1921	3/ 4/1965	Jan. 2	12/ 7/1960	3/ 4/1965	Jan. 9	
<15	12/11/1916	1/22/1937	Jan. 3	12/11/1916	1/22/1937	Jan. 3	

.

## RECORD CONSECUTIVE DAYS OF PRECIPITATION...

10

0.	01"	or mo	pre:	Avg./day
l)	8	days	8/ 5-12/1972	0.25"
	8	days	12/13-20/1967	0.42"
	8	days	7/19-26/1955	0.36"
	8	days	7/10-17/1953	0.21"
	8	days	7/16-23/1946	0.25"

0.2	5 n	or more	2:				Avg./day
1)	6	days	9/28/1983	-	10/	3/1983	1.12"

<u>0.5</u>	0 "	or mo	re:	Avg./day
1)	3	days	10/ 1- 3/1983	1.63"
	-3	days	8/ 7- 9/1983	0.77"
	3	days	12/22-24/1914	.0.93"
	3	days	8/29-31/1914	0.87"

1.0	0"	or mo	ore:	Avg./day
1)	2	days	10/ 1- 2/1983	2.09"
	2	days	9/10-11/1982	1.04"
	2	days	10/18-19/1972	1.38"
	2	days	12/14-15/1967	1.12"
	2	days	9/11-12/1966	1.43"
	2	days	9/23-24/1929	1.60"
	2	days	7/21-22/1910	1,59"

## CONSECUTIVE DAYS OF NO PRECIPITATION:

1)	90 days	3/29/1909 -	6/26/1909
2)	83 days	10/18/1917 -	1/ 8/1918
3)	81 days	4/ 3/1974 -	6/22/1974
	81 days	1/ 1/1972 -	3/21/1972
5)	79 days	1/18/1984 -	4/ 5/1984

## CONSECUTIVE DAYS OF PRECIPITATION (TRACE OR LESS):

1)	114	days	9/ 8/1950	-	12/30/1950
2)	110	days	3/15/1996	-	7/ 2/1996
3)	109	days	1/29/1895	-	5/17/1895
4)	108	days	9/23/1917	-	1/ 8/1918
5)	100	days	3/30/1897	-	7/ 7/1897

## STATISTICAL LOOK AT MAJOR HOLIDAYS FOR TUCSON ARIZONA The data used spans the period from 1894 through 1996

## January 1st - NEW YEAR'S DAY

Average High -	62.4	Record High -	79	1981
Average Low -	35.9	Record Low -	22	1919/1911
Average Precip	.02"	Record Precip	.42"	1951
Average Snowfall -	.1"	Record Snowfall -	2.0"	1906

Since 1895 precipitation was recorded on 20 New Year's Days. Snow has also occurred four times on New Year's Day (1.2" in 1960..1.8" in 1950..0,8" in 1907 and 2.0" in 1906).

## EASTER

The holiday is observed on the first Sunday after the first full moon after the vernal equinox. The holiday occurs in either late March or during the month of April.

\*\*note\*\* Averages and records are seperated for March and April.

EASTER - overall records

Average High -	81.0	Record High -	96	4/20/1930
Average Low -	47.0	Record Low -	33	3/30/1975
				3/27/1910
Average Precip	.03"	Record Precip	.81"	4/23/1905

Since 1895 rainfall was recorded on only eight Easters.

EASTER - occuring in the month of March

Average	High -	77.2	Record	High -	90	3/30/1986
Average	Low -	46.3	Record	Low -	33	3/30/1975
						3/27/1910
Average	Precip	.03"	Record	Precip.	 .62"	3/26/1989

Since 1895 rainfall was recorded on only one of the twenty Easters that were observed in March.

EASTER - occuring in the month of April

Average High -	82.0	Record High -	96	4/20/1930
Average Low -	47.2	Record Low -	35	4/ 3/1904
Average Precip	.03"	Record Precip	.81"	4/23/1905

Since 1895 rainfall was recorded on seven Easters that were observed in April.

#### MEMORIAL DAY

The holiday occurs on the last Monday in the month of May.

Average High -	93.5	Record High -	110	5/30/1910
Average Low -	60.2	Record Low -	45	5/29/1905
Average Precip.	- > TRACE	Record Precip.	05"	5/29/1972

Since 1895 rainfall was recorded on only six Memorial Days.

## July 4th - THE FOURTH OF JULY

Average High -	100.9	Record High -	114	1989
Average Low -	72.0	Record Low -	59	1935
Average Precip.	03"	Record Precip.	70"	1921

Since 1895 rainfall was recorded 34 times on the Fourth of July.

#### LABOR DAY

The holiday occurs on the first Monday in the month of September.

Average High -	96.2	Record High -	105	9/ 3/1979
	•			9/ 3/1945
Average Low - 🕐	69.0	Record Low -	53	9/ 5/1921
Average Precip.	04"	Record Precip.	- 1.18"	9/ 4/1939

Since 1895 rainfall was recorded 30 times on Labor Day.

#### THANKSGIVING DAY

The holiday occurs on the fourth Thursday in the month of November.

Average	High - '	70.8	Record	High -	86	11/24/1904
Average	Low -	40.9	Record	Lów -	24	11/22/1979
Average	Precip	.02"	Record	Precip	.46"	11/23/1944

Since 1894 rainfall was recorded on ten Thanksgiving Days.

#### December 25th - CHRISTMAS DAY

Average	High -	64.7	Record	High -	82	1933
Average	Low -	36.0	Record	Low -	21	1903
Average	Precip	.03"	Record	Precip	.71"	1944
Average	Snowfall -	1.0"	Record	Snowfall -	4.0"	1916
			Record	Snow/Ground ·	- 2.0"	1987

Since 1894 precipitation was recorded on 21 Christmas Days. Snow has also occurred four times on Christmas Day (2.6" in 1987.. trace in 1974..4.0" in 1916 and 0.5" in 1911).

# **APPENDIX E**

# **CALENDAR DAY FREQUENCY**

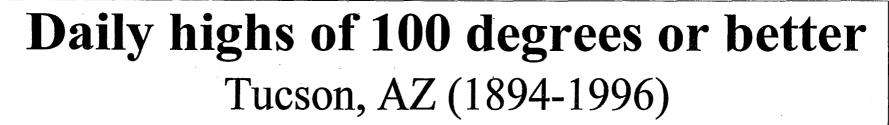
## AND

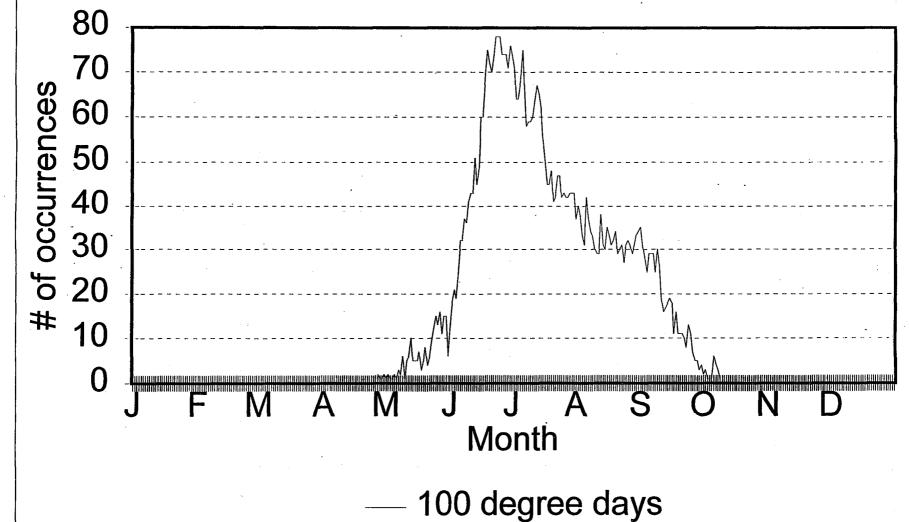
# **MONTHLY/ANNUAL TABLES**

## CALENDAR DAY OCCURRENCES OF MAXIMUM TEMPERATURE (=> 100) (1894-1996) 103 YEARS

DAY	JAN	FEB	MAR	APR	MAY	<u>JUN</u>	JUL	<u>AUG</u>	SEP	<u>0CT</u>	NOV	DEC
1	-	-	-	-	1	11	74	37	35	2	-	-
2	-	-	-	-	2	18	71	40	31	3	-	-
3	-	-	-		1	21	64	38	28	1	-	-
4	-	-	-	-	1	19	64	33	25	1	-	-
5	-	-	-		2	25	68.	31	29	l	-	-
6	-	-	-	-	1	32	75	42	29	6	-	-
7	-	-	-	-	· 3	32	66	37	29	4	-	-
8	-	-	-	-	2	37	58	34	25	3	· -	-
9	-	-	-	-	6	36	59	33	30	1	-	-
10	-	-	-	-	1	41	59	30	26	-	-	-
		•										`
11	-	-	-	-	5	43	60	29	19	-	-	-
12	-	-	-	-	6	43	64	29	16	-	-	-
13	-	-	-	-	10	51	67	38	17	-		_
14	-	-	-	-	5	45	65	31	18	-	-	-
15	-	-	-	-	5	49	62	30	19	· _ ·		-
16	-	-	-	. –	5	60	55	35	18	1	-	-
17	-	-	-	-	7	. 60	50	33	11	-	-	-
18	-	-	-	-	3	70	45	31	16	-	-	-
19	-	-	-	1	5	75	45	32	11	-	-	-
20	-	-	-	1	8	72	48	34	11		-	-
21	-	-	-	1	4	70	41	29	11	-	-	-
22	-	-	-	-	6	73	42	30	10	-	-	-
23	-	-	-	-	9	78	47	31	8	-	-	·
24	-	-	-	-	12	78	47	27	13		-	-
25	-	-	-	-	15	78	42	31	11	· _	-	-
26	-	-	-	-	13	74	43	32		-	-	-
27	-	-	-	2	16	74	42	31	5	. –	-	-
28		· –	-	1	11	74	42	29	5	-	-	-
29	· _	-	-	1	15	71	43,	31	3	-	-	-
30	-	-	-	2	15	76	43	33	4	-	÷	-
31	-	-	-	-	6	-	43	34	-	-		-

The above table shows, for example, a maximum temperature of 100 degrees or more occurred 64 times on July 4th during the period of record..103 years (1894-1996).

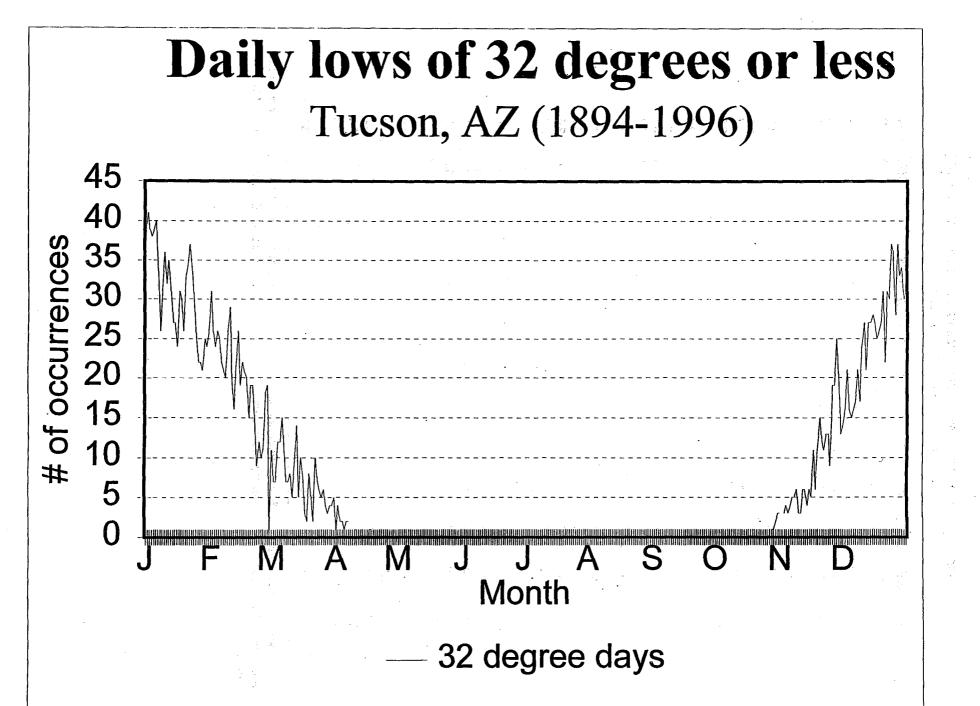




CALENDAR DAY OCCURRENCES OF MINIMUM TEMPERATURE (=< 32) 1894-1996 103 YEARS

<u>DAY</u>	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	<u>oct</u>	<u>NOV</u>	DEC
1	38	31	11	1	-	-	-	-	- '	-	- 3	14
2	41	26	7	4	-	-	-	-	-	-	-	16
3	39	24	7	2	1	-	-	-	-	-	3	21
4	38	26	12	2	-	-	-	-	-	-	4	16
5	39	25	12	l	· -	-	-		-	-	3	15
			•									
6	40	22	15	2	-	-	-	-	-	-	4	16
7	34	21	11	. 2	-	-	-	· –	-	-	5	17
8	26	20	7		÷	-	-	-	-	-	5	21
9	31	26	7	<b>-</b> ·	-	-	-	-	- :	· <b></b>	6	17
10	36	29	8	1	-	-	-	-	-	-	3	24
11	32	20	5	1	-	-	-	-	-	-	3	27
12	35	16	9	. –	-	-	-	-	-	-	6	21
13	31	22	14	-	-	-	-	• _	-	-	6	27
14	27	26	5	-	. –	-	-	-	-	-	4	27
15	27	19	10	-	-	-	-	-	-	-	6	28
16	24	22	8	-	-	-	-	-	-	1	5	27
17	31	21	3	1	-	-	-	-	-	-	11	25
18	30	20	· 2	1	-	-	·	-	-	-	6	26
19	26	15	. 8	-	-	-	-	-	-	-	11	27
20	33	19	5	-	-	-	-	-	· -	-	15	31
21	34	19	2	-	-	-		-	-	-	12	22
22	37	13	10	-	-	-	-	-	-	2	11	31
23	34	9	7	-		-	-	-	-	. 2	13	30
24	30	12	6	-	-	-	-	-	-	-	13	37
25	25	10	5	-	-	-	-	-			9	36
			·	•								2
26	22	11	6	-	-	. –	-	-	-	1	18	28
27	22	18	4	-	-	-	-	-	-	-	19	37
28	21	19	3	-	-	· –	-	-	-	1	25	33
29	25	l	4	-	-	-	-	-	-	1.	20	34
30	24	-	4	-	-		-	-	-	2	13	30
31	26	-	5	-	-	-	. –	-	-	3	-	31

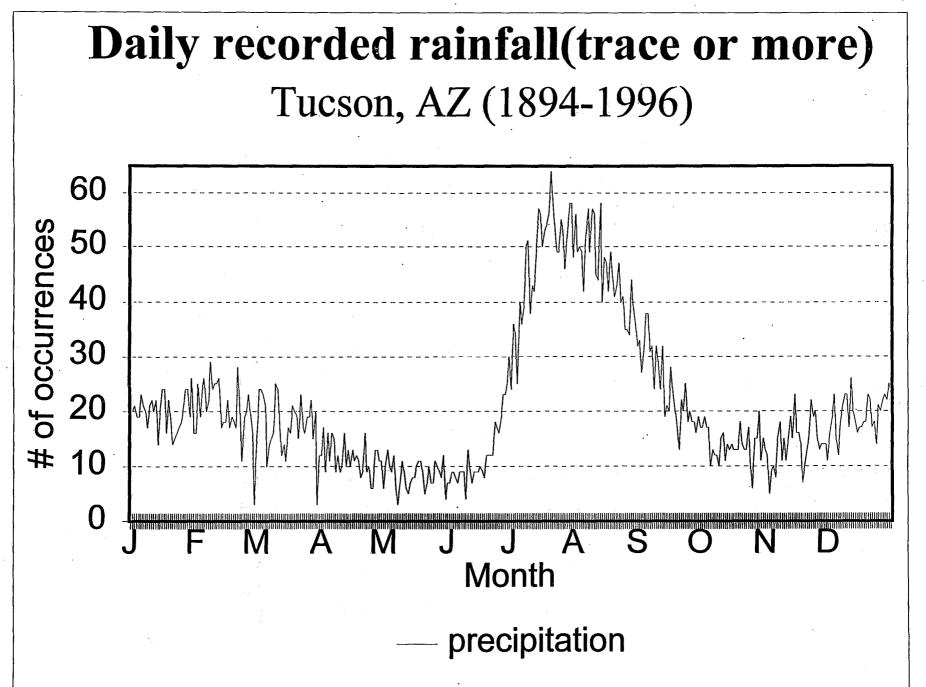
The above table shows, for example, a minimum temperature of 32 degrees or less occurred 38 times on January 1st during the period of record..103 years (1894-1996).



CALENDAR DAY OCCURRENCES OF PRECIPITATION (Trace or more) (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	<u>SEP</u>	OCT	<u>NOV</u>	DEC
1	20	16	15.	12	6	7	30	48	32	17	13	11
· 2	20	25	24	17	10	7	.24	56	33	17	12	16
3	21	19	24	9	13	9	36	49	27	19	5	19
4	19	24	23	16	10	9	34	50	31	17	9	23
5	19	26	21	11	9	8	25	49	38	17	. 10	15
6	23	20	10	16	12	7	40	42	38	10	8	12
7	21	22	14	15	6	9	36	52	31	13	15	18
8	20	29	15	9	3	9	-39	57	32	12	18	21
9	17	24	16	12	7	9	50	49	24	12	11	23
10	21	25	25	9	11	4	51	57	32	10	15	23
11	22	25	24	10	•	13	38	56	29	15	11	17
12	20		17	16	6	9	43	45	24	16	15	26
13	22	17	12	10	5	7	42	44	32	11	19	20
14	14	18	14	13	7	9	49	58	19	14	15	18
15	20	18	11	10	8	9	57	40	21	13	23	16
	•											
16	24	22	17	13	. 8	9	56	48	20	14	16	17
17	24	17	16	11	10	10	50	47	28		16	17
18	16	19	21	12	11	9	53	42	23	13	14	18
19	22	18	20	11	11	8	54	49	20	13	7	18
20	18	17	19	. 8	9	12	56	44	17	18	10	23
21	14	28	15	9	5	12	64	41	13	14	13	22
22	15	18	23	16	7	12	58	43	22	13	15	17
23	16	11	17	9	10	12	53	47	20	13	22	18
24	17	19	16	10	7	18	49	40	25	17	19	14
25	18	20	19	6	7	17	49	41	18	10	20	21
	_			-		_		_		_		
26	21	23	19	6	11	16	55	35	20	6	15	20
27	24	19	. 22	13	10	19	52	35	18	15	13	22
28	24	16	· 15	13	9	23	46	34	18	15	14	23
29	19	3		11	8		52	44	16	20	14	22
30	26	-	3	11	12	25	58	39	19	11	14	25
_			_								•	
31	16	. <del>-</del>	12	-	4	-	58	36	-	15	-	23

The above table shows, for example, that precipitation of a trace or more has occurred 34 times on July 4th during the period of record..103 years (1894-1996).



CALENDAR DAY OCCURRENCES OF MEASURABLE PRECIPITATION (=> .01") (1894-1996) 103 YEARS

DAY	JAN	<u>FEB</u>	MAR	APR		JUN	JUL	AUG	<u>Sep</u>	OCT	NOV	DEC	
1	14	12	13	7	4	5	18	33	21	10	7	5	
2	14	19	20	10	4	2	16	34	18	10	8	10	
3	15	14	16	7	5	3	28	32	23	14	4	15	
4	13	14	18	10	7	6	- 24	34	17	15	5	17	
5	12	18	16	8	6	4	13	28	24	12	9	12	
6	17	17	. 9	11	6	1	27	28	27	8	6	10	
7	14		10	10	2	4 5	19	35	16			11	
8	15	22	13	- 10 - 6	1	5	26	35 44	21	11 8		17	
			13								14		
9	13	18	-	8	4	3 · 3	26	34	13	8		16	
10	14	17	20	6	4	3	28	40	19	7	12	16	
11	20	19	15	7	5	6	26	34	18	9	9	14	、
12	13	17	15	9	4	4	26	26	16	12	13	19	
13	13	13	8	6	4	4	25	29	20	<b>. 7</b>	12	14	
14	11	13	8	7	5	2	30	37	9	9	12	11	
15	16	12	7	7	5	1	39	31	11	8	.18	14	
16	15	16	12	9	3	6		33	14	10	15	15	
17	16	14	10	7	4	5	37	36	19	9	10	14	
18	12	13	15	7	10	6	31	21	15	10	11	17	
19	15	15	12	8	5	3	40	30	14	9	7	15	
20	15	12	15	5	6	5	37	30	10	13	. 7	18	
21	13	17	12	4	4	6	44	27	7	12	6	16	
22	9	14	12	12	2	5		31		8	10	12	
23	9	5	13	5	6	7		34	15	9	15	17	
24	13	13	14	7	5	3	39	25	21	11	17	9	
25	13	16	13	3	5	9	. 32	25	15	9	16	17	
				-	_	-	• •						
26	15	12	16	2	6	8	39	19	12	4	13	17	
27	17	15	18	6	2	7	39	21	14	10	8	15	
28	19	11	12	10	5	12	22	17	14	8		17	
29	18	3			3	13	33		15	12		15	
3,0	17	-	3	6	5	18	39	21	13	11	12	20	
31	15	-	6	-	1		42	25	-	12		16	-

The above table shows, for example, that precipitation of 0.01" or more has occurred 24 times on July 4th during the period of record..103 years (1894-1996).

## CALENDAR DAY OCCURRENCES OF PRECIPITATION (=> .10") (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	SEP	<u>oct</u>	NOV	DEC
1	8	8	6	4	4	1	8	21	15	4	3	2
2	6	6	10	7	1	2	7	20	10	6	3	7
3	12	9	10	1	1	-	13	18	14	7	3	10
4	10	10	10	7	2	2	14	20	9	8	-	10
5	. 7	13	10	3	3	. –	6	17	16	7	4	11
6	9	9	6	6	4	_	15	17	12	5	5	6
7	7	13	4	3	1	1	10	19	-2-	9	4	7
8	8	12	1	3	-	3	12	21	13	5	10	11
9	8	10	9	5	3	2	15	19	8	5	4	11
10	9	12	12	3	2	1	14		10	3	9	8
TO	9	12		2	4	-	Tđ	41	10	3	9	0
11	11	8	9	4	-	2	15	22	11	4	5	10
12	7	10	8	7	1	2	16	15	10	6	10	10
13	10	10	5	3	-	2	14	14	10	3	4	10
14	5	ว้	5	2	1	1	14	21	6	4	8	7
15	8	, 7	5	4	4	-	17	20	7	2	12	7
16	8	11	4	3	1	3	18	15	6	6	12	10
17	8	7	8	3	3	1	23	20	7	4	6	9
18	4	7	5	2	3	1	15	12		5	8	13
19	9	4	7	6	3	1	22	17	6	6	3	9
20	10	6	7	1	3	-		16	5	6	2	14
21	6	9	5	2	2	2	22	14	5	5	5	9
22	4	4	7	4	2	3	28	20	7	5	6	
23	4	3	7	4	3	2	18	20	11	3	11	10
24	8	6			2	2	14	15	12	6	12	5
25	7	6	6	1	_	6	19	7	11	3	11	12
		-	,	_								
26	7	6	11	-	4	. 3	19	12	7	2	6	9
27	11	7	8	4	-	3	21	10	6	5	6	8
28	11	7	4	4	1	7	14	9	9	7	4	9
29	14	3	6	1	2	6	24	19	10	7	9	9
30	8	-	1	3	3	11	16	9	7	9	6	5
31	6	-	5	-	1	-	20	16	-	5	-	9

The above table shows, for example, precipitation of 0.10" or more has occurred 14 times on July 4th during the period of record..103 years (1894-1996).

CALENDAR DAY OCCURRENCES OF PRECIPITATION (=> .25") (1894-1996) 103 YEARS

<u>DAY</u>	<u>JAN</u>	<u>Feb</u>	MAR	APR	MAY	JUN	<u>JUL</u>	AUG	<u>SEP</u>	<u>oct</u>	<u>NOV</u>	DEC
l	3	3	4	1.	2	-	6	14	7	4	3	-
2	3 :	5	6	4	-	2	2	13	3	4	-	4
3	7	4	7	-	1	-	6	12	10	7	2	. 7
4	6	7	5	2		-	2	12	5	8	-	5
5	6	3	3	1	1	-	4	9	7	4	3	. 8
6	6	6	2	1	2	· _	5	7	5	3	3	.2
7	3	8	1	1	-	-	6	10	5	5	2	· _
8	2	6	1	3	· _	_	8	11	9	4	3	4
9	4	3	4	2	2	1	9	14	3	3	2	6
10	4	7	7	_	2	l	7	10	7	2	3	
11	, 6	5	2	2	-	-	7	12	6	1	4	4
12	5	3	4	6	-	1	8	10	5	4	5	5
13	5	4	2	. 1	-	-	6	7	5	2	2	5
14	2	4	3	1	-	-	8	12	4	3	3	6
15	3	6	1	3	2	-	10	14	6	1	6	2
				-					-	_	-	
16	1	4	3	. 2	-	-	12	12	2	3	7	5
17	4	4	3	2	-	-	. 14	8	3	2	4	- 5
18	3	3	4	· -	2	-	· 10	7	4	5	4	5
19	2	1	5	2	1	1	14	9	3	5 -	2	3
20	8	3	1	1	1	-	11	11	3	4	1	б
21	3	3	4	1	-	2	15	8	1	. 3	4	5
22	2	2	2	2	l	2	15	11	5	-	4	4
23	2	2	4	3	. 2	2	9	7	6	2	9	5
24	3	5	3	1	1	1	· 11	12	6	2	7	2
25	2	2	2	1	-	2	10	3	7	-	6	6
•												
26	3	3	4	-	4	1	8	5	6	1	3	6
27	5	3	3	2	-	1	9	7	3	3	4	3
28	6	4	2	1	1	4	9	3	7	5	2	6
29	7	2	5	-	2	4	11	6	8	5	6	4
30	2		1	1	2	4	8	5	4	5	2	2
31	2	· -	2	-	-	-	7	9	-	2	-	7

The above table shows, for example, precipitation of 0.25" or more has occurred

2 times on July 4th during the period of record..103 years (1894-1996).

## CALENDAR DAY OCCURRENCES OF PRECIPITATION (=> .50") (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	SEP	<u>oct</u>	NOV	DEC	
1	-	-	-	-	1	_	5	4	3	3	-	-	
2	-	1	1	1	-	1	1	9	l	4	-	2	
3	4	-	2	-	1	-	4	9	5	3	2	4	
4	1	4	2	2	-	-	1	5	4	2	-	2	
5	4	1	1	_	-	-	3	3	3	2	2	1	
6	2	3	2	· _	-	-	-	5	2	2	2	2	
7	2	4	l	-	-	-	2	3	3	2	1		
8	-	3.	-	1	-	-	3	4	6	1	2	2	
9	2	1	4	2	-	-	4	9	2	1	-	4	
10	3	2	4	-	-	1	2	4	4	2	2	3	
		••											
11	2	1	-	-	-	-	3	7	4	-	2	2	
12	2	2	2	1	-	-	7	6	3	3	1	2	
13	-	2	1	1	-	-	1	6	1	1	1	4	
14	2	1	1	-	-	-	1	3	2	1	2	5	
15	2	-	· _	3	1	-	4	7	3	-	1	2	
16	-	-	3	-	-	-	5	5	1	2	4	2	
17	1	1	1	-	-	-	5	2	1	1	3	1	
18	1	1	1	-	-	. –	4	2	- 3	1	3	1	
19	1	-	2	-	1	1	6	3	1	1	2		
20	2	1	-	1	-	-	5	2	-	1	-	2	
21	-	1	-	-	-	1	8	3	- 1	1	3	-	
22	-	1	-	1	-	1	8	8	2	-	3	3	
23	1	-	1	2	1	1		3	2	2	2	1	
24	-	3	-	-	1	1	8	7	4	1	3	1	
25	-	1	1	-	-	2	<b>7</b> ·	1	4	-	2	1	
26	1	l	2	-	-	-	4	3	5	1	-	2	
27	2	1	1	-	-	1	4	5	3	1	-	2	
28	1	3	-	-	1	1	3	1	2	1	1	5	
29	. 4	1	1	-	-	1	6	2	5	2	1	1	
30	2	-	-	-	-	1	4	4	2	3	1.	2	
										•			
31	1	-	-	-		-	4	4	-	-	-	1	
													-

The above table shows, for example, precipitation of 0.50" or more has occurred 1 time on July 4th during the period of record..103 years (1894-1996).

## CALENDAR DAY OCCURRENCES OF PRECIPITATION (=> 1.00") (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	<u> JUF</u>	<u>AUG</u>	<u>SEP</u>	<u>0CT</u>	<u>NOV</u>	DEC
1	-	-	-	-	-	· –	-	2	1	1	-	-
' 2	-	-	-	-	-	-	. –	4	-	2	-	-
3	-	-	-	-	-	-	2	4	2	· 1	-	1
4	-	-	-	-	-	-	-	-	2	-	-,	1
5	1	-	-	-	-	-	1	1	1	1	· -	1
_	_							_		_		
6	1	-	-	-	-	-	. –	2	-	1	-	-
7	1	1	-	-		-	1	1	2	-	-	-
8	-	-	-	1	-	-	2	2	-	· <del>-</del>	-	-
9	-	-	1	-	-	-	-	3	-	-	-	-
10	1	-	1	-	-	-	-	1	2	1	1	-
11	1	1	-				_	2	3	_	1	1
12		1	-	-	-	-	- 4	2	2	. –		1
	-	-	-	-	-	-					-	-
13	-	-	-	-	-	. –	-	2	-	-	1	-
14		-	-	-	-	· · <b>_</b>	1	1	1	-	-	1
15	-	-	-	-	1	-	1	1	1	-	-	1
			_				-					
16	-	-	1	-	-	-	2	-	1	-	1	-
17	-		-	-	-	-	l	l	1	-	1	-
18	1	-	-	. –	-	-	-	1	. 1	1	-	-
19	1	-	- '	. –	-	-	3	-	-	1	2	-
20	-	-	-	-	-	-	2	-	-	-	-	1
21							4		1	1	_	
21	-	-	-	-	-	-	4 3	-			- 1	-
22	-	-	-	-	-	-	د -	4	-	-	1	1
	-	-	Ŧ	-	-	-	- 3	2	2 2	-	+	-
24		1	-	-	-	° <b>1</b>		-		-	-	1
25	-	Ŧ	. 1	-	-	-	1	-	1	-	2	-
26	-	-	-	-	-	-	2	÷	3	1	-	
27	-	1	· _	-	-	· _	2	-	2	-	-	-
28	-	_	• -	. –	_	· 1	2	-	· · 1	-	-	1
29	-	-	· _	· _	-	-	1	1	1	1	_	-
30	-	-	-	-	-	-	1	3	-	1	· _	1
31	-	-	-	-	-	-	2	1	-	-		1

The above table shows, for example, precipitation of 1.00" or more has not occurred yet on July 4th during the period of record..103 years (1894-1996).

## CALENDAR DAY OCCURRENCES OF SNOWFALL (Trace or more) (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	<u>oct</u>	<u>NOV</u>	DEC
1	4		_	-			-			ator 1		1
2	3	4	1	1	-	_	-	_	· _	· _	_	<u>-</u>
3	1	2	2	_	_	-	_	-	_	-	_	
4	_	1	3	_	-	_	_	_	_	_	_	2
5	_	1	2			-			-	_	_	-
. 5	-	-	2	-	-	-	-	-	-		-	-
6	-	3	-	-	-	-	-	-	-	-	-	2
7	1	2	-	_	-	-	-	-	-	-	-	2
8	l	1	· 1	_	-	-	_	-	-	-	_	l
9	_	3	2	· _	-	_	-	-	-	-	-	-
10	-	2	1	-		_	-	-	_	_	-	1
10		2	-									
11	2	-	1	÷		-	-	-	-	-	-	2
12	2	2	1	1	_	-	-	-	-	-	-	1
13	2	l	_		-	-	-		-	_	-	4
14	-	2	1	-		-	-	-	-	_	-	3
15	1	2	_	-	-	-		-	-	-	1	-
	-	-									-	
16	3	3	1	1	-	-	-	-	-	-	1	-
17	1	1	-	-	-	_	-	-	-	-	-	1
18	2	-		-	-	-	-	-	-	-	-	2
19	1	2	-	-	-	-	-	-	-	-	1	-
20	3	2		-	-		-	-	-	-	-	3
21	1	2	-	-	-	-	-	-	· –	Ĩ	-	1
22	l	1	-	-	-	-	-	-	-	-	-	2
23	-	-		-	-	-	-	-	-	. <del>-</del>	-	l
24	1	1	2	·	-	-0	-	-	-	-	-	2
25	1	l	1	-	-	-	-	-	. –	_	-	4
26	1	· ••	-	-	-	-	-	-	-	-	-	2
27	-	2		-	-,	-	-	-		-	-	, 1
28	-	-	1	-	-	-	-	-	-	-	-	-
29	1	-	-	-	-	-	-		·	-	1	-
30	-		-	-	-	-	-	-	-	l	_ `	2
31	-	-	-	-	-	-	-	-	-	-	-	7
			<b>.</b> .								· •	

The above table shows, for example, snowfall of a Trace or more has occurred seven times on December 31st during the period of record (1894-1996).

## CALENDAR DAY OCCURRENCES OF SNOWFALL (=> 1") (1894-1996) 103 YEARS

DAY	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	<u> JUL</u>	AUG	SEP	<u> 0CT</u>	NOV	DEC
1.	- 3	-	-	-	÷	· <del>-</del>	-	-	-	-	-	-
2	1	· 1	1	1	-	_	-	-	-	-	-	-
3	. 🗕	1	2	-	-	-	. –	_	-	· _	-	-
4	• 🗕	ľ	-	-	-	· _	-	_	-	-	- `	-
5	-	-	-	-	-	-	-	_	-	-	. –	_
6	· _	2	-	-	-	· _	-	-	-	-	-	-
7	1.	. 1	-	-	· -	-	-	· _	-	-	-	-
8	. • <b>_</b>	1	-	· _	-	-	-	-	-	-	_	1
9	-	1	1	-	-	· _		-	-	· _	-	-
10	-	1	_	-	_		-	-	-	-	-	-
11	2		-	-		-	-	_	-	-	-	1
12	1	1	1	-	_	-	-	· _	-	-	-	-
13	1	1	_	-		_	-	· _	_	-	-	-
14	-	: _		<b>_</b> '	_ ·	-	· -	_	-	-	-	-
15	-	1	-	-	-	-	-	-	-	-	-	-
			•		· .							
16	· 1	1	-	1	-	-	-	· _	-	-	1	-
17	-	1	· _	-	-	-	-	-	-	-	-	1
18	- '	-	-	-	· _		-	-	-	· _	-	1
19	1	· _	· _	-	-	-	· _	-	-	-		-
20	_	-	-	_	-	-	-	-	-	-	_	<sup>`</sup> 1
21	-	.=	· _	-	<b>-</b> '	-	-	-	-	-	-	<b></b>
22	-	-	-	-		-	-	-	-	-	-	1
23	-	-	-	-	. –	-	-	-	-	-	_	-
24	1	· _	1	-	-	-	-		. –	-	-	2
25	1	-	-	-	. –		-	· <del>-</del>	-	-	-	2
26	-	-	-	-	-	-	-	<b>,</b> –	-	-	-	-
27	-	1	-	-	-	-	-	-	-	-	-	-
28	. –	· -		-	-	-	-	-		-	-	-
29	l	-	-	-	-	-	· _	-	-	-	-	-
30	-	-	-	-	-	-	-	-	-	-	-	<del></del> .
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31	-	-	-	-	-	-	· -	-	-	-	-	1
							÷					

The above table shows, for example, snowfall of an inch or more has occurred three times on January 1st during the period of record (1894-1996).

## MONTHLY AND ANNUAL AVERAGE TEMPERATURES 1894-1996 103 YEARS

YEAR	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	TUL	AUG	<u>Sep</u>	OCT	NOV	DEC	ANNUAL
1894					·			·		71.3	64.1	54.8	
1895	52.0	E2 0	59.0		ס גרי	67 7	96.5	07 0	00 0	<i>c</i>	55.1	48.6	
1895	52.0	53.9	59.0 61.5	63.9	74.8 73.6	81.1	86.2 85.0	82.8 84.1	80.8 80.7	68.9 68.8	55.1 58.1	40.0 53.7	
1898	49.6	50.7	54.1	65.2	75.7	80.1	05.0	04.1	80.2	67.6	60.5	48.9	
1898	46.2	57.2	55.8	67.4	/5./	80.I	86.3	84.8	79.3	68.5	60.5 54.5	40.9	
1898	46.6	49.3	55.8	65.7	68.0	80.9	86.6	83.6	79.3 82.4	67.1	54.5 58.0	47.5 51.5	66.4
1090	40.0	19.5	20.0	05.7	00.0	00.5	00.0	05.0	02.7	07.1	50.0	51.5	00.4
1900	52.9	52.1	62.7	59.1	74.6	82.6	88.3	82.7	76.6	68.5	60.2	51.6	67.6
1901	51.0	52.0	55.6	61.7	72.2	79.4	87.3	84.8	79.6	69.4	61.4	50.4	67.1
1902	50.4	52.6	54.1	66.3	71.5	83.1	84.4	84.1	79.8	71.0	55.0	50.3	66.9
1903	48.9	45.3	55.1	62.2	70.0	80.4	85.8	85.8	78.4	67.4	60.1	51.8	65.9
1904	45.4	56.2	60.2	63.9	72.8	81.8	84.9	82.4	77.0	68.4	58.7	47.8	66.6
1905	48.7	50.6	54.0	58.4	<u>64.6</u>	77.8	84.2	86.1	80.4	69.8	57.6	47.2	<u>65.0</u>
1906	50.6	55.2	58.4	62.0	69.7	80.0	86.2	81.8	79.1	68.8	57.8	53.5	66.9
1907	51.4	56.0	58.4	65.2	70.8	78.0	85.8	83.0	80.0	69.6	58.1	51.4	67.3
1908	51.2	51.4	58.8	64.2	68.2	78.2	83.8	82.4	78.2	<u>63.8</u>	58.0	51.0	65.8
1909	53.8	50.4	53.0	63.4	68.6	81.4	85.0	82.8	77.8	67.7	57.3	47.4	65.7
				•									
1910	50.0	50.1	63.1	66.8	75.3	82.8	85.8	85.3	82.0	70.4	58.0	52.6	68.5
1911	54.6	51.8	62.7	64.8	72.7	81.4	83.6	85.0	81.2	67.0	51.0	<u>45.0</u>	66.7
1912	50.6	51.7	55.9	58.7	70.7	83.0	<u>81.6</u>	82.6	76.8	65.6	57.2	45.8	<u>65,0</u>
1913	44.8	50.2	53.9	64.0	71.1	78.2	83.5	83.5	78.0	66.9	59.5	48.8	65.2
1914	53.8	52.3	60.7	65.8	73.6	82.2	83.1	84.2	80.0	66.8	60.4	47.5	67.5
1915	46.8	51.0	53.8	61.2	67.0	81.2	87.2	86.9	78.4	70.7	57.2	49.4	65.9
1916	50.8	57.9	61.6	64.0	70.4	80.2	84.4	82.8	79.4	66.2	55.4	47.0	66.7
1917	48.6	50.1	53.6	61.8	66.6	82.2	85.6	83.1	80.1	70.8	60.2	53.0	66.3
1918	47.8	54.6	60.9	64.2	69.6	85.4	86.2	81.8	81.4	70.0	56.2	49.0	67.3
1919	47.6	48.0	54.9	65.5	72.0	82.4	83.1	83.2	76.9	64.0	57.5	52.8	65.7
			<b>5</b> 4 0			<b>.</b>							~~ ~
1920	51.8	55.2	54.8	58.5	71.8	79.8	87.4	82.6	77.2	65.0	56.8	47.3	65.7
1921	52.0	54.0	60.7	61.6	69.0	79.5	84.1	81.8	78.6	70.6	58.3	54.4	67.0
1922	48.0	52.6	55.4	60.6	73.4	83.0	85.6	84.2	80.6	69.4	53.0	53.6	66.6
1923	54.0	53.8	56.0	64.2	74.3	78.4	84.5	<u>80.8</u>	76.7	65.4	56.0	49.8	66.2
1924	48.8	54.3	52.4	61.6	73.8	84.4	86.6	86.1	81.8	67.4	59.5	50.4	67.3
1925	47.6	56.4	60.5	65.4	74.9	80.3	88.2	83.6	78.2	68.1	56.2	50.3	67.5
1926	46.2	55.3	59.6	64.7	72.0	82.5	85.5	86.0	80.9	71.2	59.0	50.6	67.8
1927	54.8	56.4	57.0	54.8	73.2		87.0	84.0	78.9	69.1	61.7	48.3	68.0
1928	50.8	52.0	60.3	62.9	75.4	82.0	87.2	83.5	81.0	70.6		49.8	67.8
1929	48.0	49.8	55.8	62.3	73.2	81.6	86.2	84.2	79.7	69.7	54.0	52.8	66.4
4747	40.0	40.0	22.0	02.5	12.2	01.0	00.2	04.2	12.1	09.7	54.0	22.0	00.4
1930	49.8	55.8	56.6	67.9	70.0	82.7	85.9	85.3	78.2	67.3	57.8	50.3	67.3
1931	49.8	53.6	57.8	67.2	73.4	81.5	88.6	82.2	80.5	68.8	54.3	48.4	67.2
1932	43.3	54.6	57.4	63.5	71.7	79.6	85.5	85.2	80.6	67.8	60.0	47.2	66.4
1933	47.7	47.5	57.8	60.6	67.1	82.4	87.4	85.8	81.6	72.0	59.4	52.2	66.8
1934	49.4	56.4	63.9	69.0	78.4	79.8	87.8	83.6	79.6	70.6	56.7	52.3	69.0
1935		55.0	55.0	64.7	67.6	82.0	85.7	82.3	78.3	68.8	54.6	51.5	66.5
1936	48.8	53.2	59.0	66.9	75.3	83.8	86.8	83.8	77.6	68.6	59.9		67.9
1937	<u>41.2</u>	52.8	56.0	62.8	73.8	81.2	86.3	86.0	81.8	71.0	59.4	54.3	.67.2
1938	52.4	54.2		65.5	71.3	81.8	84.4	83.3	81.2	70.0	54.8	53.0	67.5
1939	50.4	45.5	59.2	67.2	74.0	82.6	87.2	84.6	79.4	67.5	62.2	56.2	68.0

Record monthly and annual temperatures are shown in **bold** (warmest) & <u>underlined</u> (coldest).

## MONTHLY AND ANNUAL AVERAGE TEMPERATURES 1894-1996 103 YEARS

IABA      DEAL <thdeal< th="">      DEAL      DEAL      <thd< th=""><th></th><th></th><th></th><th>-</th><th>141.5</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th><b>57</b>4</th><th></th></thd<></thdeal<>				-	141.5									<b>57</b> 4	
1941    52.6    65.5    56.9    87.6    98.7    88.2    81.6    69.4    63.2    52.5    63.6      1943    52.8    58.7    61.8    70.4    76.3    83.2    88.0    83.9    82.0    70.8    61.6    52.5    70.2      1944    50.4    50.7    56.4    63.0    73.4    80.6    87.4    86.4    79.6    72.8    55.9    52.3    67.4      1945    50.7    53.6    54.6    63.4    73.6    86.5    84.2    80.9    71.6    58.5    50.4    67.2      1946    48.0    52.0    50.4    67.4    73.4    88.0    80.0    80.0    78.0    75.8    50.4    65.1    66.1      1944    43.0    50.2    57.6    67.4    73.4    83.0    85.0    84.2    82.2    66.4    64.3    50.8    65.1    66.3    50.4    65.1    66.3    50.4    65.1    66.3    50.4    65.1    66.3    50.4    66.1    66.3    50.5    65.6		YEAR	JAN	FEB	MAR	APR	MAY	JUN		AUG	SEP	OCT	NOV	DEC	ANNUAL
1942      53.0      50.8      53.8      73.1      82.9      93.8      85.2      81.6      53.4      61.6      52.5      70.2        1943      52.8      58.7      61.8      70.4      76.3      83.2      88.0      83.9      82.0      70.8      61.6      52.5      70.2        1944      50.4      50.7      53.6      54.6      63.4      73.0      80.6      84.2      80.9      71.6      58.5      50.4      67.2        1944      50.4      57.0      67.4      73.0      85.4      86.0      80.9      71.6      58.5      50.4      67.2      68.1        1944      50.2      57.6      67.4      73.4      83.0      85.0      84.2      82.2      66.4      64.3      50.8      67.3        1950      50.4      57.2      60.7      69.2      71.6      81.6      84.7      83.2      76.4      64.4      50.8      64.2      97.1      61.6      62.6      64.4      70.2      57.8      55.5      67.4															
1943    52.8    68.7    61.8    70.4    76.3    83.2    88.0    83.9    82.0    70.8    61.6    52.5    70.2      1945    50.7    53.6    54.6    63.4    73.6    88.6    87.4    86.4    79.6    72.8    55.9    52.3    67.4      1945    50.7    53.6    54.6    63.4    73.6    88.4    80.9    81.5    95.5    55.6    66.4    68.0      1945    43.0    50.2    57.6    67.4    73.4    83.0    85.0    84.2    82.2    66.4    64.3    50.8    67.3      1950    50.4    57.2    60.7    69.2    71.6    81.6    82.8    84.7    78.3    76.8    63.0    56.9    69.4      1951    50.3    57.7    57.4    64.4    71.8    80.6    85.3    83.3    76.4    56.4    60.2    66.0    83.4    82.9    71.0    61.6    68.3      1955    53.5    57.4    64.4    71.8    82.3    83.4    82.9    7															
194450.450.756.463.0 $73.4$ 80.687.486.479.672.855.952.367.4194550.753.654.663.473.678.986.584.280.971.658.550.467.2194644.052.059.470.673.085.486.084.080.965.954.855.668.0194748.457.850.664.767.882.188.283.783.070.454.248.268.1194851.550.854.068.075.183.486.885.282.671.153.651.267.8195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.652.765.176.883.486.083.482.974.262.753.370.6195553.560.359.371.575.983.186.881.482.974.262.753.370.6195554.674.885.085.484.083.482.974.262.753.370.6195554.674.885.985.484.084.387.954.354.969.0195553.664.271.285.884.281.367.954.354.969.0195653.654.2															
194550.753.654.663.473.678.986.584.280.971.658.550.467.2194648.052.059.470.673.085.486.084.080.965.954.855.668.0194748.457.859.664.876.882.188.288.783.070.454.248.268.1194943.050.257.667.473.483.085.084.282.266.464.350.867.3195050.457.260.769.271.681.682.884.778.376.466.450.168.3195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.652.765.176.883.486.088.382.971.261.648.666.2195353.952.260.665.268.984.186.886.482.971.262.753.370.6195453.560.359.371.575.983.186.481.881.274.358.555.567.4195656.148.770.260.271.285.386.184.281.370.257.852.568.8195753.861.159.669.272.585.486.681.881															
1946    48.0    52.0    59.4    70.6    73.0    85.4    86.0    84.0    60.9    65.9    64.8    55.6    66.0      1947    48.4    57.8    59.6    64.8    76.8    82.1    88.2    83.0    70.4    54.2    48.2    66.1      1948    51.5    50.8    54.0    66.0    67.4    73.4    83.0    85.0    84.2    82.2    66.4    64.3    50.8    67.3      1950    50.4    57.2    60.7    69.2    71.6    81.6    82.8    84.7    78.3    76.8    63.0    56.9    50.1    68.3    84.9    83.2    72.5    58.5    51.5    66.3      1955    51.7    51.6    52.7    65.1    76.8    83.4    86.0    83.4    82.9    71.0    61.6    48.6    68.4    82.9    71.0    61.6    48.6    68.4    82.9    71.2    53.3    70.5    73.3    70.6    73.3    76.4    56.4    66.1    68.1    81.0    81.0    74.2    62.7 <td< td=""><td></td><td>1944</td><td>50.4</td><td>50.7</td><td>20.4</td><td>63.0</td><td>13.4</td><td>80.6</td><td>8/.4</td><td>86.4</td><td>/9.6</td><td>12.8</td><td>55.9</td><td>52.3</td><td>67.4</td></td<>		1944	50.4	50.7	20.4	63.0	13.4	80.6	8/.4	86.4	/9.6	12.8	55.9	52.3	67.4
1946    48.0    52.0    59.4    70.6    73.0    85.4    86.0    84.0    60.9    65.9    64.8    55.6    66.0      1947    48.4    57.8    59.6    64.8    76.8    82.1    88.2    83.0    70.4    54.2    48.2    66.1      1948    51.5    50.8    54.0    66.0    67.4    73.4    83.0    85.0    84.2    82.2    66.4    64.3    50.8    67.3      1950    50.4    57.2    60.7    69.2    71.6    81.6    82.8    84.7    78.3    76.8    63.0    56.9    50.1    68.3    84.9    83.2    72.5    58.5    51.5    66.3      1955    51.7    51.6    52.7    65.1    76.8    83.4    86.0    83.4    82.9    71.0    61.6    48.6    68.4    82.9    71.0    61.6    48.6    68.4    82.9    71.2    53.3    70.5    73.3    70.6    73.3    76.4    56.4    66.1    68.1    81.0    81.0    74.2    62.7 <td< td=""><td></td><td>1945</td><td>50.7</td><td>53.6</td><td>54.6</td><td>63.4</td><td>73.6</td><td>78.9</td><td>86.5</td><td>84.2</td><td>80.9</td><td>71.6</td><td>58.5</td><td>50.4</td><td>67.2</td></td<>		1945	50.7	53.6	54.6	63.4	73.6	78.9	86.5	84.2	80.9	71.6	58.5	50.4	67.2
194748.457.859.664.876.882.188.283.783.070.454.248.266.1194851.550.854.068.075.183.486.885.282.671.153.651.267.8195050.457.260.769.271.681.682.884.282.266.464.350.857.3195050.457.260.769.271.681.682.884.778.376.863.056.969.4195150.353.757.464.474.080.588.884.983.272.558.551.566.3195553.952.260.665.268.984.186.886.482.971.061.648.668.5195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.262.271.285.381.880.280.370.551.469.0195953.861.155.664.271.983.384.681.880.267.354.969.0195854.454.264.579.184.986.984.580.571.953.551.468.2195953.851.558.269.271.984.980.281.281.267.359.249															
194851.550.854.068.075.183.486.885.282.282.671.153.651.267.3194943.050.257.667.473.483.085.084.282.266.464.350.867.3195050.457.260.769.271.681.682.884.778.376.863.056.969.4195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.652.765.176.883.486.085.383.376.456.450.168.2195353.959.371.575.983.186.886.482.974.262.775.370.6195554.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.851.558.269.272.585.486.681.880.269.758.551.468.2195851.455.553.158.269.272.585.486.681.880.269.758.551.468.2195953.851.558.269.272.585.486.681		1947	48.4	57.8	59.6	64.8	76.8					70.4	54.2		
194943.050.257.667.473.483.085.084.282.266.464.350.867.3195050.457.260.769.271.681.682.884.778.376.863.056.969.4195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.665.266.981.486.085.383.376.456.450.168.2195353.952.260.665.268.984.186.883.482.974.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195553.861.159.664.271.285.386.184.281.367.954.354.969.0195851.455.854.264.271.186.384.580.571.957.855.668.9195953.851.558.269.272.585.486.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.281.370.555.551.468.2196046.847.861.065.771.983.586.084.281.267.359		1948	51.5		54.0									51.2	67.8
195050.457.260.769.271.681.682.884.778.376.863.056.969.4195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.652.765.176.883.486.085.383.376.456.450.168.2195353.952.260.665.268.984.186.886.482.974.262.753.370.6195453.560.359.371.575.983.186.884.482.974.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195551.460.264.275.886.285.484.084.370.257.852.568.8195753.861.159.664.279.184.986.984.580.571.957.855.668.9195851.455.854.264.579.184.986.984.281.267.357.855.668.9195953.851.557.557.764.077.380.587.681.380.775.851.468.2196046.847.861.065.771.183.584.076.871.156		1949	43.0	50.2		67.4									
195150.353.757.464.474.080.588.884.983.272.558.551.568.3195251.751.652.765.176.883.486.085.383.376.456.450.168.2195353.560.359.371.575.983.186.886.482.971.061.648.668.5195453.560.359.371.575.983.186.883.482.974.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.861.159.666.271.285.388.184.281.367.954.354.969.0195851.455.854.264.571.184.986.084.581.267.359.249.167.0196152.553.058.269.272.585.486.084.281.267.359.249.167.0196152.553.051.764.077.380.587.682.382.473.259.352.768.6196348.357.557.764.077.380.587.682.382															
195251.751.652.765.176.883.486.085.383.376.456.450.168.2195353.952.260.665.268.984.186.886.482.971.061.648.668.5195453.560.359.371.575.983.186.883.482.971.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.264.275.886.285.484.081.370.257.855.668.8195753.861.155.666.271.285.386.181.067.954.354.969.0195851.455.269.272.585.486.681.880.571.957.855.668.2196046.847.861.065.771.983.586.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.870.661.554.068.2196447.547.753.370.171.780.384.987.081.370.661.554.066.2196447.547.754.863.273.282.086.281.671.952.552.466		1950	50.4	57.2	60.7	69.2	71.6	81.6	82.8	84.7	78.3	76.8	63.0	56.9	69.4
195353.952.260.665.268.984.186.886.482.971.061.648.668.5195455.560.359.371.575.983.186.883.482.974.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.266.271.285.384.084.370.257.852.568.8195753.861.159.664.275.886.984.580.571.957.855.668.9195851.455.854.264.579.184.986.984.281.267.359.249.167.0196152.553.058.269.272.585.486.681.880.269.758.551.468.2196447.861.065.771.983.586.084.281.267.359.249.167.0196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.871.962.652.167.4196553.651.155.164.570.177.685.084.076.871.962.652		1951	50.3	53.7	57.4	64.4	74.0	80.5	88.8	84.9	83.2	72.5	58.5	51.5	68.3
195453.560.359.371.575.983.186.883.482.974.262.753.370.6195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.861.159.666.271.285.386.184.281.367.954.354.969.0195851.455.854.264.579.184.986.984.580.571.957.855.668.9195953.851.558.269.272.585.486.681.880.269.758.551.468.2196046.847.861.065.771.983.586.084.281.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.470.681.370.661.554.068.2196447.747.860.164.876.182.885.382.973.368.161.152.467.1196553.651.155.164.770.177.685.484		1952	51.7	51.6	52.7	65.1	76.8	83.4	86.0	85.3	83.3	76.4	56.4	50.1	68.2
195546.748.859.664.471.882.384.681.881.274.358.555.567.4195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.861.159.666.271.285.388.184.281.367.954.354.969.0195851.455.854.264.579.184.986.984.580.571.958.551.468.2196046.847.861.065.771.983.586.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.582.882.382.473.259.352.768.6196447.547.754.863.273.282.084.076.871.962.652.167.1196253.651.155.164.570.1 $77.6$ 85.084.076.871.962.652.167.1196447.747.860.166.876.182.885.382.978.3		1953	53.9	52.2	60.6	65.2	68.9	84.1	86.8	86.4	82.9	71.0	61.6	48.6	68.5
195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.861.155.666.271.285.388.184.281.367.954.354.969.0195851.455.854.264.579.184.986.984.580.571.957.855.668.9195953.651.558.262.272.585.486.681.880.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.871.962.652.167.1196553.651.155.164.570.177.685.084.076.871.962.652.167.1196447.747.860.166.870.177.685.084.071.662.948.668.1196553.651.154.366.671.980.785.484.680.771		·1954	53.5	60.3	59.3	71.5	75.9	83.1	86.8	83.4	82.9	74.2	62.7	53.3	70.6
195656.148.760.264.275.886.285.484.084.370.257.852.568.8195753.861.155.666.271.285.388.184.281.367.954.354.969.0195851.455.854.264.579.184.986.984.580.571.957.855.668.9195953.651.558.262.272.585.486.681.880.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.871.962.652.167.1196553.651.155.164.570.177.685.084.076.871.962.652.167.1196447.747.860.166.870.177.685.084.071.662.948.668.1196553.651.154.366.671.980.785.484.680.771							-								
195753.8 <b>61.1</b> 59.6 $66.2$ 71.2 $85.3$ $88.1$ $84.2$ $81.3$ $67.9$ $54.3$ $54.9$ $69.0$ 195851.455.854.2 $64.5$ 79.1 $84.9$ $86.9$ $84.5$ $80.5$ $71.9$ $57.8$ $55.6$ $68.9$ 195953.851.558.2 $69.2$ 72.5 $85.4$ $86.6$ $81.8$ $80.2$ $69.7$ $58.5$ $51.4$ $68.2$ 196046.847.8 $61.0$ $65.7$ $71.9$ $83.5$ $86.0$ $84.2$ $81.2$ $67.3$ $59.2$ $49.1$ $67.0$ 196152.553.0 $58.2$ $66.2$ $72.9$ $84.7$ $86.1$ $81.8$ $77.1$ $68.5$ $54.4$ $50.5$ $67.1$ 196249.0 $54.7$ $53.3$ $70.1$ $71.7$ $80.3$ $84.9$ $87.0$ $81.3$ $70.6$ $61.5$ $54.0$ $68.2$ 196348.3 $57.5$ $57.7$ $64.0$ $77.3$ $80.5$ $81.6$ $76.3$ $72.1$ $55.2$ $52.7$ $68.6$ 196447.5 $47.7$ $54.8$ $63.2$ $73.2$ $82.0$ $86.2$ $81.6$ $71.9$ $82.4$ $78.3$ $88.1$ $61.1$ $52.4$ $66.1$ 1965 $53.6$ $51.1$ $55.1$ $64.5$ $70.1$ $77.6$ $85.3$ $82.9$ $78.3$ $68.1$ $61.1$ $52.4$ $66.1$ 1965 $53.6$ $51.1$ $62.1$ $71.9$ $80.7$ $85.4$ <td></td> <td>1955</td> <td>46.7</td> <td>48.8</td> <td>59.6</td> <td>64.4</td> <td>71.8</td> <td>82.3</td> <td>84.6</td> <td>81.8</td> <td>81.2</td> <td>74.3</td> <td>58.5</td> <td>55.5</td> <td>67.4</td>		1955	46.7	48.8	59.6	64.4	71.8	82.3	84.6	81.8	81.2	74.3	58.5	55.5	67.4
195851.455.854.264.579.184.986.984.580.571.957.855.668.9195953.851.558.269.272.585.486.681.880.269.758.551.468.2196046.847.861.065.771.983.586.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.255.252.466.0196447.747.860.166.876.182.885.382.978.368.161.152.467.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.668.1196955.553.154.366.674.980.786.186.381		1956	56.1	48.7	60.2	64.2	75.8	86.2	85.4	84.0	84.3	70.2	57.8	52.5	68.8
195953.851.558.269.272.585.486.681.880.269.758.551.468.2196046.847.861.065.771.983.586.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.036.281.676.871.962.652.167.1196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.466.1196553.453.154.366.671.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.668.1196955.553.154.366.674.980.786.186.381		1957	53.8	61.1	59.6	66.2	71.2	85.3	88.1	84.2	81.3	67.9	54.3	54.9	69.0
196046.847.861.065.771.983.586.084.281.267.359.249.167.0196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.754.863.273.282.086.281.676.871.962.652.167.1196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164		1958	51.4	55.8	54.2	64.5	79.1	84.9	86.9	84.5	80.5	71.9	57.8	55.6	68.9
196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.372.155.252.466.0196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.758.350.668.1196852.459.158.763.273.383.584.981.380.771.658.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.686.682.978.666		1959	53.8	51.5	58.2	69.2	72.5	85.4	86.6	81.8	80.2	69.7	58.5	5i.4	68.2
196152.553.058.266.272.984.786.181.877.168.554.450.567.1196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.372.155.252.466.0196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.758.350.668.1196852.459.158.763.273.383.584.981.380.771.658.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.686.682.978.666		1000	46.0	47 0	<b>C1</b> 0	<b>CE 7</b>	71 0	00 F				<b>C</b> Π <sup>1</sup> 2	<b>F0 0</b>	40.1	67.0
196249.054.753.370.171.780.384.987.081.370.661.554.068.2196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.372.155.252.466.0196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.668.1196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.484.779.670															
196348.357.557.764.077.380.587.682.382.473.259.352.768.6196447.547.754.863.273.282.086.281.676.372.155.252.466.0196553.651.155.164.570.177.685.084.076.871.962.652.167.1196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.666.1196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.686.682.978.666.553.049.067.3197347.653.451.659.773.081.484.384.779															
1964    47.5    47.7    54.8    63.2    73.2    82.0    86.2    81.6    76.3    72.1    55.2    52.4    66.0      1965    53.6    51.1    55.1    64.5    70.1    77.6    85.0    84.0    76.8    71.9    62.6    52.1    67.1      1966    47.7    47.8    60.1    66.8    76.1    82.8    85.3    82.9    78.3    68.1    61.1    52.4    67.4      1967    51.4    55.6    62.1    62.1    71.9    80.7    85.4    84.6    80.7    71.6    62.9    48.6    68.1      1968    52.4    59.1    58.7    63.2    73.3    83.5    84.9    81.3    80.7    71.7    58.3    50.6    68.1      1969    55.5    53.1    54.3    66.6    74.9    80.7    86.1    86.3    81.2    66.8    59.6    52.4    68.0      1970    50.0    57.0    55.9    61.1    75.2    83.4    87.2    84.8    76.4    65.1    6															
1965 $53.6$ $51.1$ $55.1$ $64.5$ $70.1$ $27.6$ $85.0$ $84.0$ $76.8$ $71.9$ $62.6$ $52.1$ $67.1$ 1966 $47.7$ $47.8$ $60.1$ $66.8$ $76.1$ $82.8$ $85.3$ $82.9$ $78.3$ $68.1$ $61.1$ $52.4$ $67.4$ 1967 $51.4$ $55.6$ $62.1$ $62.1$ $71.9$ $80.7$ $85.4$ $84.6$ $80.7$ $71.6$ $62.9$ $48.6$ $68.1$ 1968 $52.4$ $59.1$ $58.7$ $63.2$ $73.3$ $83.5$ $84.9$ $81.3$ $80.7$ $71.7$ $58.3$ $50.6$ $68.1$ 1969 $55.5$ $53.1$ $54.3$ $66.6$ $74.9$ $80.7$ $86.1$ $86.3$ $81.2$ $66.8$ $59.6$ $52.4$ $68.0$ 1970 $50.0$ $57.0$ $55.9$ $61.1$ $75.2$ $83.4$ $87.2$ $84.8$ $76.4$ $65.1$ $60.1$ $51.8$ $67.3$ 1971 $50.5$ $52.3$ $59.8$ $62.8$ $69.3$ $81.2$ $87.5$ $81.3$ $79.1$ $64.2$ $56.8$ $47.1$ $66.0$ 1972 $50.4$ $55.8$ $65.0$ $65.8$ $72.3$ $81.6$ $86.6$ $82.9$ $78.6$ $65.5$ $53.0$ $49.0$ $67.3$ 1973 $49.8$ $50.7$ $55.3$ $57.9$ $69.8$ $80.5$ $84.2$ $83.0$ $79.5$ $58.4$ $52.2$ $66.4$ 1974 $50.2$ $51.9$ $60.1$ $66.1$ $74.3$ $86$															
196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.668.1196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.686.682.978.666.553.049.067.3197347.653.451.659.773.081.484.384.779.670.758.452.366.4197450.251.960.166.174.386.983.583.077.869.157.547.067.3197549.850.755.3 $57.9$ 69.880.584.285.880.069.559.353.066.3197652.658.458.264.874.583.483.985.3		1904	4/.5	4/./	34.0	03.2	13.2	02.0	80.2	01.0	/0.3	12.1	55.4	32.4	66.0
196647.747.860.166.876.182.885.382.978.368.161.152.467.4196751.455.662.162.171.980.785.484.680.771.662.948.668.1196852.459.158.763.273.383.584.981.380.771.758.350.668.1196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.865.065.872.381.686.682.978.666.553.049.067.3197347.653.451.659.773.081.484.384.779.670.758.452.366.4197450.251.960.166.174.386.983.583.077.869.157.547.067.3197549.850.755.3 $57.9$ 69.880.584.285.880.069.559.353.066.3197652.658.458.264.874.583.483.985.3		1965	53.6	51.1	55.1	64.5	70.1	77.6	85.0	84.0	76.8	71.9	62.6	52.1	67.1
1968    52.4    59.1    58.7    63.2    73.3    83.5    84.9    81.3    80.7    71.7    58.3    50.6    68.1      1969    55.5    53.1    54.3    66.6    74.9    80.7    86.1    86.3    81.2    66.8    59.6    52.4    68.0      1970    50.0    57.0    55.9    61.1    75.2    83.4    87.2    84.8    76.4    65.1    60.1    51.8    67.3      1971    50.5    52.3    59.8    62.8    69.3    81.2    87.5    81.3    79.1    64.2    56.8    47.1    66.0      1972    50.4    55.8    65.0    65.8    72.3    81.6    86.6    82.9    78.6    66.5    53.0    49.0    67.3      1973    47.6    53.4 <u>51.6</u> /td>    59.7    73.0    81.4    84.3    84.7    79.6    70.7    58.4    52.3    66.4      1974    50.2    51.9    60.1    66.1    74.3    86.9    83.5    87.7    67.8    60.0	•	1966	47.7	47.8	60.1	66.8	76.1		85.3	82.9	78.3	68.1	61.1	52.4	67.4
196955.553.154.366.674.980.786.186.381.266.859.652.468.0197050.057.055.961.175.283.487.284.876.465.160.151.867.3197150.552.359.862.869.381.287.581.379.164.256.847.166.0197250.455.8 <b>65.0</b> 65.872.381.686.682.978.666.5 <u>53.0</u> 49.067.3197347.653.4 <u>51.6</u> 59.773.081.484.384.779.670.758.452.366.4197450.251.960.166.174.386.983.583.077.869.157.547.067.3197549.850.755.3 <u>57.9</u> 69.880.584.285.880.069.559.353.066.3197652.658.458.264.874.583.483.985.377.767.860.052.268.3197750.756.955.767.070.884.787.086.482.073.361.756.969.4197853.153.661.865.273.185.888.184.780.973.858.549.769.0197948.453.856.465.672.283.187.583.4 <td></td> <td>1967</td> <td>51.4</td> <td>55.6</td> <td>62.1</td> <td>62.1</td> <td>71.9</td> <td>80.7</td> <td>85.4</td> <td>84.6</td> <td>80.7</td> <td>71.6</td> <td>62.9</td> <td>48.6</td> <td>68.1</td>		1967	51.4	55.6	62.1	62.1	71.9	80.7	85.4	84.6	80.7	71.6	62.9	48.6	68.1
1970 $50.0$ $57.0$ $55.9$ $61.1$ $75.2$ $83.4$ $87.2$ $84.8$ $76.4$ $65.1$ $60.1$ $51.8$ $67.3$ 1971 $50.5$ $52.3$ $59.8$ $62.8$ $69.3$ $81.2$ $87.5$ $81.3$ $79.1$ $64.2$ $56.8$ $47.1$ $66.0$ 1972 $50.4$ $55.8$ $65.0$ $65.8$ $72.3$ $81.6$ $86.6$ $82.9$ $78.6$ $66.5$ $53.0$ $49.0$ $67.3$ 1973 $47.6$ $53.4$ $51.6$ $59.7$ $73.0$ $81.4$ $84.3$ $84.7$ $79.6$ $70.7$ $58.4$ $52.3$ $66.4$ 1974 $50.2$ $51.9$ $60.1$ $66.1$ $74.3$ $86.9$ $83.5$ $83.0$ $77.8$ $69.1$ $57.5$ $47.0$ $67.3$ 1975 $49.8$ $50.7$ $55.3$ $57.9$ $69.8$ $80.5$ $84.2$ $85.8$ $80.0$ $69.5$ $59.3$ $53.0$ $66.3$ 1976 $52.6$ $58.4$ $58.2$ $64.8$ $74.5$ $83.4$ $83.9$ $85.3$ $77.7$ $67.8$ $60.0$ $52.2$ $68.3$ 1977 $50.7$ $56.9$ $55.7$ $67.0$ $70.8$ $84.7$ $87.0$ $86.4$ $82.0$ $73.3$ $61.7$ $56.9$ $69.4$ 1978 $53.1$ $53.6$ $61.8$ $65.2$ $73.1$ $85.8$ $88.1$ $84.7$ $80.9$ $73.8$ $58.5$ $49.7$ $69.0$ 1979 $48.4$ $53.8$ $56.4$ $65.6$ $72$		1968	52.4	59.1	58.7	63.2	73.3	83.5	84.9	81.3	80.7	71.7	58.3	50.6	68.1
1971    50.5    52.3    59.8    62.8    69.3    81.2    87.5    81.3    79.1    64.2    56.8    47.1    66.0      1972    50.4    55.8    65.0    65.8    72.3    81.6    86.6    82.9    78.6    66.5    53.0    49.0    67.3      1973    47.6    53.4    51.6    59.7    73.0    81.4    84.3    84.7    79.6    70.7    58.4    52.3    66.4      1974    50.2    51.9    60.1    66.1    74.3    86.9    83.5    83.0    77.8    69.1    57.5    47.0    67.3      1975    49.8    50.7    55.3    57.9    69.8    80.5    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1975    49.8    50.7    55.7    67.0    70.8    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1975    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    5		1969	55.5	53.1	54.3	66.6	74.9	80.7	86.1	86.3	81.2	66.8	59.6	52.4	68.0
1971    50.5    52.3    59.8    62.8    69.3    81.2    87.5    81.3    79.1    64.2    56.8    47.1    66.0      1972    50.4    55.8    65.0    65.8    72.3    81.6    86.6    82.9    78.6    66.5    53.0    49.0    67.3      1973    47.6    53.4    51.6    59.7    73.0    81.4    84.3    84.7    79.6    70.7    58.4    52.3    66.4      1974    50.2    51.9    60.1    66.1    74.3    86.9    83.5    83.0    77.8    69.1    57.5    47.0    67.3      1975    49.8    50.7    55.3    57.9    69.8    80.5    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1975    49.8    50.7    55.7    67.0    70.8    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1975    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    5															
1972 $50.4$ $55.8$ $65.0$ $65.8$ $72.3$ $81.6$ $86.6$ $82.9$ $78.6$ $66.5$ $53.0$ $49.0$ $67.3$ $1973$ $47.6$ $53.4$ $51.6$ $59.7$ $73.0$ $81.4$ $84.3$ $84.7$ $79.6$ $70.7$ $58.4$ $52.3$ $66.4$ $1974$ $50.2$ $51.9$ $60.1$ $66.1$ $74.3$ $86.9$ $83.5$ $83.0$ $77.8$ $69.1$ $57.5$ $47.0$ $67.3$ $1975$ $49.8$ $50.7$ $55.3$ $57.9$ $69.8$ $80.5$ $84.2$ $85.8$ $80.0$ $69.5$ $59.3$ $53.0$ $66.3$ $1976$ $52.6$ $58.4$ $58.2$ $64.8$ $74.5$ $83.4$ $83.9$ $85.3$ $77.7$ $67.8$ $60.0$ $52.2$ $68.3$ $1977$ $50.7$ $56.9$ $55.7$ $67.0$ $70.8$ $84.7$ $87.0$ $86.4$ $82.0$ $73.3$ $61.7$ $56.9$ $69.4$ $1978$ $53.1$ $53.6$ $61.8$ $65.2$ $73.1$ $85.8$ $88.1$ $84.7$ $80.9$ $73.8$ $58.5$ $49.7$ $69.0$ $1979$ $48.4$ $53.8$ $56.4$ $65.6$ $72.2$ $83.1$ $87.5$ $83.4$ $84.2$ $73.0$ $56.6$ $55.0$ $68.3$ $1980$ $54.3$ $57.9$ $57.5$ $65.6$ $71.5$ $84.9$ $88.6$ $84.6$ $80.5$ $69.6$ $59.5$ $58.1$ $69.4$ $1981$ $54.8$ $57.1$ $57.1$ <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>															
1973    47.6    53.4    51.6    59.7    73.0    81.4    84.3    84.7    79.6    70.7    58.4    52.3    66.4      1974    50.2    51.9    60.1    66.1    74.3    86.9    83.5    83.0    77.8    69.1    57.5    47.0    67.3      1975    49.8    50.7    55.3    57.9    69.8    80.5    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1976    52.6    58.4    58.2    64.8    74.5    83.4    83.9    85.3    77.7    67.8    60.0    52.2    68.3      1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    5															
1974    50.2    51.9    60.1    66.1    74.3    86.9    83.5    83.0    77.8    69.1    57.5    47.0    67.3      1975    49.8    50.7    55.3    57.9    69.8    80.5    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1976    52.6    58.4    58.2    64.8    74.5    83.4    83.9    85.3    77.7    67.8    60.0    52.2    68.3      1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    5															
1975    49.8    50.7    55.3    57.9    69.8    80.5    84.2    85.8    80.0    69.5    59.3    53.0    66.3      1976    52.6    58.4    58.2    64.8    74.5    83.4    83.9    85.3    77.7    67.8    60.0    52.2    68.3      1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    6															
1976    52.6    58.4    58.2    64.8    74.5    83.4    83.9    85.3    77.7    67.8    60.0    52.2    68.3      1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    5		1974	50.2	51.9	60.1	66.1	74.3	86.9	83.5	83.0	77.8	69.1	57.5	47.0	67.3
1976    52.6    58.4    58.2    64.8    74.5    83.4    83.9    85.3    77.7    67.8    60.0    52.2    68.3      1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    5		1975	49.8	50.7	55.3	57.9	69.8	80.5	84.2	85,8	80.0	69.5	59.3	53.0	66.3
1977    50.7    56.9    55.7    67.0    70.8    84.7    87.0    86.4    82.0    73.3    61.7    56.9    69.4      1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    57.7    50.1    67.0      1983    52.9    53.8    57.3    60.4    73.8    81.6    86.9    84.0    82.2    69.5    5															
1978    53.1    53.6    61.8    65.2    73.1    85.8    88.1    84.7    80.9    73.8    58.5    49.7    69.0      1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    57.7    50.1    67.0      1983    52.9    53.8    57.3    60.4    73.8    81.6    86.9    84.0    82.2    69.5    57.4    53.5    67.8															
1979    48.4    53.8    56.4    65.6    72.2    83.1    87.5    83.4    84.2    73.0    56.6    55.0    68.3      1980    54.3    57.9    57.5    65.6    71.5    84.9    88.6    84.6    80.5    69.6    59.5    58.1    69.4      1981    54.8    57.1    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    57.7    50.1    67.0      1983    52.9    53.8    57.3    60.4    73.8    81.6    86.9    84.0    82.2    69.5    57.4    53.5    67.8															
198054.357.957.565.671.584.988.684.680.569.659.558.169.4198154.857.157.169.173.486.185.286.480.768.162.255.069.6198250.754.757.766.172.380.584.883.979.267.057.750.167.0198352.953.857.360.473.881.686.984.082.269.557.453.567.8															
1981    54.8    57.1    69.1    73.4    86.1    85.2    86.4    80.7    68.1    62.2    55.0    69.6      1982    50.7    54.7    57.7    66.1    72.3    80.5    84.8    83.9    79.2    67.0    57.7    50.1    67.0      1983    52.9    53.8    57.3    60.4    73.8    81.6    86.9    84.0    82.2    69.5    57.4    53.5    67.8								• -	5,.9		¥ - • 2		20.0		
1982 50.7 54.7 57.7 66.1 72.3 80.5 84.8 83.9 79.2 67.0 57.7 50.1 67.0 1983 52.9 53.8 57.3 60.4 73.8 81.6 86.9 84.0 82.2 69.5 57.4 53.5 67.8		1980	54.3	57.9	57.5	65.6	71.5	84.9	88.6	84.6	80.5	69.6	59.5	58.1	69.4
1983 52.9 53.8 57.3 60.4 73.8 81.6 86.9 84.0 82.2 69.5 57.4 53.5 67.8		1981	54.8	57.1	57.1	69.1	73.4	86.1	85.2	86.4	80.7	68.1	62.2	55.0	69.6
1983    52.9    53.8    57.3    60.4    73.8    81.6    86.9    84.0    82.2    69.5    57.4    53.5    67.8      1984    51.8    53.7    60.5    64.0 <b>79.9</b> 83.1    84.2    82.9    81.5    66.3    57.8    51.5    68.1			50.7	54.7	57.7	66.1	72.3	80.5	84.8	83.9	79.2	67.0	57.7	50.1	.67.0
1984 51.8 53.7 60.5 64.0 <b>79.9</b> 83.1 84.2 82.9 81.5 66.3 57.8 51.5 68.1		1983	52.9										57.4	53.5	67.8
		1984	51.8	53.7	60.5	64.0	79.9	83.1	84.2	82.9	81.5	66.3	57.8	51.5	68.1
		_		. <b>.</b> .	•	<b>-</b> .					_ ,			- · · ·	

Record monthly and annual temperatures are shown in **bold** (warmest) & <u>underlined</u> (coldest).

### MONTHLY AND ANNUAL AVERAGE TEMPERATURES 1894-1996 103 YEARS

<u>YEAR</u> 1985 1986 1987 1988 1989	<b>JAN</b> 50.3 <b>58.7</b> 50.9 53.0 49.9	<b>FEB</b> 53.1 56.9 54.2 59.4 58.2	MAR 58.7 63.8 57.9 61.4 65.0	APR 68.7 69.0 70.1 68.0 <b>73.8</b>	<u>MAY</u> 75.9 76.8 74.3 76.4 77.4	86.3	87.9	AUG 86.1 86.0 85.1 85.9 86.6	<u>SEP</u> 77.4 79.0 79.9 80.4 <b>84.5</b>	<u>OCT</u> 70.0 69.6 75.1 75.3 71.1	NOV 58.0 59.8 58.9 59.2 61.7	DEC 52.9 52.3 50.3 51.9 53.0	<u>ANNUAL</u> 68.7 70.3 69.2 70.5 <b>71.4</b>
1990 1991 1992 1993 1994	51.8 52.3 51.6 55.2 53.7	52.8 59.8 57.3 54.0 55.2	61.8 55.4 59.4 61.3 62.9	69.7 65.2 70.8 68.6 68.6	73.5 76.7 78.1	88.7 81.5 84.5 85.0 <b>89.2</b>	87.5 86.8 88.0	82.6 86.6 85.1 85.5 <b>90.3</b>	80.7 83.6 81.4	73.1 74.0 74.2 72.6 70.5	61.6 58.9 56.1 58.8 56.7	51.1 54.3 51.4 53.4 53.9	69.6 69.1 69.8 70.2 70.9
1995 1996	52.6 53.6	60.7 58.9	61.2 61.1	- 10 S	72.6 79.0	83.3 87.4	88.4 88.6	87.3 86.4	82.9 77.7	72.4 70.4	63.1 60.9	54.0 53.5	70.3 70.6

Record monthly and annual temperatures are shown in **bold** (warmest) & <u>underlined</u> (coldest).

### MONTHLY AND ANNUAL MAXIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

						•							
YEAR	JAN	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1894										97	90	79	<b></b> `
1895	. 76	84	92	95	102	108	106	106	107	93	83	85	108
1896			94	93	106	110	104	104	102	91	83	76	110
1897	71	80	80	97	98	105	103	101	99	92	89	80	105
1898	73	83	82	95			108	106	102	98	90	74	108
1899	74	79	88	92	98	106	107	104	107	93	88	78	107
1900	76	80	92	88	102	108	108	105	100	92	88	78	108
1901	76	82	86	.92	97	108	108	106	104	98	85	83	108
1902	80	81	84	94	98	112	108	109	105	95	81	78	112
1903	76	76	82	92	102	108	106	108	104	93	88	78	108
1904	79	91	88	92	99	107	107	100	97	97	86	78	107
1905	67	70	74	79	97	102	107	107	103	96	82	72	107
1906	83	88	87	92	99	107	108	102	102	96	92	78	108
1907	76	82	95	96	101	107	111	102	102	96	85	78	111
1908	76	84	88	91	96	108	106	100	102	98	88	74	108
1909	82	76	81	91	96	106	108	102	100	96	91	79	108
												•	
1910	78	82	96	100	111	109	110	107	103	101	92	83	111
1911	83	83	88	90	97	107	106	106	101	95	80	85	107
1912	81	80	80	90	102	108	105	106	101	91	88	72	108
1913	72	76	90	90	101	105	109	103	102	94	85	74	109
1914	81	79	88	95	105	107	103	106	99	95	83.	73	107
											•		
1915	76	77	80	89	98	106	109	110	102·	95		82	110
1916	73	82	90	94	99	107	107	102	100	96	· 93	79	107
1917	72	80	88	91	96	110	107	102	103	101	88	82	110
1918	83	80	87	90	96	108	105	110	102	99	91	82	110
1919	74	78	86	96	97	111	103	105	100	86	83	77	111
1920		76	80	86	101	106	111	105	102	97	83	80	111
1921		91	89	93	98	109	106	103	101	99	85	85	109
1922		81	83	92	105	111	107	106	104	98	81	82	111
1923		82	82	89	101	110	108	99	100	94	74	73	110
1924	. 73	80	82	88	100	110	107	105	105	96	94	80	110
1925		86	91	99	104	106	109	103	100	100	80	. 75	109
1926		84	84	94	100	109	107	104	104	98	84	84	109
1927		82	86	96	103	108	106	106	102	96	88	77	108
1928		81	88	95	101	107	107	106	105	101	88	82	107
1929	77	78	86	91	99	111	106	102	102	101	84	79	111
		00	0.7	0.0	• •	110			1.00	~ ~	0.0	75	110
1930		83	81	96	99	110	108	110	103	94	86	75	110
1931		79	89	89	98	105	108	102	101	94	91	74	108
1932		82	85	91	100	110	106	105	103	93	84	. 77	110
1933		. 80	86	88	103	111	106	109	104	98	87	84 75	111
1934	77	82	91	94	106	107	109	107	103	101	93	75	109
1000		05	0.7	0.2	04	106	106	100	101	0.0	00	70	106
1935		85	82 88	93 06	94 100	106	106 108	103	101	99 99	86 86	78 79	106
. 1936		80		96 07	100	111		105	104			79 77	110
1937		79 79	83	97 07	102 104	106	110 107	106	102	97	88 81	83	108
1938		79 78	85	97 95	104 100	106 107	107	108	101	98 92	81 91	83 85	108
T 7 7 7	80	/8	89	75	TOO	TOI	TUP	104	104	72	ΒT	63	TOV

monthly and annual record high temperatures are shown in BOLD.

### MONTHLY AND ANNUAL MAXIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

-							1						
YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1940	82	85	87	94	99	108	110	104	102	95	87	80	110
1941	72	82	83	87	100	105	107	103	100	93	85	82	107
1942	82	78	85	92	103	109	110	104	102	94	86	78	110
1943	76	89	91	102	101	106	109	103	105	94	85	73	109
1944	78	78	82	88	101	107	109	109	103	97	87	75	109
									200	2,			
1945	74	80	83	95	96	105	104	105	107	94	89	75	107
1946	78	79	88	95	95	107	105	105	102	89	84	82	107
1947	80	83	88	94	105	104	110	105	105	98	90	76	110
1948	81	83	80	98	101	107	108	106	107	95	81	76	108
1949	68	80	87	97	104	107	106	105	103	92	86	78	107
			• •	2.	201		100	105	103	22	00	/0	107
1950	84	79	92	95	96	107	106	108	107	99	86	82	108
1951	82	86	81	92	107	106	108	104	104	97	80	78	108
1952	78	75	80	91	98	107	107	104	106	97	87	75	107
1953	87	80	90	94	98	109	110	105	104	98	87	76	110
1954	79	83	85	96	97	108	108	105	105	98	88	84	108
1001		05	0.5	20	, ,	100	108	105	105	20	00	04	108
1955	77	82	87	90	101	110	108	100	103	101	85	79	110
1956	79	79	91	89	102	109	108	104	105	97	85	77	109
1957	75	92	88	91	98	111	100	104	100	98	76	75	111
1958	75	83	77	95	107	107	109	102	101	93	82	82	111
1959	79	75	82	94	99	107	104	101	101		82 77	.76	107
2000	,,,	75	02 (7	54	99	107	104	TOO	103	96	//	- 76	107
1960	73	76	87	93	102	108	105	104	100	92	83	80	108
1961	74	80	85	94	98	106	105	103	95	91	78	73	106
1962	73	83	87	96	97	106	103	107	104	92	86	75	103
1963	77	86	86	96	100	104	103	98	101	92	85	73	107
1964	76	76	87	98 94	100	104	107	102	98	95	85	73	106
101	70	70	07	24	100	104	100	102	30	30	00	/4	108
1965	77	79	86	. 98	100	104	107	104	97	98	85	78	107
1966	75	72	85	89	100	105	105	100	99	91	84	80	105
1967	81	83	89	88	99	105	107	104	100	95	87	70	107
1968	75	85	85	89	102	110	105	98	102	94	85	80	110
1969	82	77	91	94	102	106	108	106	102	94 95	79	81	108
2000	02	••		24	105	±00	100	100	TOT	55	79	θT	100
1970	77	81	79	87	101	111	106	102	102	85	83	82	111
1971	85	80	90	92	94	105	108	97	101	89	86	78	108
1972	77	83	91	92	95	105	107	107	97	97	78	74	107
1973	76	77	77	89	98	107	107	103	104	95	87	83	107
1974	79	81	85	94	104	109	101	100	101	93	79	72	109
		UL /	05	24	101		*0×	100	TOT	22	19	12	109
1975	77	78	84	87	97	103	103	106	96	94	88	80	106
1976	79	82	85	89	98	108	105	104	96	89	83	73	108
1977	74	81	84	91	103	108	104	105	102	100	86	78	108
1978	74	77	87	91 .	103	108	104	101	98	95	85	76	108
1979	73	82	82	90	96								
1919	13	02	02	90	90	108	110	104	105	99	83	• 79	110
1980	72	82	78	96	101	108	107	106	102	101	89	81	108
1981	79	85	83	94	93	107	106	105	99	89	86	83	103
1982	80	84	81	92	97	106	106	104	104	89 94	81	83 78	106
1982	77	84 78	83	92 89	105	108	111	104					
1983	76	76	85	95	105	104	105		107	89	83	76	111
1904	10	/0	00	20	T00	102	TOD	105	102	88	88	74	106

monthly and annual record high temperatures are shown in BOLD.

## MONTHLY AND ANNUAL MAXIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

YEAR	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	JUL	AUG	<u>SEP</u>	<u>oct</u>	NOV	<u>DEC</u>	ANNUAL
1985	71	81	84	94	99	111	109	108	100	97	87	77	111
1986	84	89	92	94	102	108	111	106	105	91	81 .	78	111
1987	86	81	85	97	97	109	110	106	102	101	85	81	110
1988	81	86	99	96	105	114	108	106	104	99	90	80	114
1989	74	89	. 97	104	106	113	114	105	106	97	88	78	114
											•		
1990	83	86	92	96	103	117	111	105	107	95	88	79	117
1991	- 74	85	87.	92	101	110	109	106	103	100	88	76	110
1992	75	83	<u></u> 86	102	99	108	111	108	103	99	84	76	111
1993	76	77	85	99	104	113	109	112	103	102	86	79	113
1994	84	85	90	97	105	116	111	110	105	92	86	77	116
1995	76	83	87	94	100	110	114	109	104	97	85	79	114
1996	80	· 82	87	99	107	107	106	106	97	100	87	82	107

monthly and annual record high temperatures are shown in BOLD.

### MONTHLY AND ANNUAL MINIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

YEAR	JAN	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	<u>SEP</u>	OCT	NOV	DEC	ANNUAL
1894		`						<b>`</b>		39	35	30	
1895	27	20	30	21	47	45	<b>C</b> 2	<b>C</b> 1	FO	38	27	14	14
1895	×/ 	29	30 27	31 31	47 40	45 59	63 67	61 69	50 52	38 42	30	14 27	27
1898	26	25	27	30	52	50	65	66	62		28	16	16
1898	17	32	25	34	45		66	66	54	38	20	22	17
1899	20	17	26	34	32	48	68	62	52	32	32	22	17
	20		. 20	50		-10	00	02	72	52.	52	22	÷.
1900	27	25	31	35	45	57	61	57	50	29	32	25	25
1901	19	31	25	28	41	48	66	63	49	46	36	10	10
1902	25	24	28	38	39	50	59	65	53	43	30	26	24
1903	27	24	24	37	42	57	61	65	50	35	35	21	· 21
1904	15	24	30	33	41	55	55	65	44	35	32	28	15
1905	26	28	36	36	39	52	62	66	45	40	31	11	11
1905	28	20 31	24	31	39	46	62 61	61	43 52	29	27	29	22
1903	26	27	24	35	42	50	65	63	45	42	30	20	20
1908	26	22	28	36	41	43	64	63	48	29	25	23	22
1909	29	23	25	30	41	53	64	62	52	36	26	17	17
1909	25	23	2.2	50			04		52	50	20	1,	
1910	15	19	33	35	42	52	61	63	54	38	34	23	15
1911	16	27	35	38	43	51	49	63	62	41	24	19	16
1912	21	25	32	33	38	53	54	64	51	31	31	18	18
1913	6	28	26	36	38	49	58	63	43	40	35	28	6
1914	26	26	33	39	41	52	64	63	57	40	35	22	22
1915	22	28	30	36	37		67	67	44				
1916	23	22	30	34	44	44	63	63 E E	52	38	24	15	15
1917	28	27	23	28	39	48	65	55	50	36	30	22	22.
1918	18 20	24	34 29	34	· 43 49	49 50	66 64	61 65	55 54	36 35	27 26	27 28	18 20
1919	20	29	29	38	49	50	04	05	54	35	20	20	20
1920	30	30	30	33	41	53	61	60	49	33	29	19	19
1921	22	23	35	32	40	49	64	64	53	35	19	27	19
1922	17	23	24	28	37	53	67	65	38	32	25	27	17
1923	19	25	28	37	43	50	66	63	44	34	28	27	19
1924	24	25	28	- 30	47	55	64	60	52	35	27	25	24
1005	10		•		47	4.0	60	<b>C 1</b>	50	40	20	24	10
1925	18	33	29	32	47	46	62	61	52	42	29	24	18
1926 1927	24 28	29	32 31	41	44 43	58 49	58 67	63 65	59 51	44 41	32 35	24 24	24 24
1927	28	34 26	32	38 34	43 50	49 51	57	63	54	41 38	25	24	24
1928	22	26	29	33	43	52	57 69	67	59	32	29	23	22
1929	44	20	29	23	40	52	69	87	59	52	29	23	22
1930	26	31	30	40	39	52	68	67	50	40	27	20	20
1931	23	32	29	44	46	55	66	66	49	41	27	23	23
1932	19	25	30	36	42	48	66	64	57	36	32	22	19
1933	26	18	28	33	38	51	67	63	56	48	29	23	18
1934	21	28	37	31	46	50	65	68	45	39	23	22	21
1015	~-		• •		4.5	50		~ ^		~~	0.5	~~	<b>•</b> ••
1935	21	29	29	34	43	50	59	64 64	56	33	27	25	21
1936	22	27	29	31	44	48	62	64 64	44	42	31	27	22 15
1937	15 26	26	31	35	41	53	66 50	64 60	61 61	46	33	31 27	26
1938 1939	∡6 26	28 25	31 28	31 40	41 49	56 55	58 69	60 65	61 49	40 42	27 35	27	26 24
2222	20	20	20	•± U	47		9	65	47	44	55	<u> </u>	4 <b>7</b>

monthly and annual record low temperatures are shown in BOLD.

### MONTHLY AND ANNUAL MINIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

YEAR	<u>JAN</u>	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1940	22	28	30	40	49	61	62	64	61	42	29	33	22
1941	30	37	36	34	45	53	65	65	48	37	30	28	28
1942	27	28	28	37	45	56	70	64	62	38	28	29	27
1943	30	27	40	42	47	55	67	67	60	41	30	32	27
1944	23	28	31	36	46	52	65	66	59	48	31	30	23
		•					·						••
1945	30	31	30	27	49	54	68	66	49	42	32	22	22
1946	24	22	34	39	49	61	66	66	61	44	30	30	22
1947	23	32	35	39	50	58	68	66	63	44	28	24	23
1948	25	20	28	38	49	56	65	67	60	43	.29	23	23
1949	16	25	31	38	49	54	67	65	66	35	37	22	16
1950	17	32	35	40	38	53	68	67	55	52	37	34	17
1951	28	27	26	39	42	54	70	63	63	43	35	27	27
1952	25	25	32	43	48	57	68	67	52	51	32	28	25
1953	29	23	33	38	42	54	69	68	58	42	25	24	23
1954	31	31	29	45	46	54	69	64	61	42	35	18	18
1955	25	20	26	37	41	47	63	63	58	46	31	33	20
1955	33	25	26	34	41 47	63	66	61 61	58 64	37	28	35	25
1957	29	33	36	42	46	59	69	65	58	44	30	27	27
1958	27	31	33	37	- <u>1</u> 0 52	60	66	68	54	46	24	28	24
1959	26	27	28	44	43	59	68	68	57	39	34	28	24
1,2,2,2	20	21	. 20			22	00	00	57		54	20	20
1960	24	24	30	34	46	57	63	67	58	45	27	20	20
1961	32	32	34	43	46	52	64	64	56	38	32	32	32
1962	21	29	27	44	46	50	65	65	. 60	45	32	35	21
1963	21	33	30	. 37	53 -	53	70	66	63	51	39	27	21
1964	18	24	29	38	41	58	69	65	56	50	31	32	18
1965	30	22	20	37	40	52	68	66	44	41	37	30	20
1966	27	29	24	43	52	56	66	68	63	43	32	23	23
1967	20	30	32	34	39	55	68	69	63	41	38	26	20
1968	32	30	36	37	47	54	68	63	55	45	33	19	19
1969	27	28	27	43	39	57	69	70	61	41	34	24	24
1070		~ ~ ~	26		42		60	70		25	20		<b>~</b> ~
1970 1971	23 17	24	36 22	36 39	43	57 50	69 68	70 67	55	35 <b>26</b>	39	29 27	23 17
1971	23	27 30	35	39	46 48	50 61	66	67 64	55 55	<b>∡o</b> 38	35 32	26	23
				35		56			55	43			25
1973 - 1974	26 28	33 26	33 32	39	44 44	58	63 67	66 67	55 60	43 39	32 35	28 16	26 16 :
19/4	20	20	52	55	44	50		67	80		22	10	10
1975	25	25	31	34	40	59	67	69	59	40	31	26	25
1976	23	31	30	33	48	54	68	66	59	45	29	27	23
1977	29	28	34	37	47	63 ,	70	70	64	51	38	36	28
1978	29	29	39	37	48	59	67	68	55	49	37	20	20
1979	25	32	35	36	44	56	67	63	62	42	24	31	25
1980	34	38	38	40	43	54	68	66	60	39	32	31	31
1981	35	29	38	38.	51	62	68	66	61	35	34	27	27
1982	29	29	31	40	49	57	62	65	53	39	34	27	27
1983	30	33	35	36	47	58	64	65	63	52	30	30	30
1984	28	28	34	37	50	63	67	67	62	47	26	30	26
					_		,						

monthly and annual record low temperatures are shown in BOLD.

### MONTHLY AND ANNUAL MINIMUM TEMPERATURE EXTREMES 1894-1996 103 YEARS

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1985	31	24	32	43	50	55	70	66	55	50	31	26	24
1986	36	31	37	41	44	64	65	68	54	44	35	29	29
1987	19	32	33	42	50	62	64	64	57	54	32	23	19
1988	26	35	31	39	40	55	69	70	53	56	32	20	20
1989	24	31	32	41	48	58	70	65	57	40	32	26	24
						÷.,							
1990	28	23	30	45	49	57	66	65	59	44	30	21	21
1991	26	33	34	37	44	52	67	68	62	36	35	29	26
1992	28	36	39	44	50	58	59	63	63	50	26	29	26
1993	31	34	38	42	51	51	68	65	57	46	31	30	30
1994	29	27	40	42	51	63	67	69	62	42	28	32	27
									•				
1995	31	40	32	38	44	54	63	68	59	46	35	32	31
1996	28	35	34	43	55	60	70	70	60	38	31	26	26

monthly and annual record low temperatures are shown in BOLD.

### MONTHLY AND ANNUAL PRECIPITATION AMOUNTS 1894-1996 103 YEARS

		•												
<u>YEAR</u> 1894	<u>JAN</u>	<u>FEB</u>	MAR	<u>APR</u>	<u>MAY</u>	<u>JUN</u> 	<u>JUL</u> 	<u>AUG</u>	<u>SEP</u> 	<u>OCT</u> .46	<u>NOV</u> .00	<u>DEC</u> 1.70	ANNUAL	
1895	.56	Т	0	Т	.09	.02	.11	4.48	.75	.68	4.30	.08	11.07	
1896	.53	.08	.27	.12	Т	.19	3.45		1.13	3.31	.30	.76	11.39	
1897	1.79	.08	.13	Т	0	0	1.98	3.43	2.71	.54	0	.11	10.77	
1898	1.10	0	.63	1.05	0	.20	3.22	3.94	.10	0	.85	1,63	12.72	
1899	.78	.39	.37	.62	T	1.27	1.87	1.82	.03	.67	.56	T	8.38	
1900	.16	.49	.54	1.12	$\cdot \mathbf{T}$	.17	.65	.95	,85	.41	2.45	Т	7.79	
1901	1.15	1.38	.64	.04	.41	0	2.57	1.99	.28	1.18	.08	0	9.72	
1902	.53	т	.44	т	Т	.19	.42	1.31	.58	1.64	1.34	2.15	8.60	
1903	0	1.11	1.63	0	.20	.22	1.52	2.67	1.17	0	0	.28	8.80	
1904	.20	.54	.06	0	.61	.18	1.75	2.65	.89	.04	т	.93	7.85	
1905	2.25	4.15	3.88	3.53	.02	.24	1.10	.56	2.84	.09	4.61	.90	24.17	
1906	.50	.33	.33	.50	т	0	1.82	2.53	.43	т	.74	4.57	11.75	
1907	1.76	.75	.56	.15	.43	Т	4.27	3.46	.80	1.13	.78	0	14.09	
1908	.76	2.08	.39	.10	.16	T	4.77	2.18	.55	.26	.17	2.62	14.04	
1909	.51	.50	.33	0	0	.54	4.04	1.36	1.25	0	.87	.81	10.21	
												•		
1910	1.02	Ť	.10	.08	т	.12	4.21	2.55	.30	.04	1.32	.06	9.80	
1911	1.31	.99	.25	.27	0	.07	1.57	2.06	2.65	1.23	Т	.85	11.25	
1912	0	.37	2.12	.28	.32	.61	3.00	.96	.01	1.78	0	.39	9.84	
1913	.80	1.86	.12	.70	т	.08	1.32	1.21	.14	.22	1.98	.89	9.32	
1914	.15	.52	1.18	0	.49	1.31	2.94	3.45	.40	2.59	1.02	5.85	19.90	
1915	1.33	1.68	.76	.35	.15	.14	2.39	1.51	.92	0	1.04	2.35	12.62	
1916	4.00	.58	.50	.51	0	.07	2.03	2.26	1.29	1.10	0	.81	13.15	
1917	1.92	.44	.15	ر <b>.28</b>	.82	0	3.90	2.31	.88	т	0	0	10.70	
1918	1.40	1.26	.32	.04	.18	.34	1.54	.78	.13	.68	1.04	1.41	9.12	
1919	.26	.87	.63	1.10	.82	.32	5.53	1.82	2.54	.35	3.13	.64	18.01	
1920	2.29	1.00	1.96	.16	.21	.56	.25	2.84	.74	.55	.01	.15	10.72	
1921	.34	.47	.13	.62	T	.22	6.24	1.79	3.01	.25	.59	.12	13.78	
1922	1.20	.20	1.36	.76	.15	.44	1.73	1.18	1.73	.22	.32	.10	9.39	
1923	.27	.36	.65	.53	.05	0	3.00	4.06	.23	0	3.43	2.64	15.22	
1924	0	т	1.65	.41	т	.17	1.15	.08	.19	.16	.61	.65	5.07	
1925	.04	.07	.15	.36	т	.86	1.20	1.52	2.95	1.08	1 24	.33	9.80	
	.64		1.60		.60			.10					12.15	
1927	.04		1.40	.44	.01	.20	1.33	1.51		1.50 T		1.33	9.74	
1928		83	0	.03	.09	.09	1.78		.36	-	.44		6.50	
1929			.17	.17	.09 T	.10	1.94		4.28	.07	.05		9.33	
1930	.81	1.23	2.32	.57	.93	1.12	1.03						11.27	
1931	.68	2.95	.16	.48	1.34	.49		3.96	.94	.05	3.72	.42	16.26	
1932	.74	1.27	.40	.32	Т	.16	2.58	1.61	.23	1.62	0		10.94	
1933	.93	.24	0	.03	0	.10	1.60	2.23	1.62	2.00	.47	.38	9.60	
1934	.50	.30	.39	.03	.05	.14	1.16	2.41	1.07	T	.50	2.04	9.59	
1935	1.25	2.43	1.46	т	.14	т	.87	5.61	.88	0	1.89	1.24	15.77	
1936	.96	.92	.55	.07	T	.06	2.82	3.03	1.51	.34	1.13	.85	12.24	
1937	1.62	.23	.63	.01	.25	Т	2.06	1.29	1.43	.05	.19	.67	8.43	
1938	.65	.88	.43	.08	.11	2.07	.78	2.37	.50	0	.09	. 93	8.89	
1939	.35	1.60	.69	.04	0	т	.61	1.24	1.53	.18	.54	.27	7.05	

Record monthly/annual precipitation totals are shown in BOLD.

### MONTHLY AND ANNUAL PRECIPITATION AMOUNTS 1894-1996 103 YEARS

										'a.			
YEAR	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL
1940	.45	1.42	.04	.21	.52	1.14	.84	2.84	2.72	.13	1.62	2.82	14.75
1941	1.43	2.27	1.46	1.06	.74	Т	2.51	1.99	1.20	.53	.65	2.01	15.85
1942	.50	1.92	.23	.79	0	· 0	.68	.90	1.78	.60	Т	.47	7.87
1943	.44	.39	1.27	.03	.89	.13	1.09	3.04	3.59	.25	0	.79	11.91
1944	.36	1.10	1.01	.56	.37	.04	1.77	1.78	2.08	1.13	1.78	1.55	13.53
1945	.58	.47	.53	.11	0	0	2.84	4.31	.14	1.13	0	.47	10.58
1946	2.22	.22	.50	.14	0	.04	2.44	3.61	2.26	.82	1.10	.46	13.81
1947	.14	.02	.39	т	.04	.05	.27	2.24	.47	.80	.70	.41	5.53
1948	т	2.00	.29	т	0	.06	3.02	1.08	1.11	.56	.06	.93	9.11
1949	1.19	.20	.19	.38	0	.02	1.42	1.92	.81	.52	.17	.84	7.66
1950	.30	1.48	.26	T	.01	1.24	3.72	.86	1.15	т	Ť	.27	9.29
1951	1.12	.13	.12	1.66	.01	Т	1.49	2.66	.34	1.91	1.27	.99	11.70
1952	.24	.08	2.26	1.51	.02	.30	3.25	1.56	.80	0	1.90	.73	12.65
1953	.06	.96	.60	.06	Т	.03	2.87	.46	0	Ť	.18	.12	5.34
1954	.78	.75	1.01	0	.47	1.46	2.03	2.00	3.05	.02	0	.06	11.63
1955	1.89	.19	.03	т	.03	.03	5.10	7.93	.05	.32	Т	.33	15.90
1956	1.08	.54	0	.31	Т	.36	2.77	1.12	.37	.27	т	.22	7.04
1957	2.37	.36	.93	.16	.33	.17	1.25	3.92	т	2.62	.56	. 89	13.56
1958	т	1.15	1.82	.48	.02	.51	5.20	.91	.21	1.21	1.09	0	12.80
1959	.03	.28	Т	.01	. 0	Ţ	3.92	2.79	Т	.70	.29	1.97	9.99
1960	2.01	.42	.25	· •0	.08	.25	.73	2.09	1.20	.71	.07	.93	8,74
1961	.95	.01	.41	т	0	.26	1.81	4.28	.51	.65	.44	1.57	10.89
1962	1.39	.33	.25	· T	0	.25	1.38	.48	2.86	.22	.49 <sup>-</sup>	.93	8.58
1963	.59	.81	.34	.32	т	Т	1.66	2.86	1.45	.60	1.26	.08	9.97
1964	.14	.13	.81	.67	0	.01	4.82	3.90	5.11	.91	.68	.81	17.99
1965	.45	.64	.27	.23	Т	.01	2.13	1.12	.82	.07	.77	5.02	11.53
1966	1.74	2.25	.19	.12	.11	.02	2.57	3.31	3.53	.32	.06	.19	14.41
1967	.04	.13	.41	.29	.62	.42	2.72	2.00	1.35	1.03	.48	3.44	12.93
1968	.18	.99	1.79	.62	Т	• 0	1.97	1.12	T	.09	1.86	.32	8.94
1969	.74	.50	.34	.60	.46	0	1.51	2.57	1.31	.03	1.06	.82	9.94
1970	Т	.34	1.13	.45	.03	.33	2.53	1.43	3.58	1.73	0	.43	11.98
1971	.04	.50	т	.56	.01	Т	2.18	3.29	1.75	1.18	.69	1.97	12.17
1972	0	0	.01	0	.24	.68	3.49	2.93	1.09	4.51	1.30	.61	14.86
1973	.06	1.60	2.20	.02	.09	.50	1.74	.54	Т	0	.47	0	7.22
1974	. 93	Т	.55	T	0	.01	4.44	1.04	1.69	2,12	.81	.33	11.92
1975	.36	.13	. 95	.27	.11	0	2.38	.32	1.26	Т	.34	. 52	6.64
1976	.06	.53	.38	.57	.23	.10	1.18	.23	1.68	.37	.48	.47	6.28
1977	1.83	.04	.74	.43	.08	.06	.76	.80	1.41	2.36	.33	1.33	10.17
1978	2.05	1.75	.89	.01	.61	.22	.78	1.59	1.66	1.86	1.58	2.73	15.73
1979	2.94	.42	.64	.04	.67	.53	2.04	2.60	.02	.33	.01	.15	10.39
1980	. 73	2.90	1.22	.08	T	.23	1.78	1.95	2.93	.22	0	.19	12.23
1981	1.29	.71	1.98	.56	.26	.16	6.17	.80	1.10	.06	.61	0	13.70
1982	1.56	.06	1.26	.05	.51	.13	2.13	2.51	2.69	0	1.30	1.59	13.79
1983	1.70	.94	1.28	.14	т	0	1.98	4.24	4.28	4.98	1.71	.61	21.86
1984	.62	0	<b>0</b> , 7	.36	.06	1.05	2.92	4.19	1.81	.77	.45	3.30	15.53

Record monthly/annual precipitation totals are shown in BOLD.

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### MONTHLY AND ANNUAL PRECIPITATION AMOUNTS 1894-1996 103 YEARS

1985    1.71    1.08    .20    .45    T    .07    3.14    1.97    1.13    2.03    .95    .15    12.8      1986    .98    1.13    1.30    T    .44    .06    1.82    3.56    .31    .50    .42    1.28    11.8      1987    .59    1.64    .83    .80    .74    .16    .37    2.79    2.30    .34    .44    1.50    12.5      1988    .41    .53    .35    1.15    .02    .15    1.69    3.64    .80    2.09    .75    .05    11.6      1989    .96    .23    .62    0    .13    .06    1.42    .90    .02    1.84    .12    .18    6.4	IAL
1987.591.64.83.80.74.16.372.792.30.34.441.5012.51988.41.53.351.15.02.151.693.64.802.09.75.0511.6	88
1988 .41 .53 .35 1.15 .02 .15 1.69 3.64 .80 2.09 .75 .05 11.6	80
	50
1989 .96 .23 .62 0 .13 .06 1.42 .90 .02 1.84 .12 .18 6.4	63
	48
1990 .96 .71 .38 .10 .03 .64 5.45 2.70 1.63 .58 .23 1.54 14.9	95
1991 1.15 .91 1.40 0 0 .20 .44 2.17 1.54 .73 .80 1.44 10.7	78
1992 1.21 1.80 2.12 .19 1.11 .07 .93 4.55 .94 .03 T 3.47 16.4	42
1993 <b>4.81</b> 1.50 .49 0 .59 .02 .26 4.93 .46 .81 .98 .14 14.9	99
1994 .02 1.03 1.14 .04 .52 .26 .41 .45 1.46 .76 1.83 3.71 11.6	63
1995 1.41 1.32 .54 .28 .15 T .04 3.71 2.29 .36 .86 .22 11.1	18
1996 .01 .81 .32 T O T 1.88 1.87 3.68 1.74 .19 T 10.5	50

Record monthly/annual precipitation totals are shown in BOLD.

# **APPENDIX F**

# MONTHLY/ANNUAL TABLES for (1866 - 1894) data

### MONTHLY AND ANNUAL AVERAGE TEMPERATURES 1866-1894 28 YEARS

YEAR	<u>JAN</u>	FEB	MAR	<u>APR</u>	MAY	JUN	<u> JUL</u>	AUG	SEP	<u>0CT</u>	NOV	DEC	ANNUAL
1866												66.5	
1867	51.0	45.7	54.4	63.5	78.5	85.6	87.3	85.6	84.7	76.4	65.2	59.7	69.8
·1868	48.7	56.2	62.5	70.5	73.2	85.7	88.2	84.4	81.8	73.9	56.8	49.4	69.3
1869	46.6	48.6	59.8	66.0	76.1	88.6	89.0	82.9	78.9	68.6	59.0	47.6	67.6
1870	50.2	53.1	58.4	68.4	78.5	82.3	83.7	83.1	77.7	69.9	59.6	45.9	67.6
1871	51.8	51.1	58.0	62.3	78.3	84.3	87.5	86.6	85.1	72.4	58.0	55.3	69.6
1872	49.3	55.6	61.7	64.0	78.6	88.2	86.0	85.4	79.9	73.5	55.5	54.9	69.4
1873	51.8	53.0	65.1	68.1	77.1	87.7	90.9	81.9	80.1	70.8	59.9	48.9	69.6
1874	53.1	48.0	54.2	60.5	74.6	84.8	84.0	82.7	83.2	71.7	57.6	48.9	66.9
1875	47.8	51.8	56.0	69.3	81.7	89.2	85.7	87.3	81.3		59.2	47.4	
1876	47.3	53.0	56.8	70.6	80.5	90.4	88.4	83.6	80.7	67.0	58.7	48.7	68.8
1877	50.5	56.5	63.2	64.5	74.7	87.9	92.6	90.2	80.3	65.2	52.1	47.0	68.7
1878	47.4	48.6	57.2	66.5	78.3		92.7	86.0	76.5	70.9	60.1	50.8	
1879	51.4	57.3	62.0	69.0	78.8	89.7	88.1	86.7	81.7	66.6	53.6	50.4	69.6
1880	46.8	44.2	55.0	63.5	75.0	88.4	85.8	81.9	78.9	64.1	49.9	48.9	65.2
1881	43.5	53.4	56.0	69.4	77.1	87.3	86.4	82.7	77.0	67.0	51.0	49.9	66.7
1882	45.2	47.2	56.4	63.3	72.9	81.0	88.5	82.0	77.4	64.4	57.1	49.2	65.4
1883	42.3	47.8	55.9	62.1						66.4	58.5	49.8	
1884	44.8	56.8	56.3	62.0						70.9			
1885													
1886			56.7	65.3	80.2	86.7	90.1	86.4	81.1	68.8	53.8	53.1	
1887	49.5	51.8									•		
1888													
1889	40.9	44.0	58.6	66.2	71.5	81.2	86.6	86.4	76.3	68.8	56.2	56.6	66.1
1890	49.8	52.4	58.5	65.1	71.9	78.2	86.1	80.2	80.0	67.2	58.0	60.6	67.3
1891	47.7	52.5	59.8	71.5	78.0	84.5		86.8	81.2	70.8	58.9	44.4	68.9
1892	49.2	52.8	57.0	61.8	69.6	79.2	87.6	85.0	81.1	66.9	58.6	46.3	66.3
1893	51.3	54.0	56.0	63.6	71.2	83.6	85.0	81.8	77.0	65.5	54.0	50.4	66.1
1894	45.2	47.3	54.9	64.7	72.3	77.0	85.2	82.6	77.7				

### MONTHLY AND ANNUAL MAXIMUM TEMPERATURE EXTREMES 1879-1894 16 YEARS

<u>YEAR</u> 1879	<u>JAN</u>	FEB	MAR	<u>APR</u> 109	MAY	JUN	JUL	<u>AUG</u>	<u>SEP</u>	OCT	NOV	DEC	ANNUAL
1880							108	107	105	95	81	82	
1881	81	87	92	99	102	106	111	115	104	105	85	86	115
1882	85	76	90	98	98	107	109	110	105	200	89	82	110
1883	74	79	78	88						94	89	76	
1884	78	86	86	91						98			
1885													
1886			91	91	109	110	111	111	105	97	86		111
1887	82	•											
1888													
1889	72		86	100.	105	108	111	108	101	101	92	87	111
1890	. 86	87	89	94	105	- 108	109	-101	101	98	98	83	108
1891	75	67	80	96	95	106	109	105	100	91	89	77	109
1892	75	78	83	91	100	107	106	107	102	94	83	76	107
1893	73	80	. 92	91	98	107	107	102	99	92	84	76	107
1894	75	75	86	91	100	104	106	100	100				106

### MONTHLY AND ANNUAL MINIMUM TEMPERATURE EXTREMES 1880-1894 15 YEARS

<u>YEAR</u> 1880	<u>JAN</u>	<u>Feb</u>	MAR	APR	MAY	JUN	<u>JUL</u> 48	AUG 49	<u>SEP</u> 43	<u>0CT</u> 27	<u>NOV</u> 18	<u>DEC</u> 16	ANNUAL
1881	15	18	21	35	45	68	64	50	42	29	20	19	15
1882	13	21	21	29	40	47	64	65	46	*	24	9	<sup>`</sup> 9
1883	0	20	35	35						26	25	28	0
1884	12	20	33	34						41			
				•									, <b>,</b>
1885	N E							,					
1886			30	33	41	52	68	67	49	32	15		
1887	18												
1888													
1889	35	22	35	36	37	52	63	66	45	35	26	29	22
						•							
1890	20	21	21	39	44	44	65	63	54	35	24	25	20
1891	16	31	40	55	65	68	68	68	60	35	30	11	11
1892	17	30	32	32	38	39	67	65	60	35	33	16	16
1893	23	31	30	36	42	55	64	62	50	38	29	22	22
1894	18	20	24	34	43	48	66	64	46				

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### MONTHLY AND ANNUAL PRECIPITATION AMOUNTS 1867-1894 28 YEARS

<u>YEAR</u>	<u>JAN</u>	FEB	MAR	APR	MAY	<u>JUN</u>	JUL	AUG	SEP	OCT	NOV	DEC	ANNUAL	
1867					0	0	2.90	1.40	.60	Т	.20	1.70	<b></b> ,-	
1868	.57	.57	.30	1.09	1,00	0	3.34	.67	3.83	.25	.32	.50	12.44	
1869	1.09	1.58	.70	т	0	.35	2.49	6.31	.30	.03	1.01	.83	14.69	
1870	.02	.20	.03	.16	0	т	2.82	2.04	т	0	0	. 94	6.21	
1871	.52	.64	.16	.04	Т	.40	1.02	3.70	2.00	т	.21	1.00	9.69	
1872	.54	.12	0	.05	.01	.26	3.94	3.81	3.06	.40	0	1.39	13.58	
1873	0	.69	1.01	0	Т	0	.08	2.73	.62	0	1.32	.97	7.42	
1874	1.76	1.66	1.19	.43	.07	0	4.82	1.93	0	1.08	.92	.37	14.23	
													· -	
1875	.37	1.22	0	.09	0	.20	4.22	2.09	2.39	0	.18	.82	11.16	•
1876	.37	.25	1.22	0	0	.29	3.71	4.19	2.28	.96	.75	0	14.02	
1877	.19	2.53	.20	.57	.41	0	3.04	.02	2.44	.46	o	2.91	12.77	
1878	.22	1.00	1.77	.52	Ó	.65	5.72	4.71	.08	0	1.31	.68	16.66	
1879	2.02	.94	.83	.02	0	.01	.84	1.76	.74	.94	.60	3.31	12.01	
	•		,						•					
1880	.56	.15	.41	.04	0	т	1.62	1.28	1.89	.09	0	.57	6.61	
1881	.05	.25	1.17	.62	.04	0	5.69	3.92	2.37	.62	0	.19	14.92	
1882	1.75	1.64	.72	.05	.01	.99	2.63	6.32	.32	0	1.12	.04	15.59	
1883	1.27	.51	1.14	Т	.35	.71	1.80	1.23	0	.48	.04	.95	8.48	
1884	.83	2.59	1.95	1.17	.23	.23	.32	1.15	.30	2.24	.34	4.72	15.07	
										•				
1885	0	.42	.40	0	0	.13	1.00	1.76	.12	0	.42	1.01	5.26	
1886	1.61	.35	.87	.06	0,	0	1.06	2.47	.44	.31	.45	.40	8.02	
1887	0	.85	<u>o</u>	<b>.</b> 38	.32	.26	5.08	1.25	2.08	1.72	.74	.27	12.95	
1888	.73	.57	1.03	T	.32	.55	1.58	.92	.10	.78	2.06	1.96	10.60	
1889	1.74	1.06	1.98	.18	Т	.30	5.66	2,06	3.12	.36	.32	1.59	18.37	
1890	1.27	.76	.29	.91	0	Т	2.37	5.23	1.44	.62	.83	1,32	15.04	
1891	.16	3.28	.16	0	.22	.27	.70	2.26	.48	0	Ť	.25	7.78	
1892	1.52	2.63	.98	.18	.17	.10	1.00	2.14	.37	.27	Т	.25	9.61	
1893	.27	.82	1.16	т	.75	0	2.78	5.40	1.02	0	.43	.49	13.12	
1894	.11	1.04	1.16	т	.05	т	1.60	1.01	Т					

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- 144 Arizona Cool Season Climatological Surface Wind and Pressure Gradient Study. Ira S. Brenner, May 1979. (PB298900/AS)
- 446
- The BART Experiment. Morris S. Webb, October 1979. (PB80 155112) Occurrence and Distribution of Flash Floods in the Western Region. Thomas L. Dietrich, December 147 1979 (PB80 160344)
- 1979. (FB80 160344) Misinterpretations of Precipitation Probability Forecasts. Allan H. Murphy, Sarah Lichtenstein, Baruch Fischhoff, and Robert L. Winkler, February 1980. (PB80 174576) 149
- Annual Data and Verification Tabulation Eastern and Central North Pacific Tropical Storms and 150 Hurricanes 1979, Emil B, Gunther and Staff, EPHC, April 1980. (PB80 220486) NMC Model Performance in the Northeast Pacific. James E. Overland, PMEL-ERL, April 1980.
- PB80 196033) Climate of Salt Lake City, Utah, William J. Alder, Sean T. Buchanan, William Cope (Retired), James A. Cisco, Craig C. Schmidt, Alexander R. Smith (Retired), Wilbur E. Figgins (Retired), April 1996 -Sixth Revision (PB96 175583)
- 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
- Regression Equation for the Peak Wind Glob to to 12 hours in Advance a Great Pails During S. Downslope Wind Storms. Michael J. Oard, July 1980. (PB91 108367) A Raininess Index for the Arizona Monsoon. John H. Ten Harkel, July 1980. (PB81 106494) 155
- The Effects of Terrain Distribution on Summer Thunderstorm Activity at Reno, Nevada. Christopher 156 Dean Hill, July 1980. (PB81 102501)
- An Operational Evaluation of the Scofield/Oliver Technique for Estimating Precipitation Rates from Satellite Imagery. Richard Ochoa, August 1980. (PB81 108227) Hydrology Practicum. Thomas Dietrich, September 1980. (PB81 134033) 157
- 158
- Tropical Cyclone Effects on California. Arnold Court, October 1980. (PB81 133779) Eastern North Pacific Tropical Cyclone Occurrences During Intraseasonal Periods. Preston W. 159
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- Solar Radiation as a Sole Source of Energy for Photovoltaics in Las Vegas, Nevada, for July and December. Darryl Randerson, April 1981. (PB81 224503) 161
- A Systems Approach to Real-Time Runoff Analysis with a Deterministic Rainfall-Runoff Model. 162 Robert J.C. Burnash and R. Larry Ferral, April 1981. (PB81 224495) A Comparison of Two Methods for Forecasting Thunderstorms at Luke Air Force Base, Arizona. LTC
- 163 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.
- Prilia Gunther and Staff, May 1981. (PB82 230336) Preliminary Estimates of Wind Power Potential at the Nevada Test Site. Howard G. Booth, June
- 166 1981. (PB82 127036)
- 167
- ARAP User's Guide. Mark Mathewson, July 1981, Revised September 1981. (PB82 196783) Forecasting the Onset of Coastal Gales Off Washington-Oregon. John R. Zimmerman and William D. Burton, August 1981. (PB82 127051) 168
- A Statistical-Dynamical Model for Prediction of Tropical Cyclone Motion in the Eastern North Pacific Ocean. Preston W. Leftwich, Jr., October 1981. (PB82195298) 169
- 170 An Enhanced Plotter for Surface Airways Observations. Andrew J. Spry and Jeffrey L. Anderson, October 1981, (PB82 153883) Verification of 72-Hour 500-MB Map-Type Predictions. R.F. Quiring, November 1981,
- 171 (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,
- une 1982. (PB82 253089) limate of Phoenix, Arizona. Robert J. Schmidli and Austin Jamison, April 1969 (Revised July
- .996). (PB96-191614) Annual Data and Verification Tabulation, Eastern North Pacific Tropical Storms and Hurricanes 1982. 1/8
- 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) Standard Hydrologic Exchange Format (SHEF) Version I. Phillip A. Pasteris, Vernon C. Bissel, David G. Bennett, August 1983. (PB85 106052) 180
- B Dunntative and Spacial Distribution of Winter Precipitation along Utah's Wasatch Front. Lawrence B Dunn, August 1983. (PB85 106912) 500 Millibar Sign Frequency Teleconnection Charts Winter. Lawrence B. Dunn, December 1983. 181
- 182 (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)
- 500 Millibar Sign Frequency Teleconnection Charts Summer. Lawrence B. Dunn, March 1984. 185 (PB85 111359)
- 186 Annual Data and Ventication 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 1878887AS)
- Great Salt Lake Effect Snowfall: Some Notes and An Example. David M. Carpenter, October 1985 190 (PB86 119153/AS)
- 191 Large Scale Patterns Associated with Major Freeze Episodes in the Agricultural Southwest. Ronald
- S Hamilton and Glenn R. Lussky, December 1985, (PB86 144474AS) 192 NWR Voice Synthesis Project: Phase I. Glen W. Sampson, January 1986. (PB86 145604/AS) 193 The MCC An Overview and Case Study on its Impact in the Western United States. Glenn R.
- Lussky, March 1986. (PB86 170651/AS) Annual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1985. 194
- E.B Gunther and R.L. Cross, March 1986. (PB86 170941/AS) Radid Interpretation Guidelines. Roger G. Pappas, March 1986. (PB86 177680/AS) 0195
- 196 A Mesoscale Convective Complex Type Storm over the Desert Southwest. Darryl Randerson, April 1986. (PB86 190998/AS)
- The Effects of Eastern North Pacific Tropical Cyclones on the Southwestern United States. Walter Smith, August 1986. (PB87 106258AS) 197
- Preliminary Lightning Climatology Studies for Idaho. Christopher D. Hill, Carl J. Gorski, and Michael C. Conger, April 1987. (PB87 180196/AS) 198
- Heavy Rains and Flooding in Montana: A Case for Slantwise Convection. Glenn R. Lussky, April 100 37. (PB87 185229/AS)
  - Jual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1986. ger L. Cross and Kenneth B. Mielke, September 1987. (PB88 110895/AS)
- An Inexpensive Solution for the Mass Distribution of Satellite Images. Glen W. Sampson and 201 George Clark, September 1987. (PB88 114038/AS)
- 202 Annual Data and Verification Tabulation Eastern North Pacific Tropical Storms and Hurricanes 1987. Roger L. Cross and Kenneth B. Mielke, September 1988. (PB88-101935/AS)

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